



Neuse River Regional Hazard Mitigation Plan



September 2020



TABLE OF CONTENTS

1 Introduction 1

1.1 Background 1

1.2 Purpose and Authority 2

1.3 Scope 2

1.4 References 3

1.5 Plan Organization 4

2 Planning Process 5

2.1 Purpose and Vision 5

2.2 What’s Changed in the Plan 6

2.3 Preparing the Plan 6

2.3.1 Phase I – Planning Process 8

2.3.2 Phase II – Risk Assessment 9

2.3.3 Phase III – Mitigation Strategy 9

2.3.4 Phase IV – Plan Maintenance 9

2.4 Hazard Mitigation Planning Committee 10

2.5 Meetings and Workshops 13

2.6 Involving the Public 13

2.7 Outreach Efforts 14

2.8 Involving the Stakeholders 15

2.9 Documentation of Plan Progress 15

3 Planning Area Profile 23

3.1 Regional Characteristics 23

3.2 Greene County 30

3.2.1 Hydrology 30

3.2.2 Parks and Open Space 32

3.2.3 Demographics 32

3.2.4 Housing Characteristics 34

3.2.5 Wages, Employment and Industry 35

3.2.6 Historic Properties 36

3.2.7 Land Development Trends 36

3.3 Jones County 37

3.3.1 Hydrology 37

3.3.2 Parks and Open Space 37

3.3.3 Demographics 39

3.3.4 Housing Characteristics 41

TABLE OF CONTENTS

3.3.5	Wages, Employment and Industry	42
3.3.6	Historic Properties	43
3.3.7	Land Development Trends	43
3.4	Lenoir County	44
3.4.1	Hydrology	44
3.4.2	Parks and Open Space	44
3.4.3	Demographics	46
3.4.4	Housing Characteristics	48
3.4.5	Wages, Employment and Industry	49
3.4.6	Historic Properties	50
3.4.7	Land Development Trends	50
3.5	Pitt County	51
3.5.1	Hydrology	51
3.5.2	Parks and Open Space	53
3.5.3	Demographics	53
3.5.4	Housing Characteristics	56
3.5.5	Wages, Employment and Industry	57
3.5.6	Historic Properties	58
3.5.7	Land Development Trends	59
3.6	Wayne County	60
3.6.1	Hydrology	60
3.6.2	Parks and Open Space	60
3.6.3	Demographics	62
3.6.4	Housing Characteristics	64
3.6.5	Wages, Employment and Industry	65
3.6.6	Historic Properties	66
3.6.7	Land Development Trends	66
4	Risk Assessment	68
4.1	Overview	68
4.2	Hazard Identification	68
4.3	Risk Assessment Methodology and Assumptions	73
4.4	Asset Inventory	77
4.4.1	Population	77
4.4.2	Property	78
4.4.3	Critical Infrastructure & Key Resources and High Potential Loss Properties	79
4.4.4	Agriculture	86
4.5	Hazard Profiles, Analysis, and Vulnerability	87
4.5.1	Dam Failure	87

TABLE OF CONTENTS

4.5.2	Drought	99
4.5.3	Earthquake	109
4.5.4	Extreme Heat	122
4.5.5	Flood	129
4.5.6	Hurricane and Tropical Storm	154
4.5.7	Severe Weather (Thunderstorm Winds, Lightning, and Hail).....	169
4.5.8	Severe Winter Storm.....	183
4.5.9	Tornado.....	189
4.5.10	Wildfire.....	199
4.6	Conclusions on Hazard Risk.....	212
5	Capability Assessment	214
5.1	Overview	214
5.2	Conducting the Capability Assessment.....	214
5.3	Capability Assessment Findings	215
5.3.1	Planning and Regulatory Capability	215
5.3.2	Administrative and Technical Capability.....	224
5.3.3	Fiscal Capability.....	227
5.3.4	Education and Outreach Capability	228
5.3.5	Mitigation Capability.....	230
5.3.6	Political Capability.....	231
5.3.7	Local Self-Assessment Rating.....	231
5.4	Conclusions on Local Capability	232
6	Mitigation Strategy.....	234
6.1	Goals and Objectives.....	234
6.1.1	Coordination with Other Planning Efforts	234
6.1.2	Goal Setting.....	234
6.1.3	Resulting Goals and Objectives.....	235
6.2	Identification and Analysis of Mitigation Activities	236
6.2.1	Prioritization Process	237
7	Mitigation Action Plans	238
8	Plan Maintenance	254
8.1	Implementation	254
8.2	Monitoring, Evaluation, and Enhancement.....	257
8.2.1	Role of HMPC in Implementation, Monitoring and Maintenance.....	257
8.2.2	Maintenance Schedule.....	258
8.2.3	Maintenance Evaluation Process.....	258
8.3	Continued Public Involvement.....	259
9	Plan Adoption	261

TABLE OF CONTENTS

Annex A	Greene County.....	330
Annex B	Jones County.....	357
Annex C	Lenoir County.....	385
Annex D	Pitt County.....	418
Annex E	Wayne County.....	477
Appendix A	Plan Review Tool.....	A.1
Appendix B	Planning Process Documentation.....	B.1
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.1
C.2.2	Property Protection Measures.....	C.5
C.2.3	Natural Resource Protection.....	C.9
C.2.4	Emergency Services Measures.....	C.12
C.2.5	Structural Projects.....	C.15
C.2.6	Public Information.....	C.17
Appendix D	References.....	D.1

1 Introduction

Section 1 provides a general introduction to hazard mitigation and an introduction to the Neuse River 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 Neuse River 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 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 Pre-Disaster Mitigation (PDM) 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

SECTION 1: INTRODUCTION

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.

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 stakeholders. This plan will ensure all jurisdictions in the Neuse River Region remain eligible for federal disaster assistance including FEMA HMGP, PDM, and FMA programs.

This plan has been prepared in coordination with FEMA Region IV and NCEM and in compliance with Section 322 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (Stafford 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. Additionally, this plan will be monitored and updated on a routine basis to comply with the above legislation and with the National Flood Insurance Act of 1968, as amended by 42 U.S.C. 4001 et seq, and North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act, as amended by Senate Bill 300: An Act to Amend the Laws Regarding Emergency Management as Recommended by the Legislative Disaster Response and Recovery Commission (2001).

This plan will be adopted by each participating jurisdiction in accordance with standard local procedures under the authority and police powers granted to counties as defined by the State of North Carolina (N.C.G.S., Chapter 153A) and the authority granted to cities and towns as defined by the State of North Carolina (N.C.G.S., Chapter 160A). Copies of adoption resolutions are provided in Section 9 Plan Adoption.

1.3 SCOPE

This document comprises a Regional Hazard Mitigation Plan for the Neuse River Region. The planning areas includes all incorporated municipalities and unincorporated areas listed in Table 1.1.

Table 1.1 – Participating Jurisdictions in the Neuse River Regional Hazard Mitigation Plan

Greene County	
Hookerton	Snow Hill
Walstonburg	
Jones County	
Maysville	Pollocksville
Trenton	
Lenoir County	
Kinston	La Grange
Pink Hill	
Pitt County	
Ayden	Bethel
Falkland	Farmville
Fountain	Greenville
Grifton	Grimesland
Simpson	Winterville
Wayne County	
Eureka	Fremont
Goldsboro	Mount Olive
Pikeville	Seven Springs
Walnut Creek	

SECTION 1: INTRODUCTION

The focus of this plan is on those hazards deemed “high” or “moderate” priority hazards for the planning area, as determined through the risk and vulnerability assessments. Lower priority hazards will continue to be evaluated but will not necessarily be prioritized for mitigation in the action plan.

The Neuse River Region followed the planning process prescribed by FEMA, and this plan was developed under the guidance of an 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 hazards profiled in this plan include:

- ▶ Dam Failure
- ▶ Drought
- ▶ Earthquake
- ▶ Extreme Heat
- ▶ Flood
- ▶ Hurricane & Tropical Storm
- ▶ Severe Weather (Thunderstorm Wind, Lightning, & Hail)
- ▶ Severe Winter Storm
- ▶ Tornado
- ▶ Wildfire

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 Neuse River Regional Hazard Mitigation Plan is organized into the following sections:

- ▶ 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 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 Neuse River 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

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 Neuse River 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.

The Neuse River Region HMPC met to discuss their vision for the Region in terms of hazard mitigation planning. The committee was asked to consider 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 as a way to brainstorm a vision statement for the plan. The HMPC developed and discussed a list of ideas that were consolidated into the following statement and set of key principles that they agreed should define and guide the planning process and the Region’s approach to hazard mitigation:

SECTION 2: PLANNING PROCESS

Using a coordinated and multi-disciplinary hazard mitigation approach, protect life, property, and the environment through coordination and cooperation among public and private partners in order to reduce risk/loss and enhance the quality of life for citizens throughout the Neuse River Region.

2.2 WHAT'S CHANGED IN THE PLAN

This plan is an update to the 2015 Neuse River Basin Regional Hazard Mitigation Plan, which included participation from all jurisdictions involved in this plan update: Greene, Jones, Lenoir, Pitt, and Wayne Counties. The previous plan was approved by FEMA on June 22, 2015.

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 2018 State of North Carolina HMP and the 2015 Neuse River Basin Regional Plan and provides the final decision made by the HMPC as to which hazards should be included in the updated 2020 Neuse River Regional Plan.

In addition to the specific changes in hazard analyses identified in Section 4.2, the following items were also addressed in this 2020 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.

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 Community Rating System (CRS) Coordinator's Manual, in addition to DMA requirements.

2.3 PREPARING THE PLAN

The planning process for preparing the Neuse River 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;

SECTION 2: PLANNING PROCESS

- 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 CRS and FMA programs. Thus, the modified 10-step process used for this plan meets the requirements of six major programs: FEMA’s HMGP; PDM; CRS; FMA; 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
Phase I – Planning Process	
§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
Phase II – Risk Assessment	
§201.6(c)(2)(i)	Step 4. Assess the Hazard
§201.6(c)(2)(ii) & (iii)	Step 5. Assess the Problem
Phase III – Mitigation Strategy	
§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
Phase IV – Plan Maintenance	
§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
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 Section 5 – Capability
Establish community hazard reduction priorities and recommendations to reduce structural ignitability	Step 6, 7, and 8	Section 6 – Mitigation Strategy Section 7 – Mitigation Action Plans
Develop an action plan and assessment strategy	Step 8 and 10	Section 7 – Mitigation Action Plans 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:

SECTION 2: PLANNING PROCESS

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 each County’s effort to reorganize and coordinate for the plan update. Consultants from Wood Environment and Infrastructure Solutions, Inc. and Holland Consulting Planners 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 formed for development of the 2015 Plan was reconvened for this plan update. Where necessary, additional members were added to the HMPC. Each community also sought to incorporate stakeholder and public participation on the HMPC. More details on the HMPC are provided in Section 2.4. Stakeholder coordination was incorporated into the formation of the HMPC and was also sought through additional outreach methods. These efforts are detailed in Section 2.8.

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. Participating jurisdictions in the Neuse River 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 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, including the hazard identification, risk and vulnerability assessment, and capability assessment. The Hazard Identification and Risk Assessment can be found 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	Local comprehensive plans from around the region were referenced in the Planning Area Profile in Section 3. Other local comprehensive plans were incorporated into Mitigation Action Plans where applicable in Section 7 and 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.
Greene, Jones, Lenoir, Pitt and Wayne Counties and Incorporated Areas Flood Insurance Study (FIS) Reports	The Flood Insurance Studies were referenced in the preparation of flood hazard profile in Section 4.

SECTION 2: PLANNING PROCESS

Resource Referenced	Use in this Plan
Neuse River Basin Regional Hazard Mitigation Plan, 2015	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.
North Carolina State Hazard Mitigation Plan, 2018	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.

2.3.3 Phase III – Mitigation Strategy

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

Wood and HCP facilitated brainstorming and discussion sessions with the HMPC that described the purpose and process of developing a vision for the planning process and setting planning goals and objectives, a comprehensive range of mitigation alternatives, and 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 IV to review and approve, contingent upon final adoption by the Counties and their participating jurisdictions.

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

SECTION 2: PLANNING PROCESS

the method and schedule for monitoring, updating, and evaluating the plan. The Section also discusses incorporating the plan into existing planning mechanisms and how to continue public involvement.

2.4 HAZARD MITIGATION PLANNING COMMITTEE

As with the previous plan, this Hazard Mitigation Plan was developed under the guidance of a HMPC. The Committee members included representatives of County and jurisdiction departments, federal and state agencies, citizens and other stakeholders.

To reconvene the planning committee, a letter was sent via email to all County Emergency Managers asking for their assistance to convene the County, City, and Town HMPC contacts from the previous planning effort. 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 County, City, and Town officials in order to improve the integration of stakeholder input into the plan. Table 2.4 details the HMPC members and the agencies and jurisdictions they represented.

The formal HMPC meetings followed the 10 CRS Planning Steps. Agendas, minutes, and sign-in sheets for the HMPC meetings are included 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 to satisfy multi-jurisdictional participation requirements, 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 Neuse River Region HMPC, “participation” meant the following:

- ▶ Providing facilities for meetings;
- ▶ Attending and participating in the HMPC meetings;
- ▶ Collecting and providing requested data (as available);
- ▶ Completing the Local Capability Self-Assessment;
- ▶ Providing an update on previously adopted mitigation actions;
- ▶ 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 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 despite the fact that 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.

SECTION 2: PLANNING PROCESS

Table 2.4 – HMPC Members

Jurisdiction	Agency	Representative	Position or Title
CRS Steering Committee			
Lenoir County	Lenoir Co Emergency Services	Samuel Kornegay	EM Planner
Lenoir County	Lenoir Co Emergency Services	Jerri King	Interim Director
Lenoir County	South Lenoir High School	Joseph Noble	Teacher, Agricultural & Life Sciences
Lenoir County	Lenoir Community College	Justin Tilghman	Associate Dean of Public Safety
Kinston	City of Kinston	Damien Locklear	Fire Chief
Kinston	City of Kinston	Adam Short	Planning Director
Kinston	N/A	Russell Rhodes	Citizen/Stakeholder
Kinston	N/A	Dorian Edwards	Citizen/Stakeholder
Pitt County	Pitt County Planning & Development	James Rhodes, AICP	Planning Director
Pitt County	Pitt County Planning & Development	Mark Nottingham, AICP	Planner III
Pitt County	Pitt County Planning Board	Johnny Pinner	Citizen/Stakeholder
Pitt County	Red Cross Disaster	Mark Lenz	Program Manager
Farmville	Town of Farmville	Justin Oakes	Planning Director
Farmville	Town of Farmville	David Hodkins	Town Manager
Farmville	N/A	Hunter Walters	Citizen/Stakeholder
Farmville	N/A	Burt Smith	Citizen/Stakeholder
Greenville	City of Greenville Public Works Dept.	Daryl Norris	Stormwater Engineer
Greenville	N/A	Ann Maxwell	Citizen/Stakeholder
Grifton	Town of Grifton	Mark Warren	Interim Town Manager
Grifton	Town of Grifton	Brian Silva	Police Chief
Grifton	N/A	Mike Gaskins	Citizen/Stakeholder
Grifton	N/A	Daniel Allbritton	Citizen/Stakeholder
Winterville	Town of Winterville	Terri L. Parker	Town Manager
Winterville	Town of Winterville	Bryan Jones	Planning Director
Winterville	N/A	Bryan Fagundus	Citizen/Stakeholder
Winterville	N/A	Sean Owens	Citizen/Stakeholder
Wayne County	Wayne County Planning	Berry Gray	Planning Director
Wayne County	Wayne County Planning	Anthony Cape	Planning Technician
Wayne County	N/A	Chris Cox	Citizen/Stakeholder
Wayne County	N/A	Pete Benton	Citizen/Stakeholder
Goldsboro	City of Goldsboro	Marty Anderson, PE, CFM	City Engineer
Goldsboro	City of Goldsboro	Bobby Croom, PE	PO Drawer A, Goldsboro 27530
Goldsboro	NC Baptist Men	Chip McGuirty	Citizen/Stakeholder
Goldsboro	At-large citizen	Gloria Crowder	Citizen/Stakeholder
Walnut Creek	Village of Walnut Creek	Robert Parchman	Administrator/Chief of Police
Walnut Creek	Village of Walnut Creek	Peggy C. Page	Village Clerk
Walnut Creek	N/A	Stoney Sloan	Citizen/Stakeholder
Walnut Creek	N/A	Craig Bowen	Citizen/Stakeholder

SECTION 2: PLANNING PROCESS

Jurisdiction	Agency	Representative	Position or Title
HMPC Working Group			
Greene County	Emergency Services	Berry Anderson	Director
Greene County	Emergency Services	David Lancaster	EM Coordinator
Town of Hookerton	Town of Hookerton	Tyler Shirley	Maintenance Supervisor
Town of Hookerton	Town of Hookerton	April Vinson	Town Clerk/Finance Officer
Town of Snow Hill	Town of Snow Hill	John Bauer	Town Manager
Town of Snow Hill	Town of Snow Hill	Todd Whaley	Public Works Director
Town of Walstonburg	Town of Walstonburg	Ron Turner	Commissioner
Town of Walstonburg	Town of Walstonburg	Bess Patton	Town Clerk
Jones County	Jones County Emergency Svcs	Timmy Pike	Emergency Services Director
Jones County	Jones County Administration	Franky Howard	County Manager
Maysville	Town of Maysville	Shumata Brown	Town Manager
Pollocksville	Town of Pollocksville	Jay Bender	Mayor
Trenton	Town of Trenton	Glenn Spivey	Town Clerk
Trenton	Town of Trenton	Darlene Spivey	Mayor
La Grange	Town of La Grange Planning Inspections & Safety	Nathan A. Rhue	Director
La Grange	Town of La Grange Administration	John P. Craft	Town Manager
Pink Hill	Town of Pink Hill Administration	Carol Sykes	Mayor
Pink Hill	Town of Pink Hill Administration	Crystal Heath	Town Clerk
Pink Hill	Town of Pink Hill Public Works	Timothy Kennedy	Public Works Director
Ayden	Town of Ayden	Stephen Smith	Community & Economic Planning Director
Ayden	Town of Ayden	Steven L. Harrell	Town Manager
Bethel	Town of Bethel	Tom Asbell	Town Manager
Bethel	Town of Bethel	John Nelson	Public Works Director
Falkland	Town of Falkland	Vickie Wells	Town Clerk
Falkland	Town of Falkland	Ginger Little	Mayor
Fountain	Town of Fountain Admin.	Letha H. Hines	Town Clerk
Fountain	Town of Fountain Utility Dept.	Ronnie R. Williams	Utility Supervisor
Greenville	City of Greenville Public Works Dept.	Billy Merrill	Surveyor/Floodplain Coordinator
Grimesland	Town of Grimesland	Barbara Chitmon	Town Clerk
Grimesland	Town of Grimesland	Jaime Moles	Deputy Clerk
Simpson	Village of Simpson	Richard C Zeck	Mayor
Simpson	Village of Simpson	Sue Ellen Hill	Village Clerk
Eureka	Town of Eureka	Doug Booth	Mayor
Fremont	Town of Fremont	W. Darron Flowers	Mayor
Fremont	Town of Fremont	Barbara Aycock	Town Administrator
Mount Olive	Town of Mount Olive	Charles S. Brown	Town Manager
Mount Olive	Town of Mount Olive	Jammie Royall	Special Projects Director
Pikeville	Town of Pikeville	Lisa Jones	Town Administrator
Pikeville	Town of Pikeville	Joanne Honn	Town Clerk
Seven Springs	Town of Seven Springs	Stephen Potter	Mayor

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 2.5 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 2.5 – Summary of HMPC Meetings

Meeting Title	Meeting Topic	Meeting Date	Meeting Location
HMPC Mtg. #1 – Project Kick-Off	<ol style="list-style-type: none"> 1) Introduction to DMA, CRS, and FMA requirements and the planning process 2) Review of HMPC responsibilities and the project schedule. 	February 7, 2019	Pitt County Commissioners’ Auditorium 1717 W. 5 th Street Greenville, NC
HMPC Mtg. #2	<ol style="list-style-type: none"> 1) Review and update plan goals 2) Brainstorm a vision statement 3) Report on status of actions from the 2015 plan 4) Complete the capability self-assessment 	February 26, 2019	Kinston Community Center 2602 W. Vernon Ave Kinston, NC
HMPC Mtg. #3	<ol style="list-style-type: none"> 1) Review Draft Hazard Identification & Risk Assessment (HIRA) 2) Draft objectives and Mitigation Action Plans 	July 25, 2019	Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC
HMPC Mtg. #4	<ol style="list-style-type: none"> 1) Review the Draft Hazard Mitigation Plan 2) Solicit comments and feedback 	March 9, 2020	Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC

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.

SECTION 2: PLANNING PROCESS

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 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 2.6.

Table 2.6 – Summary of Public Meetings

Meeting Title	Meeting Topic	Meeting Date	Meeting Location
Public Meeting #1	<ol style="list-style-type: none"> 1) Introduction to DMA, CRS, and FMA requirements and the planning process 2) Review of HMPC responsibilities and the project schedule. 	February 26, 2019	Woodmen Center 2602 W. Vernon Ave Kinston, NC
Public Meeting #2	<ol style="list-style-type: none"> 1) Review “Draft” Hazard Mitigation Plan 2) Solicit comments and feedback 	March 9, 2020	Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC

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. The table below details public outreach efforts employed during the preparation of this plan.

Table 2.7 – Public Outreach Efforts

Location	Date	Event/Message
Plan website	Ongoing	Meeting announcements, meeting materials, and description of hazards; contact information provided to request additional information and/or provide comments
Local community websites	2/13/2019	Public Meeting #1 announcements posted with information about the planning process
Local community websites	Ongoing	Link to the plan website shared to expand reach
Public survey	Ongoing	Survey hosted online and made available via shareable link
Plan website - HIRA draft	7/30/2019	Draft HIRA made available for review and comment online
Plan website - Draft Plan	3/6/2020	Full draft plan made available for review and comment online
Mitigation Flyer	Ongoing	Information flyer made available online and at meetings

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 February 2019 and remained open for response until July 2019. The public survey requested public input into the Hazard Mitigation Plan planning process and the identification of mitigation activities to lessen the risk and impact of future hazard events. The survey is shown in Appendix B. The survey was available in hard copy at the first public meeting and online on the plan website. In total, 105 survey responses were received.

The following is a list of high-level summary results and analysis derived from survey responses:

SECTION 2: PLANNING PROCESS

- ▶ 17.3% of respondents say they feel not at all prepared for a hazard event; 61.5% feel somewhat prepared.
- ▶ 23.8% of respondents do not know where evacuation centers or storm shelters are located; however, 91.4% of respondents say they are able to evacuate or take shelter if necessary, which indicates that most people manage evacuating or taking shelter through their own resources. It is possible that these results skew toward those with more awareness of hazard risk and resources to respond.
- ▶ Over 29% of respondents do not know where to get more information on hazard risk and preparedness.
- ▶ Flood was rated the most significant hazard, followed by hurricane, severe weather, and tornado. Earthquake was rated the least significant hazard, followed by wildfire and drought.
- ▶ Respondents who reported having taken steps to mitigate risk at home reported a wide variety of actions, including property protection such as elevating equipment and maintaining drainage; preparedness actions such as emergency kits, supplies, and generators; and prevention, including decision-making regarding home purchase and political action regarding new development and growth management.
- ▶ Respondents largely favored structural projects and property protection for mitigation.

Detailed survey results are provided in Appendix B.

2.8 INVOLVING THE STAKEHOLDERS

In addition to representatives of each participating jurisdiction, the HMPC included a variety of stakeholders. Stakeholders on the HMPC included representatives from a public school district, a local community colleges, a religious organization, local developers, and the Red Cross, as well as local residents. Representatives from North Carolina Emergency Management also attended HMPC meetings. Input from additional stakeholders, including neighboring communities, was solicited through invitations to the open 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.

2.9 DOCUMENTATION OF PLAN PROGRESS

Progress on the mitigation strategy developed in the previous plan is documented in this plan update. Table 2.8 below details the status of mitigation actions from the previous plan. More detail on actions being carried forward is provided in Section 7 Mitigation Action Plans.

Table 2.8 – Status of Previous Mitigation Actions

Jurisdiction	Completed	Deleted	Carried Forward
Greene County	4	2	14
Town of Hookerton	4	2	15
Town of Snow Hill	4	2	14
Town of Walstonburg	4	2	14
Jones County	11	5	19
Town of Maysville	11	5	15
Town of Pollocksville	11	5	15
Town of Trenton	9	5	17
Lenoir County	4	2	13
City of Kinston	4	2	13
Town of La Grange	4	1	12
Town of Pink Hill	4	1	12

SECTION 2: PLANNING PROCESS

Jurisdiction	Completed	Deleted	Carried Forward
Pitt County	8	0	17
Town of Ayden	7	0	12
Town of Bethel	6	0	12
Town of Falkland	6	0	12
Town of Farmville	9	0	13
Town of Fountain	6	0	12
City of Greenville	12	0	14
Town of Grifton	9	0	12
Town of Grimesland	8	0	12
Village of Simpson	6	0	12
Town of Winterville	12	0	12
Wayne County	3	1	15
Town of Eureka	1	1	11
Town of Fremont	3	1	14
City of Goldsboro	3	1	15
Town of Mount Olive	3	1	14
Town of Pikeville	3	1	14
Town of Seven Springs	3	1	13
Village of Walnut Creek	3	1	15
Total	38	10	78

Table 2.9 on the following pages details all completed and deleted actions from the 2015 plan.

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 2.9 – Completed and Deleted Actions from the 2015 Neuse River Regional Hazard Mitigation Plan

2015 Action #	Description	2019 Status	Status Comments/Explanation
Greene County			
G2	Continue to maintain the County’s E-911 addressing system. This system is aimed at maintaining accurate location information on all developed properties throughout the County. The E-911 addressing system will be maintained through the County’s GIS system.	Completed	Completed; now considered a day-to-day capability.
G6	Educate, inform, and provide local real estate agents with information that will advise potential buyers to investigate the flood hazard for the property they are considering purchasing. This effort should involve a floodplain determination and an assessment of flooding history, if applicable and requested.	Deleted	Redundant; addressed in G4.
G9	Factor in the information and strategies outlined within this plan when making decisions that will impact land development policy and infrastructure improvements and extensions.	Completed	Completed; now considered a day-to-day capability.
G12	Work with the State Office of Dam Safety (ODS) to: a) Ensure that all dams in Greene County for which the ODS has jurisdiction are inspected on a regular basis; b) Ensure that ODS notifies the Greene County Emergency Management (EM) office of all ODS jurisdictional dams classified as "high hazard" or "distressed" dams; c) Attempt to ensure that all high hazard or distressed dams in the County have an updated and implemented operations and maintenance plan and emergency action plan; d) Provide the County EM office with an inventory of all ODS jurisdictional dams in the County; and e) With the assistance of ODS and/or dam owners, determine the extent of flood inundation if dam failure were to occur for each major dam in the County.	Completed	Continuing effort in coordination with the NC Office of Dam Safety
G14	Continue to maintain all development regulations, emergency and land use related plans, and applications for permits on the County's website. This information will be updated and maintained as deemed necessary.	Completed	Completed; now in maintenance phase.
G21	Work to establish a flood and tornado immediate warning system to serve all County residents, including those located within incorporated areas.	Deleted	Redundant; addressed in G11.
Jones County			
J1	Review, update, and, when feasible, exercise the County EOP and evacuation plan. This effort will involve a review of sheltering procedures including the "CRES" plan.	Deleted	Redundant; addressed in J1.

SECTION 2: PLANNING PROCESS

2015 Action #	Description	2019 Status	Status Comments/Explanation
J3	Continue to coordinate with the American Red Cross to ensure that a Spanish-speaking translator is available at the County's Central Shelter when it is activated. If a greater need persists following a disaster event, the County will establish contacts through which additional contractors may be procured.	Deleted	Redundant; addressed in J1.
J4	Continue to proactively address nuisance issues through ongoing code enforcement efforts. These efforts will focus on the cleanup of debris and abandoned material that may pose a threat during a flooding event or other natural disaster generating heavy winds.	Completed	Completed; now considered a day-to-day capability.
J7	Continue coordination with Lenoir County in maintaining a joint E-911 call center. Although the primary facility is located in Lenoir County, Jones County will maintain the backup facility.	Completed	Completed; this facility is now in place.
J10	Jones County Emergency Services will work closely with the County Health Department and the Department of Social Services in maintaining the County's Infectious Disease Spread Prevention Plan. These efforts will involve the creation of a public and media notification plan regarding infectious diseases and other public health issues. Jones County will also maintain a flow of information to all applicable agencies in the event of an outbreak of disease.	Deleted	Redundant; addressed in J1.
J13	Continue efforts to keep White Oak River, Trent River, and local streams free of debris (natural and man-made). These efforts will involve both County efforts, as well as grant funding when feasible.	Completed	Procedures now in place; ongoing activity.
J17	Continue to address the issue of a Brock Mill Dam breach within the County's Emergency Operations Plan (EOP).	Completed	Operational function of the EOP.
J19	Continue to coordinate with NCDOT in addressing drainage issues along State roadways throughout the County.	Completed	Determined to be a responsibility of NCDOT.
J20	Work with NC Cooperative Extension Service to assist farmers and foresters in addressing the drainage issues relating to their operations.	Completed	Completed; now considered a day-to-day capability.
J21	During the project approval process for new development, the County will work to educate individuals about the potential threats associated with building in areas identified as susceptible to forest fires. These efforts will focus on property protection mechanisms available to the property owner.	Deleted	Redundant; addressed in J9.
J24	Continue to work closely with real estate agents, contractors and business owners to ensure that prospective buyers and business operators are educated about development and hazards present within a flood hazard area. The County will prepare materials for dissemination to these entities to assist in this education process.	Deleted	Redundant; addressed in J12.
J25	Continue to maintain an Interlocal Agreement with the Towns of Maysville and Pollockville to cover the use of water in an emergency situation.	Completed	Completed; now considered a function of the EOP.

SECTION 2: PLANNING PROCESS

2015 Action #	Description	2019 Status	Status Comments/Explanation
J26	Work with all participating municipal jurisdictions in identifying a long-term solution to digital data protection. These efforts will focus on off-site backup procedures.	Completed	Completed; now in maintenance phase.
J27	Work with all participating municipal jurisdictions to establish an annual contract with a Pre-Qualified Post-Disaster Debris Management Firm.	Completed	Completed; approved annually prior to hurricane season.
J28	Through implementation of the County's Emergency Operations Plan, ensure that there is an adequate food and water supply for citizens in shelters during and after a disaster.	Completed	Operational function of the EOP.
J32	Increase GIS capacity and capability for emergency response and damage assessment functions through ARC GIS training for redundant Jones County Staff.	Completed	Staff in place; training provided through annual budgeting process.
J34	Convert water supply withdrawal from Black Creek Aquifer to Castle Hayne Aquifer in accordance with Eastern Carolina water supply permitting requirements and aquifer management policy.	Completed	Capital project completed during implementation of existing plan.
Lenoir County			
L4	Lenoir County Emergency Services will coordinate with and assist the Lenoir County Cooperative Extension in educating local farmers about the potential impact of natural hazards on annual crop yields. Cooperative Extension will provide educational materials to assist in limiting crop damage associated with natural hazard events.	Completed	Completed; now considered a day-to-day capability.
L5	Maintain a comprehensive Floodplain Management Program focused on managing development within flood hazard areas. This effort will include maintaining updated Flood Insurance Rate Maps, as well as annually reviewing and updating the County Flood Damage Prevention Ordinance. Municipal jurisdictions which maintain independent Floodplain Management Programs will be responsible for carrying out this action.	Completed	Completed; now considered a day-to-day capability.
L11	Continue to update and maintain a comprehensive GIS System involving the mapping of a range of County facilities and services including: <ul style="list-style-type: none"> • Fire Hydrants • Critical Facilities • 911 Addressing • Infrastructure Floodplain Maps	Completed	Completed; not in maintenance phase.
L13	Maintain information on the County website, as well as the County Emergency Services Facebook page, regarding issues related to preparation and safety in the event of a natural disaster. These efforts will involve the distribution of emergency notifications when deemed necessary.	Deleted	Redundant; addressed in L9.

SECTION 2: PLANNING PROCESS

2015 Action #	Description	2019 Status	Status Comments/Explanation
L16	Continue to enforce all regulations outlined under the NC State Building Code. Although not a requirement, the County will encourage the use of wind resistant design techniques for all new residential construction.	Completed	Completed; now considered a day-to-day capability.
L18	Continue to provide detailed information regarding properties located within flood hazard areas as outlined under CRS Manual Section 322.a through 322.g.	Deleted	Redundant; addressed in L4.
Pitt County			
P2	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.	Completed	Completed; now handled on an as-needed basis.
P4	Continue to enforce the NC State Building Code. Through enforcement of the NC State Building Code, jurisdictions will work to ensure that all structures, including manufactured homes, are properly anchored to minimize potential impacts stemming from a disaster event.	Completed	Completed; now considered a day-to-day capability.
P5	Maintain and update local Flood Insurance Rate Maps (FIRMs). These maps will be reviewed and formally updated as revisions become available through North Carolina Floodplain Mapping Program.	Completed	Completed; now handled on an as-needed basis.
P8	Continue to impose regulations as defined under the Tar-Pamlico and Neuse River Basinwide Water Quality Management Rules. Compliance with the Tar-Pamlico rules are mandatory. This strategy will be amended during implementation of this plan due to anticipated changes in the Tar-Pamlico and Neuse River Basinwide Regulations.	Completed	Completed; now considered a day-to-day capability. Coordinated with NCDEQ.
P19	Continue to provide detailed information regarding properties located within flood hazard areas as outlined under CRS Manual Section 322.a through 322.g.	Completed	Day-to-day component of CRS program.
P22	Support the efforts of the Greenville Utilities Commission (GUC) and Duke Energy to increase the resiliency of all infrastructure components.	Completed	Completed; now handled on an as-needed basis. Periodic meetings held with GUC and Duke Energy.
P23	Support all recommendations defined under the Flood Mitigation Report for Pitt County, NC, developed as a component of this plan. The Flood Mitigation Report for Pitt County has been provided in Appendix I.	Completed	The County Board of Commissioners continues to support the recommendations of this plan.
P24	Work to address localized flooding issues throughout the county as identified and discussed in the Pitt County Stormwater Management Study and the SEPI Flood Mitigation Report for Pitt County, North Carolina, developed as an element of this plan. The County will apply for grant funding to facilitate implementation of these projects through agencies identified under the funding source column.	Completed	The County Board of Commissioners continues to support the recommendations of these plans and applying for grant funding to carry out project activities.

SECTION 2: PLANNING PROCESS

2015 Action #	Description	2019 Status	Status Comments/Explanation
P28	The City of Greenville will continue to update the City's Emergency Operations Plan (EOP), provide more strategies for City operations following a disaster, and ensure that the EOP is aligned with the Regional Hazard Mitigation Plan.	Completed	Completed; now considered a function of the EOP.
P29	The City of Greenville will revise the development standards in the Flood Damage Prevention Ordinance so that new single-family residential development (not just multi-family) must be elevated two (2) feet above base flood elevation, making the standards consistent with Pitt County standards.	Completed	Completed; now considered a day-to-day capability.
P30	The City of Greenville will avoid subdivision development that is dependent on one or few streets that are susceptible to flooding. The City's subdivision ordinance currently requires single-family residential subdivisions with 30+ units to provide two or more access points; the City will consider requiring multi-family subdivisions to also provide two or more access points.	Completed	Completed; now considered a day-to-day capability.
P32	The City of Greenville will continue to establish a flood recovery center (FRC) when needed to address post disaster issues. The City will utilize existing staff and create temporary positions for the FRC.	Completed	Completed; this policy is in place and is defined within the city's emergency operations procedures.
P33	The Town of Farmville will raise minimum flood protection level (freeboard) from 1 foot to 4 feet above base flood elevation.	Completed	Farmville has established a 2-foot freeboard and will continue to enforce this standard.
P35	The Town of Grifton will continue to flood proof manholes to reduce stormwater to enter the sanitary sewer system.	Completed	Completed; now in maintenance phase.
P36	The Town of Grimesland will activate a Memorandum of Agreement (MOA) with the NC Department of Transportation for debris removal at the Declaration of Emergency by the State of North Carolina.	Completed	Completed; MOA is in place and will be reviewed annually.
P37	The Town of Grimesland will establish contracts with the Grimesland Volunteer Fire Department for fire services within the Town.	Completed	Completed; contract is in place and will be reviewed annually as necessary.
P38	The Town of Winterville will continue to administer and enforce requirements for underground electric service in new subdivisions.	Completed	Completed; now considered a day-to-day capability.
P39	The Town of Winterville will continue to enforce and propose more stringent provisions of the design standards manual requiring onsite retention of runoff when proposed development activity would increase the rate of runoff. These regulations have been amended to require assumption of higher runoff rates in calculation of post-development runoff. As a result, greater levels of onsite stormwater improvements are now required.	Completed	Completed; now considered a day-to-day capability.
P40	The Town of Winterville will require emergency generators at all new sewer pump stations as a required improvement.	Completed	Completed; now considered a day-to-day capability.
P41	The Town of Winterville will continue to implement its Drainage System Maintenance Program.	Completed	Completed; project activities are carried out through the Town's annual budgeting process.

SECTION 2: PLANNING PROCESS

2015 Action #	Description	2019 Status	Status Comments/Explanation
Wayne County			
W3	Maintain all FEMA Elevation Certificates, FEMA Floodproofing Certificates for non-residential structures, and where applicable, a V Zone Design Certificate for all structures built or floodproofed since application to the CRS. V Zone Design Certificates must be maintained only for structures built subsequent to January 1, 2013.	Completed	Completed; now considered a day-to-day capability.
W5	Continue to enforce all regulations outlined under the NC State Building Code. Although not a requirement, the County will encourage the use of wind resistant design techniques for all new residential construction.	Completed	Completed; now considered a day-to-day capability.
W8	Continue to maintain all development regulations, floodplain maps, emergency and land use related plans, and applications for permits on the County's website. This information will be updated and maintained as deemed necessary.	Completed	Completed; now considered a day-to-day capability.
W12	Factor in the information and strategies outlined within this plan when making decisions that will impact land development policy and infrastructure improvements and extensions.	Deleted	Strategy determined to be ambiguous and lacking in substance.

3 Planning Area Profile

This section provides an overview of the current conditions and characteristics of the Neuse River region. As Greene, Lenoir, Jones, Pitt, and Wayne Counties collectively comprise the Neuse River region, general information for the region, such as location, topography/geology, and climate have been combined in this section. Following the Region’s introductory information is a summary for each county and participating municipal jurisdictions containing pertinent information regarding natural functions, demographics such as population, housing, and economic characteristics, and land development trends. Much of the demographic, housing, and economic data is derived from American Community Survey (ACS) 5-Year Estimates.

The following provides an overview of the sections:

- ▶ 3.1 Regional Characteristics

This section discusses the region’s 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, outlines the presence of threatened and endangered species, and provides region-wide mapping.

- ▶ 3.2 Greene County Characteristics
- ▶ 3.3 Jones County Characteristics
- ▶ 3.4 Lenoir County Characteristics
- ▶ 3.5 Pitt County Characteristics
- ▶ 3.6 Wayne County Characteristics

Each of the county profiles contains the following information: an overview of each county’s hydrology, a discussion of parks/open space; demographic data for all participating jurisdictions including total population counts, racial composition, housing characteristics, and employment and industry statistics; a listing of all properties within each participating County jurisdiction that have been listed on the National Register of Historic Places; and a brief overview of development trends throughout each participating jurisdiction with information on parcel development and pre-FIRM property counts where available.

3.1 REGIONAL CHARACTERISTICS

Greene, Jones, Lenoir, Pitt, and Wayne Counties are located in eastern North Carolina’s Coastal Plain, as shown in Figure 3.1. The CSX Transportation, North Carolina Railroad, and Norfolk-Southern Railways run through Greene, Lenoir, Pitt, and Wayne Counties. Roadway transportation for the area is provided by Interstate 795 and US Routes 117 and 258 (running in a north-south direction), and 13, 64, 70 and 264 (east-west), and State Highways 11, 30, 33, 41, 43, 55, 58, 91, 102, 111, 118, 121, 123, 222, 581, and 903. Pitt-Greenville Airport is located on NC 11 approximately 10 minutes northwest of downtown Greenville. The airport is centrally situated within Pitt County and easily accessible to surrounding smaller communities. Air passenger service is provided by US-Air Express to Raleigh-Durham International Airport and Charlotte Douglas International Airport. The North Carolina Global TransPark is located at the Kinston Regional Jetport (Stallings Field) in Kinston.

The Neuse River region has a relatively flat to gently sloping topography. Elevations range from 10 feet above sea level near the Neuse River in Lenoir County to about 190 feet in the southwestern part of Wayne County. Soils near drainageways are well drained to moderately well drained; whereas, toward the center

SECTION 3: PLANNING AREA PROFILE

of the interstream divides, they are somewhat poorly to very poorly drained. The underlying material in the swamp areas of the region is slowly permeable, and internal drainage is slow. The region is drained by the Tar/Pamlico, Neuse, and Trent Rivers and their tributaries. Figure 3.2 shows the Region in relation to the HUC-8 drainage basins.

The following table, Table 3.1, provides the area in square miles for all jurisdictions participating in the Neuse River Regional Hazard Mitigation Plan Update.

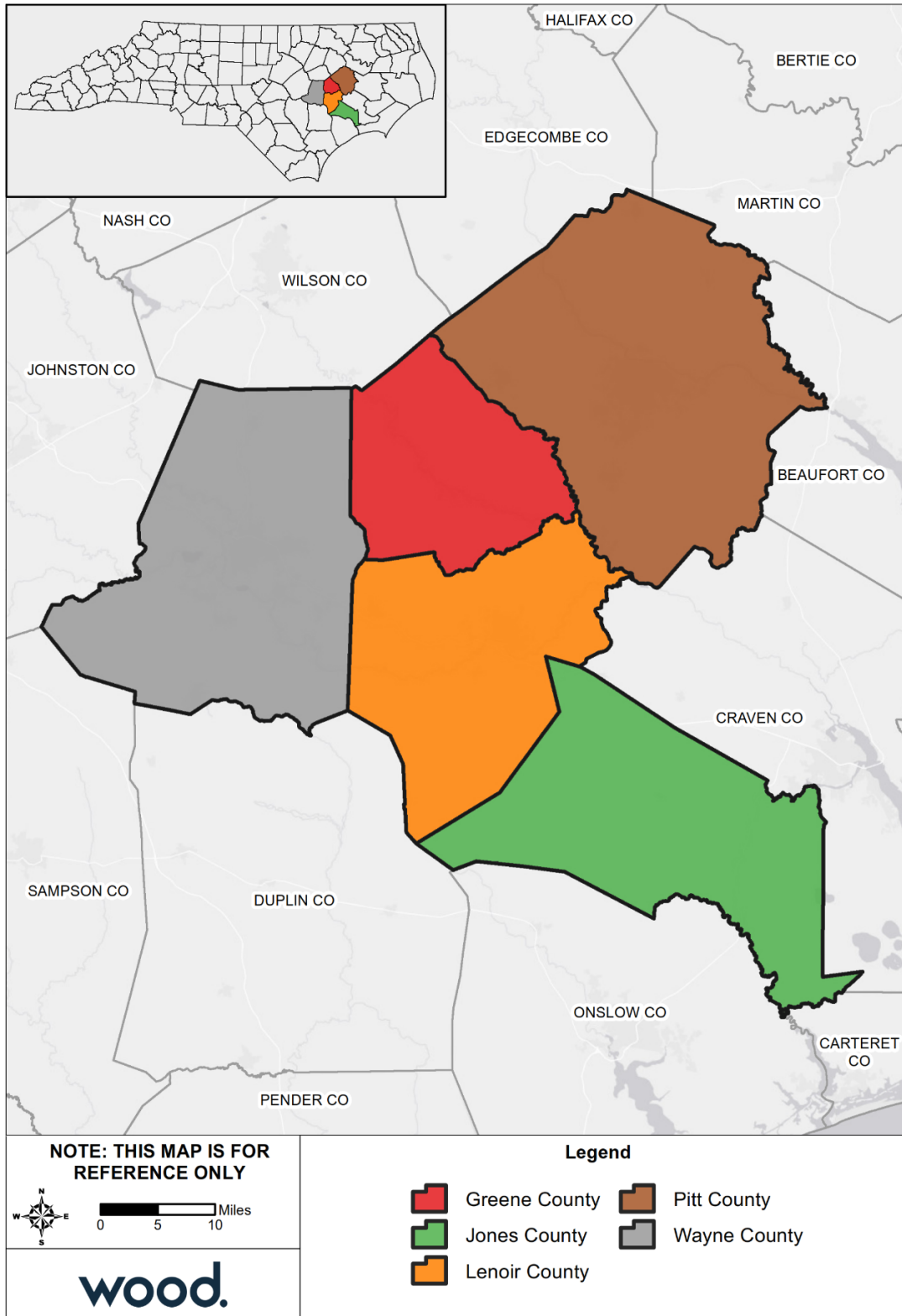
Table 3.1 – Neuse River Region Total Land Area

Jurisdiction	Total Land Area (Square Miles)
Greene County	266
Hookerton	0.3
Snow Hill	1.5
Walstonburg	0.4
Jones County	473
Maysville	0.7
Pollocksville	0.3
Trenton	0.2
Lenoir County	403
Kinston	16.9
La Grange	2.3
Pink Hill	0.5
Pitt County	655
Ayden	2.3
Bethel	1.0
Falkland	0.2
Farmville	3.1
Fountain	1.0
Greenville	25.6
Grifton	1.7
Grimesland	0.5
Simpson	0.4
Winterville	2.5
Wayne County	557
Eureka	0.4
Fremont	1.4
Goldsboro	24.8
Mount Olive	2.7
Pikeville	0.5
Seven Springs	0.3
Walnut Creek	1.5

Source: County Profiles - Wikipedia.

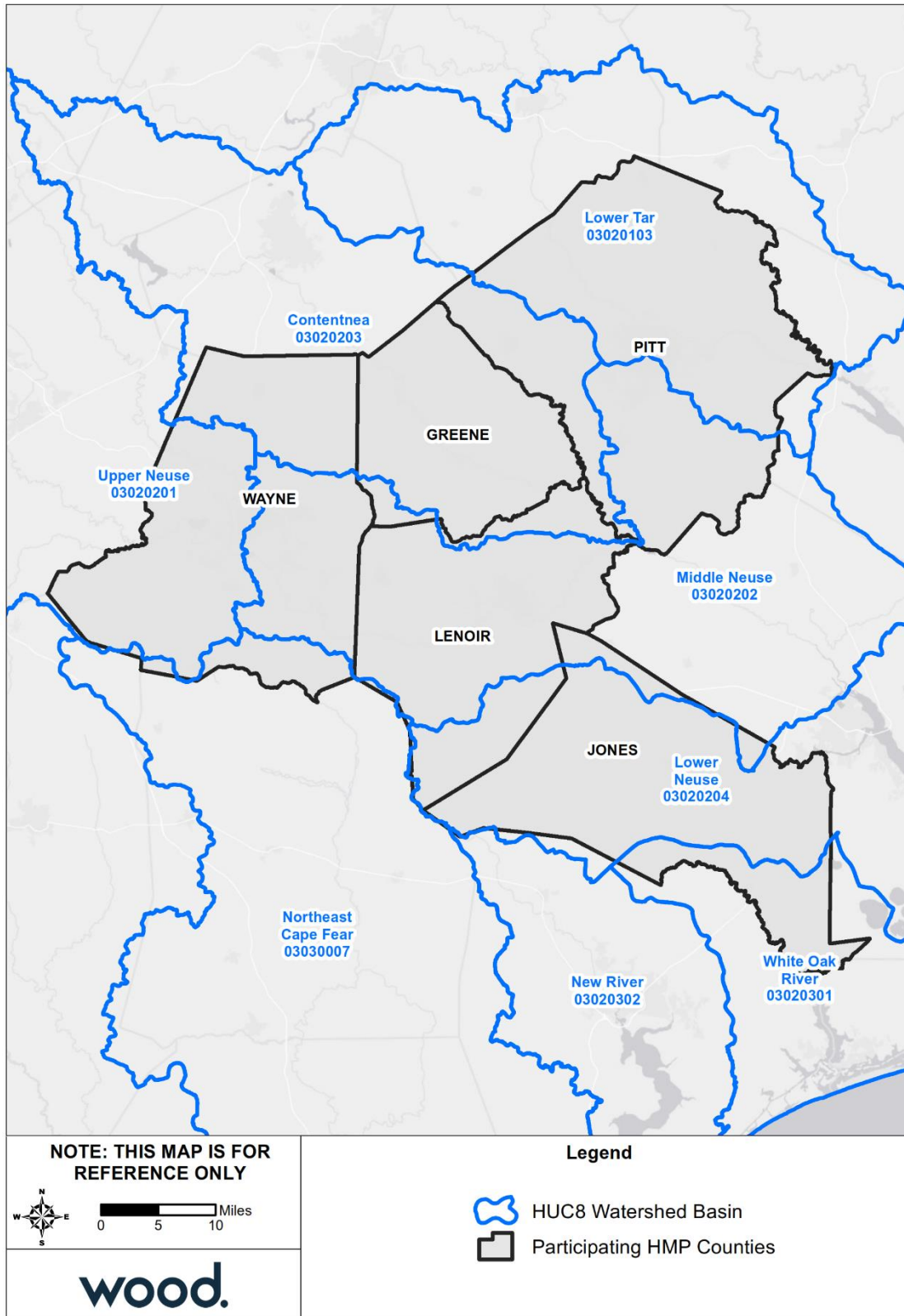
Figure 3.3 shows the population density across the Neuse River region, and Figure 3.4 shows Social Vulnerability Index (SVI) ratings across the region. Details on population and social vulnerability are discussed by county in the following sections.

Figure 3.1 – Neuse River Region Location Map



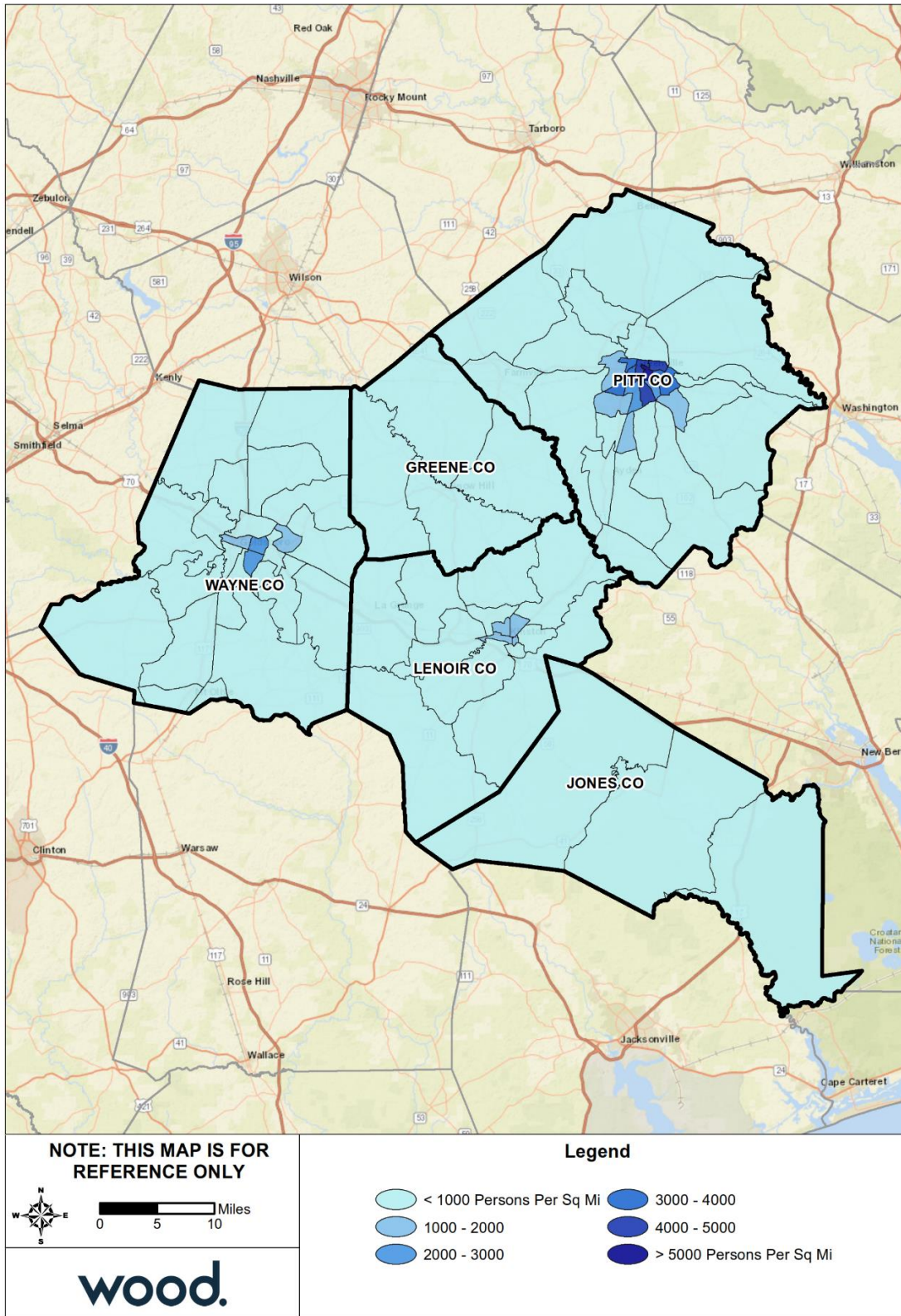
Source: U.S. Census Bureau

Figure 3.2 – Neuse River Region, HUC-8 Drainage Basins



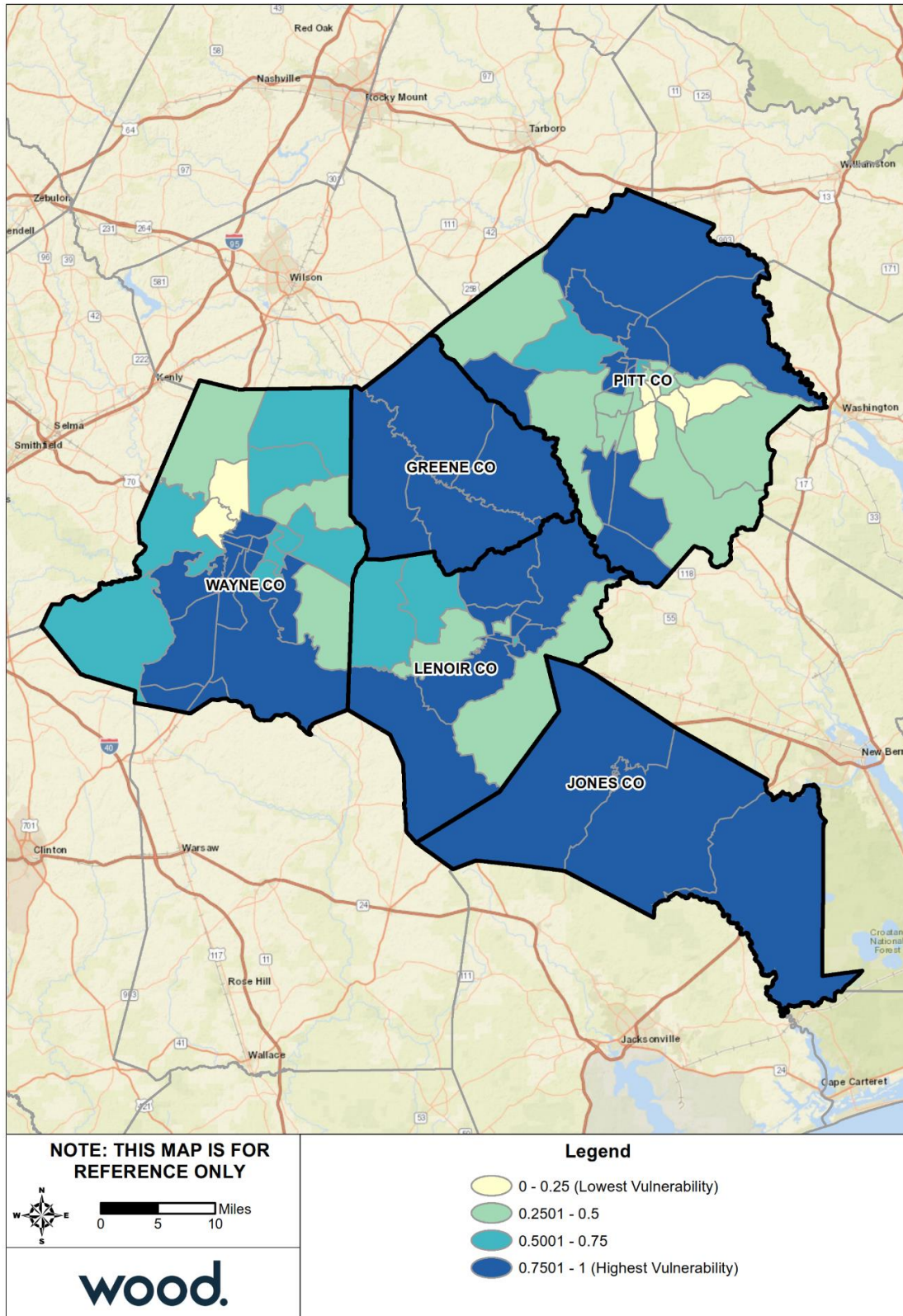
Source: National Hydrology Dataset

Figure 3.3 – Neuse River Region, Population Density



Source: American Community Survey 2013-2017 5-Year Estimates

Figure 3.4 – Neuse River Region, Social Vulnerability Index



Source: CDC 2016

SECTION 3: PLANNING AREA PROFILE

The climate of the Neuse River Region is warm and humid. Summers are long and hot, and winters are short and mild. Summer thunderstorms account for a large part of the growing season rainfall, which is therefore subject to wide variations from year to year, from month to month, and even from county to county. In some years, there may be periods of 5 to 20 days when some local areas do not have any significant rainfall. In such cases, irrigation may be a worthwhile aid to crop production. The amount of rainfall is frequently increased in autumn and occasionally in summer by the passage of a tropical storm over the region. Rainfall in winter is usually associated with large low-pressure storms passing over the eastern part of the United States or over the Atlantic Ocean. It is less variable than rainfall in summer.

Some snow or sleet occurs almost every winter, but accumulations are generally small, and they melt in a few hours. The blanketing effect of a layer of snow that lasts for several days is extremely rare. The average annual maximum temperature is 77.5 degrees Fahrenheit, and the average minimum temperature is 45.5 degrees Fahrenheit.

Wetlands

The benefits of wetlands are hard to overestimate. They provide a 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.

The following table, Table 3.2, provides a summary of wetland coverage within each County located in the Neuse River Region as reported by the U.S. Fish and Wildlife Service's National Wetlands Inventory.

Table 3.2 – Neuse River Region, Wetlands Acreage

County	Wetland Acreage	% of Total County Acreage
Greene County	23,093	13.6%
Jones County	90,143	29.8%
Lenoir County	38,295	14.8%
Pitt County	79,704	19.0%
Wayne County	49,053	13.8%
Total	280,288	18.6%

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

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. There are a range of species that are listed throughout the Neuse River Region. The following table, Table 3.3, provides the status of threatened or endangered species within each participating County.

Table 3.3 – Neuse River Region, Threatened and Endangered Species

Group	Common Name	Scientific Name	Federal Status	Counties Identified
Amphibians	Neuse River waterdog	<i>Necturus lewisi</i>	Proposed Threatened	G, J, L, P, W
Birds	Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered	G, J, L, P, W
Clams	Atlantic pigtoe	<i>Fusconaia masoni</i>	Proposed Threatened	G, L, P, W
Clams	Tar River spiny mussel	<i>Elliptio steinstansana</i>	Endangered	P, W
Clams	Dwarf wedgemussel	<i>Alasmidonta heterodon</i>	Endangered	P, W

Neuse River

Regional Hazard Mitigation Plan
2020

SECTION 3: PLANNING AREA PROFILE

Group	Common Name	Scientific Name	Federal Status	Counties Identified
Clams	Green floater	<i>Lasimigona subviridis</i>	Under Review	P
Clams	Yellow lance	<i>Elliptio lanceolate</i>	Threatened	P
Fishes	Carolina madtom	<i>Noturus furiosus</i>	Proposed Endangered	G, J, L, P, W
Flowering Plants	Sensitive joint-vetch	<i>Aeschynomene virginica</i>	Threatened	L
Mammals	Northern Long-Eared Bat	<i>Myotis septentrionalis</i>	Threatened	J
Mammals	Little brown bat	<i>Myotis lucifugus</i>	Under Review	J
Mammals	West Indian Manatee	<i>Trichechus manatus</i>	Threatened	P
Reptiles	American alligator	<i>Alligator mississippiensis</i>	Similarity of Appearance (Threatened)	J

Source: U.S. Fish & Wildlife Service

Note: G = Greene, J = Jones, L = Lenoir, P = Pitt, W = Wayne

3.2 GREENE COUNTY

3.2.1 Hydrology

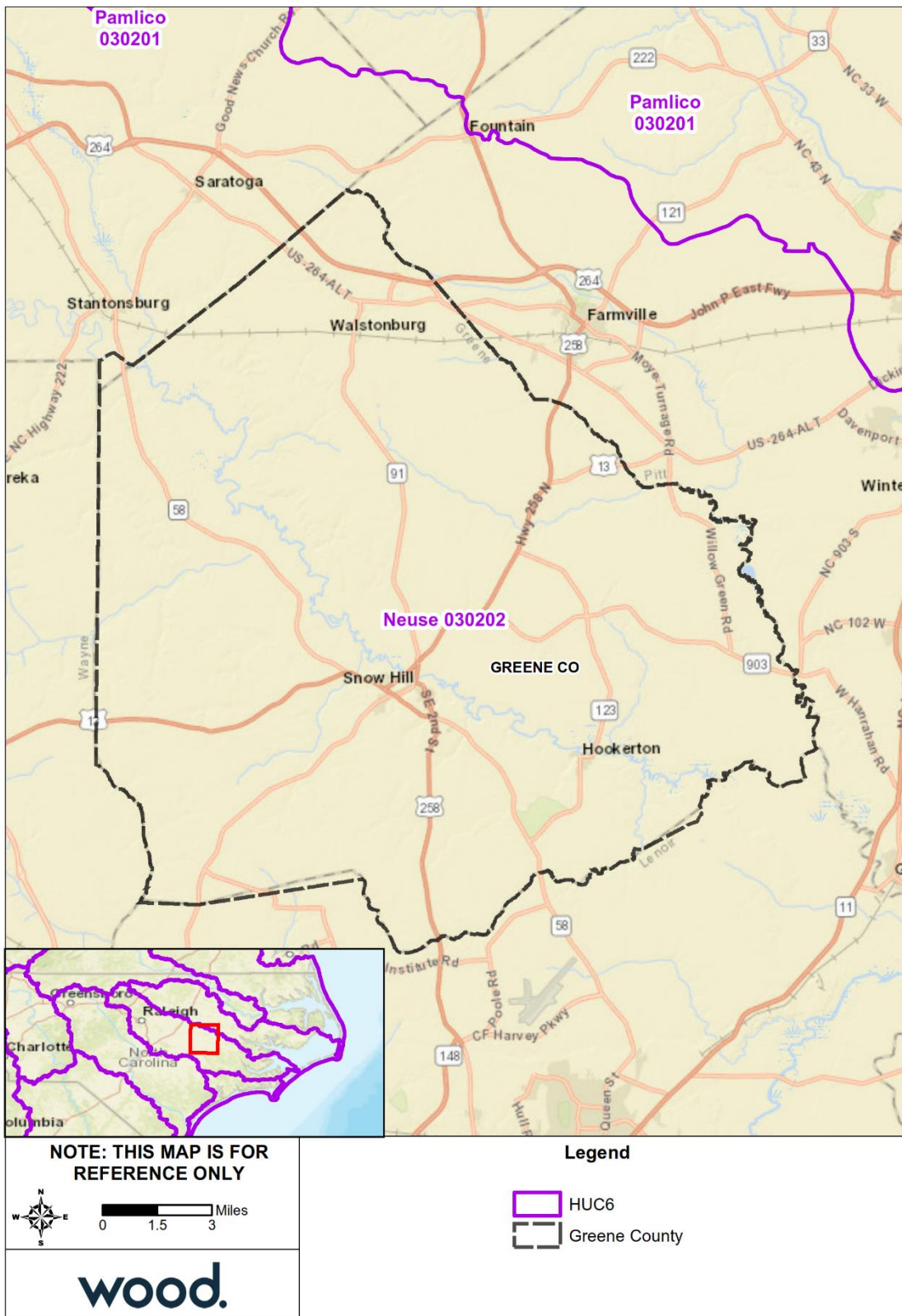
All of Greene County falls within the Neuse River Basin. A detailed overview of the Region's River Basin and Sub-basin boundaries is provided on Figure 3.5.

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. The population of these 18 counties increased by 27 percent from 1990 to 2000 and is expected to increase by 44 percent between 2000 and 2020. The population is projected to grow by more than 867,000 with the total number of people living within the Neuse River Basin to be over 2,000,000 by 2020.

Figure 3.5 – HUC-6 River Basins, Greene County



Source: National Hydrology Dataset

3.2.2 Parks and Open Space

The Greene County Parks and Recreation Department offers a wide range of programs for both the youth aged population, as well as adults and seniors. These programs include annual sports leagues, as well as activities for seniors focused on wellness long term fitness. The County maintains two primary recreations including:

- ▶ Greene County Recreation Complex
 - Three Baseball Fields
 - One Soccer/Football Field
 - Picnic Shelter
 - Restrooms
- ▶ Greene County Wellness Center
 - Full-sized basketball court
 - Stage
 - Locker Rooms
 - Retractable Seating
 - Audio Visual Room

3.2.3 Demographics

Total Population

Overall population growth throughout Greene County has been moderate since the 2000 US Census. Unincorporated portions of the County have increased in population by 11%, which is comparable to the total growth of all municipalities at 11.5%. Two of the three County municipalities have experienced growth as well, except for Hookerton (-15.0%). Although a bulk of unincorporated Greene County increased in population between the years of 2000 and 2010, the County’s municipalities experienced more growth over the period of 2010 to 2017. Figure 3.3 in Section 3.2.3 shows the population density of the Neuse River region.

The following table, Table 3.4, provides a breakdown of total population for Greene County and the participating municipalities for the years 2000, 2010, and 2017.

Table 3.4 – Greene County Total Population

Jurisdiction	2000	2010	2017	% Change 2000-2010	% Change 2010-2017	Overall % Change 2000-2017
Hookerton	467	409	397	-12.4%	-2.9%	-15.0%
Snow Hill	1,514	1,595	1,820	5.4%	14.1%	20.2%
Walstonburg	224	219	242	-2.2%	10.5%	8.0%
Municipalities	2,205	2,223	2,459	0.8%	10.6%	11.5%
Unincorporated Areas	16,769	19,139	18,600	14.1%	-2.8%	10.9%
Greene County	18,974	21,362	21,059	12.6%	-1.4%	11.0%

Source: US Census Bureau, American Community Survey.

Growth Trends

Table 3.5 provides population forecast through the year 2050 for Greene County, as well as all participating municipal jurisdictions. These forecasts are based on established trends between the years 2000 and 2017. According to these estimates, Greene County overall is expected to increase in population at a rate of 24.4% through 2050 (a total of 5,128 individuals).

Table 3.5 – Greene County Population Projections, 2017-2050

Jurisdiction	2017	2020	2030	2040	2050	% Change 2017-2050
Hookerton	397	386	351	316	281	-29.1%
Snow Hill	1,820	1,885	2,101	2,318	2,534	39.2%
Walstonburg	242	245	257	268	280	15.6%
Municipalities	2,459	2,516	2,710	2,902	3,095	25.9%
Unincorporated Areas	18,600	19,008	20,370	21,731	23,092	24.2%
Greene County	21,059	21,525	23,079	24,633	26,187	24.4%

Source: US Census Bureau American Community Survey and HCP, Inc.

Racial Demographics

The population of Greene County is principally Caucasian (57.9%) and African American (35.9%). Greene County does have one of the larger Hispanic populations throughout the Neuse Region at 14.9%. The median age for Greene County is 40.4 years, which is also characteristic of the County's municipalities. The County's population is aging slightly, in that nearly 43% of the population is over the age of 45. Table 3.6 shows the racial composition for Greene County.

Table 3.6 – Greene County Racial Composition

Jurisdiction	Caucasian	African-American	Asian	Other Race*	Two or More Races	Persons of Hispanic or Latino Origin**
Hookerton	55.7%	43.8%	0.0%	0.0%	0.5%	1.0%
Snow Hill	47.7%	48.3%	0.3%	0.9%	2.9%	13.4%
Walstonburg	71.9%	20.2%	0.0%	3.8%	4.1%	1.2%
Greene County	57.9%	35.9%	0.1%	3.1%	3.1%	14.9%

*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.

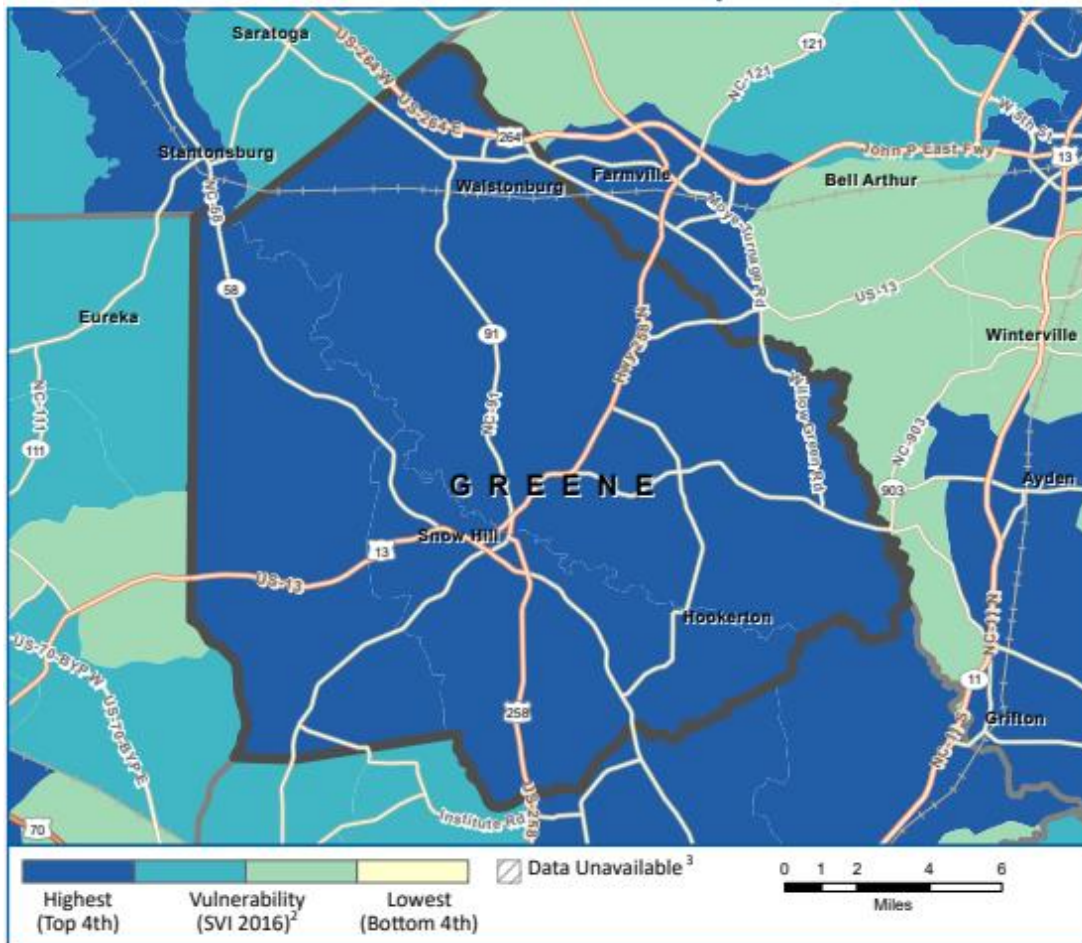
Source: US Census Bureau, American Community Survey.

Social Vulnerability

Figure 3.6 below displays social vulnerability information for Greene County by census tract according to 2016 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 (65 or older), age (17 or younger), disability, household composition, minority status, language, housing type (multi-unit structures, mobile homes, crowding, group quarters), 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, Greene County has a very high Social Vulnerability Index. This can be attributed to a variety of factors including the rural nature of the County, which results in an overall lack of emergency response and central municipal services. Snow Hill is the largest municipality within the County, which contrasts with other Counties within the Region except for Jones County. Pitt County, Lenoir County, and Wayne County all maintain larger population centers with a much broader response capacity.

Figure 3.6 – Greene County Social Vulnerability



Source: CDC 2016

3.2.4 Housing Characteristics

Throughout unincorporated Greene County, there are a total of 8,289 housing units, which has only increased by 76 units (0.9%) since the 2010 US Census. Housing development has been slow throughout the County, including the municipalities, except for Hookerton, which has increased by 12.3% (26 units) over the same period. Within all jurisdictions, most homes are occupied. Homes within unincorporated Greene County are predominantly owner-occupied (69%), while housing tenure is more evenly split within the County's municipalities.

Most housing within Greene County is single-family homes (59.4%); however, it should be noted that 36.5% of residential structures are manufactured homes. 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 Greene County, as well as participating municipal jurisdictions.

Table 3.7 – Greene County Housing Characteristics

Jurisdiction	Housing Units (2010)	Housing Units (2017)	% Change 2010-2017	% Owner Occupied (2017)	% Vacant Units (2017)
Hookerton	212	238	12.3%	79.0%	21.0%
Snow Hill	804	836	4.0%	91.7%	8.3%
Walstonburg	107	105	-1.9%	85.7%	14.3%
Greene County	8,213	8,289	0.9%	88.6%	11.4%

Source: US Census Bureau American Community Survey.

3.2.5 Wages, Employment and Industry

The 2017 ACS reports that the median household income for the Greene County is \$50,922 which is nearly equivalent to the state's median household income of \$50,320. However, approximately 25.8% of the population is considered to be living below the poverty level. Moreover, 38.8% percent of people under 18 years of age are living below the poverty level.

Within Greene County, approximately 47.6% of the population is in the labor force. This is generally characteristic of all participating municipal jurisdictions as well, with all communities maintaining a rate between forty and fifty percent. According to the ACS, the unemployment rate for Greene County overall was 9.4%. Additionally, as of 2017, approximately 24.7% of households throughout Greene County relied on food stamps/SNAP benefits.

The following tables, Table 3.8 and Table 3.9, provide a summary of key economic indicators and population employed by occupation for incorporated and unincorporated portions of Greene County.

Table 3.8 – Greene County Key Economic Indicators, 2017

Jurisdiction	Population in Labor Force	Percent Employed (%)	Percent Unemployed (%)	Percent Not in Labor Force (%)	Unemployment Rate (%)
Hookerton	174	49.8%	2.7%	47.4%	5.2%
Snow Hill	761	47.1%	6.0%	46.9%	11.3%
Walstonburg	98	42.9%	7.1%	50.0%	14.3%
Greene County	9,008	47.6%	4.9%	47.2%	9.4%

Source: US Census Bureau American Community Survey.

Table 3.9 – Greene County Employment by Occupation, 2017

Jurisdiction	Management, Business, Science and Arts (%)	Service (%)	Sales and Office (%)	Natural Resources, Construction, and Maintenance (%)	Production, Transportation, and Material Moving (%)
Hookerton	32.7%	26.7%	13.9%	12.7%	13.9%
Snow Hill	28.0%	20.6%	14.5%	14.7%	22.2%
Walstonburg	46.4%	4.8%	15.5%	15.5%	17.9%
Greene County	26.8%	19.8%	14.4%	18.6%	20.5%

Source: US Census Bureau American Community Survey.

The top employers in Greene County represent the management, business, science and arts; production, transportation, and material moving, and service occupations. These employers include:

- ▶ NC Department of Public Safety
- ▶ Greene County Public Schools
- ▶ County of Greene

SECTION 3: PLANNING AREA PROFILE

- ▶ Principle Long Term Care, Inc.
- ▶ Greene County Health Care, Inc.
- ▶ Ambleside, Inc.
- ▶ Ham Produce Co, Inc.
- ▶ N W L Capacitors Snow Hill Division
- ▶ Bojangles Famous Chicken & Biscuits
- ▶ Lenoir Community College

3.2.6 Historic Properties

As of September 2019, Greene County had 12 listings on the National Register of Historic Places. This list includes 10 historic structures/sites and 2 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 Greene County:

- ▶ Benjamin W. Best House (Jason vicinity) 2/3/2006
- ▶ Titus W. Carr House (Castoria) 11/25/1987
- ▶ Edward and Sallie Ann Coward House (Ormondsville vicinity) 3/6/2002
- ▶ Greene County Courthouse (Snow Hill) 5/10/1979
- ▶ Hardee House (Ormondsville vicinity) 9/22/2014
- ▶ Neoheroka Fort Site (Archaeology) (Snow Hill vicinity) 7/17/2009
- ▶ Saint Barnabas Episcopal Church (Snow Hill) 10/10/1979
- ▶ Snow Hill Colored High School (Snow Hill) 8/23/2003
- ▶ Snow Hill Historic District (Snow Hill) 9/14/2000
- ▶ Snow Hill Historic District Boundary Increase & Additional Documentation (Snow Hill) 8/27/2009
- ▶ Speight-Bynum House (Walstonburg vicinity) 3/12/1992
- ▶ Zachariah School (Wooten's Crossroads) 5/4/2005

3.2.7 Land Development Trends

Development throughout Greene County is rural in nature. The most concentrated urban development is located within and adjacent to the Town of Snow Hill. Snow Hill is developed like most eastern North Carolina communities, with a traditional main street downtown surrounded by local access residential streets. Commercial and light industrial development lines the corridors into town from more rural portions of the County. In unincorporated Greene County, development is sparse, and a majority of non-residential development is associated with agricultural operations. There has been more development occurring along US Highway 258 and NC Highway 58 heading south from Snow Hill to Kinston. Table 3.10 shows the developed and undeveloped parcels in Greene County.

Table 3.10 – Greene County Developed and Undeveloped Parcel Counts

Jurisdiction	Developed Parcels	Undeveloped Parcels	Pre-Firm Buildings	% Developed Pre-Firm
Hookerton	177	84	67.8%	Hookerton
Snow Hill	736	233	76.0%	Snow Hill
Walstonburg	137	50	73.3%	Walstonburg
Greene County	5,995	4,877	55.1%	Greene County

Source: HCP, Inc., Greene County Tax Office.

Detailed summaries of future land development trends, including Future Land Use Maps, are provided in the county annexes.

3.3 JONES COUNTY

3.3.1 Hydrology

Jones County is split between the Neuse and White Oak River Basins. Most of the County falls within the Neuse River Basin with a small percentage of the County's southern extent located within the White Oak Basin.

The White Oak River Basin (also known as the Onslow Bay River Basin) lies entirely within the outer coastal plain. The name of the basin is a bit of a misnomer in that it includes four separate river systems: the New River and its tributaries in the southwestern section; the White Oak River and its tributaries; the Newport River and its tributaries; and the North River in the eastern section. The basin also includes Bogue, Back and Core Sounds as well as significant portions of the Intracoastal Waterway.

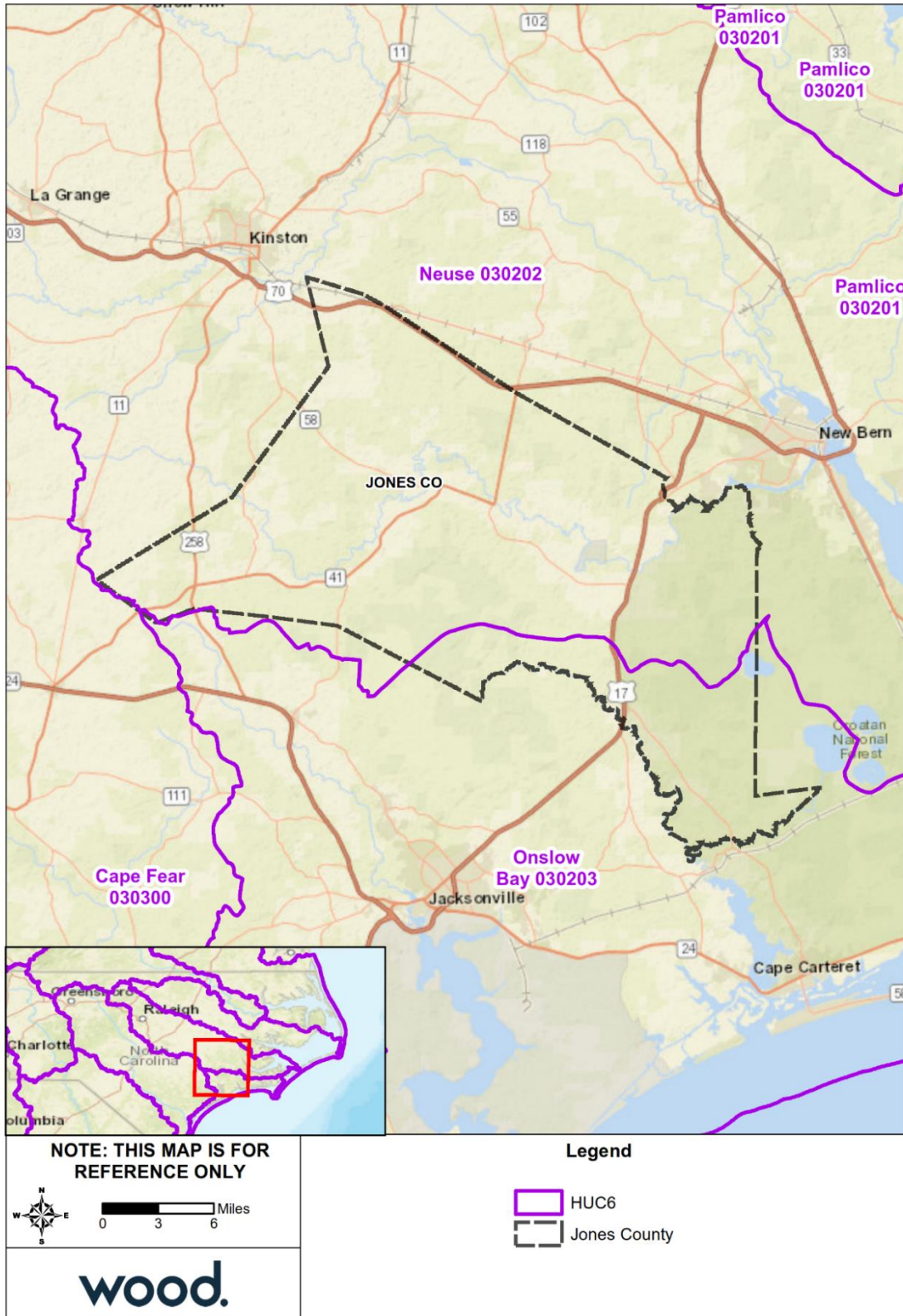
An overview of the Neuse River Basin is provided in the Greene County profile in Section 3.2.1. Figure 3.7 shows Jones County in relation to HUC-6 drainage basins. HUC-8 drainage basins are shown in Figure 3.2.

3.3.2 Parks and Open Space

The Jones County Recreation Department offers opportunities to participate in soccer, tee ball, coach pitch, little league, Pop Warner football, and basketball. A Tournament of Champions is held each year which welcomes participation from outside of Jones County and all A.A.U. teams. Registration for all activities is held through the local schools or visiting the office located within the Jones County Board of Elections Office in Trenton.

Most of the recreational facilities serving the residents of Jones County were destroyed through the impacts of Hurricane Florence and have not yet been replaced. At this time, the County is relying on the athletic fields associated with Jones Senior High School for all athletic programs. Additionally, William Frost Park is located within the Town of Maysville. This is a small municipal park facility that provides a basketball court, playground, and bathroom facilities.

Figure 3.7 – Jones County, HUC-6 Drainage Basins



Source: National Hydrology Dataset

3.3.3 Demographics

Total Population

The total population of Jones County according to the 2017 ACS was 9,776 persons. Population throughout unincorporated portions of Jones County has been in decline since the 2000 Census at an overall change of -9.8%. Only one of the County's municipalities has experienced population decline, the Town of Maysville at -3.2%. The County's other municipalities have experienced quite rapid population increase over this same period, including Pollocksville (69.5%) and Trenton (52.9%). Overall the growth for the County's municipalities has been large at 17.9%. Figure 3.3 in Section 3.2.3 shows the population density of the Neuse River region.

The following table, Table 3.11, provides a breakdown of total population for Jones County for the years 2000, 2010, and 2017.

Table 3.11 – Jones County Total Population

Jurisdiction	2000	2010	2017	% Change 2000-2010	% Change 2010-2017	Overall % Change 2000-2017
Maysville	1,002	1,019	970	1.7%	-4.8%	-3.2%
Pollocksville	269	311	456	15.6%	46.6%	69.5%
Trenton	206	287	315	39.3%	9.8%	52.9%
Municipalities	1,477	1,617	1,741	9.5%	7.7%	17.9%
Unincorporated Areas	8,904	8,536	8,035	-4.1%	-5.9%	-9.8%
Jones County	10,381	10,153	9,776	-2.2%	-3.7%	-5.8%

Source: US Census Bureau American Community Survey.

Growth Trends

Table 3.12 provides population forecast through the year 2050 for Jones County, as well as all participating municipal jurisdictions. These forecasts are based on established trends between the years 2000 and 2017. According to these estimates, Jones County overall is expected to decrease in population by 2.3% through 2050 (a total loss of 227 individuals). This loss includes both unincorporated Jones County as well as all municipalities.

Table 3.12 – Jones County Population Projections, 2017-2050

Jurisdiction	2017	2020	2030	2040	2050	% Change 2017-2050
Maysville	970	965	946	928	910	-6.2%
Pollocksville	456	512	698	885	1,071	134.9%
Trenton	315	344	442	541	639	102.7%
Municipalities	1,741	1,821	2,087	2,353	2,620	50.5%
Unincorporated Areas	8,035	7,934	7,599	7,264	6,929	-13.8%
Jones County	9,776	9,755	9,686	9,618	9,549	-2.3%

Source: US Census Bureau American Community Survey and HCP, Inc.

Racial Demographics

The median age for Jones County overall is slightly over 45 years. The County's population overall is fairly evenly distributed, with roughly 22% of the population under eighteen years of age, and slightly over 20% over the age of 65. The County's gender composition is nearly evenly split at 48.8% male and 51.2% female. The racial composition of Jones County is predominantly Caucasian (66%). The remaining County

SECTION 3: PLANNING AREA PROFILE

population is 30.5% African American, 0.2% Asian, and 3.2% either other race or two or more races. Only 4.5% of the County's population identifies as Hispanic or Latino.

Table 3.13 below provides a summary of racial composition for Jones County, as well as all participating municipal jurisdictions.

Table 3.13 – Jones County Racial Composition

Jurisdiction	Caucasian	African-American	Asian	Other Race*	Two or More Races	Persons of Hispanic or Latino Origin**
Maysville	57.1%	38.8%	0.0%	1.3%	2.8%	5.7%
Pollocksville	45.2%	52.6%	0.0%	0.8%	1.3%	2.2%
Trenton	60.3%	34.6%	0.0%	2.9%	2.2%	13.0%
Jones County	66.0%	30.5%	0.2%	0.8%	2.4%	4.5%

*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.

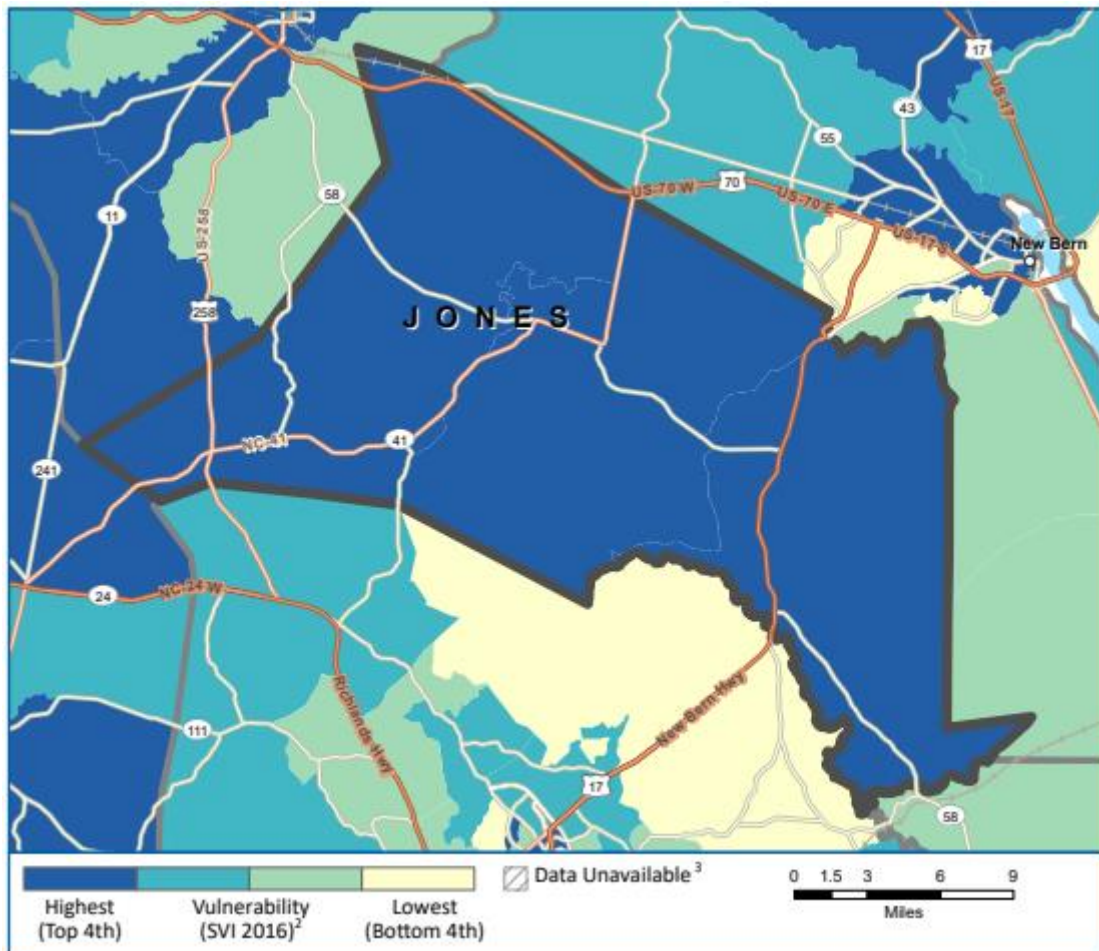
Source: US Census Bureau American Community Survey.

Social Vulnerability

Figure 3.8 displays social vulnerability information for Jones County by census tract according to 2016 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 (65 or older), age (17 or younger), disability, household composition, minority status, language, housing type (multi-unit structures, mobile homes, crowding, group quarters), 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.

Jones County is very similar to Greene County, in terms of their Social Vulnerability Index. Much like Greene, Jones County lacks the presence of a large population center, which provides a much more substantial urban framework, and the resulting capital and emergency response infrastructure that goes along with it. It should be noted that a high SVI index does not provide an indication of true deficiency within either Greene or Jones County but is simply an assessment of various demographic factors that historically contribute to a community's ability to respond to catastrophic natural hazard events.

Figure 3.8 – Jones County Social Vulnerability



Source: CDC 2016

3.3.4 Housing Characteristics

Housing development through nearly all of Jones County has been slow since 2010. There have been an additional 110 housing units developed throughout unincorporated Jones County, a modest growth rate of 2.3%. Most of the housing within the County is owner occupied (72.5%), while roughly 16% of all housing units were reported as vacant. The County's housing stock is young, with roughly 66% of homes being constructed between the years of 1970 and 2000. Additionally, less than 32% of homes were constructed prior to 1970. Most homes within the county are single-family structures (61%), and of the remaining housing stock (just over 34%) are manufactured homes.

The increase in housing stock within the County's municipal jurisdictions has also been slow, apart from Pollocksville. The Town of Pollocksville has experienced very rapid housing development at a rate of 32.9%, an increase of 55 housing units since 2010. The age of the housing stock for the County's municipalities is generally consistent with unincorporated Jones County.

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

Table 3.14 – Jones County Housing Characteristics

Jurisdiction	Housing Units (2010)	Housing Units (2017)	% Change 2010-2017	% Owner Occupied (2017)	% Vacant Units (2017)
Maysville	489	496	1.4%	81.3%	18.8%
Pollocksville	167	222	32.9%	83.3%	16.7%
Trenton	137	147	7.3%	72.1%	27.9%
Jones County	4,838	4,948	2.3%	83.8%	16.2%

Source: US Census Bureau American Community Survey.

3.3.5 Wages, Employment and Industry

According to the 2017 ACS, the median household income for Jones County was \$37,526, which is much lower than the state's median household income of \$50,320. The median income for residents of the County's municipalities varies slightly with Pollocksville having the lowest median of \$30,000. The Towns of Maysville and Trenton are more comparable at \$42,386 and \$37,000 respectively.

Within Jones County, approximately 54.8% of the population is in the labor force. This is generally characteristic of all participating municipal jurisdictions as well, except for Pollocksville (61.6%). According to the ACS, the unemployment rate for Jones County overall was 11.5%. The highest unemployment rate reported throughout the County was Maysville (12.7%), while the lowest was the Town of Pollocksville (5.5%). The largest employment sector within Jones County is management, business, science and arts (30.8%).

The following tables, Table 3.15 and Table 3.16, provide a summary of key economic indicators and population employed by occupation for both incorporated and unincorporated portions of Jones County.

Table 3.15 – Jones County Key Economic Indicators, 2017

Jurisdiction	Population in Labor Force	Percent Employed (%)	Percent Unemployed (%)	Percent Not in Labor Force (%)	Unemployment Rate (%)
Maysville	468	49.2%	7.2%	42.2%	12.7%
Pollocksville	205	57.1%	3.3%	38.4%	5.5%
Trenton	134	49.8%	5.3%	44.9%	9.7%
Jones County	4,478	47.9%	6.2%	45.2%	11.5%

Source: US Census Bureau American Community Survey.

Table 3.16 – Jones County Employment by Occupation, 2017

Jurisdiction	Management, Business, Science and Arts (%)	Service (%)	Sales and Office (%)	Natural Resources, Construction, and Maintenance (%)	Production, Transportation, and Material Moving (%)
Maysville	28.4%	16.8%	27.4%	8.8%	18.6%
Pollocksville	56.8%	24.2%	6.8%	8.9%	3.2%
Trenton	12.4%	13.2%	33.9%	12.4%	28.1%
Jones County	30.8%	16.0%	21.1%	15.3%	16.8%

Source: US Census Bureau American Community Survey.

The top employers in Jones County represent the sales and office; service; and management, business, science and arts industries. These employers include:

- ▶ Jones County Board of Education
- ▶ County of Jones

SECTION 3: PLANNING AREA PROFILE

- ▶ Craven Regional Medical Center
- ▶ Brook Stone Living Center
- ▶ Universal Mental Health Services, Inc
- ▶ Blue Rock Structures, Inc.
- ▶ Smithfield Foods, Inc.
- ▶ Home Health and Hospice Care, Inc.
- ▶ Olsten Certified Healthcare Corp.
- ▶ Preston Taylor Foods, Inc.

3.3.6 Historic Properties

As of September 2019, Jones County had 9 listings on the National Register of Historic Places. This list includes 8 historic structures/sites and 1 Historic District. 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 Jones County.

- ▶ Bryan-Bell Farm (Pollocksville vicinity) 12/21/1989
- ▶ Eagle Nest (Taylors Corner vicinity) 11/13/1974
- ▶ Foscue and Simmons Plantations (Pollocksville) 10/7/1998
- ▶ Foscue Plantation House (Pollocksville) 11/19/1971
- ▶ Grace Episcopal Church (Trenton) 1/20/1972
- ▶ Bryan Lavender House (Pollocksville) 4/25/1985
- ▶ Sanderson House (Pollocksville vicinity) 12/16/1971
- ▶ Trenton Historic District (Trenton) 7/3/1974
- ▶ Wyse Fork Battleground (Archaeology) (Caswell) 7/10/2017

3.3.7 Land Development Trends

Jones County is the least developed County within the Neuse River region. The municipalities throughout Jones County are generally much smaller than the other counties, which is evidenced by the fact that Jones County also has the lowest population throughout the region. The development pattern throughout the County is very rural in nature, with slightly higher densities in and around the towns of Maysville, Pollocksville and Trenton. Within unincorporated portions of the County, development is generally characterized by single-family homes on larger lots and non-residential development associated with the agriculture industry.

Table 3.17 summarizes the developed and undeveloped parcels in Jones County.

Table 3.17 – Jones County Developed and Undeveloped Parcel Counts

Jurisdiction	Developed Parcels	Undeveloped Parcels	% Developed
Maysville	438	183	70.5%
Pollocksville	178	62	74.2%
Trenton	153	55	73.6%
Jones County	3,909	4,186	48.3%

Source: HCP, Inc., Jones County Tax Office.

Detailed summaries of future land development trends, including Future Land Use Maps, are provided in the county annexes.

3.4 LENOIR COUNTY

3.4.1 Hydrology

All of Lenoir County's jurisdiction is located within the Neuse River Basin. An overview of the Neuse River Basin is provided in the Greene County profile in Section 3.2.1. Figure 3.9 on the following page shows Lenoir County in relation to HUC-6 drainage basins. HUC-8 drainage basins are shown in Figure 3.2.

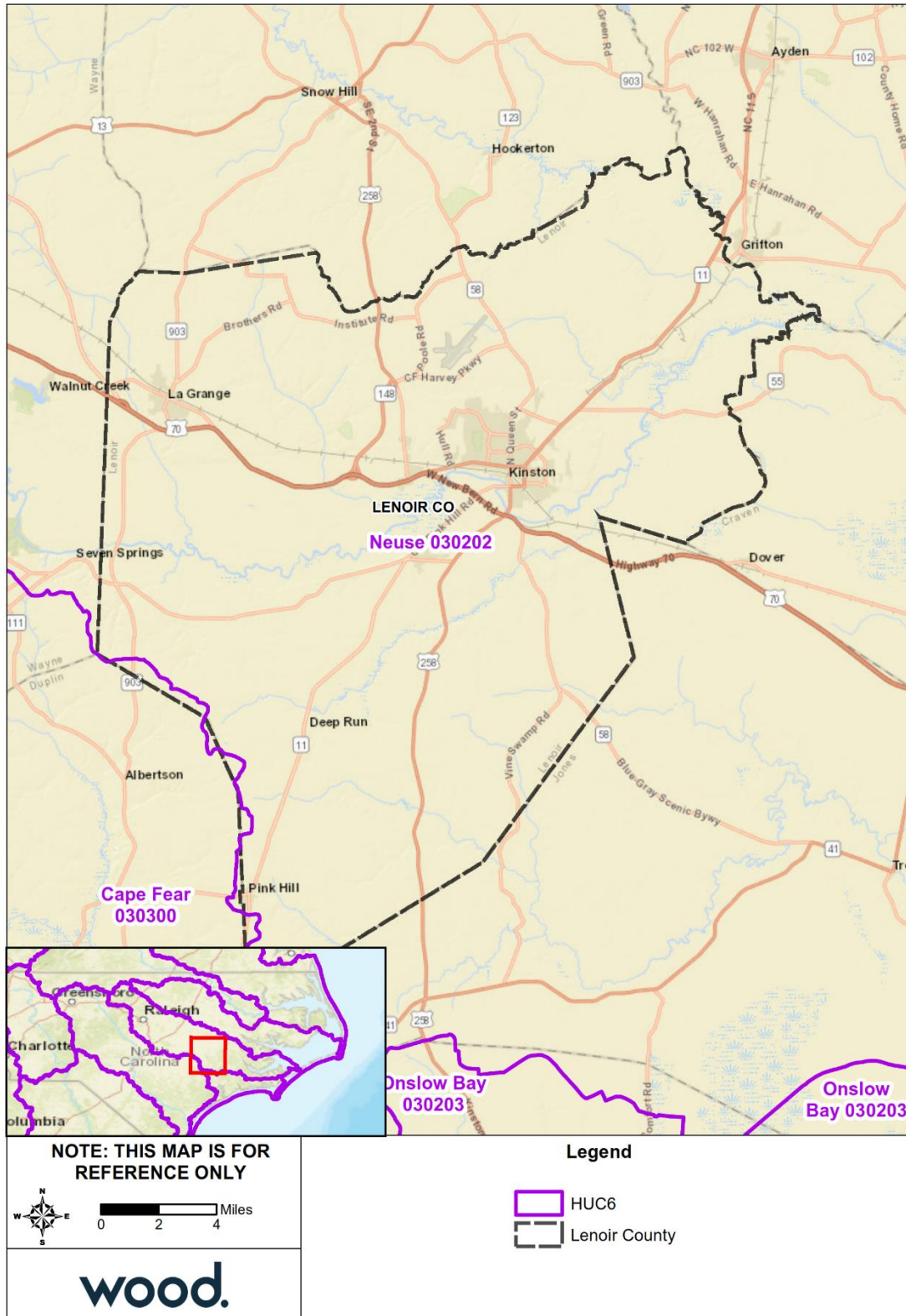
3.4.2 Parks and Open Space

Lenoir County, as well as participating municipalities, maintain both active and passive recreation facilities. Additionally, Lenoir County maintains a robust Parks and Recreation Department that oversees the development and administration of a wide range of recreational programs serving all demographics. The activities include programs tailored to senior citizens, special populations, summer camper, adult programs, and youth-based activities and programs. The following provides a summary of County and municipal park facilities:

- ▶ Barnet Park and Disc Golf Course (3613 Sandclay Road)
 - Ball fields, Disc Golf Course, Playground, Par 3 Golf Course, Picnic Shelter, Restrooms, Tennis Court, Trails
- ▶ Ellis Planetarium, Health & Science Museum (403 West Caswell Street)
- ▶ Emma Webb Gymnastics Center (1316 McAdoo Street)
 - Picnic Shelters, Playground, Softball Field
- ▶ Exchange Science Center (401 West Caswell Street)
 - Canoe Rentals, Fishing, Meeting Rooms, Picnic Shelters, Playground, Pond, Trails, Restrooms

SECTION 3: PLANNING AREA PROFILE

Figure 3.9 – HUC-6 Drainage Basins, Lenoir County



Source: National Hydrology Dataset

3.4.3 Demographics

Total Population

Population growth for Lenoir County has generally not occurred dating back to the 2000 Census. Overall, the County has decreased in population by 2.9%. Over the same period, rates of population decline have been even greater within most of the County's municipal jurisdictions. The most substantial population decline has occurred within the Town of Pink Hill (-16.9%), followed by the City of Kinston (-11.3%). Most of the population decrease within the County as well as all municipal jurisdictions occurred between the years of 2010 to 2017. Figure 3.3 in Section 3.2.3 shows the population density of the Neuse River region.

The following table, Table 3.18, provides a breakdown of total population in Lenoir County for the years 2000, 2010, and 2017.

Table 3.18 – Lenoir County Total Population

Jurisdiction	2000	2010	2017	% Change 2000-2010	% Change 2010-2017	Overall % Change 2000-2017
Kinston	23,688	21,677	21,004	-8.5%	-3.1%	-11.3%
La Grange	2,844	2,873	2,723	1.0%	-5.2%	-4.3%
Pink Hill	521	552	433	6.0%	-21.6%	-16.9%
Municipalities	27,053	25,102	24,160	-7.2%	-3.8%	-10.7%
Unincorporated Areas	32,595	34,393	33,774	5.5%	-1.8%	3.6%
Lenoir County	59,648	59,495	57,934	-0.3%	-2.6%	-2.9%

Source: US Census Bureau American Community Survey.

Growth Trends

Table 3.19 provides population forecast through the year 2050 for Lenoir County, as well as all participating municipal jurisdictions. These forecasts are based on established trends between the years 2000 and 2017. According to these estimates Lenoir County overall is expected to decrease in population at a rate of -10.5% through 2050 by a total of 6,372 individuals.

Table 3.19 – Lenoir County Population Projections, 2017-2050

Jurisdiction	2017	2020	2030	2040	2050	% Change 2017-2050
Kinston	21,004	20,584	19,184	17,784	16,384	-22.0%
La Grange	2,723	2,703	2,634	2,566	2,498	-8.3%
Pink Hill	433	420	377	334	291	-32.8%
Municipalities	24,160	23,707	22,196	20,684	19,173	-20.6%
Unincorporated Areas	33,774	33,480	32,501	31,522	30,542	-9.6%
Total	57,934	57,187	54,697	52,206	49,716	-14.2%

Source: US Census Bureau American Community Survey and HCP, Inc.

Racial Demographics

The Lenoir County population is evenly distributed with respect to gender, with roughly 47.8% of citizens male and 52.2% female. In terms of racial composition, most citizens in the County are Caucasian (55.1%), while 39.3% reported being African American. The Town of Pink Hill is much different from the rest of the County in that 11.8% of the population reports being "other race", while the Town also supports a Hispanic population of 15.5%. The median age throughout the County is slightly over 40 years, with unincorporated Lenoir County maintaining a median age just under 42 years.

SECTION 3: PLANNING AREA PROFILE

Table 3.20 provides a summary of racial composition for Lenoir County, as well as all participating municipal jurisdictions.

Table 3.20 – Lenoir County Racial Composition

Jurisdiction	Caucasian	African-American	Asian	Other Race*	Two or More Races	Persons of Hispanic or Latino Origin**
Kinston	31.1%	64.9%	0.7%	1.1%	2.2%	2.9%
La Grange	39.0%	61.0%	0.0%	0.0%	0.0%	0.0%
Pink Hill	63.7%	24.0%	0.0%	11.8%	0.5%	15.5%
Lenoir County	55.1%	39.3%	0.6%	1.8%	3.2%	7.5%

*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.

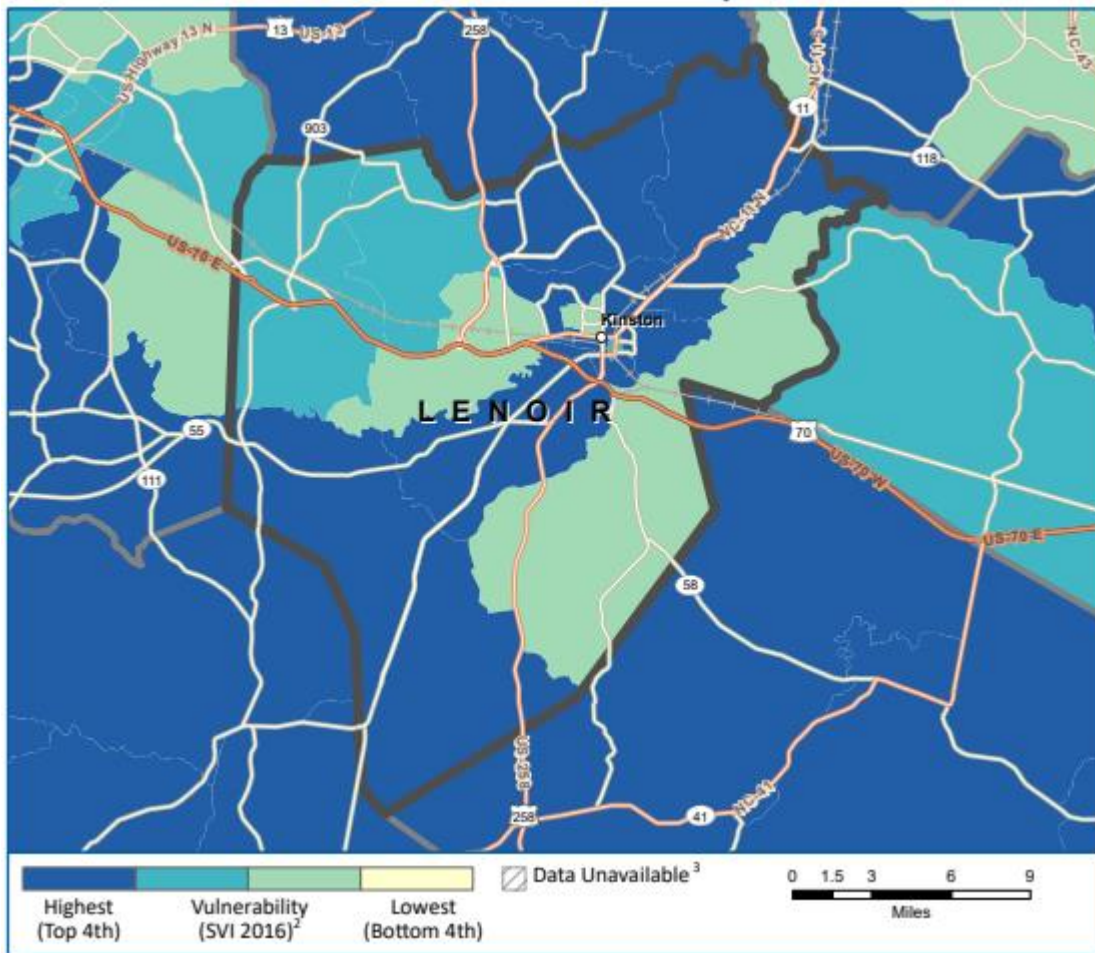
Source: US Census Bureau American Community Survey.

Social Vulnerability

Figure 3.10 below displays social vulnerability information for Lenoir County by census tract according to 2016 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 (65 or older), age (17 or younger), disability, household composition, minority status, language, housing type (multi-unit structures, mobile homes, crowding, group quarters), 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.

Lenoir County's social vulnerability index rating centers around the presence of Kinston and the fact that the City is home to both a dense population and a variety of urban and emergency response resources. The vulnerability is much lower in the City than in more rural portions of the County to the north and south. Additionally, the eastern and western portions of the County also maintain slightly lower social vulnerability, mainly due to the presence of lower population counts and the presence of available primary highway access.

Figure 3.10 – Lenoir County Social Vulnerability Index



Source: CDC 2016

3.4.4 Housing Characteristics

Sixty percent of the housing stock in Lenoir County has been developed since 1980. This young housing stock results in a more resilient community, since most homes were built after the establishment of the National Flood Insurance Program and the enforcement of local Floodplain Development regulations. In recent years, housing development has been modest. Additionally, the impacts of hurricanes Matthew and Florence has slowed new home starts in recent years.

In terms of vulnerability associated with natural hazard events such as tropical storms, hurricanes, and tornadoes, roughly 23.6% of the Lenoir County housing stock is comprised of manufactured homes, which is one of the highest percentages in the Region. The prevalence of manufactured housing poses a unique threat regarding both sustainability, as well as emergency response with defined flood hazard areas.

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

SECTION 3: PLANNING AREA PROFILE

Table 3.21 – Lenoir County Housing Characteristics

Jurisdiction	Housing Units (2010)	Housing Units (2017)	% Change 2010-2017	% Owner Occupied (2017)	% Vacant Units (2017)
Kinston	9,365	11,293	20.6%	80.3%	19.7%
La Grange	1,440	1,315	-8.7%	95.1%	4.9%
Pink Hill	240	231	-3.8%	86.1%	13.9%
Lenoir County	27,437	27,517	0.3%	84.5%	15.5%

Source: US Census Bureau American Community Survey.

3.4.5 Wages, Employment and Industry

According to the 2017 ACS, the median household income for Lenoir County was \$37,515, which is much than the state’s median household income of \$50,320. Additionally, roughly 12% of the County’s overall population lives below the poverty level. Within Lenoir County, approximately 58.3% of the population is in the labor force. According to the ACS, the unemployment rate for the County overall was 11.6%. Unemployment rates for municipalities throughout the County vary slightly with the City of Kinston having the highest (14.5%) and the Town of La Grange having the lowest (9.5%).

The following tables, Table 3.22 and Table 3.23, provide a summary of key economic indicators and population employed by industry for both incorporated and unincorporated portions of Lenoir County.

Table 3.22 – Lenoir County Key Economic Indicators

Jurisdiction	Population in Labor Force	Percent Employed (%)	Percent Unemployed (%)	Percent Not in Labor Force (%)	Unemployment Rate (%)
Kinston	53.4%	45.6%	7.8%	46.6%	14.5%
La Grange	48.9%	44.2%	4.7%	51.1%	9.5%
Pink Hill	66.6%	57.4%	9.1%	33.4%	13.7%
Lenoir County	58.3%	51.4%	6.7%	41.7%	11.6%

Source: US Census Bureau American Community Survey.

Table 3.23 – Lenoir County Employment by Occupation

Jurisdiction	Management, Business, Science and Arts (%)	Service (%)	Sales and Office (%)	Natural Resources, Construction, and Maintenance (%)	Production, Transportation, and Material Moving (%)
Kinston	26.0%	26.1%	19.6%	7.0%	21.3%
La Grange	28.4%	28.3%	18.9%	6.9%	17.4%
Pink Hill	20.4%	22.9%	14.9%	27.9%	13.9%
Lenoir County	28.0%	21.8%	20.1%	11.5%	18.6%

Source: US Census Bureau American Community Survey.

The top employers in Lenoir County represent the production, transportation, and material moving; service; and sales and office industries. These employers include:

- ▶ Sanderson Farms, Inc.
- ▶ NC Department of Health & Human Services
- ▶ Lenoir County Schools
- ▶ Smithfield Foods, Inc.
- ▶ Lenoir Memorial Hospital, Inc.
- ▶ Lenoir County

- ▶ Electrolux Home Products, Inc.
- ▶ Aristofraft/Decora/Schrock
- ▶ City of Kinston
- ▶ Spirit Aerosystems

3.4.6 Historic Properties

As of September 2019, Lenoir County had 31 listings on the National Register of Historic Places. This list includes 24 historic structures/sites and 7 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 Lenoir County.

- ▶ American Tobacco Company Prizery (Kinston) 4/28/2005
- ▶ (former) Atlantic and North Carolina Railroad Freight Depot (Gone) (Kinston) 11/8/1989
- ▶ Baptist Parsonage (Kinston) 11/8/1989
- ▶ Robert L. Blalock House (Gone) (Kinston) 11/8/1989
- ▶ C.S.S. Neuse (Moved) (Kinston vicinity) 6/11/2001
- ▶ B.W. Canady House (Kinston) 11/8/1989
- ▶ Cedar Dell (Kinston vicinity) 8/26/1971
- ▶ Herring House (LaGrange vicinity) 10/25/1973
- ▶ Hill-Grainger Historic District (Kinston) 11/8/1989
- ▶ Hotel Kinston (Kinston) 11/8/1989
- ▶ Imperial Tobacco Company Office Building (Kinston) 4/17/2017
- ▶ Jesse Jackson House (Jackson's Store vicinity) 6/24/1971
- ▶ Kennedy Memorial Home Historic District (Kinston vicinity) 9/3/2009
- ▶ Kinston Apartments (Kinston) 6/22/2004
- ▶ Kinston Baptist/White Rock Presbyterian Church (Kinston) 11/8/1989
- ▶ Kinston Battlefield (Four Areas) (Archaeology) (Kinston vicinity) 11/30/2006
- ▶ Kinston Commercial Historic District (Kinston) 6/3/1994
- ▶ Kinston Fire Station/City Hall (Kinston) 11/8/1989
- ▶ LaGrange Historic District (LaGrange) 5/11/2000
- ▶ LaGrange Presbyterian Church (LaGrange) 8/14/1986
- ▶ (Old) Lenoir County Courthouse (Kinston) 5/10/1979
- ▶ Midtown Motor Lodge (Kinston) 12/27/2016
- ▶ Mitchelltown Historic District (Kinston) 11/8/1989
- ▶ Peebles House (Harmony Hall) (Kinston) 8/26/1971
- ▶ Peoples Bank Building (Kinston) 11/8/1989
- ▶ Queen/Gordon Streets Historic District (Kinston) 11/8/1989
- ▶ Standard Drug #2 (Kinston) 12/1/2014
- ▶ Sumrell and McCoy Building (Kinston) 12/21/1989
- ▶ Trianon Historic District (Kinston) 11/8/1989
- ▶ Tull-Worth-Holland Farm (Kinston vicinity) 9/22/1992
- ▶ Dempsey Wood House (Deep Run vicinity) 8/26/1971

3.4.7 Land Development Trends

Table 3.24 summarizes the developed and undeveloped parcels in Lenoir County. As with all other counties within the Region, Lenoir County as well as all participating municipal jurisdictions are predominantly developed. Development throughout Lenoir County is very rural in nature and as with other regional municipal areas centers around the city/town corporate limits and extraterritorial

SECTION 3: PLANNING AREA PROFILE

jurisdictions. The City of Kinston is centrally located and serves as the County seat, as well as the hub of commercial activity of the County. Outside of the City of Kinston, development is extremely rural in nature except for several key commercial nodes and non-residential development associated with agricultural operations.

Table 3.24 – Lenoir County Developed and Undeveloped Parcel Counts

Jurisdiction	Developed Parcels	Undeveloped Parcels	Pre-Firm Buildings	% Developed Pre-Firm
Kinston	8,116	2,947	9,664	87.4%
La Grange	1,241	592	1,440	78.6%
Pink Hill	255	91	300	86.7%
Lenoir County	13,470	8,808	11,404	69.9%

Source: HCP, Inc., Lenoir County Tax Office.

Detailed summaries of future land development trends, including Future Land Use Maps, for each jurisdiction that participates in the Community Rating System program are provided in the county annexes.

3.5 PITT COUNTY

3.5.1 Hydrology

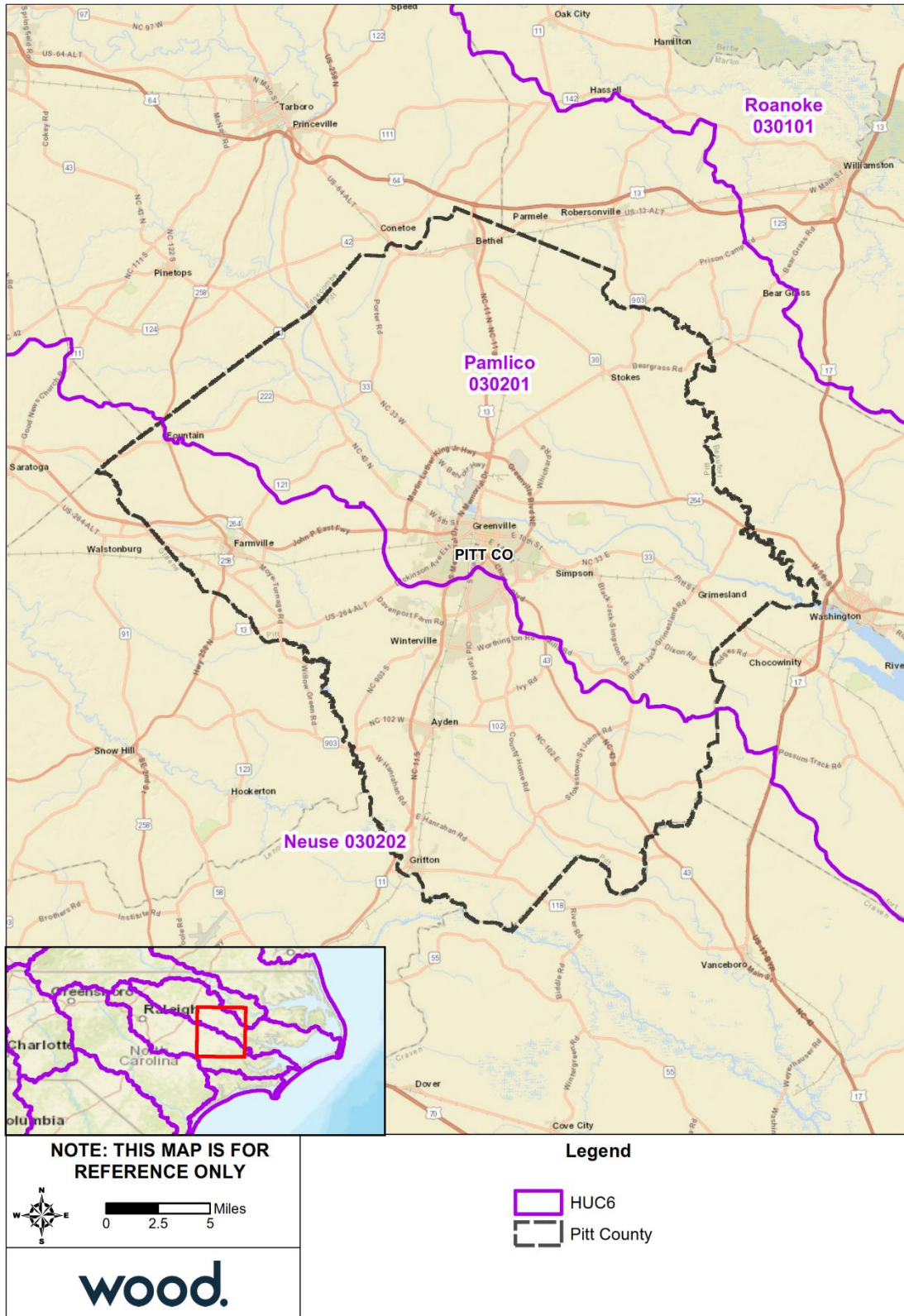
Pitt County is split between the Pamlico and Neuse River Basins. Roughly 30 percent of the County falls within the Neuse River Basin while the remaining northern 65 percent resides in the Pamlico Basin.

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). Development and population growth center around Greenville, Rocky Mount, Washington and in rural areas within commuting distance to Raleigh.

An overview of the Neuse River Basin is provided in the Greene County profile in Section 3.2.1. Figure 3.11 shows Pitt County in relation to HUC-6 drainage basins. HUC-8 drainage basins are shown in Figure 3.2.

SECTION 3: PLANNING AREA PROFILE

Figure 3.11 – HUC-6 Drainage Basins, Pitt County



Source: National Hydrology Dataset

3.5.2 Parks and Open Space

The availability of parks and recreation sites and programs is essential to maintaining a high quality of life for County residents. The County recognizes that the recreation facilities must be improved and expanded to meet the growing community needs for recreational activities. The following summarizes several key recreational opportunities throughout Pitt County:

- ▶ **Pitt County Community Schools and Recreation** - Pitt County Community Schools and Recreation was created in 1977 in order to maximize utilization of school facilities, to encourage greater citizen involvement with the schools, and to develop recreation programs and activities for citizens of all ages.
- ▶ **Alice F. Keene District Park** - Alice F. Keene District Park is the first district park in Pitt County. The park was developed on 23 acres of land located behind the Pitt County Recreation Center. Phase I of the park included a lighted softball field, four multi-purpose fields for soccer, flag football and lacrosse, a 1/4-mile walking trail, concession/bathroom building and parking area. Future phases include additional sports fields, playgrounds, outdoor basketball courts, lawn games, extended walking trails, exercise stations, and nature areas.
- ▶ **Pitt County Community Garden** - The Pitt County Community Garden is located adjacent to the Alice F. Keene District Park. The garden contains 80 plots which provide Pitt County residents an opportunity to grow their own vegetables.
- ▶ **Coastal Carolina Trail** - Pitt County is a member of the 3-county Coastal Carolina Trail Committee, which has developed a master plan and feasibility study for the development of a 30-mile recreational trail along an abandoned rail corridor.
- ▶ **Pitt County Greenway Plan** - The Pitt County Greenway Plan is intended to serve as a guide for the establishment of a county-wide network of greenways and trails. It also supports County efforts to achieve other goals in maintaining the natural environment, wetland preservation, and floodplain protection in the County.
- ▶ **Pitt County Walking Trails** - The Pitt County Community Schools and Recreation Department has made it a priority to develop safe, accessible places where people of all ages and abilities can walk. There are many trails throughout the County.

As noted, the facilities listed above are considered some of the most extensive and utilized facilities within the County. In total, there are over seventy-five park facilities throughout the County, municipalities, and the East Carolina University Campus.

3.5.3 Demographics

Total Population

Pitt County, as well as each participating jurisdiction, have experienced periods of population growth since the 2000 Census, except for Bethel, Falkland, Fountain and Simpson. Growth within the County overall has occurred at a rate of 31.9% since the year 2000, while municipalities experienced overall growth of 45.1% over the same period. Growth has been steady county-wide except for several municipalities which have experienced substantial population increases including Greenville (49.4%) and Winterville (98.0%). Of the four municipalities that experienced a decline in population, Fountain experienced the largest decrease (-37.3%), followed by Falkland (-26.8%). The exception is the Town of Grifton, which experienced a population increase of 34.2%. Figure 3.3 in Section 3.2.3 shows the population density of the Neuse River region.

Table 3.25 provides a breakdown of total population throughout Pitt County for the years 2000, 2010, and 2017.

SECTION 3: PLANNING AREA PROFILE

Table 3.25 – Pitt County Total Population

Jurisdiction	2000	2010	2017	% Change 2000-2010	% Change 2010-2017	Overall % Change 2000-2017
Ayden	4,622	4,932	5,120	6.7%	3.8%	10.8%
Bethel	1,681	1,577	1,656	-6.2%	5.0%	-1.5%
Falkland	112	96	82	-14.3%	-14.6%	-26.8%
Farmville	4,302	4,654	4,720	8.2%	1.4%	9.7%
Fountain	533	427	334	-19.9%	-21.8%	-37.3%
Greenville	60,476	84,554	90,347	39.8%	6.9%	49.4%
Grifton	2,073	2,617	2,782	26.2%	6.3%	34.2%
Grimesland	440	441	483	0.2%	9.5%	9.8%
Simpson	464	416	369	-10.3%	-11.3%	-20.5%
Winterville	4,791	9,269	9,488	93.5%	2.4%	98.0%
Municipalities	79,494	108,983	115,381	37.1%	5.9%	45.1%
Unincorporated Areas	54,304	59,165	61,103	8.9%	3.3%	12.5%
Pitt County	133,798	168,148	176,484	25.7%	5.0%	31.9%

Source: US Census Bureau American Community Survey.

Growth Trends

Table 3.26 provides population forecast through the year 2050 for Pitt County, as well as all participating municipal jurisdictions. These forecasts are based on established trends between the years 2000 and 2017. According to these estimates, Pitt County overall is expected to increase in population by 124% through 2050 with an increase of 215,551 individuals.

Table 3.26 – Pitt County Population Projections, 2017-2050

Jurisdiction	2017	2020	2030	2040	2050	% Change 2017-2050
Ayden	5,120	5,217	5,542	5,866	6,191	20.9%
Bethel	1,656	1,652	1,637	1,623	1,608	-2.9%
Falkland	82	78	65	52	39	-52.0%
Farmville	4,720	4,801	5,071	5,340	5,610	18.9%
Fountain	334	312	239	165	92	-72.5%
Greenville	90,347	98,222	124,472	150,722	176,972	95.9%
Grifton	2,782	2,950	3,510	4,069	4,629	66.4%
Grimesland	483	491	519	547	575	19.0%
Simpson	369	356	311	267	222	-39.7%
Winterville	9,488	11,130	16,601	22,073	27,545	190.3%
Municipalities	115,381	125,209	157,967	190,725	223,484	93.7%
Unincorporated Areas	61,103	71,039	104,159	137,279	170,399	178.9%
Pitt County	176,484	196,248	262,126	328,005	393,883	123.2%

Source: US Census Bureau American Community Survey and HCP, Inc.

Racial Demographics

The overall Pitt County population is predominantly Caucasian comprising 57.7% of citizens, while most of the remaining population is African American (34.6%). Overall, Pitt County has a Hispanic/Latino population of 6.0%. Falkland has the largest relative Hispanic population throughout the County include the Town of Falkland (18.3%) and the Town of Grifton (8.8%).

Neuse River

Regional Hazard Mitigation Plan
2020

SECTION 3: PLANNING AREA PROFILE

According to the ACS, the 2017 median age within Pitt County was 32 years. Approximately 73.3% of the County’s population is over the age of eighteen, while 47.2% is male and 52.8% is female.

Table 3.27 below provides a summary of racial composition for Pitt County, as well as all participating municipal jurisdictions.

Table 3.27 – Pitt County Racial Composition

Jurisdiction	Caucasian	African-American	Asian	Other Race*	Two or More Races	Persons of Hispanic or Latino Origin**
Ayden	48.4%	46.1%	1.2%	3.9%	0.4%	4.2%
Bethel	41.7%	53.1%	0.0%	4.1%	1.1%	4.3%
Falkland	11.0%	70.7%	0.0%	18.3%	0.0%	18.3%
Farmville	51.1%	47.2%	0.0%	0.1%	1.6%	2.2%
Fountain	60.2%	34.4%	0.0%	3.6%	1.8%	3.6%
Greenville	54.0%	38.2%	2.7%	2.7%	2.4%	4.9%
Grifton	44.9%	48.0%	0.0%	6.3%	0.9%	8.8%
Grimesland	63.8%	28.8%	1.0%	3.9%	2.5%	3.7%
Simpson	58.0%	40.7%	0.0%	1.4%	0.0%	0.8%
Winterville	61.3%	33.3%	2.45	0.9%	2.1%	2.5%
Pitt County	57.7%	34.6%	1.7%	3.6%	2.3%	6.0%

*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.

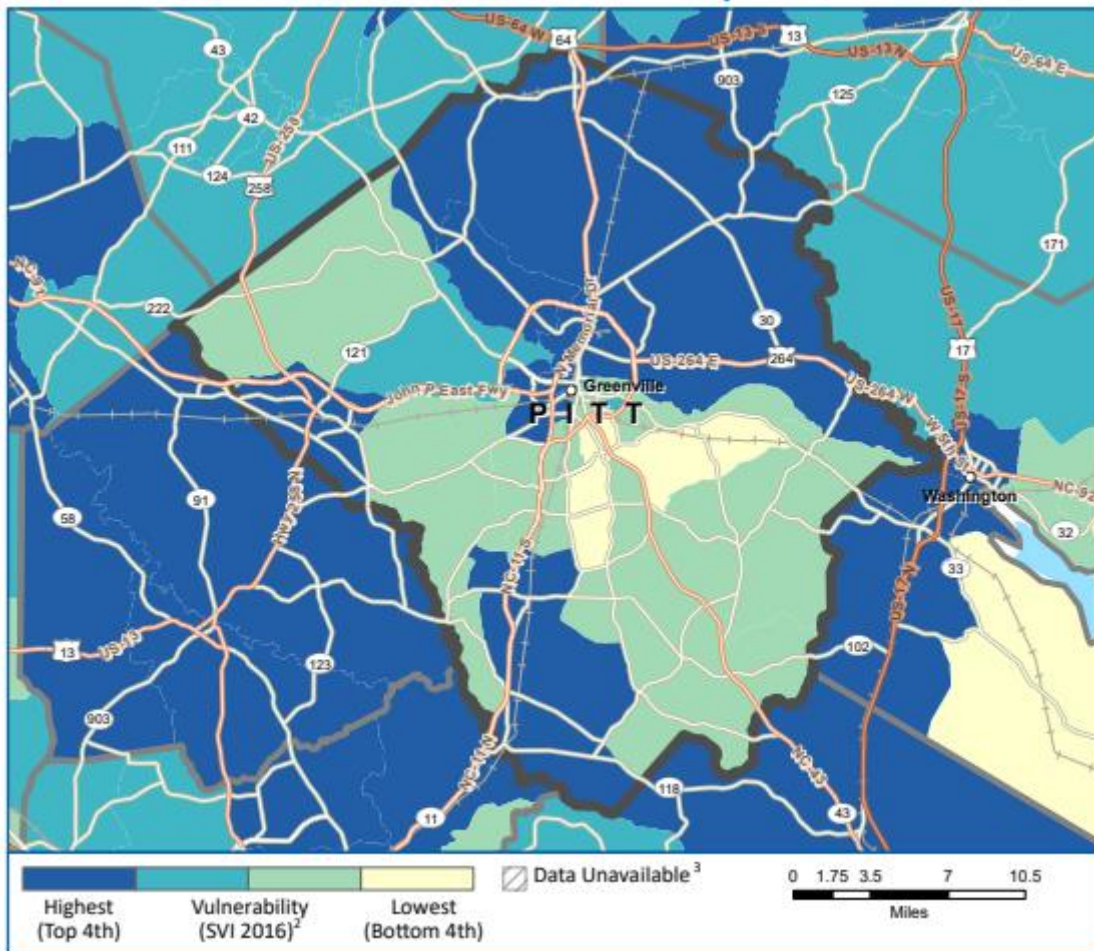
Source: US Census Bureau American Community Survey.

Social Vulnerability

Figure 3.12 below displays social vulnerability information for Pitt County by census tract according to 2016 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 (65 or older), age (17 or younger), disability, household composition, minority status, language, housing type (multi-unit structures, mobile homes, crowding, group quarters), 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.

Pitt County is split nearly evenly in relation to social vulnerability. The northern portion is characterized by high social vulnerability, while southern Pitt County is overall much lower. When considering the built environment within these portions of the County, this disparity becomes clear. Southern Pitt County is home to the Towns of Ayden, Grifton, Winterville and the southern half of the City of Greenville. Northern Pitt County is much less densely developed and lacks the volume of population centers that exist within the southern portion of the County. The presence of these municipalities provides a range of benefits that affect social vulnerability including jobs, urban resources, access to transportation, and emergency response capacity.

Figure 3.12 – Pitt County Social Vulnerability Index



Source: CDC 2016

3.5.4 Housing Characteristics

According to the ACS, there were approximately 77,843 housing units in unincorporated Pitt County as of 2017. This figure marks a 3.8%, or 2,853 unit increase since 2010. 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. Projected housing unit counts have increased by roughly 24.1% in Grimesland and 11.1% in Bethel over the same period.

Throughout Pitt County, the housing ownership relating to owner occupants is generally at or slightly below fifty percent. This percentage is generally characteristic of all municipal jurisdictions as well, except for Winterville (80.8%), Simpson (83.2%), and Grimesland (63.5%). Additionally, the City of Greenville maintains the lowest owner occupancy rate in the County at 33.5%. This factor is important with 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 12.6% of the Pitt County housing stock is comprised of manufactured homes, which is

SECTION 3: PLANNING AREA PROFILE

similar to the state overall (13%). The prevalence of manufactured housing poses a unique threat regarding both sustainability, as well as emergency response with defined flood hazard areas.

Table 3.28 provides a summary of housing characteristics for Pitt County and incorporated areas.

Table 3.28 – Pitt County Housing Characteristics

Jurisdiction	Housing Units (2010)	Housing Units (2017)	% Change 2010-2017	% Owner Occupied (2017)	% Vacant Units (2017)
Ayden	2,373	2,314	-2.5%	87.8%	12.2%
Bethel	747	830	11.1%	83.9%	16.1%
Falkland	39	30	-23.1%	76.7%	23.3%
Farmville	2,239	2,071	-7.5%	84.3%	15.7%
Fountain	210	202	-3.8%	76.2%	23.8%
Greenville	40,564	42,041	3.6%	87.0%	13.0%
Grifton	1,130	1,223	8.2%	88.4%	11.6%
Grimesland	191	237	24.1%	83.1%	16.9%
Simpson	217	173	-20.3%	86.1%	13.9%
Winterville	3,593	3,739	4.1%	99.2%	0.8%
Pitt County	74,990	77,843	3.8%	88.4%	11.6%

Source: US Census Bureau American Community Survey.

3.5.5 Wages, Employment and Industry

The 2017 ACS indicates that the median household income for Pitt County was \$43,526, which is 13% lower than the state’s median household income (\$50,320). Approximately 15.3% of County households and 28.9% of people under 18 years of age are living below the poverty level.

Within Pitt County, approximately 64.4% of the population is considered to be in the labor force. This is generally characteristic of all participating municipal jurisdictions as well, except for Bethel (47.7%) and Fountain (51.8%). According to the ACS, the unemployment rate for Pitt County overall was 10.1%. Additionally, as of 2017 approximately 15.2% of households throughout Pitt County relied on food stamps/SNAP benefits.

The following tables, Table 3.29 and Table 3.30, provide a summary of key economic indicators and population employed by occupation for both incorporated and unincorporated portions of Pitt County.

Table 3.29 – Pitt County Key Economic Indicators

Jurisdiction	Population in Labor Force	Percent Employed (%)	Percent Unemployed (%)	Percent Not in Labor Force (%)	Unemployment Rate (%)
Ayden	53.8%	42.7%	10.5%	46.2%	19.7%
Bethel	47.7%	40.4%	7.3%	52.3%	15.3%
Falkland	59.3%	51.9%	7.4%	40.7%	12.5%
Farmville	69.0%	62.1%	6.9%	31.0%	10.0%
Fountain	51.8%	38.8%	12.9%	48.2%	25.0%
Greenville	64.1%	57.5%	6.6%	35.9%	10.3%
Grifton	59.4%	50.7%	8.7%	40.6%	14.6%
Grimesland	53.9%	47.6%	6.4%	46.1%	11.8%
Simpson	65.2%	52.4%	12.9%	34.8%	19.7%
Winterville	72.4%	69.2%	3.2%	27.6%	4.4%
Pitt County	64.4%	57.8%	6.5%	35.6%	10.1%

Source: US Census Bureau American Community Survey.

Table 3.30 – Pitt County Employment by Industry

Jurisdiction	Management, Business, Science and Arts (%)	Service (%)	Sales and Office (%)	Natural Resources, Construction, and Maintenance (%)	Production, Transportation, and Material Moving (%)
Ayden	29.8%	27.6%	25.7%	7.3%	9.6%
Bethel	32.5%	6.6%	29.8%	13.7%	17.4%
Falkland	7.1%	50.0%	10.7%	0.0%	32.1%
Farmville	30.8%	25.7%	23.2%	5.0%	15.3%
Fountain	12.0%	21.3%	13.0%	30.6%	23.1%
Greenville	39.5%	23.2%	22.0%	4.0%	11.3%
Grifton	23.2%	18.7%	20.6%	16.1%	21.3%
Grimesland	28.3%	15.0%	18.2%	9.6%	28.9%
Simpson	38.9%	29.3%	14.4%	10.8%	6.6%
Winterville	48.4%	15.8%	21.8%	8.3%	8.6%
Pitt County	37.4%	21.1%	22.7%	7.2%	11.6%

Source: US Census Bureau American Community Survey.

The top employers in Pitt County represent the management, business, science and arts and the production, transportation, and material moving industries. These employers include:

- ▶ Vidant Medical Center
- ▶ East Carolina University
- ▶ Pitt County Board of Education
- ▶ Wal-Mart Associates, Inc.
- ▶ Pitt Community College
- ▶ Nacco Materials Handling Group, Inc.
- ▶ Pitt County
- ▶ Patheon Manufacturing Services, LLC
- ▶ Alliance One International, Inc.
- ▶ City of Greenville

3.5.6 Historic Properties

As of September 2019, Pitt County had 32 listings on the National Register of Historic Places. This list includes 22 historic structures/sites and 10 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 is a listing of all properties in Pitt County that are on the National Register.

- ▶ Ayden Historic District (Ayden) 8/26/1994
- ▶ College View Historic District (Greenville) 3/19/1992
- ▶ Cox-Ange House (Winterville) 10/6/2000
- ▶ Dickinson Avenue Historic District (Greenville) 3/1/2007
- ▶ Dupree-Moore Farm (Falkland vicinity) 8/28/2012
- ▶ Falkland Historic District (Falkland) 10/3/2012
- ▶ Farmville Historic District (Farmville) 10/21/1993
- ▶ E.B. Ficklen House (Greenville) 12/20/1984
- ▶ James L. Fleming House (Greenville) 7/21/1983
- ▶ Fountain Historic District (Fountain) 5/3/2016
- ▶ Greenville Commercial Historic District (Greenville) 8/21/2003

SECTION 3: PLANNING AREA PROFILE

- ▶ Greenville Commercial Historic District Additional Documentation (Greenville) 9/16/2009
- ▶ Greenville, NC Tobacco Warehouse Historic District (Greenville) 7/17/1997
- ▶ Greenville, NC Tobacco Warehouse Historic District Boundary Increase (Greenville) 11/30/1999
- ▶ Greenwreath (Falkland vicinity) 4/29/1982
- ▶ Grimesland Plantation (Grimesland vicinity) 3/31/1971
- ▶ Spencer Harris House (Falkland vicinity) 1/20/2005
- ▶ Robert Lee Humber House (Greenville) 7/9/1981
- ▶ Jones-Lee House (Original site) (Greenville) 11/25/1980
- ▶ Kittrell-Dail House (Renston vicinity) 3/24/2000
- ▶ Robert J. Lang Jr. House (Fountain vicinity) 8/23/1990
- ▶ William H. Long House (Greenville) 4/15/1982
- ▶ Benjamin May-Lewis House (Farmville vicinity) 6/20/1985
- ▶ Jesse R. Moye House (Greenville) 10/17/1997
- ▶ Oakmont (Greenville) 10/15/2001
- ▶ Pitt County Courthouse (Greenville) 5/10/1979
- ▶ Red Banks Primitive Baptist Church (Bell Fork vicinity) 2/20/2002
- ▶ Renston Rural Historic District (Winterville vicinity) 12/4/2003
- ▶ Saint John's Episcopal Church (St. John's) 12/2/1986
- ▶ Thomas Sheppard Farm (Stokes vicinity) 5/18/2000
- ▶ Skinnerville-Greenville Heights Historic District (Greenville) 12/23/2005
- ▶ United States Post Office (Greenville) 2/6/1986

3.5.7 Land Development Trends

All jurisdictions throughout Pitt County are predominantly developed, with most communities being developed to over 65% of their total parcel availability. Pitt County is by far the most urbanized of the Neuse River region. The Towns of Ayden, Farmville, Grifton, and Winterville are significant commercial and population centers, while the City of Greenville is the largest municipality in the entire Region. Development throughout the County is either associated with one of the urbanized areas, or strategically located along one of the County's key transportation corridors. Northern Pitt County is generally more rural, while a bulk of the County's urban outgrowth is occurring in its southern extent.

Table 3.31 summarizes the developed and undeveloped parcels in Pitt County.

Table 3.31 – Pitt County Developed and Undeveloped Parcel Counts

Jurisdiction	Developed Parcels	Undeveloped Parcels	% Developed	Pre-FIRM Buildings	% Developed Pre-FIRM
Ayden	1,955	559	78%	1,769	70.4%
Bethel	724	327	69%	915	87.1%
Falkland	50	21	70%	61	85.9%
Farmville	2,026	588	78%	2,145	82.1%
Fountain	221	123	64%	324	94.2%
Greenville	26,522	3,669	88%	11,234	37.2%
Grifton	891	402	69%	1,109	85.8%
Grimesland	187	159	54%	311	89.9%
Simpson	216	109	66%	199	61.2%
Winterville	3,976	380	91%	1,051	24.1%
Pitt County	20,911	11,665	64%	19,178	58.9%

Source: HCP, Inc., Pitt County Tax Office.

Detailed summaries of future land development trends, including Future Land Use Maps, for each jurisdiction that participates in the CRS program are provided in the county annexes.

3.6 WAYNE COUNTY

3.6.1 Hydrology

Wayne County's jurisdiction is located almost entirely within the Neuse River Basin. A small portion of the county is located in the Cape Fear Basin. An overview of the Neuse River Basin is provided in the Greene County profile in Section 3.2.1. Figure 3.13 on the following page shows Wayne County in relation to HUC-6 drainage basins. HUC-8 drainage basins are shown in Figure 3.2.

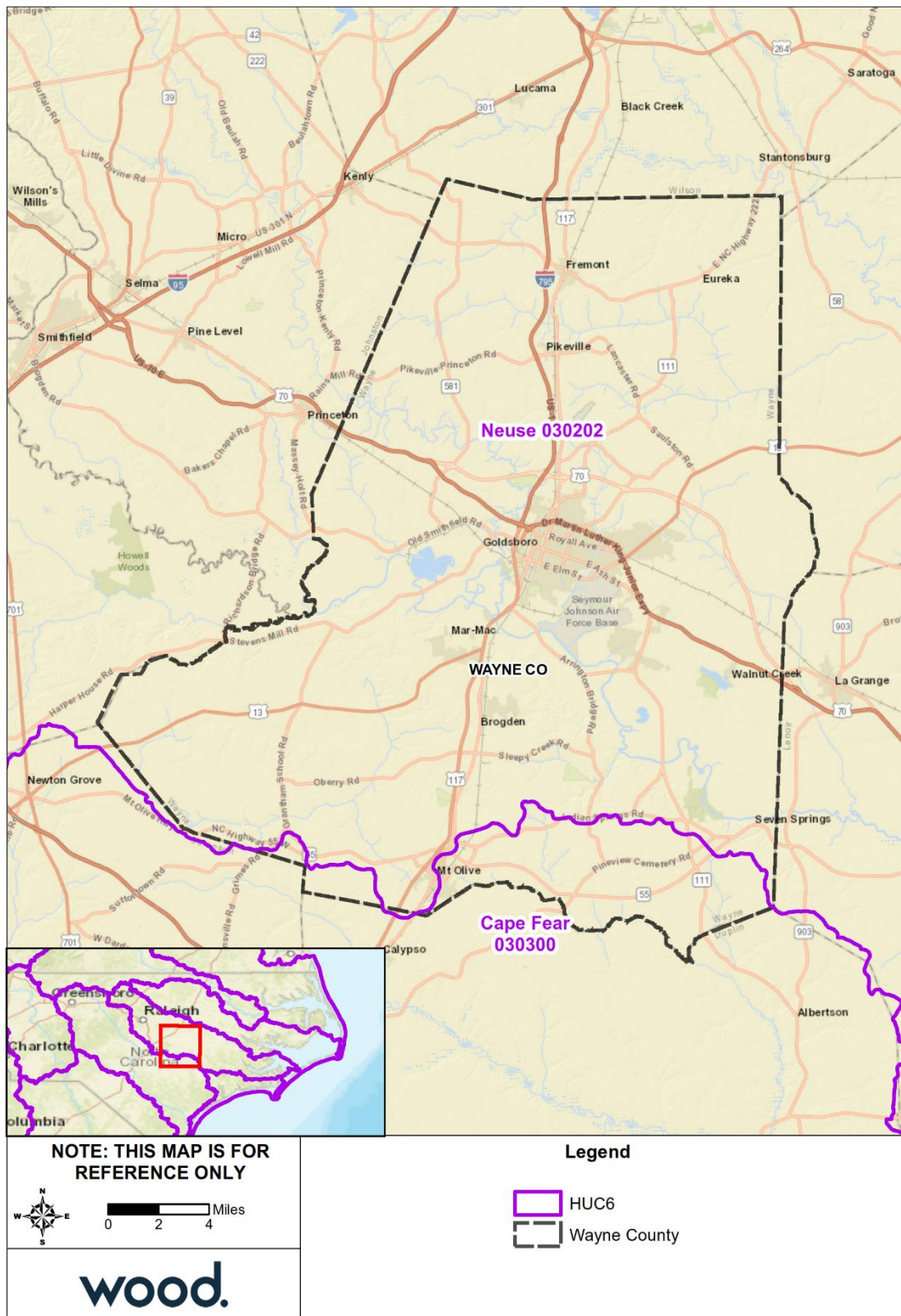
3.6.2 Parks and Open Space

The following parks and recreation facilities are located throughout Wayne County and the City of Goldsboro. These facilities provide a range of outdoor recreational opportunities for both team sports, as well as individual use. In addition to these facilities, Wayne County Parks and Recreation also offers a wide range of athletic programs.

- ▶ Park Facilities
 - Berkely Park
 - Fairview Park
 - H.V. Brown Park
 - Herman Park
 - Mina Weil Park
 - Peacock Park
 - Stoney Creek North Greenway
 - Stoney Creek Park
 - North End Park
 - Quail Park
 - South End Park
 - Veterans Memorial Park
 - Stoney Creek State park
 - Reedy Branch Greenway
- ▶ Facilities
 - Herman Park Center
 - W.A. Foster Center
 - Senior House
 - Bryan Multi Sports Complex
 - Golf Course
- ▶ Pools
 - Mina Weil Pool
 - Peacock Pool

SECTION 3: PLANNING AREA PROFILE

Figure 3.13 – HUC-6 Drainage Basins, Wayne County



Source: National Hydrology Dataset

3.6.3 Demographics

Total Population

Population growth within Wayne County has been stagnant since the year 2000, experiencing on a 0.6% increase through 2017. The growth of the County's municipal jurisdictions has been varied. Several towns have experienced negative growth including Eureka (-20.9%), Fremont (-14.0%), and Goldsboro (-9.2%). The most substantial increase in population occurred within the Town of Walnut Creek, which experienced a 23.6% increase in population dating back to the year 2000. Overall municipalities throughout Wayne County exhibited a 7.5% reduction in overall population over this same period. Figure 3.3 in Section 3.2.3 shows the population density of the Neuse River region.

The following table, Table 3.32, provides a breakdown of total population throughout Wayne County for the years 2000, 2010, and 2017.

Table 3.32 – Wayne County Total Population

Jurisdiction	2000	2010	2017	% Change 2000-2010	% Change 2010-2017	Overall % Change 2000-2017
Eureka	244	197	193	-19.3%	-2.0%	-20.9%
Fremont	1,463	1,255	1,258	-14.2%	0.2%	-14.0%
Goldsboro	39,043	36,437	35,432	-6.7%	-2.8%	-9.2%
Mount Olive	4,567	4,589	4,675	0.5%	1.9%	2.4%
Pikeville	719	678	771	-5.7%	13.7%	7.2%
Seven Springs	86	110	79	27.9%	-28.2%	8.1%
Walnut Creek	859	835	1,062	-2.8%	27.2%	23.6%
Municipalities	46,981	44,101	43,470	6.1%	-1.4%	-7.5%
Unincorporated Areas	66,348	78,522	81,026	18.3%	3.2%	22.1%
Wayne County	113,329	122,623	124,496	0.6%	1.5%	9.9%

Source: US Census Bureau American Community Survey.

Growth Trends

Table 3.33 provides population forecast through the year 2050 for Wayne County, as well as all participating municipal jurisdictions. These forecasts are based on established trends between the years 2000 and 2017. According to these estimates Wayne County overall is expected to decrease in population at a rate of -14.3% through 2050 with a reduction of 17,289 individuals.

Table 3.33 – Wayne County Population Projections, 2017-2050

Jurisdiction	2017	2020	2030	2040	2050	% Change 2017-2050
Eureka	193	186	162	138	115	-40.6%
Fremont	1,258	1,227	1,123	1,020	916	-27.2%
Goldsboro	35,432	34,854	32,926	30,998	29,071	-18.0%
Mount Olive	4,675	4,695	4,760	4,825	4,890	4.6%
Pikesville	771	781	814	846	879	14.0%
Seven Springs	79	78	74	70	67	-15.8%
Walnut Creek	1,062	1,106	1,254	1,402	1,549	45.9%
Municipalities	43,470	42,926	41,113	39,299	37,486	-13.8%
Unincorporated Areas	81,026	83,191	90,407	97,623	104,839	29.4%
Wayne County	124,496	126,117	131,519	136,922	142,325	14.3%

Source: US Census Bureau American Community Survey and HCP, Inc.

Neuse River

Regional Hazard Mitigation Plan
2020

SECTION 3: PLANNING AREA PROFILE

Racial Demographics

The overall Wayne County population is predominantly Caucasian comprising 60.1% of citizens, while most of the remaining population is African American (30.4%). The racial composition of the County's municipal jurisdictions varies substantially. The Town of Mount Olive and the City of Goldsboro is predominantly African American at 53.6% and 50.2%, respectively. Overall, Wayne County has a Hispanic/Latino population of 11.3%. Municipalities with the largest Hispanic population in the County include Fremont (8.7%), Mount Olive (7.5%), and Goldsboro (6.7%).

Table 3.34 below provides a summary of racial composition for Wayne County, as well as all participating municipal jurisdictions.

Table 3.34 – Wayne County Racial Composition

Jurisdiction	Caucasian	African-American	Asian	Other Race*	Two or More Races	Persons of Hispanic or Latino Origin**
Eureka	68.4%	31.1%	0.0%	0.0%	0.5%	2.6%
Fremont	56.8%	36.8%	0.0%	2.9%	3.5%	8.7%
Goldsboro	40.8%	50.2%	2.1%	2.0%	4.9%	6.7%
Mount Olive	36.7%	53.6%	0.2%	5.6%	3.9%	7.5%
Pikeville	88.2%	8.8%	0.4%	0.0%	2.6%	2.1%
Seven Springs	92.4%	7.6%	0.0%	0.0%	0.0%	0.0%
Walnut Creek	92.4%	2.7%	0.6%	0.0%	4.3%	4.9%
Wayne County	61.0%	30.4%	1.2%	3.8%	3.6%	11.3%

*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.

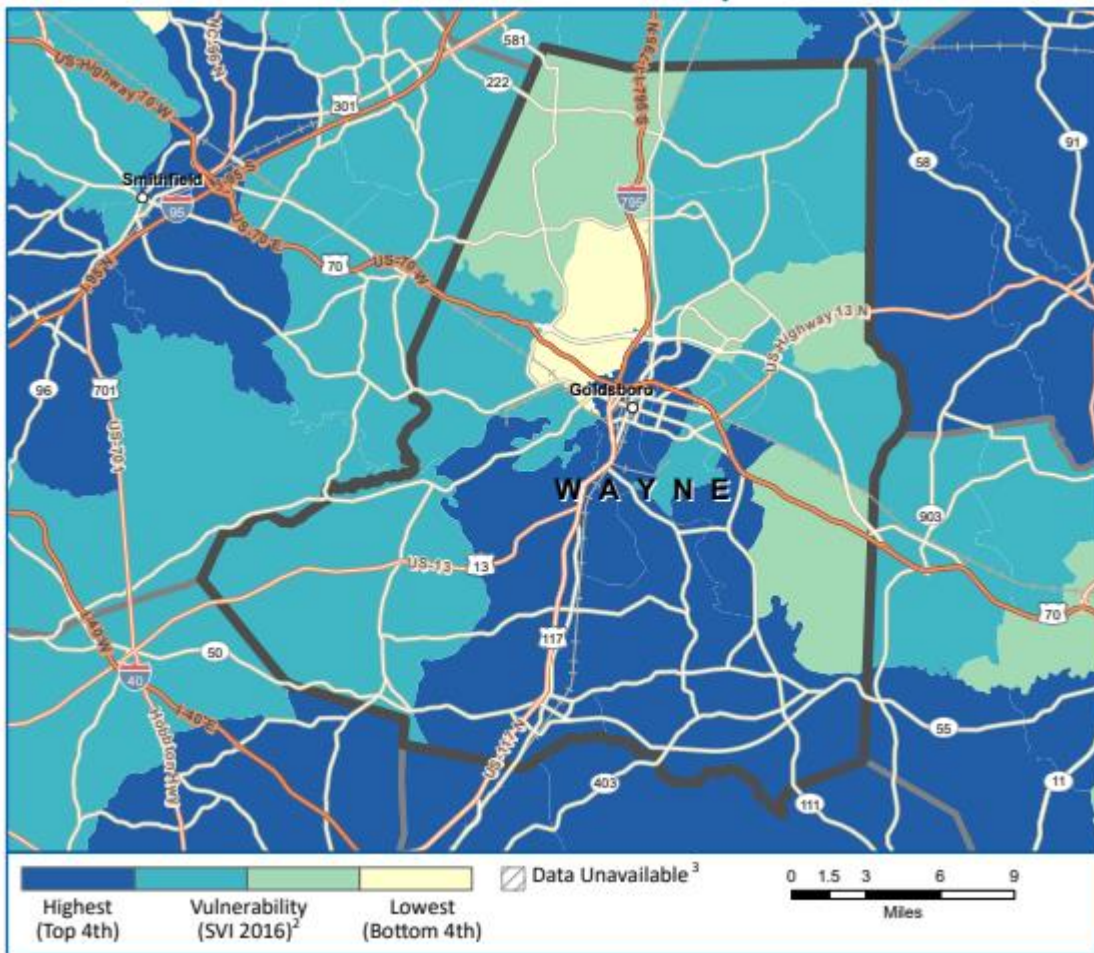
Source: US Census Bureau American Community Survey.

Social Vulnerability

Figure 3.14 below displays social vulnerability information for Wayne County by census tract according to 2016 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 (65 or older), age (17 or younger), disability, household composition, minority status, language, housing type (multi-unit structures, mobile homes, crowding, group quarters), 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.

Wayne County overall is characterized by moderate social vulnerability. The presence of the City of Goldsboro, as well as Seymour Johnson Air Force Base, contribute to this fact. Nearly two-thirds of the County (southwestern, northeastern, and northwestern) have a low to moderate social vulnerability, while central southern Wayne County is much higher. Like several other counties in the region, this fact can be attributed to a much lower population density.

Figure 3.14 – Wayne County Social Vulnerability Index



Source: CDC 2016

3.6.4 Housing Characteristics

Housing development throughout Wayne County overall, including nearly all municipal jurisdictions has been either slow or non-existent dating back to the year 2010. In relation to housing count increases, all but two municipalities experienced a decrease in housing units over this period. In some instances, the data presented through the ACS can misrepresent a jurisdiction’s demographics. It appears that this could be the case within Wayne County regarding housing unit counts. The housing stock within Wayne County is fairly young, in that roughly 55% of homes were constructed after 1980.

Table 3.35 provides a summary of housing characteristics for Wayne County and incorporated areas.

Table 3.35 – Wayne County Housing Characteristics

Jurisdiction	Housing Units (2010)	Housing Units (2017)	% Change 2010-2017	% Owner Occupied (2017)	% Vacant Units (2017)
Eureka	115	93	-19.1%	87	6
Fremont	681	596	-12.5%	483	113
Goldsboro	16,824	16,046	-4.6%	13,961	2,085
Mount Olive	2,119	2,015	-4.9%	1,574	441
Pikeville	334	363	8.7%	311	52

SECTION 3: PLANNING AREA PROFILE

Jurisdiction	Housing Units (2010)	Housing Units (2017)	% Change 2010-2017	% Owner Occupied (2017)	% Vacant Units (2017)
Seven Springs	61	54	-11.5%	43	11
Walnut Creek	363	462	27.3%	444	18
Wayne County	52,949	53,092	0.3%	47,587	6,315

Source: US Census Bureau American Community Survey.

3.6.5 Wages, Employment and Industry

The 2017 ACS reports that the median household income for Wayne County was \$41,766, which is a bit lower than the state's median household income of \$50,320. However, approximately 21.2% of the population is considered to be living below the poverty level. Moreover, 17.0% percent of people under 18 years of age are living below the poverty level.

Within Wayne County, approximately 60.9% of the population is in the labor force. This is generally higher than the municipal jurisdictions located throughout the County. Throughout Wayne County, including all municipal jurisdictions, the percentage of the labor force currently employed falls below 50%, except for Pikeville (54.3%) and Walnut Creek (53.3%). According to the ACS, the unemployment rate for Wayne County overall was 9.7%. Additionally, as of 2017, approximately 18.6% of households throughout Wayne County relied on food stamps/SNAP benefits.

The following tables, Table 3.36 and Table 3.37, provide a summary of key economic indicators and population employed by industry for both incorporated and unincorporated portions of Wayne County.

Table 3.36 – Wayne County Key Economic Indicators

Jurisdiction	Population in Labor Force	Percent Employed (%)	Percent Unemployed (%)	Percent Not in Labor Force (%)	Unemployment Rate (%)
Eureka	49.4%	48.1%	0.6%	50.6%	1.3%
Fremont	52.0%	45.3%	5.4%	48.0%	10.7%
Goldsboro	55.5%	41.7%	7.6%	44.5%	15.4%
Mount Olive	54.4%	44.2%	10.2%	45.6%	18.8%
Pikeville	59.7%	54.3%	5.4%	40.3%	9.1%
Seven Springs	52.5%	45.8%	6.8%	47.5%	12.9%
Walnut Creek	59.8%	53.3%	3.0%	40.2%	5.3%
Wayne County	60.9%	52.3%	5.6%	39.1%	9.7%

Source: US Census Bureau American Community Survey.

Table 3.37 – Wayne County Employment by Occupation

Jurisdiction	Management, Business, Science and Arts (%)	Service (%)	Sales and Office (%)	Natural Resources, Construction, and Maintenance (%)	Production, Transportation, and Material Moving (%)
Eureka	33.8%	21.6%	20.3%	14.9%	9.5%
Fremont	22.6%	21.2%	15.2%	22.6%	18.4%
Goldsboro	30.1%	21.7%	23.3%	7.0%	17.9%
Mount Olive	27.2%	17.5%	9.9%	11.6%	33.7%
Pikeville	26.8%	17.6%	24.1%	18.2%	13.2%
Seven Springs	85.2%	3.7%	3.7%	7.4%	0.0%
Walnut Creek	48.9%	7.4%	32.2%	3.7%	7.8%
Wayne County	29.1%	17.9%	22.8%	12.1%	18.1%

Source: US Census Bureau American Community Survey.

SECTION 3: PLANNING AREA PROFILE

The top employers in Wayne County represent the sales and office industry and the service industry. These employers include:

- ▶ Wayne County Board of Education
- ▶ Wayne Memorial Hospital, Inc.
- ▶ NC Department of Health & Human Services
- ▶ Wal-Mart Associates, Inc.
- ▶ County of Wayne
- ▶ Case Farms Processing, Inc.
- ▶ Department of Defense
- ▶ Mount Olive Pickle Company, Inc.
- ▶ Georgia-Pacific LLC
- ▶ Wayne Community College

3.6.6 Historic Properties

As of September 2019, Wayne County had 17 listings on the National Register of Historic Places. This list includes 16 historic structures/sites and 1 Historic District. 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 Wayne County.

- ▶ Charles B. Aycock Birthplace State Historic Site (Fremont vicinity) 2/26/1970
- ▶ Barnes-Hooks Farm (Fremont vicinity) 9/1/1995
- ▶ Borden Manufacturing Company (Goldsboro) 2/2/2005
- ▶ Eureka United Methodist Church (Eureka) 8/26/1982
- ▶ First Presbyterian Church (Christian Science Church) (Goldsboro) 5/29/1979
- ▶ L.D. Giddens and Son Jewelry Store (Goldsboro) 3/19/1979
- ▶ Goldsboro Union Station (Goldsboro) 4/13/1977
- ▶ Harry Fitzhugh Lee House (Goldsboro) 3/1/1984
- ▶ (former) Mount Olive High School (Mount Olive) 10/22/1998
- ▶ Mount Olive Historic District (Mount Olive) 5/27/1999
- ▶ Oddfellows Lodge (Goldsboro) 8/3/1978
- ▶ Perry-Cherry House (Mount Olive) 3/13/1980
- ▶ Southerland-Burnette House (Mount Olive) 2/8/1988
- ▶ (former) United States Post Office (Mount Olive) 6/2/1995
- ▶ Vernon (Gone) (Mount Olive vicinity) 10/9/1974
- ▶ Soloman and Henry Weil Houses (Goldsboro) 12/22/1976
- ▶ Dred and Ellen Yelverton House (Fremont vicinity) 8/27/2009

3.6.7 Land Development Trends

Development throughout Wayne County generally extends out from the City of Goldsboro. Goldsboro serves as the commercial core of the County but is also home to Seymour Johnson Air Force Base. Seymour Johnson has facilitated housing development within unincorporated portions of the County, and therefore rural Wayne County has several subdivision developments that are not situated within one of the County's municipalities. Development has become particularly intense heading south from the City of Goldsboro towards the Town of Mount Olive. There are still large portions of the County that are characterized by agricultural operations, and the uses associated with them.

Table 3.38 summarizes the developed and undeveloped parcels in Wayne County.

SECTION 3: PLANNING AREA PROFILE

Table 3.38 – Wayne County Developed and Undeveloped Parcel Counts

Jurisdiction	Developed Parcels	Undeveloped Parcels	Pre-Firm Buildings	% Developed Pre-Firm
Eureka	137	54	169	88.5%
Fremont	695	268	876	91.0%
Goldsboro	11,316	4,017	11,745	76.6%
Mount Olive	1,791	948	2,430	88.7%
Pikeville	328	99	350	82.0%
Seven Springs	78	64	131	92.3%
Walnut Creek	410	176	242	41.3%
Wayne County	31,366	16,381	29,292	61.3%

Source: HCP, Inc., Wayne County Tax Office.

Detailed summaries of future land development trends, including Future Land Use Maps, for each jurisdiction that participates in the Community Rating System program are provided in the county annex to this plan.

4 Risk Assessment

4.1 OVERVIEW

This section describes the Hazard Identification and Risk Assessment process for the development of the Neuse River 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 Neuse River 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 region 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**
- ▶ **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 threat 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, Medium, or High Risk hazard.

4.2 HAZARD IDENTIFICATION

To identify hazards relevant to the planning area, the HMPC began with a review of the list of hazards identified in the 2018 State Hazard Mitigation Plan and the 2015 Neuse River Regional Hazard Mitigation Plan. This review of hazards is summarized in Table 4.1. The HMPC used these lists to identify a full range of hazards for potential inclusion in this plan update and to ensure consistency across these planning efforts. All hazards on the below list were evaluated for inclusion in this plan update.

SECTION 4: RISK ASSESSMENT

Table 4.1 – Full Range of Hazards Evaluated

Hazard	Included in 2018 State HMP?	Included in 2015 Neuse River Basin Regional HMP?
Flooding	Yes	Yes
Hurricanes and Coastal Hazards	Yes	Yes
Severe Winter Weather (Freezing Rain, Snowstorms, Blizzards, Wind Chill, Extreme Cold)	Yes	Yes
Extreme Heat	Yes	Yes
Earthquake	Yes	Yes
Wildfire	Yes	Yes
Dam Failure	Yes	Yes
Levee Failure	No	Yes
Drought	Yes	Yes
Severe Thunderstorm (Tornado, Hailstorm, Torrential Rain, Thunderstorm Wind, High Wind, Lightning)	Yes	Yes (Tornadoes evaluated as a separate hazard)
Landslide	Yes	No
Sinkholes	Yes	No
Coastal Erosion	Yes	No
Hazardous Materials Incident	Yes	No
Radiological Emergency	Yes	No
Terrorism	Yes	No
Infectious Disease	Yes	No
Cyber Threat	Yes	No
Electromagnetic Pulse	Yes	No

The HMPC evaluated the above list of hazards using existing hazard data, past disaster declarations, local knowledge, and information from the 2018 State Plan and the 2015 Neuse River Basin Regional 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 National Center for Environmental Information (NCEI), which has been tracking various types of severe weather since 1950. Their Storm Events Database contains an archive by county of destructive storm or weather data and information which includes local, intense and damaging events. NCEI receives storm data from the National Weather Service (NWS). The NWS 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. The NCEI database contains 1,206 records of severe weather events that occurred in Greene, Jones, Lenoir, Pitt, and Wayne Counties in the 20-year period from 1999 through 2018. Table 4.2 summarizes these events.

SECTION 4: RISK ASSESSMENT

Table 4.2 – NCEI Severe Weather Reports for Neuse River Region Counties, 1999 – 2018

Type	# of Events	Property Damage	Crop Damage	Deaths	Injuries
Cold/Wind Chill	0	\$0	\$0	0	0
Drought	12	\$0	\$0	0	0
Extreme Cold/Wind Chill	0	\$0	\$0	0	0
Excessive Heat	0	\$0	\$0	0	0
Flash Flood	118	\$760,000	\$6,100,000	3	0
Flood	33	\$141,730,000	\$55,000,000	8	0
Frost/Freeze	4	\$0	\$0	0	0
Hail	310	\$160,000	\$1,405,000	0	0
Heat	2	\$0	\$0	3	0
Heavy Rain	17	\$0	\$0	0	0
Heavy Snow	21	\$0	\$0	0	0
High Wind	16	\$1,651,000	\$0	0	0
Hurricane	23	\$368,116,000	\$287,650,000	7	0
Ice Storm	5	\$0	\$0	0	0
Lightning	12	\$578,000	\$0	0	1
Strong Wind	17	\$34,600	\$5,000	0	0
Thunderstorm Wind	438	\$1,970,000	\$6,000	1	10
Tornado	55	\$36,421,000	\$175,000	0	48
Tropical Storm	31	\$115,500,000	\$100,500,000	3	1
Wildfire	0	\$0	\$0	0	0
Winter Storm	58	\$0	\$0	0	2
Winter Weather	34	\$10,000	\$0	0	0
Total:	1,206	\$666,930,600	\$450,841,000	25	62

Source: National Center for Environmental Information Events Database, accessed February 2019

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 Greene, Jones, Lenoir, Pitt, and Wayne Counties in order to identify significant hazards. Federal and/or state disaster declarations may be granted when the Governor certifies that the combined local, county and state resources are insufficient and that the situation is beyond their recovery capabilities. 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, 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, Greene, Jones, Lenoir, Pitt, and Wayne Counties have been designated in 16 different major disaster declarations. Table 4.3 summarizes the count of 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
Greene	11
Jones	10
Lenoir	11
Pitt	13
Wayne	11

Source: FEMA Disaster Declarations Summary, updated December 20, 2018

SECTION 4: RISK ASSESSMENT

Table 4.4 – FEMA Major Disaster Declarations for Neuse River Region Counties

County*	Disaster #	Date	Incident Type	Event Title
G, J, L, P, W	4393	9/14/2018	Hurricane	Hurricane Florence
G, J, L, P, W	4285	10/10/2016	Hurricane	Hurricane Matthew
G, J, L, P, W	4019	8/31/2011	Hurricane	Hurricane Irene
G, P	1969	4/19/2011	Severe Storm(s)	Severe Storms, Tornadoes, And Flooding
J, P	1942	10/14/2010	Severe Storm(s)	Severe Storms, Flooding, And Straight-Line Winds
J	1608	10/7/2005	Hurricane	Hurricane Ophelia
G, J, L, P, W	1490	9/18/2003	Hurricane	Hurricane Isabel
W	1448	12/12/2002	Severe Ice Storm	Severe Ice Storm
G, J, L, P, W	1292	9/16/1999	Hurricane	Hurricane Floyd Major Disaster Declarations
G, J, L, P, W	1240	8/27/1998	Hurricane	Hurricane Bonnie
L, W	1211	3/22/1998	Severe Storm(s)	Severe Storms Tornadoes, and Flooding
G, J, L, P, W	1134	9/6/1996	Hurricane	Hurricane Fran
G, J, L, P	1127	7/18/1996	Hurricane	Hurricane Bertha
P	1087	1/13/1996	Snow	Blizzard of 96
G, L, P, W	699	3/30/1984	Tornado	Severe Storms & Tornadoes
G, L, P, W	234	2/10/1968	Severe Ice Storm	Severe Ice Storm

Source: FEMA Disaster Declarations Summary, updated December 20, 2018

*County code: G = Greene, J = Jones, L = Lenoir, P = Pitt, W = Wayne

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
Flood	Yes	The 2015 Neuse River Basin plan and 2018 State plan addressed this hazard. Multiple disaster declarations for the region are related to flooding. NCEI reports 185 flood-related events.
Hurricane and Tropical Storm	Yes	The 2015 Neuse River Basin plan and 2018 State plan addressed this hazard. Past disaster declarations and NCEI storm reports indicate hurricanes are a significant hazard for the region.
Severe Winter Storm	Yes	The 2015 Neuse River Basin plan and 2018 State plan addressed this hazard. The region has received several past disaster declarations related to this hazard. NCEI reports 122 severe winter weather related events.
Extreme Heat	Yes	The 2015 Neuse River Basin plan and 2018 State plan addressed this hazard. NCEI reports 2 heat events for the region.
Earthquake	Yes	The 2015 Neuse River Basin plan and 2018 State plan addressed this hazard. The region could face minimal impacts from the Eastern Tennessee Seismic zone and the Charleston fault.
Wildfire	Yes	The 2015 Neuse River Basin plan and 2018 State plan addressed this hazard.
Dam Failure	Yes	The 2015 Neuse River Basin plan and 2018 State plan addressed this hazard. There are multiple dams in the region.
Levee Failure	No	The 2015 Neuse River Basin plan addressed this hazard in conjunction with dam failure. However, the USACE’s National Levee Database does not identify any levees in the region.

SECTION 4: RISK ASSESSMENT

Hazard	Included in this plan update?	Explanation for Decision
Drought	Yes	The 2015 Neuse River Basin plan and 2018 State plan addressed this hazard. There have been multiple past instances of severe drought.
Severe Weather (Thunderstorm, Lightning, Hail)	Yes	The 2015 Neuse River Basin plan and 2018 State plan addressed this hazard. Multiple disaster declarations for the region are related to severe storms. NCEI reports 793 related events in the past 20 years.
Tornado	Yes	The 2015 Neuse River Basin plan and 2018 State plan addressed this hazard. Multiple disaster declarations for the region are related to tornadoes. NCEI reports 55 tornado segments passing through the region in the past 20 years.
Landslide	No	The 2018 State plan addressed this hazard, but did not find significant risk in the eastern portion of the state. The 2015 Neuse River Basin plan did not address this hazard.
Sinkholes	No	The 2018 State plan addressed this hazard but the 2015 Neuse River Basin plan did not. USGS data shows minor geological basis for sinkhole risk in parts of the region but there is no record of sinkholes occurring.
Erosion	No	The 2018 State plan addressed this hazard but the 2015 Neuse River Basin plan did not. Inland erosion is an ongoing occurrence that may result from wind and flood events and so will be discussed as a subset of those hazards.
Hazardous Materials Incident	No	The 2018 State plan addressed this hazard, but the 2015 Neuse River Basin did not. The region considers this hazard more appropriately addressed through emergency operations planning and local staff training.
Radiological Emergency	No	The 2018 State plan addressed this hazard, but the 2015 Neuse River Basin did not. Only a small portion of Wayne County is in the IPZ of the Harris Nuclear Plant, but this does not equate to significant risk to the region.
Terrorism	No	The 2018 State plan addressed this hazard, but the 2015 Neuse River Basin did not. The region considers this hazard more appropriately addressed at the State level.
Infectious Disease	No	The 2018 State plan addressed this hazard, but the 2015 Neuse River Basin did not. The State HMP reports the entire State is equally at risk, but vulnerability is low across all but one impact category.
Cyber Threat	No	The 2018 State plan addressed this hazard, but the 2015 Neuse River Basin did not. The region considers this hazard more appropriately addressed through emergency operations planning and local staff training.
Electromagnetic Pulse	No	The 2018 State plan addressed this hazard, but the 2015 Neuse River Basin 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 Failure
- ▶ Drought
- ▶ Earthquake
- ▶ Extreme Heat
- ▶ Flood
- ▶ Hurricane & Tropical Storm
- ▶ Severe Weather (Thunderstorm Wind, Lightning, & Hail)
- ▶ Severe Winter Storm
- ▶ Tornado
- ▶ Wildfire

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 Neuse River 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.

Past Occurrences

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

Probability of Future Occurrence

This section gauges the likelihood of future occurrences based on past events and existing data. The frequency is generally determined by dividing the number of events observed by the number of years on record. 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). The likelihood of future occurrences is categorized into one of the classifications as follows:

- ▶ **Highly Likely** – Near or more than 100 percent chance of occurrence within the next year
- ▶ **Likely** – Between 10 and 100 percent chance of occurrence within the next year (recurrence interval of 10 years or less)
- ▶ **Possible** – Between 1 and 10 percent chance of occurrence within the next year (recurrence interval of 11 to 100 years)
- ▶ **Unlikely** – Less than 1 percent chance or occurrence within the next 100 years (recurrence interval of greater than every 100 years)

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.

SECTION 4: RISK ASSESSMENT

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; and
- ▶ Written descriptions of inventory and risks provided by the previous Neuse River Regional Hazard Mitigation Plan.
- ▶ Exposure and vulnerability estimates provided by the North Carolina Emergency Management IRISK database.
- ▶ Crop insurance claims by cause from USDA's Risk Management Agency

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 National Flood Insurance Program (NFIP) and had an effective FIRM and building codes enforced.

Census blocks and Summary File 1 from the 2010 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).

Two distinct risk assessment methodologies were used in the formation of the vulnerability assessment. The first consists of a **quantitative** analysis that relies upon best available data and technology, while the second approach consists of a **qualitative** analysis that relies on local knowledge and rational decision making. The quantitative analysis involved the use of NCEM's IRISK database, which provides modeled damage estimates for earthquake, flood, wind, and wildfire hazards.

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

SECTION 4: RISK ASSESSMENT

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.

Certain assumptions are inherent in any risk assessment. For the Neuse River 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 Neuse River 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 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

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

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).

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

The purpose of the PRI is to categorize and prioritize all potential hazards for the Neuse River Region as high, moderate, or low risk. The summary hazard classifications generated through the use of the PRI allows for the prioritization of those high hazard risks for mitigation planning purposes. Mitigation actions are not developed for hazards identified as low risk through this process.

SECTION 4: RISK ASSESSMENT

4.4 ASSET INVENTORY

4.4.1 Population

North Carolina Emergency Management’s (NCEM) IRISK database provided the asset inventory used for this vulnerability assessment. Population data in IRISK is pulled from the 2010 Census and includes a breakdown of population into two subpopulations considered to be a greater risk than the general population, elderly and children. Table 4.7 details the population counts by jurisdiction used for the vulnerability assessment.

Table 4.7 – Population Counts by Jurisdiction, 2010

Jurisdiction	2010 Census Population	Elderly (Age 65 and Over)	Children (Age 5 and Under)
Greene			
Unincorporated Greene County	18,492	2,305	1,200
Town of Hookerton	394	49	26
Town of Snow Hill	2,283	285	148
Town of Walstonburg	209	26	14
Subtotal Greene	21,378	2,665	1,388
Jones			
Unincorporated Jones County	8,665	1,496	526
Town of Maysville	955	165	58
Town of Pollockville	304	53	18
Town of Trenton	247	43	15
Subtotal Jones	10,171	1,757	617
Lenoir			
City of Kinston	24,674	3,949	1,577
Unincorporated Lenoir County	29,588	4,735	1,891
Town of La Grange	3,673	588	235
Town of Pink Hill	753	121	48
Subtotal Lenoir	58,688	9,393	3,751
Pitt			
City of Greenville	94,536	9,342	6,314
Unincorporated Pitt County	41,816	4,132	2,793
Town of Ayden	6,107	603	408
Town of Bethel	1,799	178	120
Town of Falkland	349	35	23
Town of Farmville	5,216	515	348
Town of Fountain	715	71	48
Town of Grifton	760	122	49
Town of Grimesland	850	84	57
Town of Winterville	10,051	993	671
Village of Simpson	3,167	313	212
Subtotal Pitt	165,366	16,388	11,043
Wayne			
City of Goldsboro	42,417	5,558	3,030
Town of Eureka	612	80	44
Town of Fremont	1,712	224	122
Town of Mount Olive	5,380	705	384
Town of Pikeville	1,204	158	86
Town of Seven Springs	107	14	8

Neuse River

Regional Hazard Mitigation Plan
2020

SECTION 4: RISK ASSESSMENT

Jurisdiction	2010 Census Population	Elderly (Age 65 and Over)	Children (Age 5 and Under)
Village of Walnut Creek	975	128	70
Unincorporated Wayne County	70,299	9,211	5,022
Subtotal Wayne	122,706	16,078	8,766
Total Region	378,309	46,281	25,565

Source: NCEM IRISK Database; 2010 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. The methodology for generating the building asset inventory is described in greater detail in Section 4.3. Note that these building counts were provided in 2010, and thus do not account for recent changes in development. Therefore, the exposure reflected in the following tables may be an underestimate of actual present-day exposure. Chapter 2 Planning Area Profile describes the growth that has occurred since 2010 and provides a means of estimating the degree to which exposure and vulnerability may have increased.

Table 4.8 – Building Counts and Values by Jurisdiction

Jurisdiction	Building Count	Building Value
Greene		
Unincorporated Greene County	10,649	\$1,707,377,194
Town of Hookerton	242	\$45,829,728
Town of Snow Hill	1,212	\$427,911,545
Town of Walstonburg	151	\$23,025,093
Subtotal Greene	12,254	\$2,204,143,560
Jones		
Unincorporated Jones County	6,683	\$862,472,968
Town of Maysville	463	\$59,179,029
Town of Pollocksville	209	\$43,803,717
Town of Trenton	190	\$29,183,326
Subtotal Jones	7,545	\$994,639,040
Lenoir		
Unincorporated Lenoir County	17,398	\$1,737,882,898
City of Kinston	11,517	\$2,768,573,805
Town of La Grange	1,839	\$168,303,830
Town of Pink Hill	532	\$37,250,373
Subtotal Lenoir	31,286	\$4,712,010,906
Pitt		
Unincorporated Pitt County	23,068	\$2,296,763,964
City of Greenville	28,246	\$6,133,149,999
Town of Ayden	3,073	\$405,978,748
Town of Bethel	997	\$172,578,540
Town of Falkland	229	\$24,144,136
Town of Farmville	2,690	\$563,023,743
Town of Fountain	496	\$61,344,592
Town of Grifton	2,179	\$1,015,736,994
Town of Grimesland	564	\$57,675,257
Town of Winterville	3,566	\$579,237,680
Village of Simpson	1,234	\$135,165,441

SECTION 4: RISK ASSESSMENT

Jurisdiction	Building Count	Building Value
Subtotal Pitt	66,342	\$11,444,799,094
Wayne		
Unincorporated Wayne County	44,953	\$3,359,896,432
City of Goldsboro	19,729	\$4,144,588,533
Town of Eureka	561	\$35,404,605
Town of Fremont	1,429	\$81,081,242
Town of Mount Olive	3,199	\$436,468,758
Town of Pikeville	882	\$56,276,009
Town of Seven Springs	114	\$4,101,123
Village of Walnut Creek	421	\$100,948,456
Subtotal Wayne	71,288	\$8,218,765,158
Total Region	188,715	\$27,574,357,758

Source: NCEM IRISK Database; GIS analysis

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 were also identified in 2010 and are likely an underestimate of the exposure of current CIKR and High Potential Loss Properties. These properties are detailed in Table 4.9 and Table 4.10, respectively.

Table 4.9 – Critical Infrastructure and Key Resources by Type and Jurisdiction

Jurisdiction	Food & Agriculture	Banking & Finance	Chemical	Commercial Facilities	Communications	Manufacturing	Defense	Government	Healthcare	Nuclear	Postal & Shipping	Transportation	Energy	Emergency Services	Water	Total
Greene County																
Greene County	1,658	0	0	245	0	60	0	60	5	0	0	29	2	9	0	2,068
Town of Hookerton	0	1	0	20	0	5	0	4	1	0	0	2	0	1	0	34
Town of Snow Hill	28	3	0	109	0	13	0	46	13	0	0	16	6	2	0	236
Town of Walstonburg	0	0	0	12	0	7	0	4	0	0	0	3	0	1	0	27
Jones County																
Jones County	1,547	1	0	148	0	12	0	64	7	0	0	12	0	0	0	1,791
Town of Maysville	1	1	0	32	0	1	0	3	1	0	0	4	0	0	1	44
Town of Pollocksville	0	1	0	23	0	0	0	7	0	0	0	0	0	0	0	31
Town of Trenton	0	1	0	12	0	0	0	17	1	0	0	4	0	0	0	35
Lenoir County																
Lenoir County	2,386	2	0	427	0	108	0	62	14	0	1	50	6	10	2	3,068
City of Kinston	95	33	0	900	2	128	0	168	193	1	3	129	12	4	7	1,675
Town of La Grange	39	7	0	100	0	14	0	22	4	0	0	21	0	2	6	215
Town of Pink Hill	6	1	0	61	0	9	0	18	4	0	0	10	0	1	0	110
Pitt County																
Pitt County	3,180	16	0	678	0	211	0	75	65	0	0	173	5	1	0	4,404
City of Greenville	122	61	0	1,517	3	460	2	216	196	3	0	450	23	4	2	3,059
Town of Ayden	144	3	0	109	0	32	0	22	11	0	0	36	0	1	0	358
Town of Bethel	40	1	0	34	0	17	0	4	3	0	0	6	0	0	0	105
Town of Falkland	38	0	0	14	0	6	0	2	1	0	0	0	0	0	0	61

SECTION 4: RISK ASSESSMENT

Jurisdiction	Food & Agriculture	Banking & Finance	Chemical	Commercial Facilities	Communications	Manufacturing	Defense	Government	Healthcare	Nuclear	Postal & Shipping	Transportation	Energy	Emergency Services	Water	Total
Town of Farmville	65	2	0	122	0	52	1	12	4	0	0	31	2	0	0	291
Town of Fountain	51	1	0	17	0	17	0	1	0	0	0	14	0	0	0	101
Town of Grifton	93	2	1	68	0	24	0	8	7	0	0	14	5	0	0	222
Town of Grimesland	40	0	0	14	0	6	0	4	1	0	0	16	0	1	0	82
Town of Winterville	86	7	0	179	0	56	0	29	9	0	0	77	0	0	0	443
Village of Simpson	3	0	0	23	0	5	0	6	0	0	0	13	0	0	0	50
Wayne County																
Wayne County	4,074	348	0	1,170	1	441	0	159	64	0	0	0	16	46	0	6,319
City of Goldsboro	147	272	0	1,366	16	242	0	146	169	0	0	0	0	1,119	17	3,494
Town of Eureka	41	11	0	33	0	8	0	5	1	0	0	0	0	1	0	100
Town of Fremont	46	7	0	54	0	11	0	13	14	0	0	0	0	1	0	146
Town of Mount Olive	32	52	0	224	1	48	0	36	8	0	0	1	0	2	6	410
Town of Pikeville	6	11	0	45	0	14	0	2	1	0	0	0	0	0	0	79
Town of Seven Springs	0	2	0	17	0	2	0	1	0	0	0	0	0	0	0	22
Village of Walnut Creek	0	5	0	20	0	7	0	0	5	0	0	0	0	0	0	37
Region Total	13,968	852	1	7,793	23	2,016	3	1,216	802	4	4	1,111	77	1,206	41	29,117

Source: NCEM Risk Management Tool

Table 4.10 – High Potential Loss Properties by Use and Jurisdiction

Jurisdiction	Residential	Commercial	Industrial	Government	Agricultural	Religious	Utilities	Total
Greene County								
Greene County	5	21	11	24	1	42	2	106
Town of Hookerton	0	3	1	0	0	1	0	5
Town of Snow Hill	2	16	7	15	0	4	6	50
Town of Walstonburg	0	0	0	1	0	0	0	1
Jones County								
Jones County	0	3	1	18	2	28	0	52
Town of Maysville	0	0	0	1	0	2	0	3
Town of Pollocksville	0	0	0	1	0	2	0	3
Town of Trenton	0	0	0	4	0	1	0	5
Lenoir County								
Lenoir County	10	18	7	20	4	18	4	81
City of Kinston	10	115	12	44	0	44	10	235
Town of La Grange	0	1	0	6	0	10	0	17
Town of Pink Hill	0	0	0	3	0	1	0	4
Pitt County								
Pitt County	25	76	5	9	3	13	5	136
City of Greenville	137	313	41	41	0	38	20	590
Town of Ayden	5	7	3	1	1	6	0	23
Town of Bethel	4	6	1	2	1	2	0	16
Town of Falkland	0	0	0	0	0	1	0	1
Town of Farmville	10	19	5	4	0	0	1	39

SECTION 4: RISK ASSESSMENT

Jurisdiction	Residential	Commercial	Industrial	Government	Agricultural	Religious	Utilities	Total
Town of Fountain	3	0	1	0	0	0	0	4
Town of Grifton	6	10	2	0	0	1	5	24
Town of Grimesland	0	5	0	1	0	0	0	6
Town of Winterville	10	29	2	0	0	5	0	46
Village of Simpson	1	3	0	1	0	1	0	6
Wayne County								
Wayne County	10	73	14	20	4	18	9	148
City of Goldsboro	67	147	8	282	0	30	15	549
Town of Eureka	0	1	0	0	0	1	0	2
Town of Fremont	0	3	0	2	0	1	0	6
Town of Mount Olive	2	12	2	14	0	3	6	39
Town of Pikeville	0	1	0	0	0	0	0	1
Town of Seven Springs	-	-	-	-	-	-	-	-
Village of Walnut Creek	0	1	0	0	0	0	0	1
Region Total	307	883	123	514	16	273	83	2,199

Source: NCEM Risk Management Tool

Note: A dash (-) indicates that no high potential loss facilities were reported in RMT.

In addition to examining CIKR overall, the following critical facilities and assets were examined against known hazard areas, where possible, in this risk assessment. These facilities are those that could severely disrupt emergency operations or response and recovery efforts should they be damaged by a hazard event. Note that these facilities are a subset of the CIKR inventory; critical facility exposure and risk is accounted for in the exposure and vulnerability of CIKR.

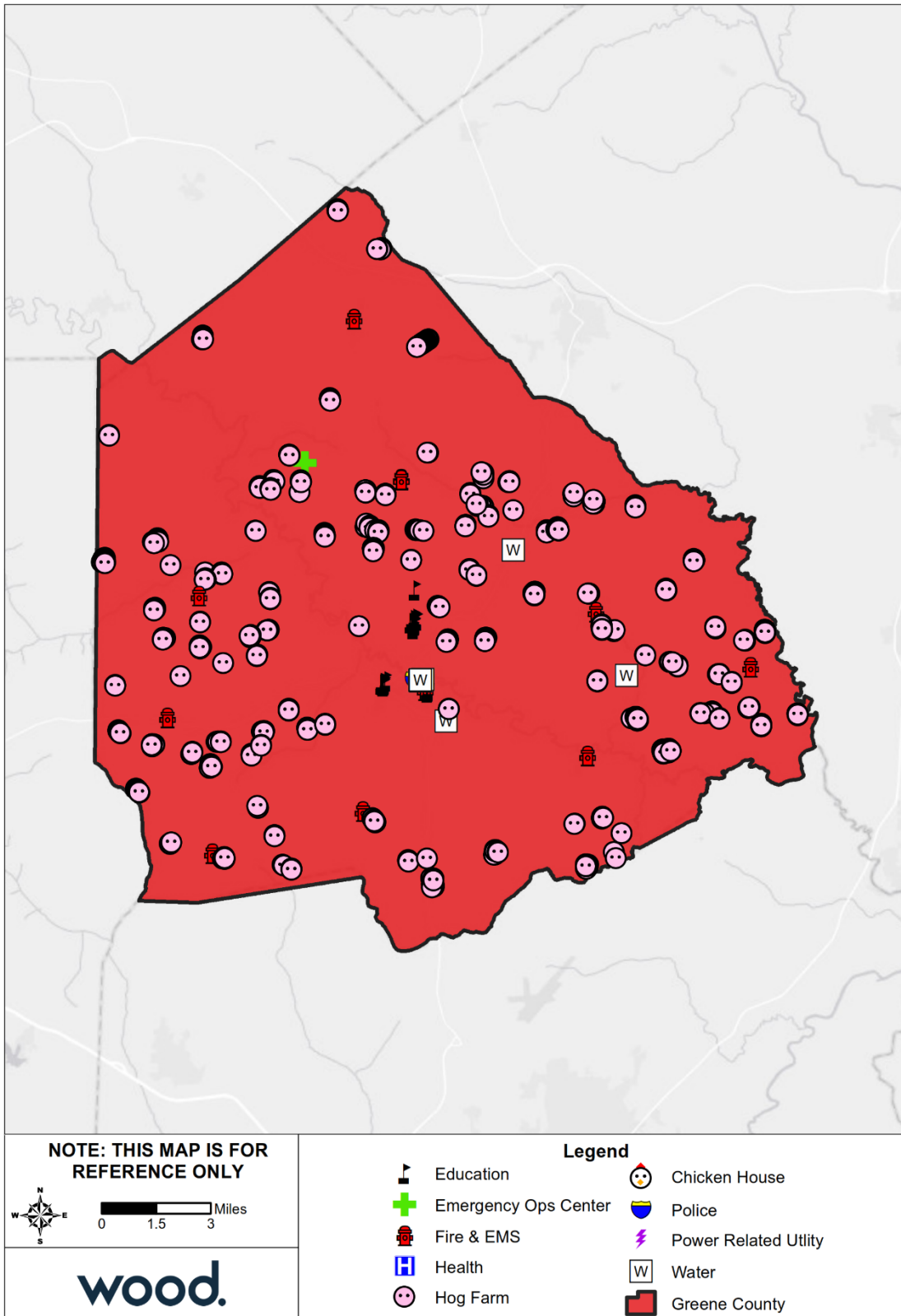
Critical facilities are summarized in Table 4.11 and shown by County in Figure 4.1 through Figure 4.4. No critical facilities data was available in the IRISK database for Wayne County. Critical facilities counts and values are also provided by County in the jurisdictional annexes.

Table 4.11 – Critical Facilities

Critical Facility Type	Building Count	Total Value
Chicken House	2	\$826,599
Community College	28	\$54,044,748
Emergency Operations Center	2	\$277,361
Fire Station	30	\$23,274,857
Hog Farm	1,327	\$209,020,432
Hospital	5	\$35,681,116
Police Station	6	\$7,311,106
Power Plant	6	\$99,999,999
School	118	\$422,649,995
Substation	8	\$30,540,937
Treatment Plant	56	\$3,156,688,997
University	3	\$25,566,631
Total	1,591	\$4,065,882,778

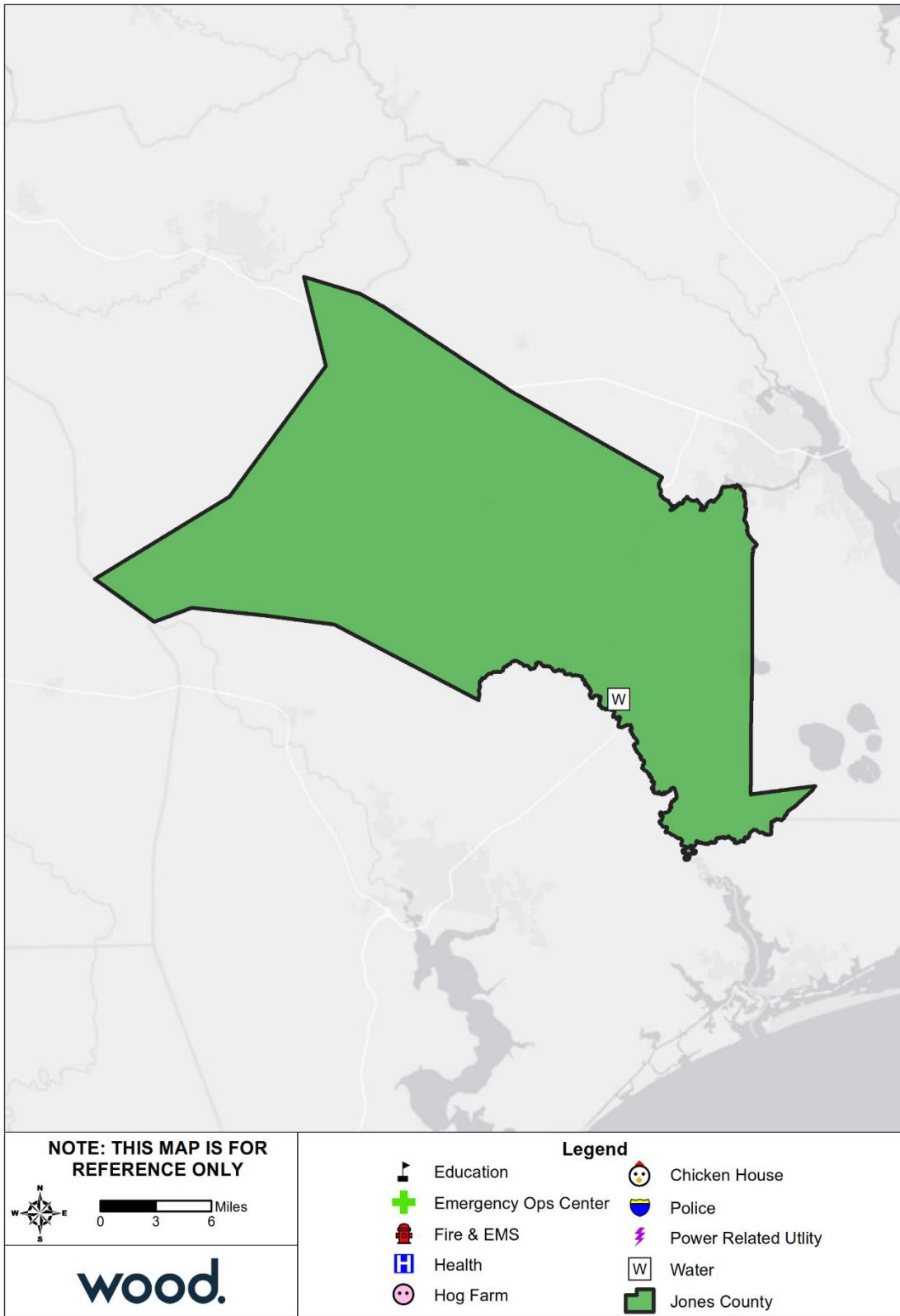
Source: NCEM IRISK Database; GIS analysis

Figure 4.1 – Greene County Critical Facilities



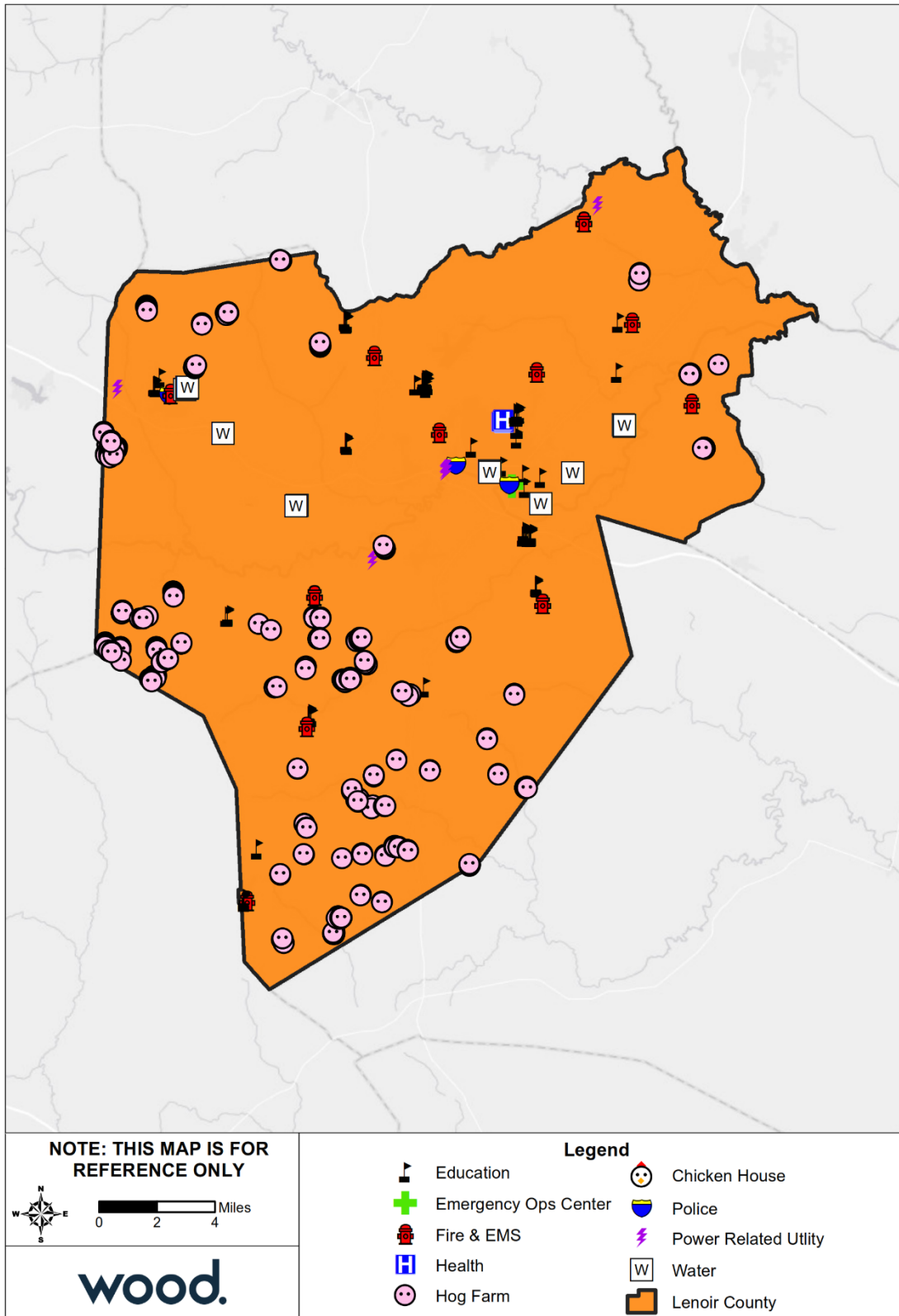
Source: NCEM IRISK Database, GIS Analysis

Figure 4.2 – Jones County Critical Facilities



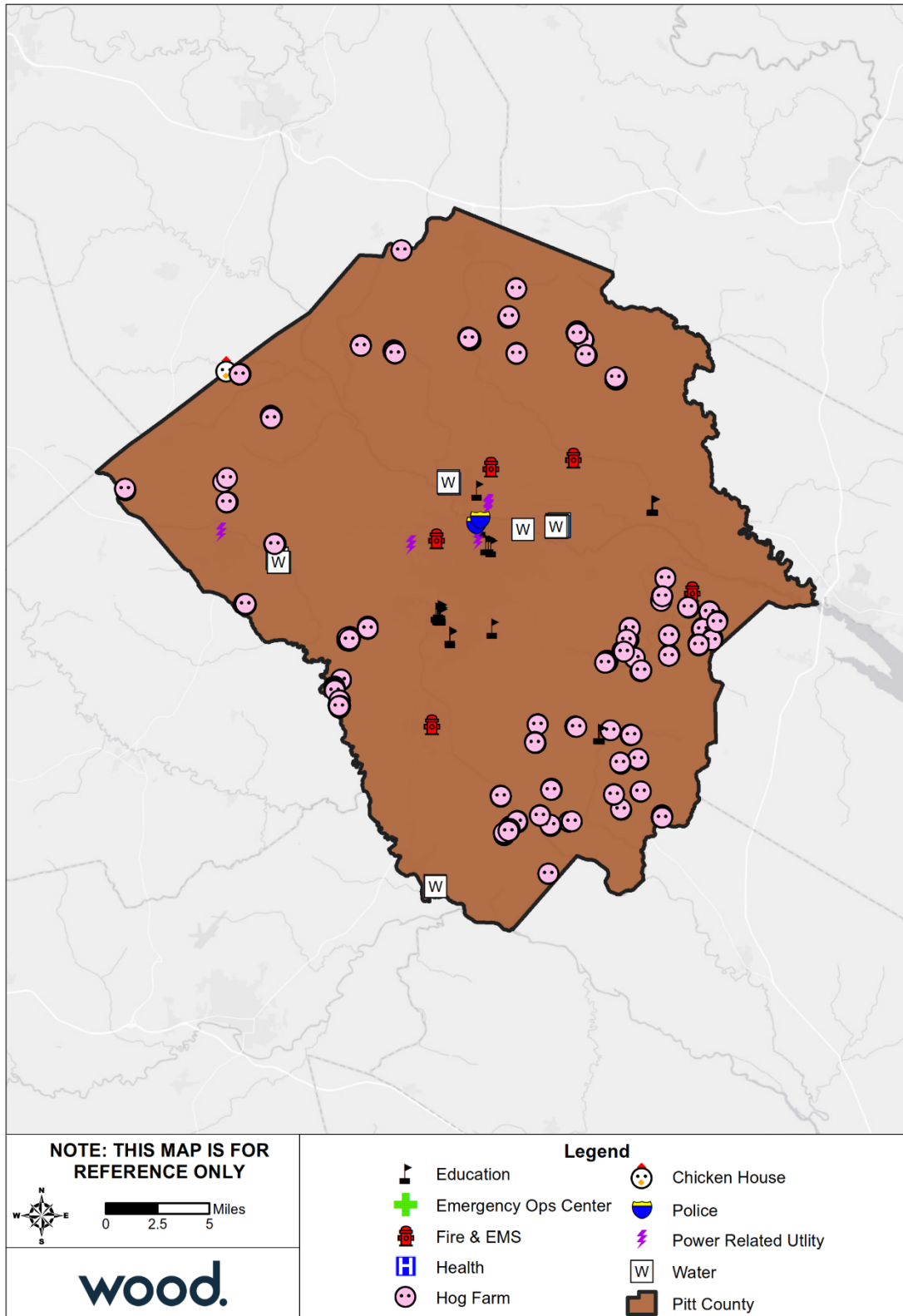
Source: NCEM IRISK Database, GIS Analysis

Figure 4.3 – Lenoir County Critical Facilities



Source: NCEM IRISK Database, GIS Analysis

Figure 4.4 – Pitt County Critical Facilities



Source: NCEM IRISK Database, GIS Analysis

SECTION 4: RISK ASSESSMENT

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 2017 Census of Agriculture. Table 4.12 below summarizes the agricultural exposure in the Region by county.

Table 4.12 – Summary of Agriculture Exposure by County

County	Number of Farms	Acreage in Farms	Proportion of Total Land Area in Farms	Acreage with Crop Insurance	Estimated Market Value of Land & Buildings
Greene County	207	83,322	48.8%	44,907 (53.9%)	\$328,742,000
Jones County	177	65,649	21.8%	31,417 (47.9%)	\$266,134,000
Lenoir County	386	113,708	44.5%	62,922 (55.3%)	\$452,590,000
Pitt County	478	186,412	44.6%	124,356 (66.7%)	\$716,751,000
Wayne County	551	165,345	46.6%	92,725 (56.1%)	\$825,006,000

Source: USDA 2017 Census of Agriculture

4.5 HAZARD PROFILES, ANALYSIS, AND VULNERABILITY

4.5.1 Dam Failure

Hazard Background

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 farm land, 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.

SECTION 4: RISK ASSESSMENT

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.

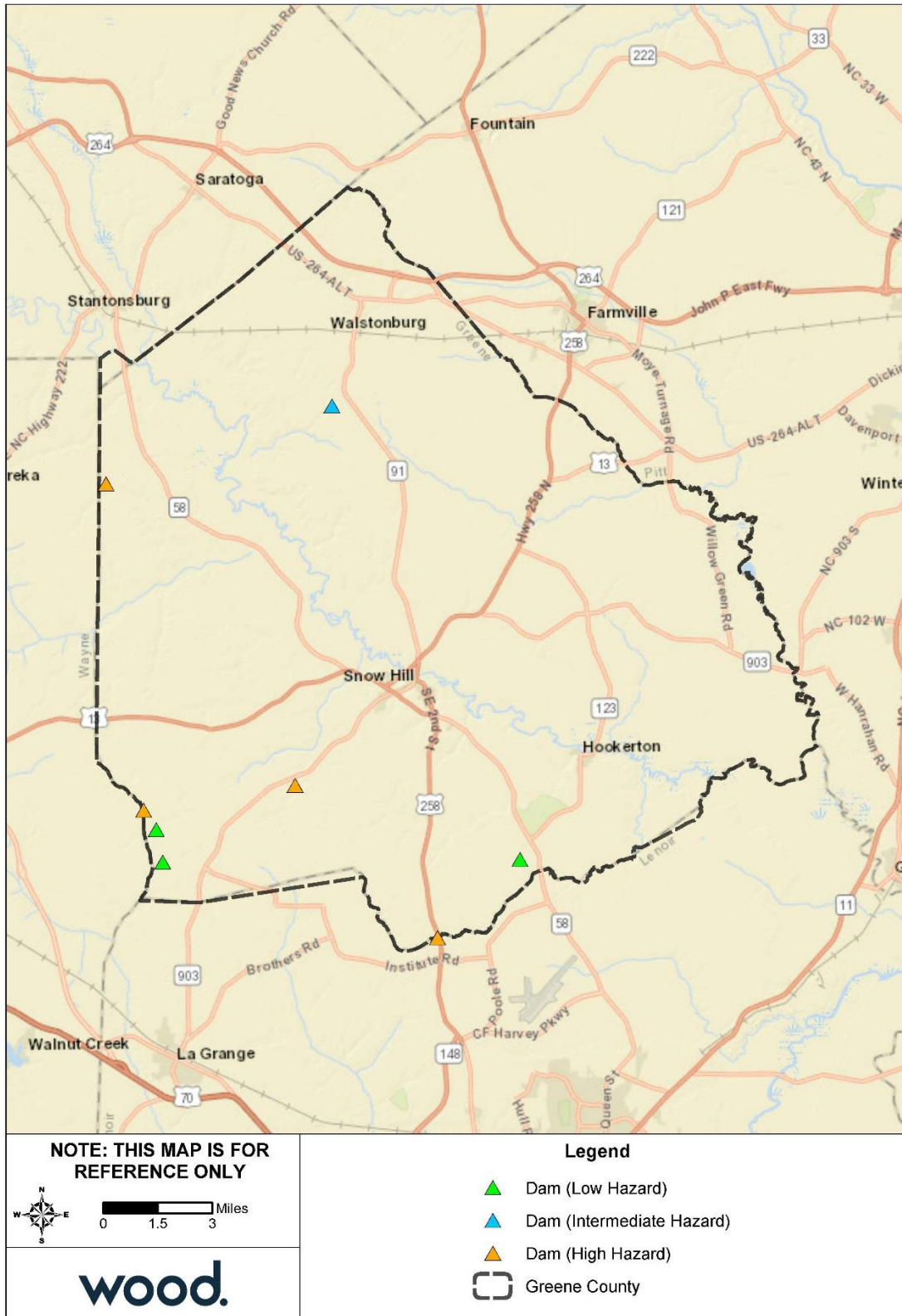
Warning Time: 4 – Less than six hours

Duration: 3 – Less than one week

Location

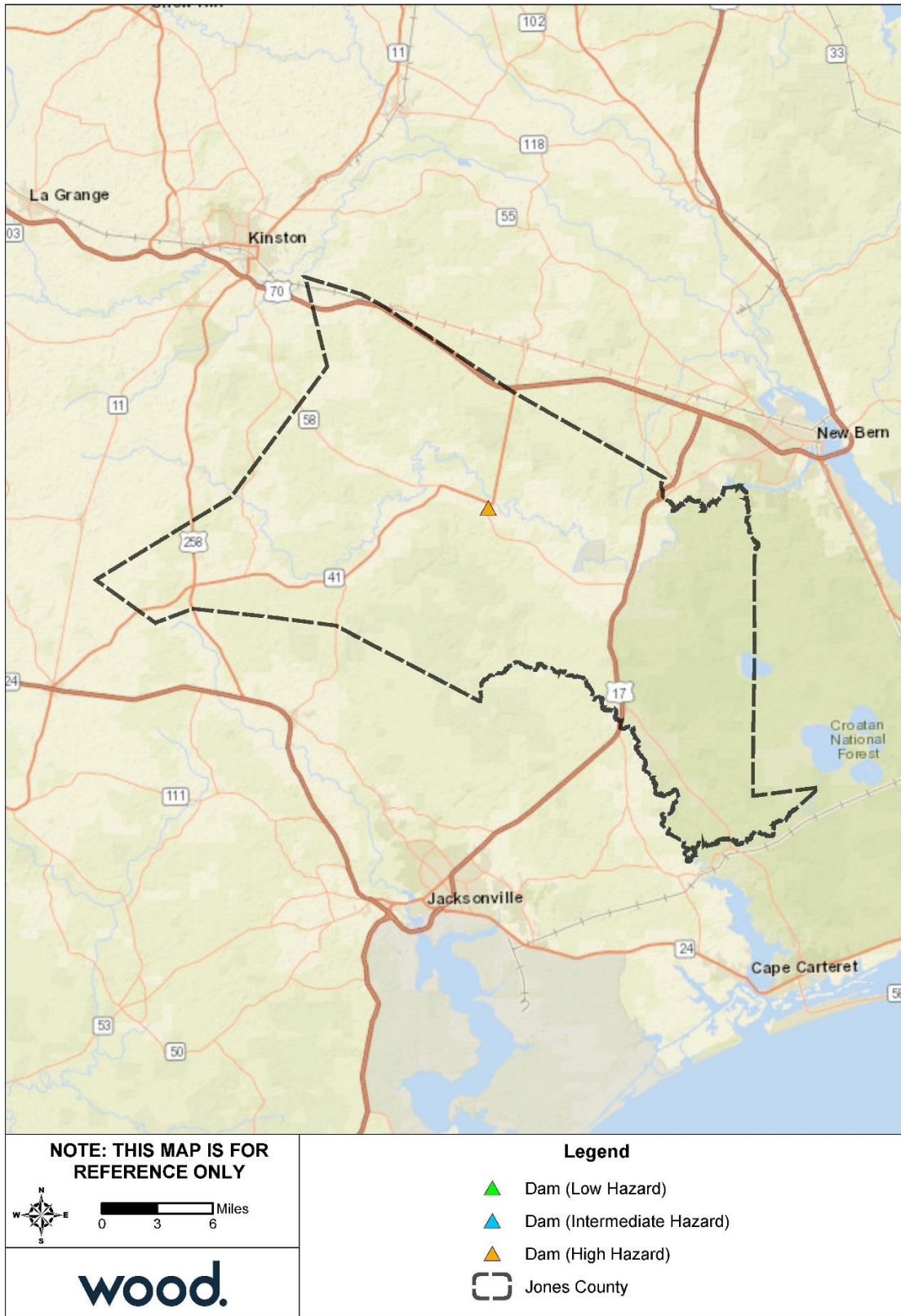
The North Carolina Dam Inventory, maintained by North Carolina Department of Environmental Quality, provides a detailed inventory of all dams in the state. As of July 2018, there are 71 dams in the Neuse River Region, of which 36 are rated low hazard, 6 are rated intermediate hazard, and 29 are rated high hazard. Figure 4.5 through Figure 4.9 show the location of all dams in Greene, Jones, Lenoir, Pitt and Wayne counties. Table 4.13 lists all dams with high hazard potential in the Region.

Figure 4.5 – Dam Locations in Greene County



Source: North Carolina Dam Inventory, July 2018

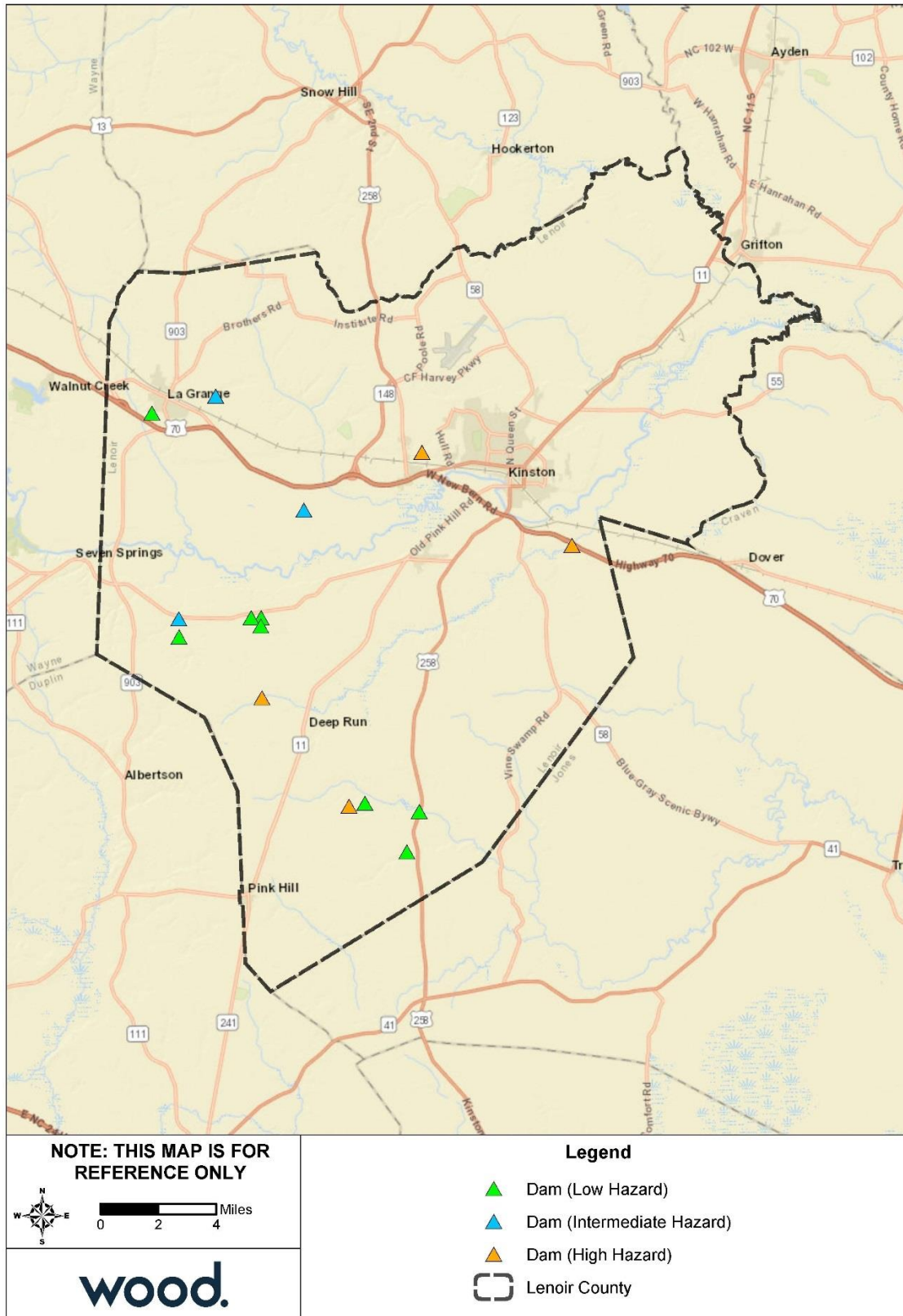
Figure 4.6 – Dam Locations in Jones County



Source: North Carolina Dam Inventory, July 2018

SECTION 4: RISK ASSESSMENT

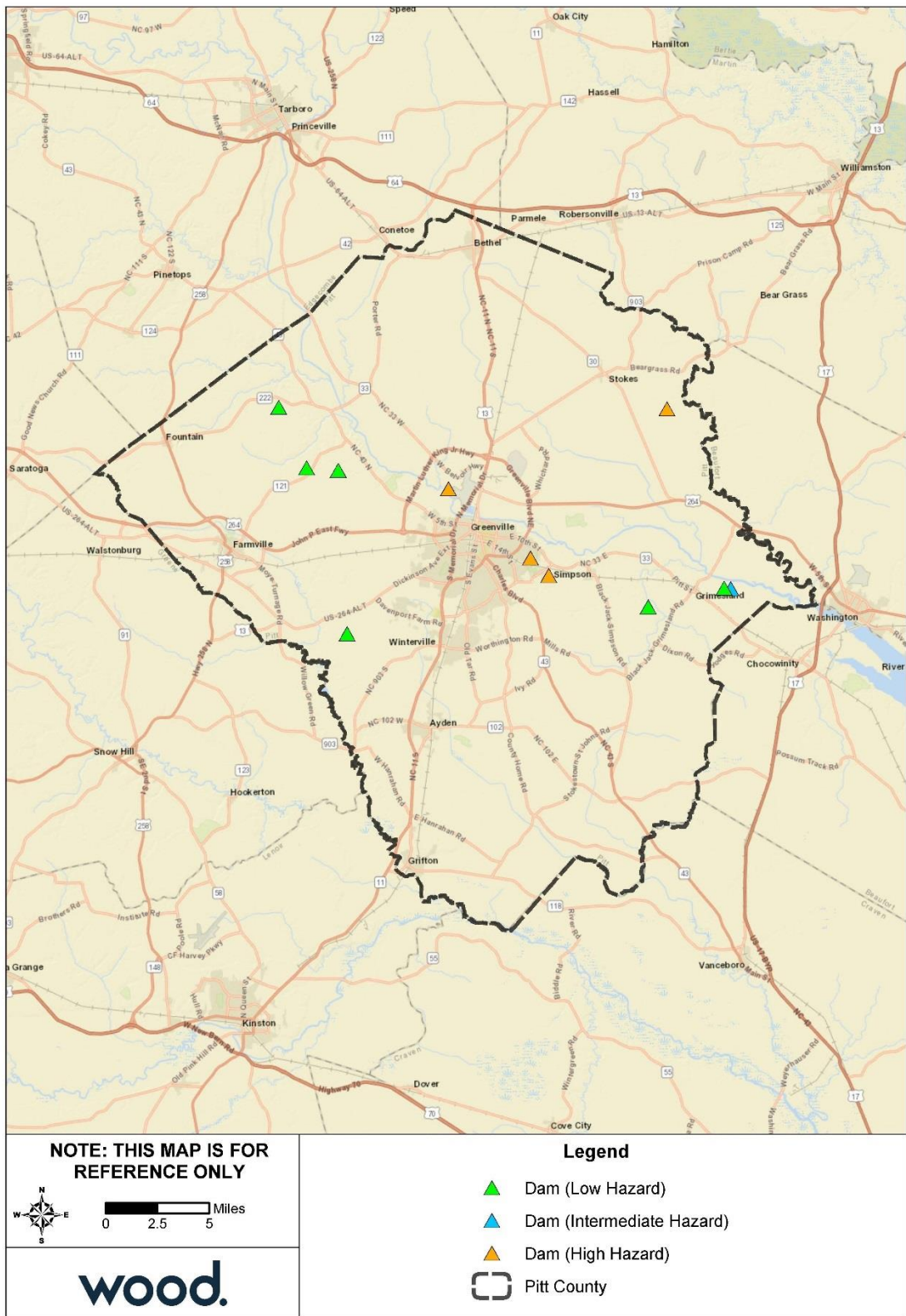
Figure 4.7 – Dam Locations in Lenoir County



Source: North Carolina Dam Inventory, July 2018

SECTION 4: RISK ASSESSMENT

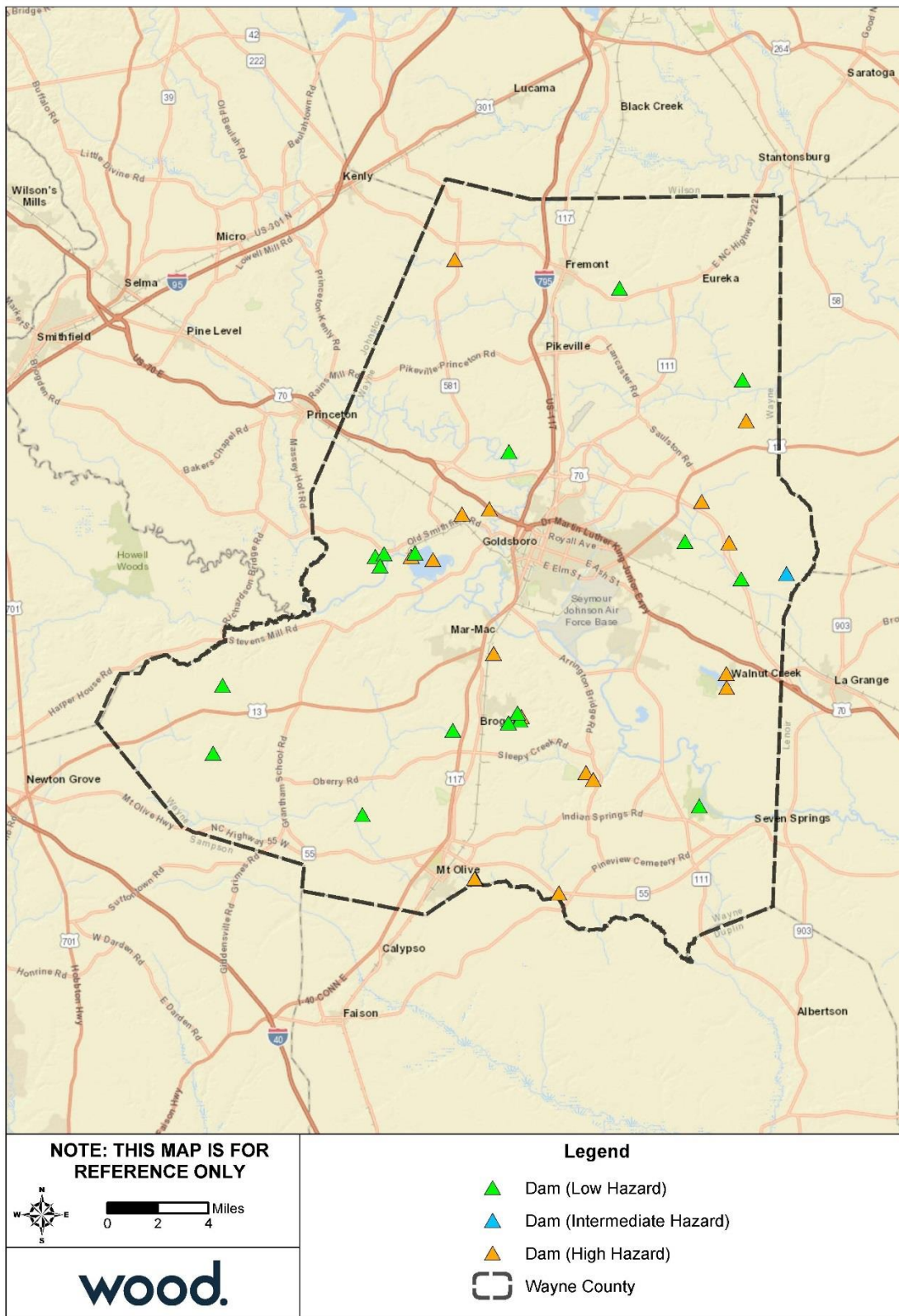
Figure 4.8 – Dam Locations in Pitt County



Source: North Carolina Dam Inventory, July 2018

SECTION 4: RISK ASSESSMENT

Figure 4.9 – Dam Locations in Wayne County



Source: North Carolina Dam Inventory, July 2018

SECTION 4: RISK ASSESSMENT

Table 4.13 – High Hazard Dams in the Neuse River Region

Dam Name	NID ID	Ownership	Max Capacity (Ac-Ft)	Nearest Downstream Location
Greene County				
Grays Millpond Dam	NC00945	Private	158	Grifton
Turnage Millpond Dam	NC00951	Private	120	Snow Hill
Whitley Lake Dam	NC00981	Private	700	La Grange
Audie Murphy Irrigation Pond	NC06134	NR	0	Lindell
Jones County				
Brock Millpond	NC01105	Local Gov	432	Trenton
Lenoir				
Kelly's Pond Dam	NC00946	Private	384	Kinston
Tull Millpond Dam	NC00948	Private	518	Kinston
J.C. Howard Dam	NC05310	Private	30	Deep Run
Hillcrest Lake Dam	NC05313	Private	62	Kinston
Pitt				
Lake Glenwood Dam	NC00898	Private	86	Yankee Hall
Sheppard Millpond Dam	NC00901	Private	907	Washington
Greenville Utilities Commission Dam	NC03696	Utility	184	Greenville
Brook Valley Country Club Dam	NC05368	Unknown	6	Greenville
Wayne				
Spring Lake Dam	NC00936	NR	458	Seven Springs
Tom Harrison Memorial Dam	NC00937	Private	2700	Seven Springs
Wayne County Wildlife Pond Dam	NC00938	Private	900	Snow Hill
Aycock Millpond Dam	NC00940	Private	158	Snow Hill
Sleepy Creek Upper Lake Dam	NC00941	Private	414	Seven Springs
Williams Millpond Dam	NC00942	State	144	Hallsville
H.F. Lee Power Station Cooling Lake Dam	NC00944	Utility	5446	Goldsboro
Ruby Hill Dam	NC00982	Private	900	La Grange
Bass Lake Dam	NC00985	Private	467	La Grange
Robin Lake Estates Dam A	NC01278	Private	125	Seven Springs
Sleepy Creek Lake Lower Dam	NC01282	Private	293	Seven Springs
H.F. Lee Active Ash Pond	NC04668	Utility	2720	Goldsboro
Cogdell Pond Dam	NC04869	Private	22	Goldsboro
Old Crescent Lake Dam	NC04870	Private	47	Goldsboro
Mt. Olive Waste Water Treatment Plant #2	NC05834	Local Gov	0	NR
Ruth Bryan Dam	NC06067	NR	52	NR

Source: North Carolina Dam Inventory; NR = Not Reported

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.

SECTION 4: RISK ASSESSMENT

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 4.14 – Dam Hazard Classifications

Hazard Classification	Description	Quantitative Guidelines
Low	Interruption of road service, low volume roads	Less than 25 vehicles per day
	Economic damage	Less than \$30,000
Intermediate	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
High	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

Impact: 2 – Limited

Spatial Extent: 1 – Negligible

Historical Occurrences

No historical instances of dam failure were reported in the region's previous hazard mitigation plan. The most recent State of North Carolina Hazard Mitigation Plan notes dam failures in Lenoir and Wayne counties due to Hurricane Matthew in 2016.

Probability of Future Occurrence

Given the significant presence of high hazard dams in across the Neuse River Region, failure of a dam is possible. Records show that counties in the region have experienced dam failure in the recent past, however historical events alone do not provide an adequate estimate of potential future occurrence. With heavy rain events becoming more frequent and intense, conditions conducive to dam failure may occur more frequently as well. The communities downstream from high hazard dams noted in Table 4.13 have an especially high level of risk to a dam failure.

Neuse River

Regional Hazard Mitigation Plan
2020

SECTION 4: RISK ASSESSMENT

Probability: 2 – Possible

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.

The Neuse River Region does have a history of dam failure related to the impacts of hurricanes. Refer to the Hurricane and Tropical Storm section of this chapter for more information regarding the climate change impacts to hurricanes. It can be surmised that with hurricanes becoming potentially more devastating due to changing climate conditions, impacts on dams throughout the region and the risk of failures may increase as well.

Vulnerability Assessment

Methodologies and Assumptions

Dam inundation areas were not available for the identified dams; therefore, a quantitative vulnerability assessment could not be completed. Vulnerability discussed below is based on anecdotal evidence and theoretical understanding of potential risks.

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.

Property

Vulnerability of the built environment includes damage to the dam itself and any man-made feature located within the inundation area caused by the dam 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.

Environment

Aquatic species within the lake will either be displaced or destroyed. The velocity of the flood wave will likely destroy riparian and instream vegetation and destroy wetland function. The flood wave will like

Neuse River

SECTION 4: RISK ASSESSMENT

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 4.15 summarizes the potential negative consequences of dam failure.

Table 4.15 – Consequence Analysis – Dam 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 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
Greene County	2	3	1	4	3	2.4	M
Hookerton	1	2	1	4	3	1.8	L
Snow Hill	2	3	1	4	3	2.4	M
Walstonburg	1	2	1	4	3	1.8	L
Jones County	2	3	1	4	3	2.4	M
Maysville	1	2	1	4	3	1.8	L
Pollocksville	1	2	1	4	3	1.8	L
Trenton	2	3	1	4	3	2.4	M
Lenoir County	2	3	1	4	3	2.4	M
Kinston	2	3	1	4	3	2.4	M
La Grange	2	3	1	4	3	2.4	M
Pink Hill	1	2	1	4	3	1.8	L
Pitt County	2	3	1	4	3	2.4	M
Ayden	1	2	1	4	3	1.8	L

SECTION 4: RISK ASSESSMENT

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Bethel	1	2	1	4	3	1.8	L
Falkland	1	2	1	4	3	1.8	L
Farmville	1	2	1	4	3	1.8	L
Fountain	1	2	1	4	3	1.8	L
Greenville	2	3	1	4	3	2.4	M
Grifton	2	3	1	4	3	2.4	M
Grimesland	1	2	1	4	3	1.8	L
Simpson	1	2	1	4	3	1.8	L
Winterville	1	2	1	4	3	1.8	L
Wayne County	2	3	1	4	3	2.4	M
Eureka	1	2	1	4	3	1.8	L
Fremont	1	2	1	4	3	1.8	L
Goldsboro	2	3	1	4	3	2.4	M
Mount Olive	1	2	1	4	3	1.8	L
Pikeville	1	2	1	4	3	1.8	L
Seven Springs	2	3	1	4	3	2.4	M
Walnut Creek	1	2	1	4	3	1.8	L

4.5.2 Drought

Hazard Background

Drought is a deficiency in precipitation over an extended period. It is a normal, recurrent feature of climate that occurs in virtually all climate zones. The duration of a drought varies widely. There are cases when drought develops relatively quickly and lasts a very short period, exacerbated by extreme heat and/or wind, and there are other cases when drought spans multiple years, or even decades. Studying the paleoclimate record is often helpful in identifying when long-lasting droughts have occurred. Common types of drought are detailed below in Table 4.16.

Table 4.16 – Drought Classifications

Type	Details
Meteorological Drought	Meteorological Drought is based on the degree of dryness (rainfall deficit) and the length of the dry period.
Agricultural Drought	Agricultural Drought is based on the impacts to agriculture by factors such as rainfall deficits, soil water deficits, reduced ground water, or reservoir levels needed for irrigation.
Hydrological Drought	Hydrological Drought is based on the impact of rainfall deficits on the water supply such as stream flow, reservoir and lake levels, and ground water table decline.
Socioeconomic Drought	Socioeconomic drought is based on the impact of drought conditions (meteorological, agricultural, or hydrological drought) on supply and demand of some economic goods. Socioeconomic drought occurs when the demand for an economic good exceeds supply as a result of a weather-related deficit in water supply.

The wide variety of disciplines affected by drought, its diverse geographical and temporal distribution, and the many scales drought operates on make it difficult to develop both a definition to describe drought and an index to measure it. Many quantitative measures of drought have been developed in the United States, depending on the discipline affected, the region being considered, and the particular application. Several indices developed by Wayne Palmer, as well as the Standardized Precipitation Index, are useful for describing the many scales of drought.

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.

SECTION 4: RISK ASSESSMENT

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

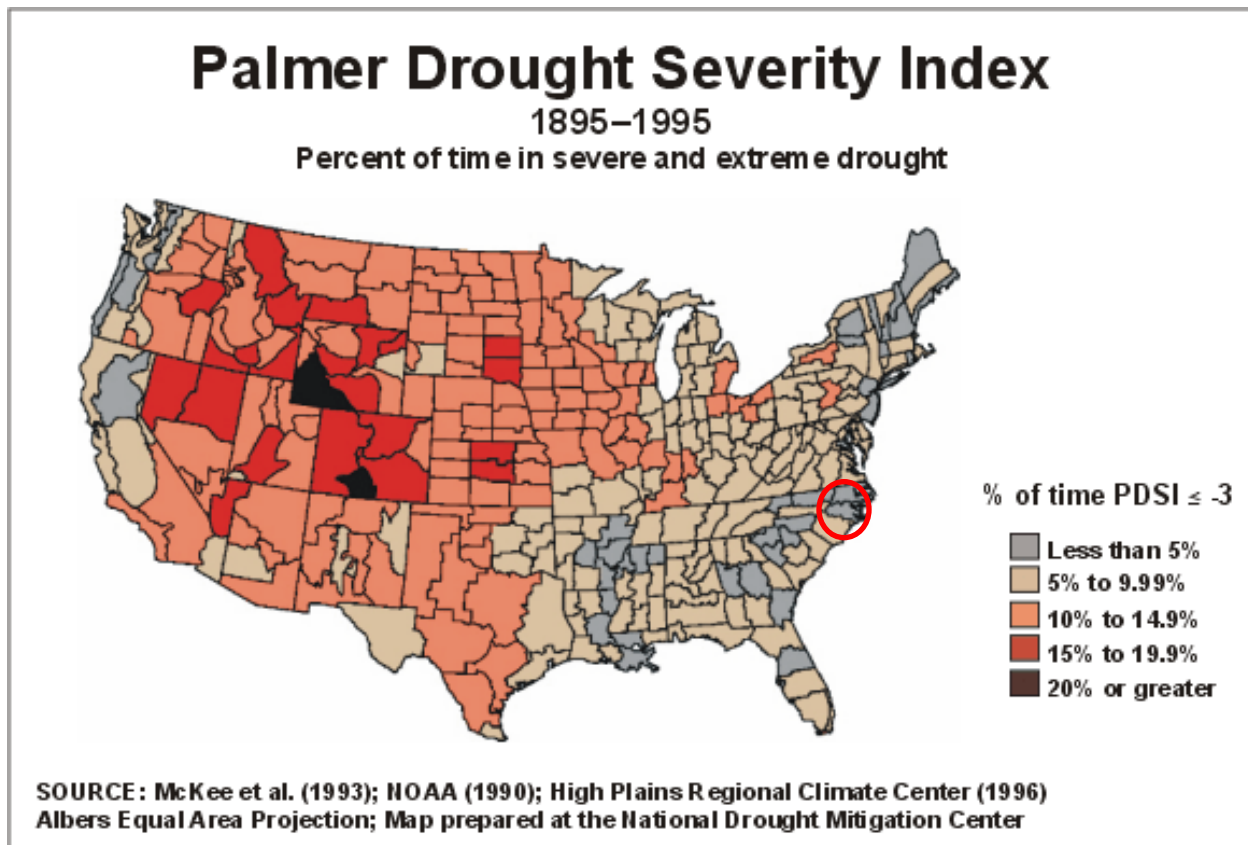
Duration: 4 – More than one week

Location

Typically, the National Weather Service looks at drought and extreme heat as episodes that impact a widespread forecast “zone,” and therefore it is not common to pinpoint a specific location within a planning area that is more susceptible to these hazards than others. From this viewpoint, each county is considered uniformly at risk to drought and extreme heat. However, the most significant financial losses are likely to occur in areas that are primarily agricultural.

Figure 4.10 below shows the Palmer Drought Severity Index (PDSI) summary map for the United States from 1895 to 1995. PDSI drought classifications are based on observed drought conditions and range from -0.5 (incipient dry spell) to -4.0 (extreme drought). As can be seen, the Eastern United States has historically not seen as many significant long-term droughts as the Central and Western regions of the country. Specifically, the Neuse River Region was in drought less than 5% of the identified timeframe.

Figure 4.10 – PDSI, 1895-1995 Percent of Time in Severe and Extreme Drought



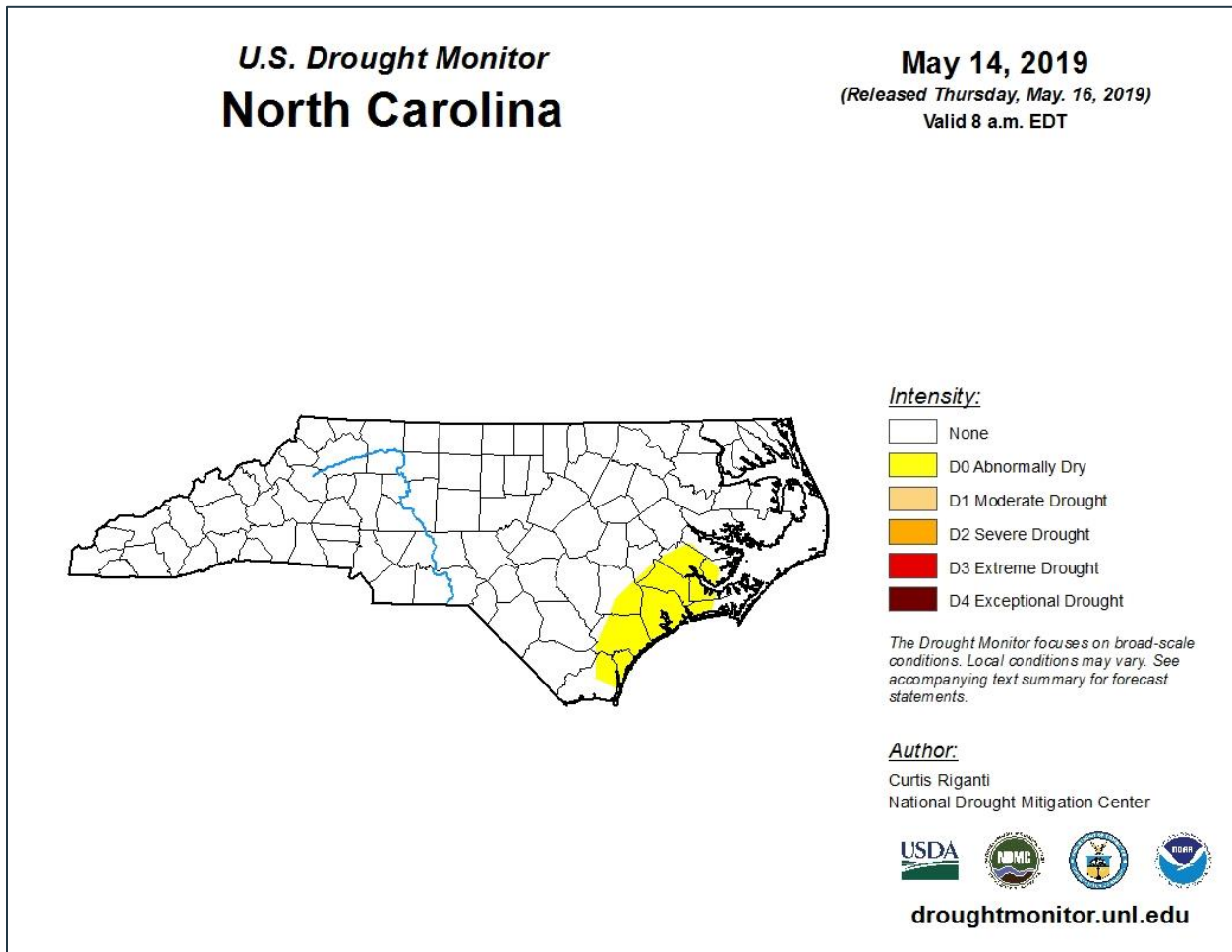
Source: United States Geological Survey; Neuse River Region noted by red circle

Figure 4.11 notes the U.S. Drought Monitor’s drought ratings for North Carolina as of May 14, 2019; as of that date, both Jones and Lenoir County are experiencing abnormally dry conditions related to drought.

Neuse River

Regional Hazard Mitigation Plan
2020

Figure 4.11 – US Drought Monitor for Week of May 14, 2019



Source: U.S. Drought Monitor

Extent

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.

SECTION 4: RISK ASSESSMENT

Figure 4.12 – US 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"> Going into drought: <ul style="list-style-type: none"> short-term dryness slowing planting, growth of crops or pastures Coming out of drought: <ul style="list-style-type: none"> some lingering water deficits pastures or crops not fully recovered 	-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"> Some damage to crops, pastures Streams, reservoirs, or wells low, some water shortages developing or imminent Voluntary water-use restrictions requested 	-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"> Crop or pasture losses likely Water shortages common Water restrictions imposed 	-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"> Major crop/pasture losses Widespread water shortages or restrictions 	-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"> Exceptional and widespread crop/pasture losses Shortages of water in reservoirs, streams, and wells creating water emergencies 	-5.0 or less	0 to 2	0 to 2	-2.0 or less	0 to 2

Source: US Drought Monitor

Though most droughts experienced in the region fall into the D0 (abnormal) or D1 (moderate) category, the counties in the region are susceptible to any of these levels of drought.

Impact: 2 – Limited

Spatial Extent: 4 – Large

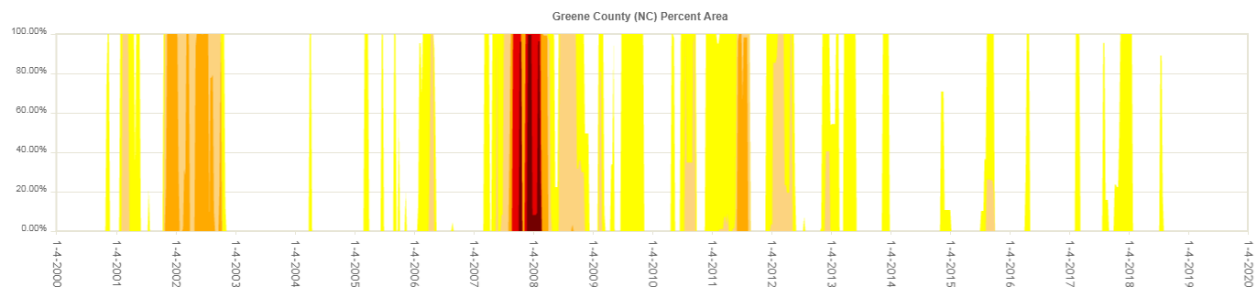
Historical Occurrences

Figure 4.13 through Figure 4.17 show historical periods where each county was considered in some level of drought condition. The color key shown in Figure 4.12 indicates the intensity of the drought. Per these records, all counties in the Region experienced extreme and exceptional drought conditions in 2007 and 2008.

Greene County

Between 2000 and 2018, Greene County was in some level of drought 33.3% of the time. The County recorded 14 weeks in “extreme” drought or worse during this timeframe.

Figure 4.13 – US Drought Monitor Historical Trends – Greene County 2000-2018



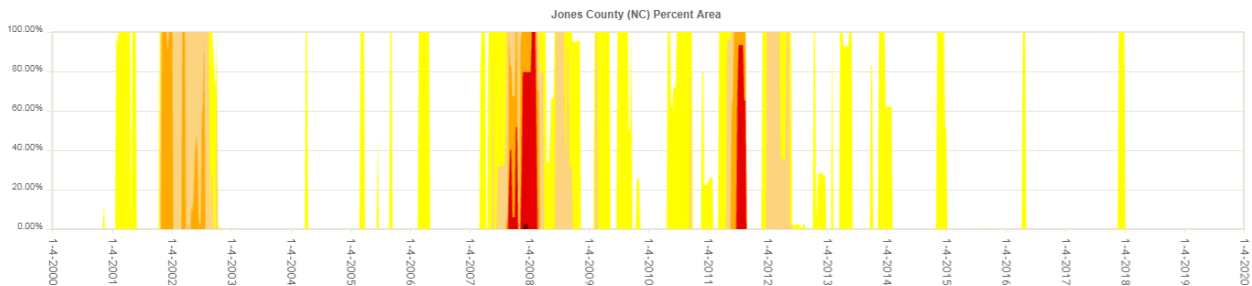
Source: U.S. Drought Monitor

SECTION 4: RISK ASSESSMENT

Jones County

Between 2000 and 2018, Jones County was in some level of drought 38.8% of the time. The County recorded four weeks in “extreme” drought or worse during this timeframe.

Figure 4.14 – US Drought Monitor Historical Trends – Jones County 2000-2018

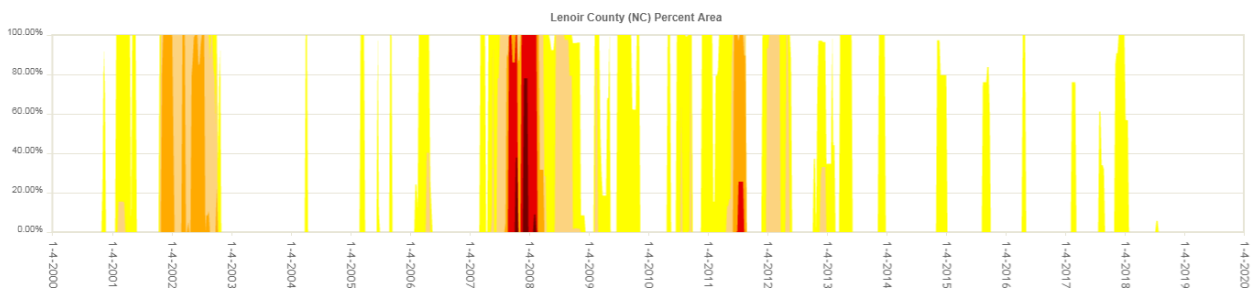


Source: U.S. Drought Monitor

Lenoir County

Between 2000 and 2018, Lenoir County was in some level of drought 40.7% of the time. The County recorded eight weeks in “extreme” drought or worse during this timeframe.

Figure 4.15 – US Drought Monitor Historical Trends – Lenoir County 2000-2018

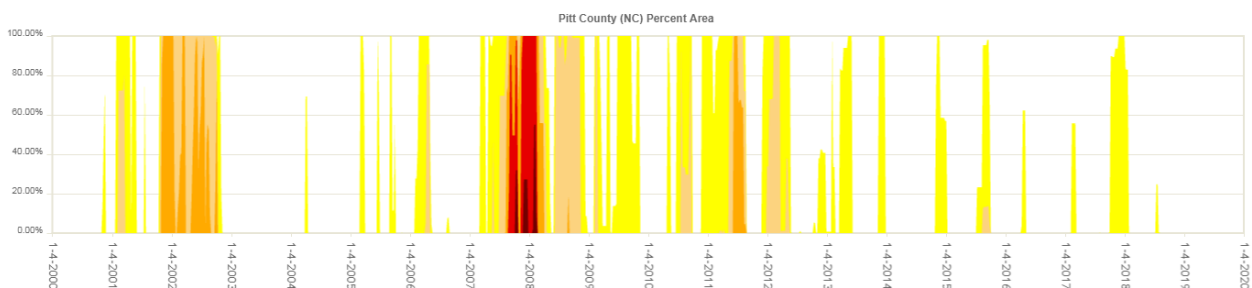


Source: U.S. Drought Monitor

Pitt County

Between 2000 and 2018, Pitt County was in some level of drought 42.5% of the time. The County recorded ten weeks in “extreme” drought or worse during this timeframe.

Figure 4.16 – US Drought Monitor Historical Trends – Pitt County 2000-2019



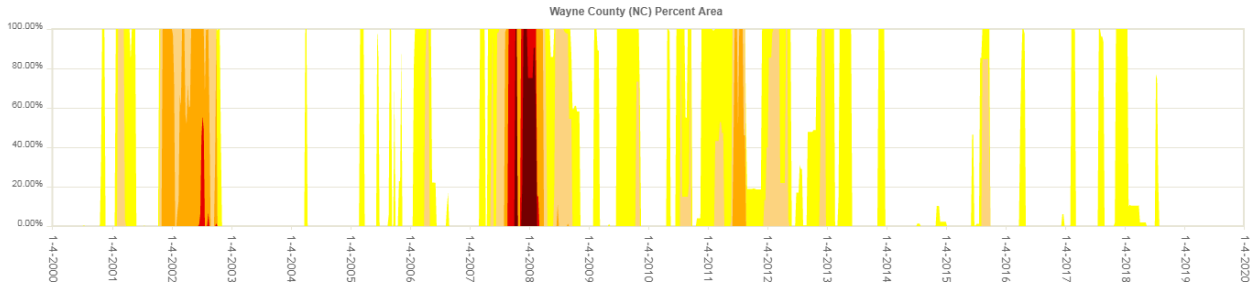
Source: U.S. Drought Monitor

SECTION 4: RISK ASSESSMENT

Wayne County

Between 2000 and 2018, Wayne County was in some level of drought 48.3% of the time. The County recorded 15 weeks in “extreme” drought or worse during this timeframe.

Figure 4.17 – US Drought Monitor Historical Trends – Wayne County 2000-2019



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 National Drought Mitigation Center’s Drought Impact Reporter, during the 10-year period from January 2009 through December 2018, 624 drought impacts were noted for the State of North Carolina, of which 289 were reported to affect the counties in the Neuse River Region. Table 4.17 summarizes the number of 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, and that the same impacts were listed for every county in the region, which speaks to the regional nature of drought.

Table 4.17 – Drought Impacts Reported for Neuse River Region, January 2009 through December 2018

Category	Greene	Jones	Lenoir	Pitt	Wayne
Agriculture	97	97	97	97	97
Business and Industry	8	8	8	8	8
Energy	16	16	16	16	16
Fire	61	61	61	61	61
Plants & Wildlife	129	129	129	129	129
Relief, Response & Restrictions	56	56	56	56	56
Society and Public Health	27	27	27	27	27
Tourism and Recreation	15	15	15	15	15
Water Supply & Quality	114	114	114	114	114

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

Probability of Future Occurrence

Over the 988 week period between January 1, 2000 and December 31, 2018, the Region spent an average of 416 weeks in some level of drought condition, ranging from abnormally dry to exceptional drought. This equates to a 42.1% chance of drought in any given week somewhere across the Neuse River Region. Table 4.18 shows historical data by county.

Neuse River

Table 4.18 – Historical Weeks in Drought by County, 2000-2018

County	Weeks in Any Drought	Percentage of Weeks in Drought
Greene	398	40.3%
Jones	383	38.8%
Lenoir	402	40.7%
Pitt	420	42.5%
Wayne	477	48.3%

Source: US Drought Monitor

Probability: 3 – Likely

Climate Change

The Fourth National Climate Assessment reports that average and extreme temperatures are increasing across the country and average annual precipitation is decreasing in the Southeast. Heavy precipitation events are becoming more frequent, meaning that there will likely be an increase in the average number of consecutive dry days. As temperature is projected to continue rising, evaporation rates are expected to increase, resulting in decreased surface soil moisture levels. Together, these factors suggest that drought will increase in intensity and duration in the Southeast.

Vulnerability Assessment

Methodologies and Assumptions

Vulnerability to drought in the counties in the Neuse River Region is based on historical occurrences of drought in the planning area and generalized concerns regarding potential drought consequences. Agricultural vulnerability was estimated using data from the 2012 Census of Agriculture and a review of past claims related to drought.

People

Drought can affect people’s physical and mental health. For those economically dependent on a reliable water supply, drought may cause anxiety or depression about economic losses, reduced incomes, and other employment impacts. Conflicts may arise over water shortages. People may be forced to pay more for water, food, and utilities affected by increased water costs.

Drought may also cause health problems due to poorer water quality from lower water levels. If accompanied by extreme heat, drought can also result in higher incidents of heat stroke and even loss of human life.

Property

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 the 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 2007-2016, the sum of claims paid for crop damage as a result of drought in the counties of the Neuse River Region was \$112,260,939.90, or an average of \$11,226,093.99 in losses per year. Table 4.19 summarizes the regional crop losses due to drought reported in the RMA system.

Table 4.19 – Crop Losses Resulting from Drought, 2007-2016

Year	Determined Acres	Indemnity Amount
2007	84,768.59	\$12,054,324

SECTION 4: RISK ASSESSMENT

Year	Determined Acres	Indemnity Amount
2008	133,359.93	\$30,284,312
2009	22,887.46	\$3,630,189
2010	140,327.04	\$21,722,100
2011	90,979.30	\$28,282,189
2012	12,291.56	\$1,965,295
2013	715.81	\$77,552
2014	1,508.87	\$282,418
2015	34,217.76	\$7,983,161.47
2016	14,492.21	\$5,979,399.44
Total	535,548.53	\$112,260,939.9

Source: USDA Risk Management Agency

Table 4.20 summarizes county-specific data on indemnity amounts, as well as average payout amounts per year per county. Lenoir County by far suffered the greatest impacts agriculturally from drought, with almost \$31 million in payouts over the 10-year timespan.

Table 4.20 – County-Specific Total Crop Losses Resulting from Drought, 2007-2016

County	Determined Acres	Indemnity Amount	Average Annual Indemnity
Greene	70,418.7	\$15,126,520.89	\$1,512,652.09
Jones	67,407.0	\$16,290,495.79	\$1,629,049.50
Lenoir	121,330.6	\$30,839,875.44	\$3,083,987.54
Pitt	129,481.8	\$22,594,983.53	\$2,259,498.35
Wayne	146,909.5	\$27,409,064.26	\$2,740,906.42

Source: USDA Risk Management Agency

Environment

Plants and animals depend on water, just as people do. Drought can shrink food supplies and damage habitats. Sometimes this damage is only temporary, and other times it is irreversible. Drought can also impact water quality, as shrinking surface water bodies experience higher pollutant and algal concentrations but have less capacity to attenuate those pollutants due to decreased volume.

Drought conditions can also provide a substantial increase in wildfire risk. As plants and trees wither and die from a lack of precipitation, increased insect infestations, and diseases—all of which are associated with drought—they become fuel for wildfires. Long periods of drought can equate to more wildfires and more intense wildfires, which affect the economy, the environment, and society in many ways such as by destroying neighborhoods, crops, and habitats. If climate change projections for long-term drought paired with intense rain events are accurate, these conditions can also increase risk of flash flooding.

Specific to the Neuse River Region, the National Drought Mitigation Center listed impacts including water conservation, increased fire risk, and wildlife and agriculture life cycle impacts occurring between January 2009 and December 2018.

Consequence Analysis

Table 4.21 summarizes the potential negative consequences of droughts in the Neuse River Region.

SECTION 4: RISK ASSESSMENT

Table 4.21 – Consequence Analysis - Drought

Category	Consequences
Public	Can cause anxiety or depression about economic losses, conflicts over water shortages, reduced incomes, fewer recreational activities, higher incidents of heat stroke, and fatality.
Responders	Impacts to responders are unlikely. Exceptional drought conditions may impact the amount of water immediately available to respond to wildfires.
Continuity of Operations (including Continued Delivery of Services)	Drought would have minimal impacts on continuity of operations due to the relatively long warning time that would allow for plans to be made to maintain continuity of operations.
Property, Facilities and Infrastructure	Drought has the potential to affect water supply for residential, commercial, institutional, industrial, and government-owned areas. Drought can reduce water supply in wells and reservoirs. Utilities may be forced to increase rates.
Environment	Environmental impacts include strain on local plant and wildlife; increased probability of erosion and wildfire.
Economic Condition of the Jurisdiction	Farmers may face crop losses or increased livestock costs. Businesses that depend on farming may experience secondary impacts. Extreme drought has the potential to impact local businesses in landscaping, recreation and tourism, and public utilities.
Public Confidence in the Jurisdiction’s Governance	When drought conditions persist with no relief, local or State governments must often institute water restrictions, which may impact 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. Given the significant presence of agriculture across the entire region, the magnitude of impacts was considered constant across all jurisdictions.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Greene County	3	2	4	1	4	2.8	H
Hookerton	3	2	4	1	4	2.8	H
Snow Hill	3	2	4	1	4	2.8	H
Walstonburg	3	2	4	1	4	2.8	H
Jones County	3	2	4	1	4	2.8	H
Maysville	3	2	4	1	4	2.8	H
Pollocksville	3	2	4	1	4	2.8	H
Trenton	3	2	4	1	4	2.8	H
Lenoir County	3	2	4	1	4	2.8	H
Kinston	3	2	4	1	4	2.8	H
La Grange	3	2	4	1	4	2.8	H
Pink Hill	3	2	4	1	4	2.8	H
Pitt County	3	2	4	1	4	2.8	H
Ayden	3	2	4	1	4	2.8	H
Bethel	3	2	4	1	4	2.8	H
Falkland	3	2	4	1	4	2.8	H
Farmville	3	2	4	1	4	2.8	H
Fountain	3	2	4	1	4	2.8	H
Greenville	3	2	4	1	4	2.8	H
Grifton	3	2	4	1	4	2.8	H

SECTION 4: RISK ASSESSMENT

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Grimesland	3	2	4	1	4	2.8	H
Simpson	3	2	4	1	4	2.8	H
Winterville	3	2	4	1	4	2.8	H
Wayne County	3	2	4	1	4	2.8	H
Eureka	3	2	4	1	4	2.8	H
Fremont	3	2	4	1	4	2.8	H
Goldsboro	3	2	4	1	4	2.8	H
Mount Olive	3	2	4	1	4	2.8	H
Pikeville	3	2	4	1	4	2.8	H
Seven Springs	3	2	4	1	4	2.8	H
Walnut Creek	3	2	4	1	4	2.8	H

4.5.3 Earthquake

Hazard Background

An earthquake is a movement or shaking of the ground. Most earthquakes are caused by the release of stresses accumulated as a result of the rupture of rocks along opposing fault planes in the Earth's outer crust. These fault planes are typically found along borders of the Earth's 10 tectonic plates. The areas of greatest tectonic instability occur at the perimeters of the slowly moving plates, as these locations are subjected to the greatest strains from plates traveling in opposite directions and at different speeds. Deformation along plate boundaries causes strain in the rock and the consequent buildup of stored energy. When the built-up stress exceeds the rocks' strength a rupture occurs. The rock on both sides of the fracture is snapped, releasing the stored energy and producing seismic waves, generating an earthquake.

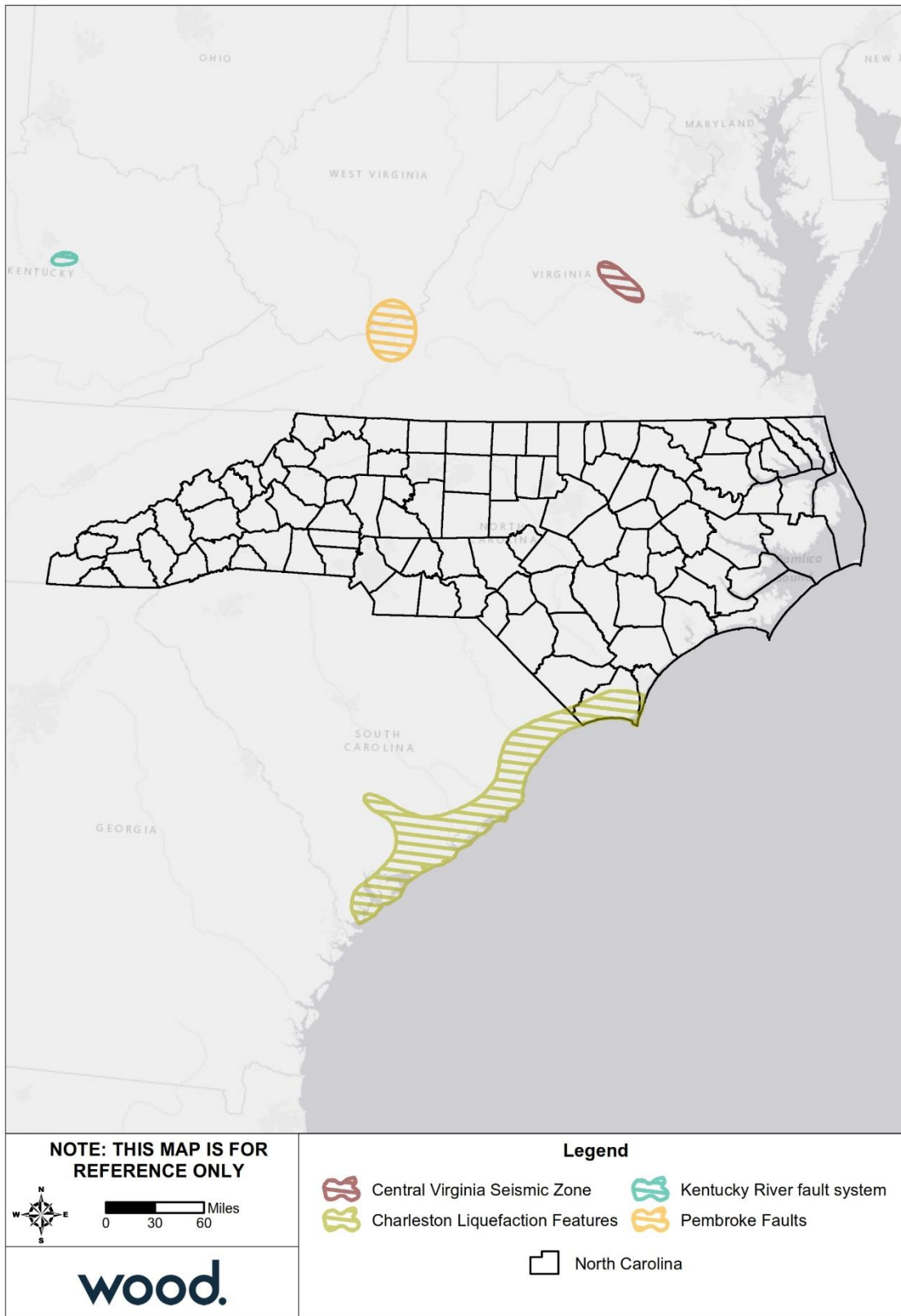
Warning Time: 4 – Less than 6 hours

Duration: 1 – Less than 6 hours

Location

Figure 4.18 reflects the Quaternary fault lines that present an earthquake hazard for the planning area based on data from the USGS Earthquake Hazards Program.

Figure 4.18 – US Quaternary Faults



Source: USGS Earthquake Hazards Program

SECTION 4: RISK ASSESSMENT

All of North Carolina is subject to earthquakes, 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.

Extent

Earthquakes are measured in terms of their magnitude and 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 4.22. 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 4.23 shows descriptions for levels of earthquake intensity on the MMI scale compared to the Richter scale. Seismic shaking is typically the greatest cause of losses to structures during earthquakes.

Table 4.22 – Richter Scale

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

Source: FEMA

Table 4.23 – Comparison of Richter Scale and Modified Mercalli Intensity (MMI) Scale

MMI	Richter Scale	Felt Intensity
I	0 – 1.9	Not felt. Marginal and long period effects of large earthquakes.
II	2.0 – 2.9	Felt by persons at rest, on upper floors, or favorably placed.
III	3.0 – 3.9	Felt indoors. Hanging objects swing. Vibration like passing of light trucks. Duration estimated. May not be recognized as an earthquake.
IV	4.0 – 4.3	Hanging objects swing. Vibration like passing of heavy trucks. Standing motor cars rock. Windows, dishes, doors rattle. Glasses clink the upper range of IV, wooden walls and frame creak.
V	4.4 – 4.8	Felt outdoors; direction estimated. Sleepers wakened. Liquids disturbed, some spilled. Small unstable objects displaced or upset. Doors swing, close, open. Pendulum clocks stop, start.
VI	4.9 – 5.4	Felt by all. Many frightened and run outdoors. Persons walk unsteadily. Windows, dishes, glassware broken. Books, etc., fall off shelves. Pictures fall off walls. Furniture moved. Weak plaster and masonry D cracked. Small bells ring. Trees, bushes shaken.
VII	5.5 – 6.1	Difficult to stand. Noticed by drivers of motor cars. Hanging objects quiver. Furniture broken. Damage to masonry D, including cracks. Weak chimneys broken at roof line. Fall of plaster, loose bricks, stones, tiles, cornices. Some cracks in masonry C. Waves on ponds. Small slides and caving in along sand or gravel banks. Large bells ring. Concrete irrigation ditches damaged.
VII	6.2 – 6.5	Steering of motor cars is affected. Damage to masonry C; partial collapse. Some damage to masonry B. Fall of stucco and some masonry walls. Twisting, fall of chimneys, factory

SECTION 4: RISK ASSESSMENT

MMI	Richter Scale	Felt Intensity
		stacks, monuments, towers, elevated tanks. Frame houses moved on foundations. Decayed piling broken off. Branches broken from trees. Changes in flow or temperature of springs and wells. Cracks in wet ground and on steep slopes.
IX	6.6 – 6.9	General panic. Masonry D destroyed; masonry C heavily damaged, sometimes with complete collapse; masonry B seriously damaged. (General damage to foundations.) Serious damage to reservoirs. Underground pipes broken. Conspicuous cracks in ground. In alluvial areas sand and mud ejected, earthquake fountains, sand craters.
X	7.0 – 7.3	Most masonry and frame structures destroyed with their foundations. Some well-built wooden structures and bridges destroyed. Serious damage to dams, dikes, embankments. Large landslides. Water thrown on banks of canals, rivers, lakes, etc. Sand and mud shifted horizontally on beaches and flat land. Rails bent slightly.
XI	7.4 – 8.1	Rails bent greatly. Underground pipelines completely out of service.
XII	> 8.1	Damage nearly total. Large rock masses displaced. Lines of sight and level distorted. Objects thrown in the air.

Masonry A: Good workmanship, mortar, and design; reinforced, especially laterally, and bound together by using steel, concrete, etc.; designed to resist lateral forces. Masonry B: Good workmanship and mortar; reinforced, but not designed in detail to resist lateral forces. Masonry C: Ordinary workmanship and mortar; no extreme weaknesses like failing to tie in at corners, but neither reinforced nor designed against horizontal forces. Masonry D: Weak materials, such as adobe; poor mortar; low standards of workmanship; weak horizontally.
Source: Oklahoma State Hazard Mitigation Plan.

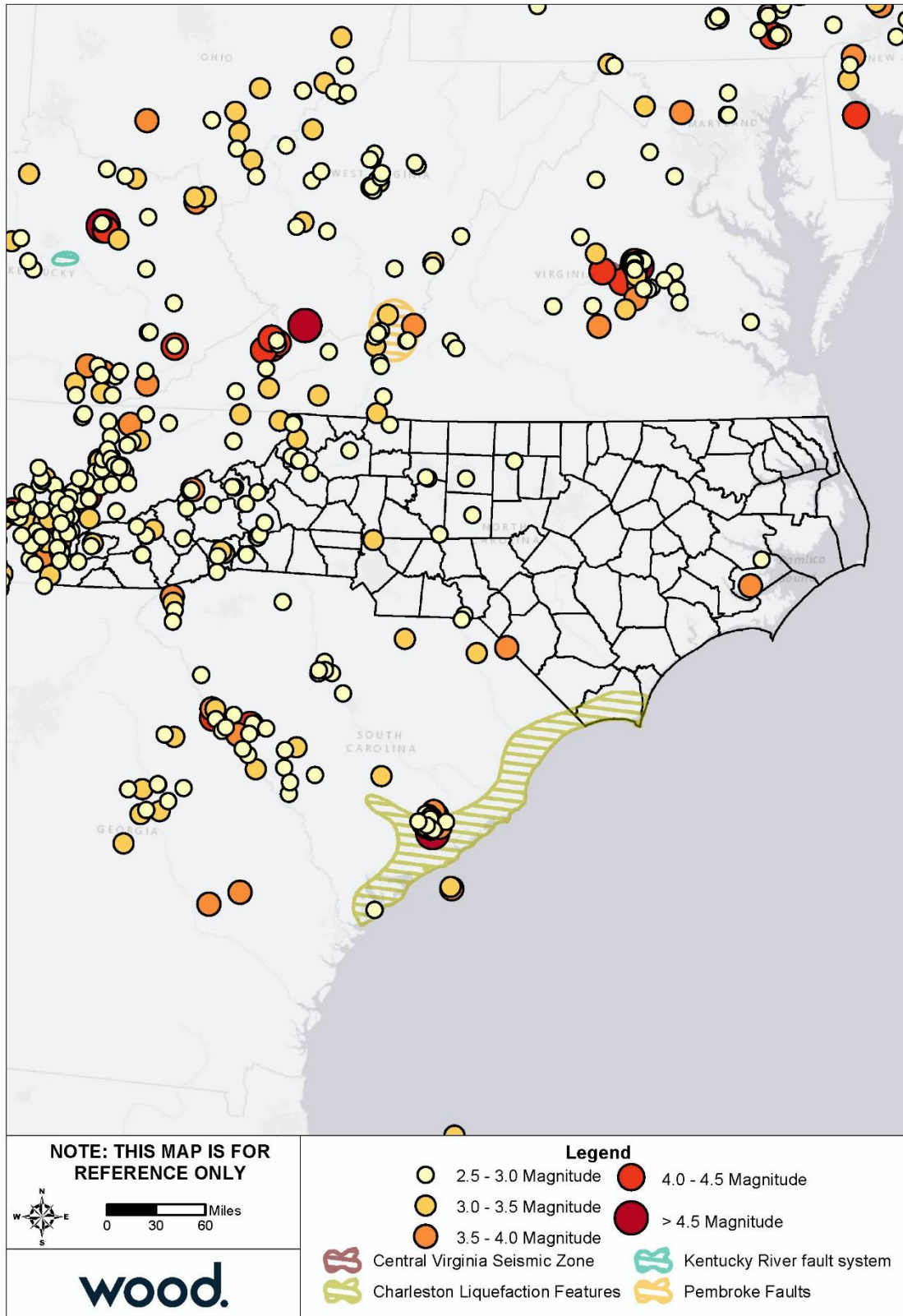
Impact: 1 – Minor

Spatial Extent: 4 – Large

Historical Occurrences

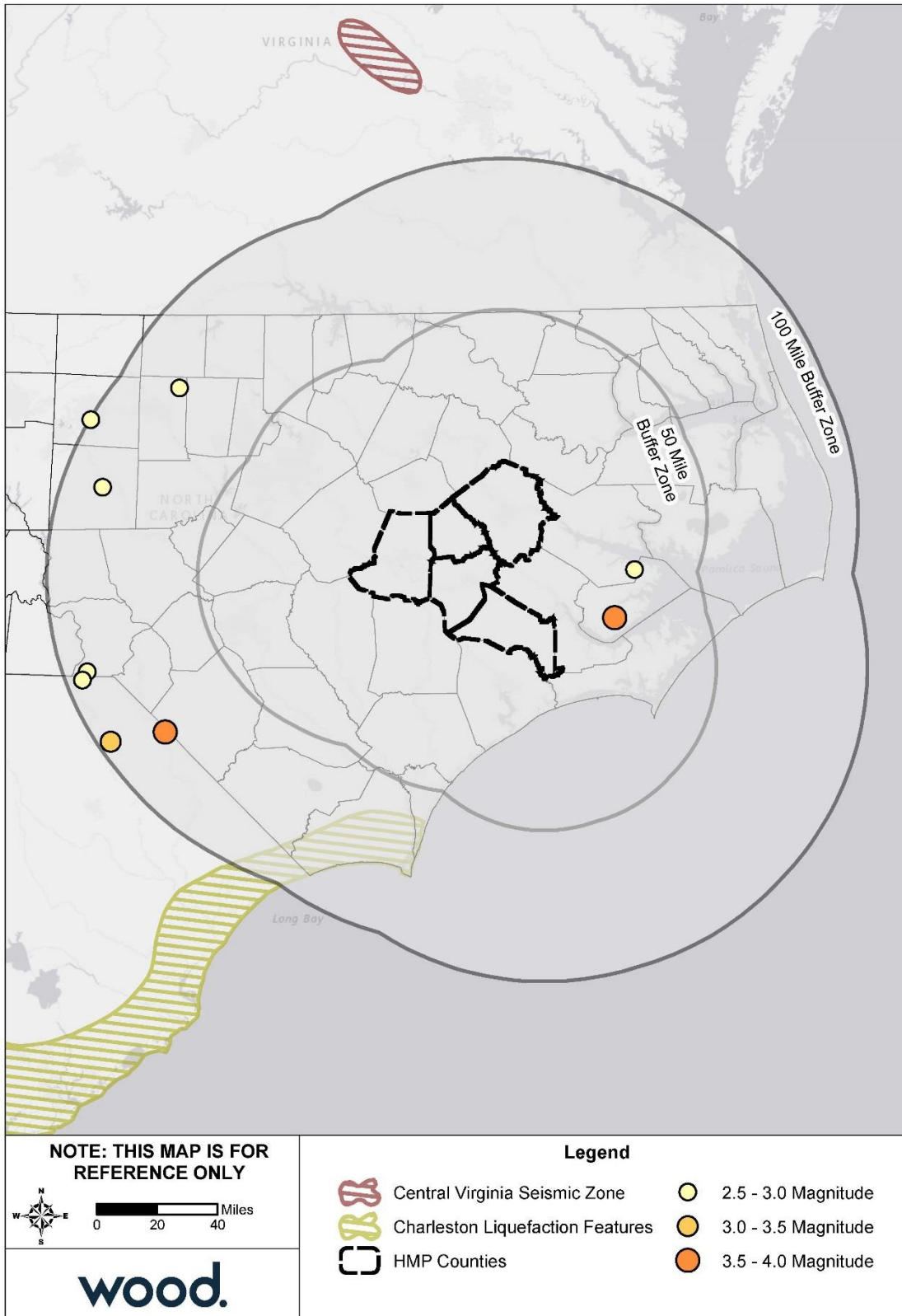
The USGS Earthquake Hazards Program maintains a database of all historical earthquakes of a magnitude 2.5 and greater. These events are illustrated in the following pages. Figure 4.19 shows historical earthquakes by magnitude in relation to North Carolina and the Quaternary Faults identified by USGS. This includes events from 1973 to 2019. Figure 4.20 provides a more detailed view of earthquakes that have occurred within 50 and 100 miles of the Neuse River Region.

Figure 4.19 – Historical Earthquakes by Magnitude, 1973-2019



Source: USGS Earthquakes Hazard Program

Figure 4.20 – Historical Earthquakes, Distance from Neuse River Region



Source: USGS Earthquakes Hazard Program

SECTION 4: RISK ASSESSMENT

Figure 4.19 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. The USGS Earthquake Hazards Program compiles data on a variety of earthquake metrics, including felt impact. According to USGS records, there have been five earthquakes with a felt impact in North Carolina since 1989; none of these events caused recorded impacts in the Neuse River Region.

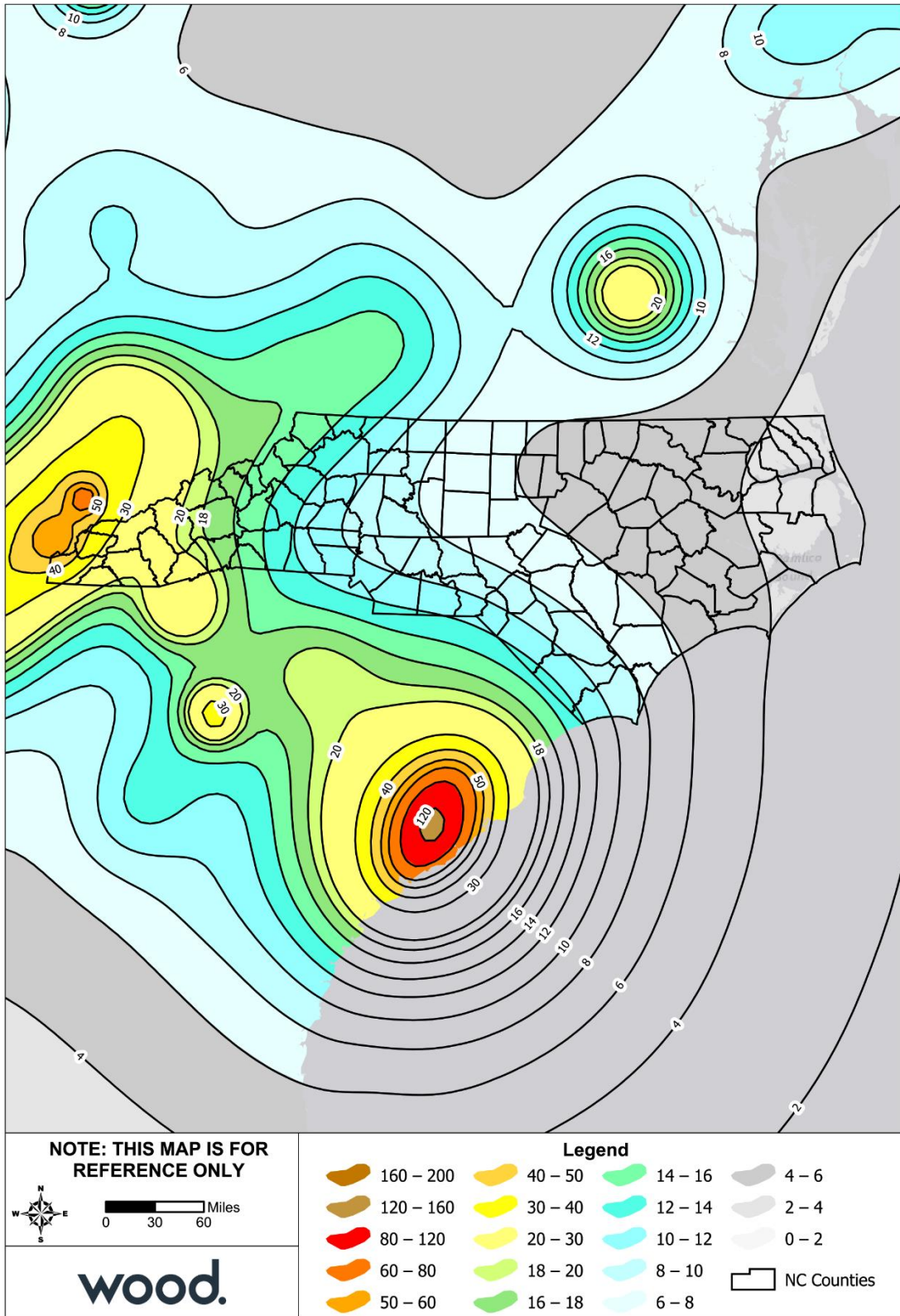
Probability of Future Occurrence

Ground motion is the movement of the earth's surface due to earthquakes or explosions. It is produced by waves generated by a sudden slip on a fault or sudden pressure at the explosive source and travels through the earth and along its surface. Ground motion is amplified when surface waves of unconsolidated materials bounce off of or are refracted by adjacent solid bedrock. The probability of ground motion is depicted in USGS earthquake hazard maps by showing, by contour values, the earthquake ground motions (of a particular frequency) that have a common given probability of being exceeded in 50 years.

Figure 4.21 reflects the seismic hazard for the counties in the Neuse River Region based on the national USGS map of peak acceleration with two percent probability of exceedance in 50 years. In developing Figure 4.21, the ground motions being considered at a given location are those from all future possible earthquake magnitudes at all possible distances from that location. The ground motion coming from a particular magnitude and distance is assigned an annual probability equal to the annual probability of occurrence of the causative magnitude and distance. The method assumes a reasonable future catalog of earthquakes, based upon historical earthquake locations and geological information on the recurrence rate of fault ruptures. When all the possible earthquakes and magnitudes have been considered, a ground motion value is determined such that the annual rate of its being exceeded has a certain value.

Therefore, for the given probability of exceedance, two percent, the locations shaken more frequently will have larger ground motions. The Neuse River Region is located within the dark gray zone; this represents a 2% chance that in 50 years, the region will see 2% - 6% g, which is a low peak acceleration.

Figure 4.21 – Seismic Hazard Information for North Carolina



Source: USGS Earthquake Hazards Program

SECTION 4: RISK ASSESSMENT

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

Probability: 1 – Unlikely

Climate Change

Scientists are beginning to believe there may be a connection between climate change and earthquakes. Changing ice caps and sea-level redistribute weight over fault lines, which could potentially have an influence on earthquake occurrences. However, currently no studies quantify the relationship to a high level of detail, so recent earthquakes should not be linked with climate change. While not conclusive, early research suggest that more intense earthquakes and tsunamis may eventually be added to the adverse consequences that are caused by climate change.

Vulnerability Assessment

People

Earthquake events in the region are unlikely to produce more than mild ground shaking; therefore, injury or death is unlikely. Objects falling from shelves generally pose the greatest threat to safety.

Table 4.24 and Table 4.25 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 4.24 – 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
Greene	21,378	633	3%	2,665	79	3%	1,388	41	3%
Jones	10,171	943	9.3%	1,757	163	9.3%	617	57	9.2%
Lenoir	59,448	5114	8.6%	9515	812	8.5%	3,800	328	8.6%
Pitt	168,177	1865	1.1%	16619	186	1.1%	11,233	124	1.1%
Wayne	122,706	18,352	15%	16,078	2,404	15%	8,766	1,311	15%
Total	381,880	26,907	7%	46,634	3,644	7.8%	25,804	1,861	7.2%

Source: NCEM Risk Management Tool

Table 4.25 – 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
Greene	21,378	18,492	100%	2,305	2,305	100%	1,200	1,200	100%
Jones	10,171	10,171	100%	1,757	1,757	100%	617	617	100%
Lenoir	59,448	62,751	105.6%	9,515	9,839	103.4%	3,800	4,021	105.8%
Pitt	168,177	154,093	91.6%	16,619	15,272	91.9%	11,233	10,291	91.6%
Wayne	122,706	122,797	100.1%	16,078	16,091	100.1%	8,766	8,773	100.1%
Total	381,880	371,190	97.2%	46,634	45,624	97.8%	25,804	25,090	97.2%

Source: NCEM Risk Management Tool

Property

In a severe earthquake event, buildings can be damaged by the shaking itself or by the ground beneath them settling to a different level than it was before the earthquake (subsidence). Buildings can even sink into the ground if soil liquefaction occurs. If a structure (a building, road, etc.) is built across a fault, the ground displacement during an earthquake could seriously damage that structure.

Earthquakes can also cause damages to infrastructure, resulting in secondary hazards. Damages to dams or levees could cause failures and subsequent flooding. Fires can be started by broken gas lines and power lines. Fires can be a serious problem, especially if the water lines that feed the fire hydrants have been damaged as well.

There are no records of the Neuse River Region being impacted by an earthquake with more than a low intensity, so damage to the built environment is unlikely.

Table 4.26 and Table 4.27 detail the estimated buildings impacted from varying magnitudes of earthquake events.

SECTION 4: RISK ASSESSMENT

Table 4.26 – 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
Greene	12,254	287	2.3%	\$289	169	1.4%	\$6,629	70	0.6%	\$2,617	526	4.3%	\$9,534
Jones	7,545	533	7.1%	\$199	13	0.2%	\$480	29	0.4%	\$728	575	7.6%	\$1,409
Lenoir	33,465	2,349	7%	\$2,372	856	2.6%	\$41,071	185	0.6%	\$6,816	3,390	10.1%	\$50,256
Pitt	64,163	726	1.1%	\$328	1,075	1.7%	\$49,531	87	0.1%	\$1,721	1,888	2.9%	\$51,580
Wayne	71,288	9,269	13%	\$28,781	3,400	4.8%	\$179,130	999	1.4%	\$57,586	13,668	19.2%	\$265,499
Total	188,715	13,164	7%	\$31,969	5,513	2.9%	\$276,841	1,370	0.7%	\$69,468	20,047	10.6%	\$378,278

Source: NCEM Risk Management Tool

Table 4.27 – 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
Greene	12,254	9,888	80.7%	\$170,646	2,126	17.3%	\$217,850	232	1.9%	\$173,340	12,246	99.9%	\$561,835
Jones	7,545	5,646	74.8%	\$97,837	1,697	22.5%	\$89,640	201	2.7%	\$76,604	7,544	100%	\$264,083
Lenoir	33,465	28,018	83.7%	\$543,864	4,639	13.9%	\$1,275,979	655	2%	\$404,965	33,312	99.5%	\$2,224,806
Pitt	64,163	50,235	78.3%	\$1,137,379	7,912	12.3%	\$1,823,626	735	1.1%	\$332,995	58,882	91.8%	\$3,294,004
Wayne	71,288	60,553	84.9%	\$1,770,544	8,414	11.8%	\$3,401,283	2,282	3.2%	\$1,602,018	71,249	99.9%	\$6,773,847
Total	188,715	154,340	81.8%	\$3,720,270	24,788	13.1%	\$6,808,378	4,105	2.2%	\$2,589,922	183,233	97.1%	\$13,118,575

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. Impacts to the built environment (e.g. ruptured gas line) could damage the surrounding environment. However, this type damage is unlikely based on historical occurrences.

Consequence Analysis

Table 4.28 summarizes the potential negative consequences of earthquake.

Table 4.28 – Consequence Analysis - Earthquake

Category	Consequences
Public	Impact expected to be severe for people who are unprotected or unable to take shelter; moderate to light impacts are expected for those who are protected.
Responders	Responders may be required to enter unstable structures or compromised infrastructure. Adverse impacts are expected to be severe for unprotected personnel and moderate to light for protected personnel.
Continuity of Operations (including Continued Delivery of Services)	Damage to facilities/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	Damage to facilities and infrastructure in the area of the incident may be extensive for facilities, people, infrastructure, and HazMat.
Environment	May cause extensive damage, creating denial or delays in the use of some areas. Remediation may be needed.
Economic Condition of the Jurisdiction	Local economy and finances expected to be 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 are not timely and effective.

Hazard Summary by Jurisdiction

The following table summarizes earthquake hazard risk by jurisdiction. Earthquake risk is uniform across the planning area.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Greene County	1	1	4	4	1	1.9	L
Hookerton	1	1	4	4	1	1.9	L
Snow Hill	1	1	4	4	1	1.9	L
Walstonburg	1	1	4	4	1	1.9	L
Jones County	1	1	4	4	1	1.9	L
Maysville	1	1	4	4	1	1.9	L
Pollockville	1	1	4	4	1	1.9	L
Trenton	1	1	4	4	1	1.9	L
Lenoir County	1	1	4	4	1	1.9	L
Kinston	1	1	4	4	1	1.9	L
La Grange	1	1	4	4	1	1.9	L
Pink Hill	1	1	4	4	1	1.9	L
Pitt County	1	1	4	4	1	1.9	L
Ayden	1	1	4	4	1	1.9	L
Bethel	1	1	4	4	1	1.9	L
Falkland	1	1	4	4	1	1.9	L
Farmville	1	1	4	4	1	1.9	L
Fountain	1	1	4	4	1	1.9	L

Neuse River

SECTION 4: RISK ASSESSMENT

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Greenville	1	1	4	4	1	1.9	L
Grifton	1	1	4	4	1	1.9	L
Grimesland	1	1	4	4	1	1.9	L
Simpson	1	1	4	4	1	1.9	L
Winterville	1	1	4	4	1	1.9	L
Wayne County	1	1	4	4	1	1.9	L
Eureka	1	1	4	4	1	1.9	L
Fremont	1	1	4	4	1	1.9	L
Goldsboro	1	1	4	4	1	1.9	L
Mount Olive	1	1	4	4	1	1.9	L
Pikeville	1	1	4	4	1	1.9	L
Seven Springs	1	1	4	4	1	1.9	L
Walnut Creek	1	1	4	4	1	1.9	L

4.5.4 Extreme Heat

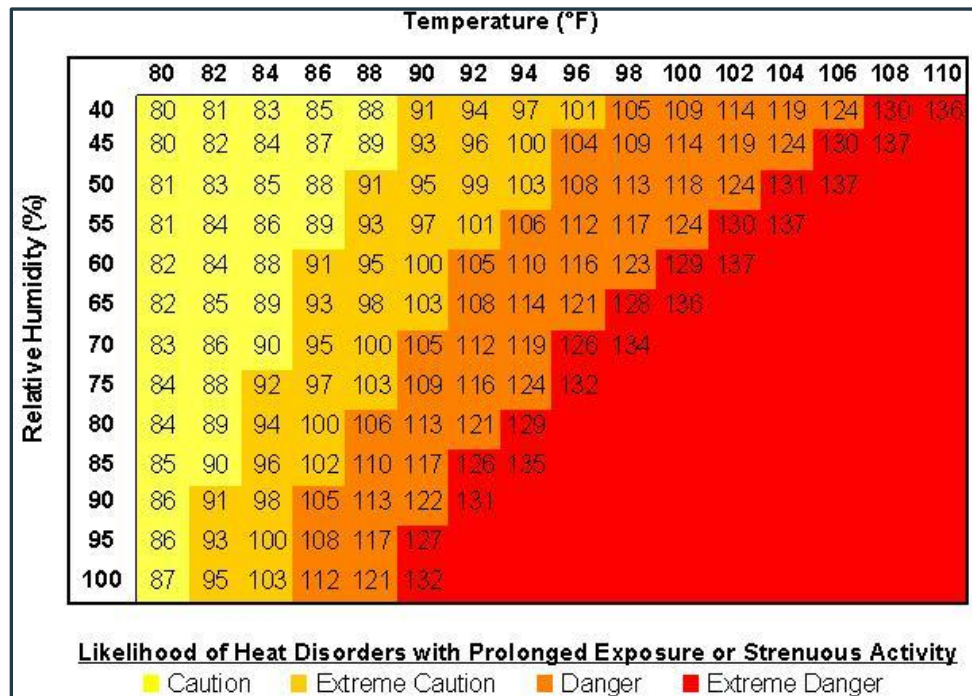
Hazard Background

Per information provided by FEMA, 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. In extreme heat, evaporation is slowed and the body must work extra hard to maintain a normal temperature, which can lead to death by overwork of the body. Extreme heat often results in the highest annual number of deaths among all weather-related disasters. Per Ready.gov:

- Extreme heat can occur quickly and without warning
- Older adults, children, and sick or overweight individuals are at greater risk from extreme heat
- Humidity increases the feeling of heat as measured by heat index

Ambient air temperature is one component of heat conditions, with relative humidity being the other. The relationship of these factors creates what is known as the apparent temperature. The Heat Index Chart in Figure 4.22 uses both of these factors to produce a guide for the apparent temperature or relative intensity of heat conditions.

Figure 4.22 – Heat Index Chart



Source: National Weather Service (NWS) http://www.nws.noaa.gov/os/heat/heat_index.shtml

Note: Exposure to direct sun can increase Heat Index values by as much as 15°F. The shaded zone above 105°F corresponds to a heat index that may cause increasingly severe heat disorders with continued exposure and/or physical activity.

During these conditions, the human body has difficulties cooling through the normal method of the evaporation of perspiration. Health risks rise when a person is over exposed to heat.

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, 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

SECTION 4: RISK ASSESSMENT

individuals are susceptible if they participate in strenuous physical activities during hot weather or are not acclimated to hot weather. Table 4.29 lists typical symptoms and health impacts of exposure to extreme heat.

Table 4.29 – Typical Health Impacts of Extreme Heat

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

Source: National Weather Service Heat Index Program, www.weather.gov/os/heat/index.shtml

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 80°F or above for two or more consecutive days. A heat advisory is issued when temperatures reach 105 degrees and a warning is issued at 115 degrees.

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 one week

Location

Historically, extreme heat is a regional hazard. The entire planning area is susceptible to high temperatures and incidents of extreme heat and indeed the vast majority of the planning area would suffer some level of impact from the same event. In extreme heat incidents recorded in 2011 and 2012, all six counties in the region experienced its impacts concurrently.

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

The extent of extreme heat can be defined by the maximum temperature reached. Heat index records maintained by the North Carolina Climate Office indicate that the Region regularly experiences heat index temperatures above 100°F. Table 4.30 provides counts of heat index values by threshold recorded from 1999-2018 at the Stallings AFB (KISO) weather station in Kinston, used as an indicator for the Neuse River Region overall. Counts are provided as the number of hours in a given year where the heat index reached

Neuse River

SECTION 4: RISK ASSESSMENT

or exceeded 100°F. Based on this data, the Neuse River Region experiences an average of 93 hours per year with heat index values above 100°F.

Table 4.30 – Historical Heat Index Counts, Stallings AFB (KISO) in Kinston, NC, 2001 – 2018

Year	Heat Index Value				Total
	100-104°F	105-109°F	110-114°F	≥115°F	
2001	55	16	7	0	78
2002	76	26	1	0	103
2003	76	12	0	2	90
2004	0	0	0	0	0
2005	1	1	0	2	4
2006	0	0	0	0	0
2007	77	10	16	7	110
2008	88	8	0	0	96
2009	55	1	0	2	58
2010	142	39	14	1	196
2011	104	39	8	0	151
2012	84	36	13	4	137
2013	47	1	0	0	48
2014	55	0	0	0	55
2015	112	18	0	0	130
2016	161	52	3	1	217
2017	96	21	1	0	118
2018	85	0	0	2	87
Sum	1,314	280	63	21	1,678
Average	73	16	4	1	93

Source: North Carolina Climate Office, Heat Index Climatology Tool

Impact: 3 – Critical

Spatial Extent: 4 – Large

Historical Occurrences

According to the National Oceanic and Atmospheric Administration (NOAA), 2017 was North Carolina’s hottest year on record; that record stretches back 123 years to 1895.

The NCEI reports two heat-related incidents across the Neuse River Region between 1999 and 2018; these incidents caused three fatalities, no injuries, and no property or crop damage. The narratives for these incidents note that a man and woman were found dead in a trailer in mid-June 2008; the temperatures were well into the 90s, and the trailer they were found in had no air conditioning and closed window. The narratives also note a separate incident of a man perishing in Pitt County; the death was attributed to extreme heat.

Probability of Future Occurrence

Data was gathered from the North Carolina State Climate Office’s Climate Thresholds Tool using the Kinston weather station as an approximation for the Neuse River Region. Based on 53 years of available

SECTION 4: RISK ASSESSMENT

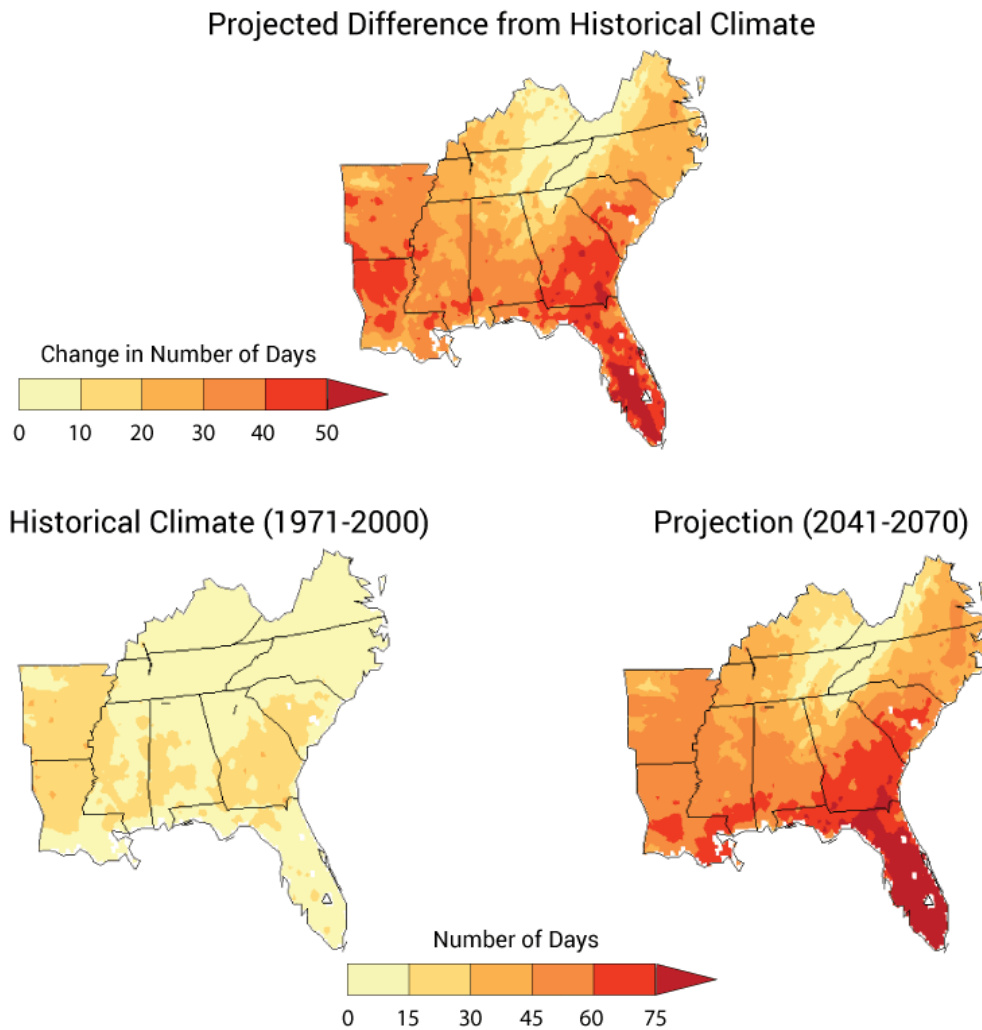
data, the Kinston station averages 3.2 days per year with a high temperature above 100°F. In 1993, there were 10 days with recorded temperatures above this threshold.

Probability: 4 – Highly Likely

Climate Change

Research shows that average temperatures will continue to rise in the Southeast United States and globally, directly affecting North Carolina. Per the Fourth National Climate Assessment, “extreme temperatures are projected to increase even more than average temperatures. Cold waves are projected to become less intense and heat waves more intense.” The number of days over 95°F is expected to increase by between 20 and 30 days annually, as shown in Figure 4.23.

Figure 4.23 – Projected Change in Number of Days Over 95°F



Source: NOAA NCDC from 2014 National Climate Assessment

SECTION 4: RISK ASSESSMENT

Vulnerability Assessment

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 are also more vulnerable to extreme heat.

According to NCEI data, three deaths were blamed on extreme heat in Pitt County in June 2010; two of the deaths were specifically attributed to lack of air conditioning.

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 heat 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 2007-2017, the sum of claims paid for crop damage due to heat across the counties in the Neuse River Region was \$7,608,247, or an average of \$362,297 in losses every year. Table 4.31 summarizes the crop losses due to heat reported in the RMA system.

Table 4.31 – Crop Indemnity Amounts Resulting from Heat, 2007-2017

Year	Greene	Jones	Lenoir	Pitt	Wayne
2007	\$8,723	-	\$5,633	\$97.33	\$40,774
2008	\$314,849	\$55,671	\$86,487	\$1,156.74	\$148,976
2009		\$1,651	\$27,450	\$58.56	\$14,141
2010	\$427,924		\$228,638	\$4,723.16	\$735,356
2011	\$86,112	\$3,576	\$151,444	\$300.44	\$695,240
2012	\$171,711	\$3,542	\$48,481	\$201.80	\$259,046
2013	-	-	-	-	-
2014	-	-	\$3,301	\$23.70	\$71,328.80
2015	\$153,279.40	\$60,502.65	\$195,849	\$1,212.61	\$1,115,494.75
2016	\$374,835.85	\$97,540.60	\$186,513.95	\$1,173.25	\$815,221.75
2017	\$284,329.16	\$8,686	\$265,245.1	\$1,352.49	\$450,394.32
Total	\$1,821,763.41	\$231,169.25	\$1,199,042.05	\$2,008,851.40	\$3,435,972.62

Source: USDA Risk Management Agency

Table 4.32 shows determined acres by county and year.

Table 4.32 – Determined Acres Resulting from Heat, 2007-2017

Year	Greene	Jones	Lenoir	Pitt	Wayne
2007	111.5	-	186.89	97.33	189.55
2008	1257.79	249	347.15	1,156.74	854.19
2009	-	7.9	12.5	58.56	36.90
2010	1465.69	-	782.55	4,723.16	2,383.84
2011	164.93	28.98	357.87	300.44	2,659.70
2012	850.95	57	325.1	201.80	2,072.92
2013	-	-	-	-	-
2014	-	-	26.6	23.70	706.43
2015	239.01	143.85	779.05	1,212.61	4,379.98

Neuse River

SECTION 4: RISK ASSESSMENT

Year	Greene	Jones	Lenoir	Pitt	Wayne
2016	526.47	521.48	571.67	1,173.25	2,754.62
2017	1512.61	89.32	737.4	1,352.49	121
Total	6,128.95	1,097.53	4,126.78	10,300.08	17,319.73

Source: USDA Risk Management Agency

Table 4.33 shows indemnity amounts by county and crop. The most impacted crop during this time period was flue cured tobacco, with over \$78 million in indemnities paid.

Table 4.33 – Indemnity Amounts by Crop, 2007-2017

Crop	Greene	Jones	Lenoir	Pitt	Wayne
Barley	\$4,046	-	-	-	-
Burley Tobacco	\$378,478	-	-	-	-
Corn	\$185,905	\$3,259,509	\$13,454,622	\$9,572,797	\$2,753,145
Cotton	\$222,785	\$249,955	\$7,659,640	\$12,893,324	\$1,663,018
Flue Cured Tobacco	\$683,222	\$650,258	\$36,982,058	\$27,347,102	\$13,092,205
Grain Sorghum	-	-	\$34,179	\$76,037	-
Oats	-	-	\$799	\$8,392	-
Pasture/Rangeland	-	-	\$714	-	\$519
Peanuts	-	-	\$23,220	\$1,098,905	\$6,811
Soybeans	\$403,394	\$1,139,035	\$7,452,185	\$11,928,142	\$840,131
Wheat	\$58,077	\$259,687	\$3,867,628	\$3,814,064	\$86,287
Other	\$70,037	-	-	-	-

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 4.34 summarizes the potential negative consequences of extreme heat.

Table 4.34 – Consequence Analysis – Extreme Heat

Category	Consequences
Public	Extreme heat may cause illness and/or death, especially when air conditioning is not available.
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.
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.

SECTION 4: RISK ASSESSMENT

Hazard Summary by Jurisdiction

The following table summarizes extreme heat hazard risk by jurisdiction. Extreme heat risk does not vary significantly by jurisdiction.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Greene County	4	3	4	1	3	3.3	H
Hookerton	4	3	4	1	3	3.3	H
Snow Hill	4	3	4	1	3	3.3	H
Walstonburg	4	3	4	1	3	3.3	H
Jones County	4	3	4	1	3	3.3	H
Maysville	4	3	4	1	3	3.3	H
Pollocksville	4	3	4	1	3	3.3	H
Trenton	4	3	4	1	3	3.3	H
Lenoir County	4	3	4	1	3	3.3	H
Kinston	4	3	4	1	3	3.3	H
La Grange	4	3	4	1	3	3.3	H
Pink Hill	4	3	4	1	3	3.3	H
Pitt County	4	3	4	1	3	3.3	H
Ayden	4	3	4	1	3	3.3	H
Bethel	4	3	4	1	3	3.3	H
Falkland	4	3	4	1	3	3.3	H
Farmville	4	3	4	1	3	3.3	H
Fountain	4	3	4	1	3	3.3	H
Greenville	4	3	4	1	3	3.3	H
Grifton	4	3	4	1	3	3.3	H
Grimesland	4	3	4	1	3	3.3	H
Simpson	4	3	4	1	3	3.3	H
Winterville	4	3	4	1	3	3.3	H
Wayne County	4	3	4	1	3	3.3	H
Eureka	4	3	4	1	3	3.3	H
Fremont	4	3	4	1	3	3.3	H
Goldsboro	4	3	4	1	3	3.3	H
Mount Olive	4	3	4	1	3	3.3	H
Pikeville	4	3	4	1	3	3.3	H
Seven Springs	4	3	4	1	3	3.3	H
Walnut Creek	4	3	4	1	3	3.3	H

4.5.5 Flood

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.

Sources and Types of Flooding

Flooding within the Neuse River Region can be attributed to three main sources as noted below.

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

- ▶ **Greene County:** Contentnea Creek, Little Contentnea Creek, Nahunta Swamp, Rainbow Creek, and other streams;
- ▶ **Jones County:** Trent River;
- ▶ **Lenoir County:** Neuse River, Adkin Branch, Briery Run, and other streams;
- ▶ **Pitt County:** Tar River, Green Mill Run, Contentnea Creek, and Little Contentnea Creek and their tributaries.
- ▶ **Wayne County:** Neuse River, Northeast Cape Fear River, Thunder Swamp, Lee Branch, Little River, Nahunta Swamp, Stoney Creek, the Slough, Walnut Creek, Walnut Creek Tributary B, and other streams

These rivers and their tributaries are susceptible to overflowing their banks during and following excessive precipitation events. Flooding on larger streams results primarily from heavy rains associated with tropical storms or major weather fronts, while flooding on small streams is due mainly to local thunderstorms. 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 or tidal waves, storm surge and heavy rains in combination with high tides, and tropical storms and hurricanes. Portions of Jones County are susceptible to coastal flooding, which normally occurs between June and November.

Flash Flooding: A flash flood 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 thunderstorms and sometimes combined with rapid snowmelt, ice jam release, frozen ground, saturated soil, or impermeable surfaces. Ice jam flooding is a form of flash flooding that occurs when ice breaks up in moving waterways, and then stacks on itself where channels narrow. This creates a natural dam, often causing flooding within minutes of the dam formation. Flash flooding can happen in Special Flood Hazard Areas (SFHAs) as delineated by the NFIP and can also happen 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

SECTION 4: RISK ASSESSMENT

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.

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.

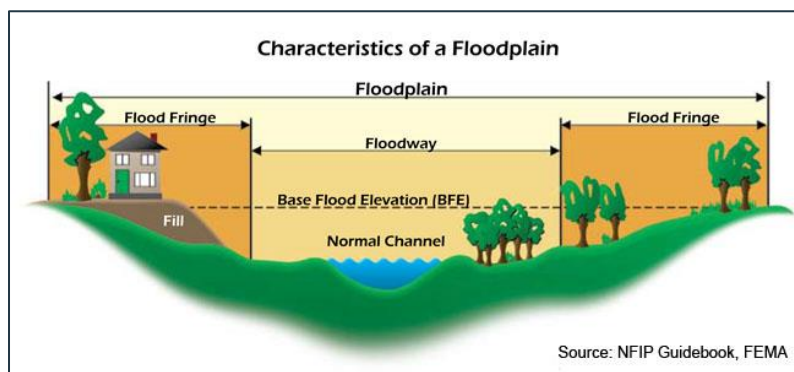
Localized flooding may be caused by the following issues:

- ▶ **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, which may lead to a 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.

Flooding and Floodplains

In the case of riverine flooding, the area adjacent to a channel is the floodplain, as shown in Figure 4.24. A floodplain is flat or nearly flat land adjacent to a stream or river that experiences occasional or periodic 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.

Figure 4.24 – Characteristics of a Floodplain



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

SECTION 4: RISK ASSESSMENT

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.

The 100-year 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

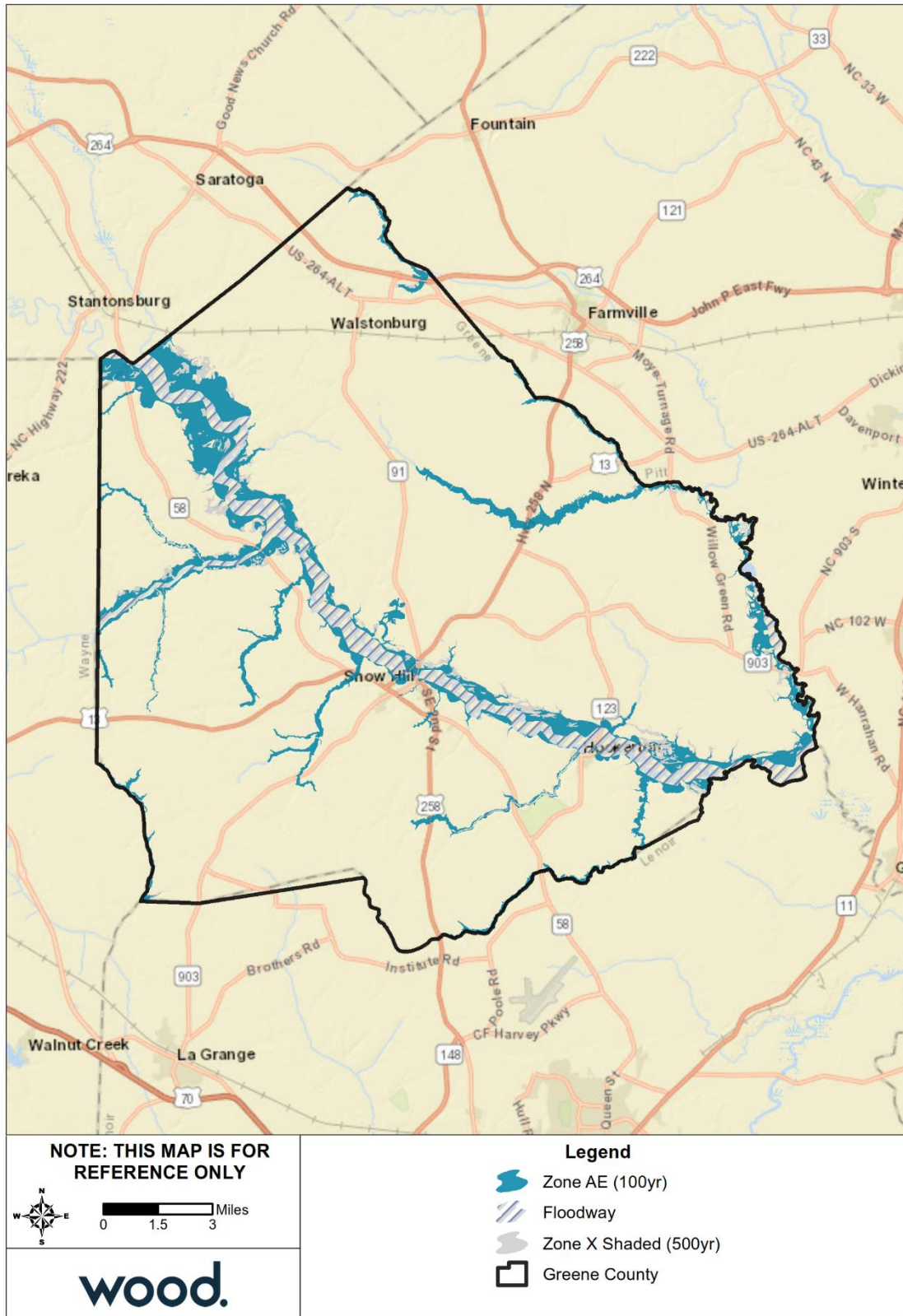
Duration: 3 – Less than one week

Location

Areas at risk of flooding occur throughout the planning area. Figure 4.25 through Figure 4.29 reflect the effective mapped flood insurance zones for the counties in the Neuse River Region. See the annexes for more detail, including mapped flood insurance zones by jurisdiction.

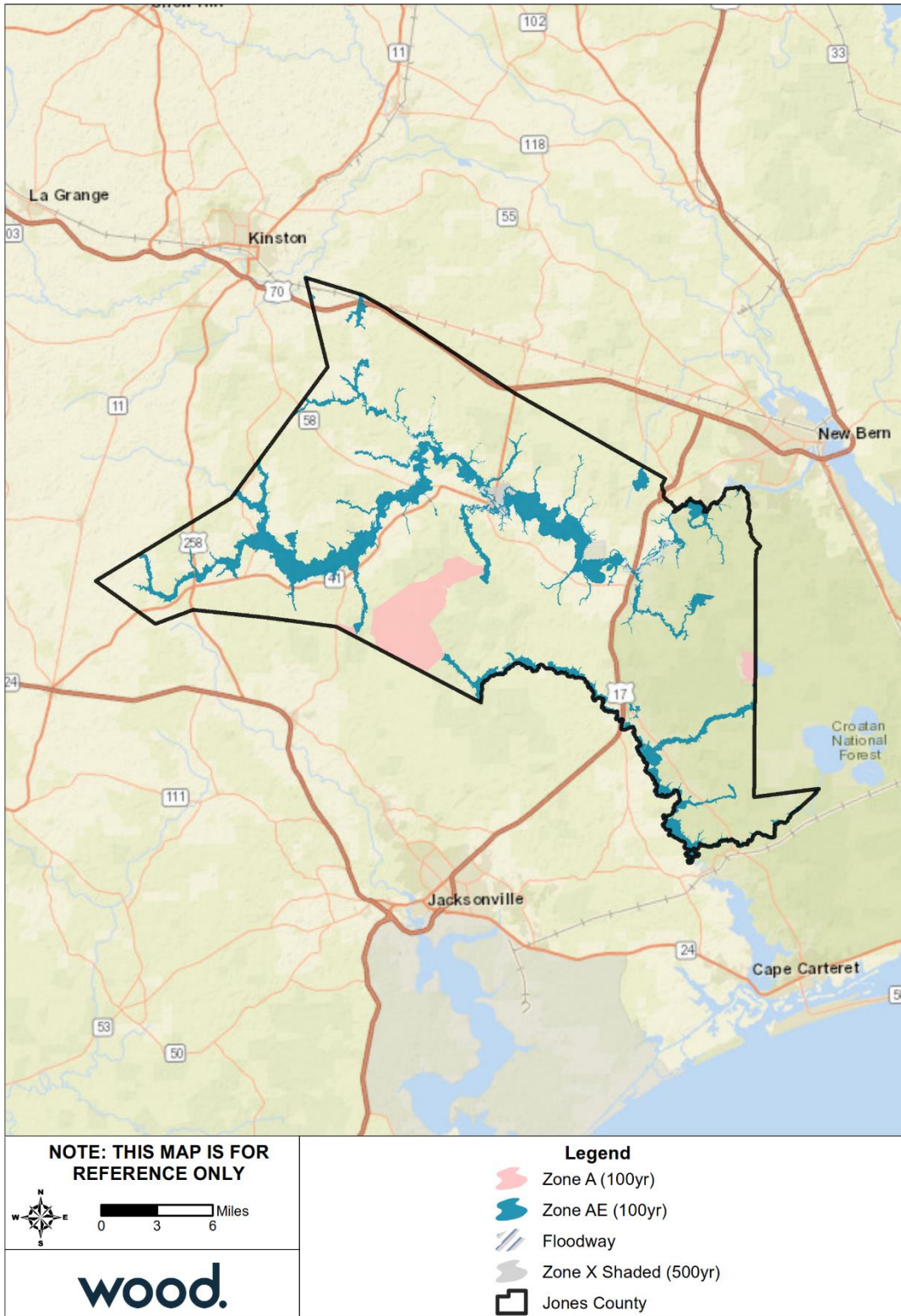
SECTION 4: RISK ASSESSMENT

Figure 4.25 – FEMA Flood Hazard Areas in Greene County



Source: FEMA Effective DFIRM

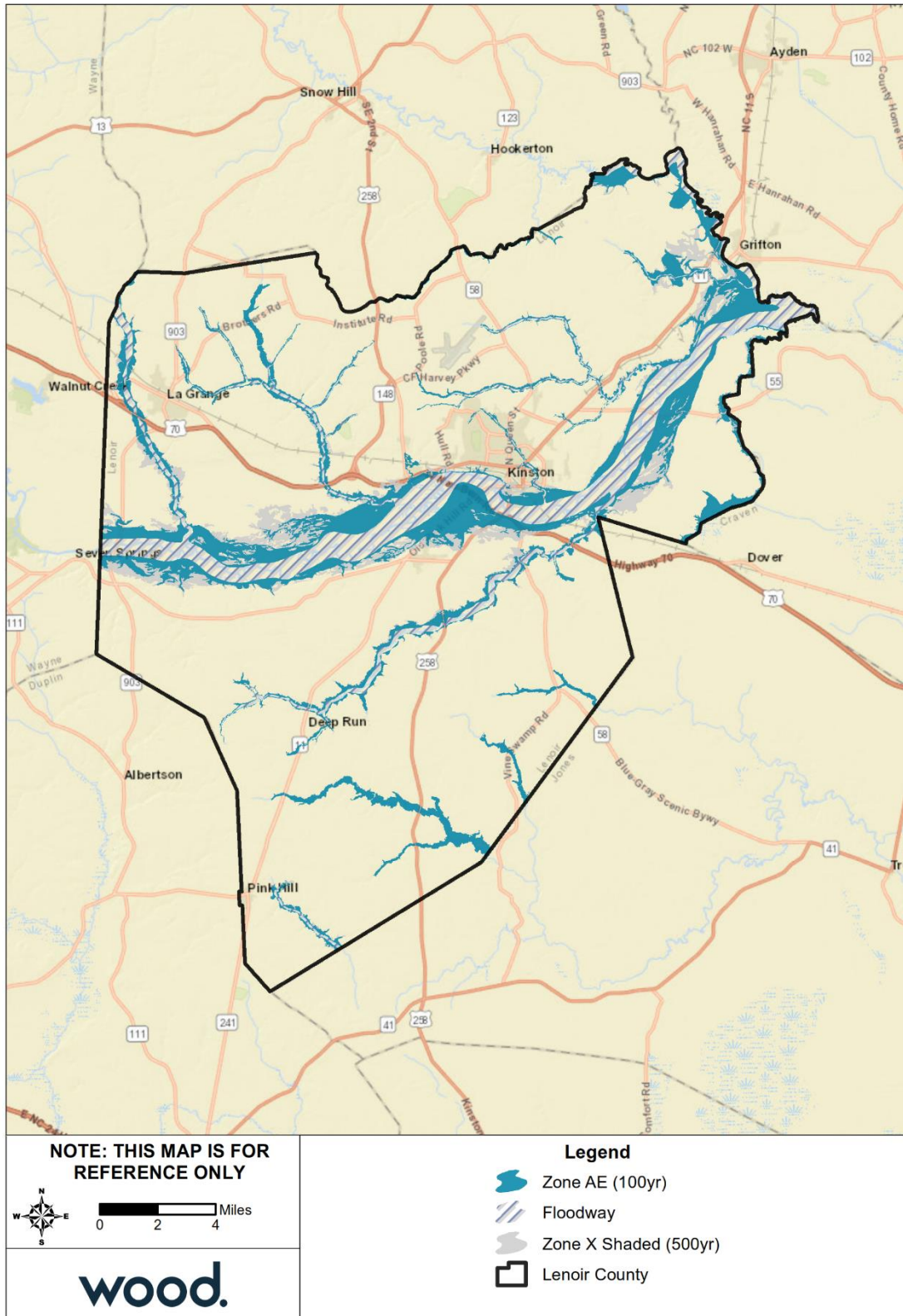
Figure 4.26 – FEMA Flood Hazard Areas in Jones County



Source: FEMA Effective DFIRM

SECTION 4: RISK ASSESSMENT

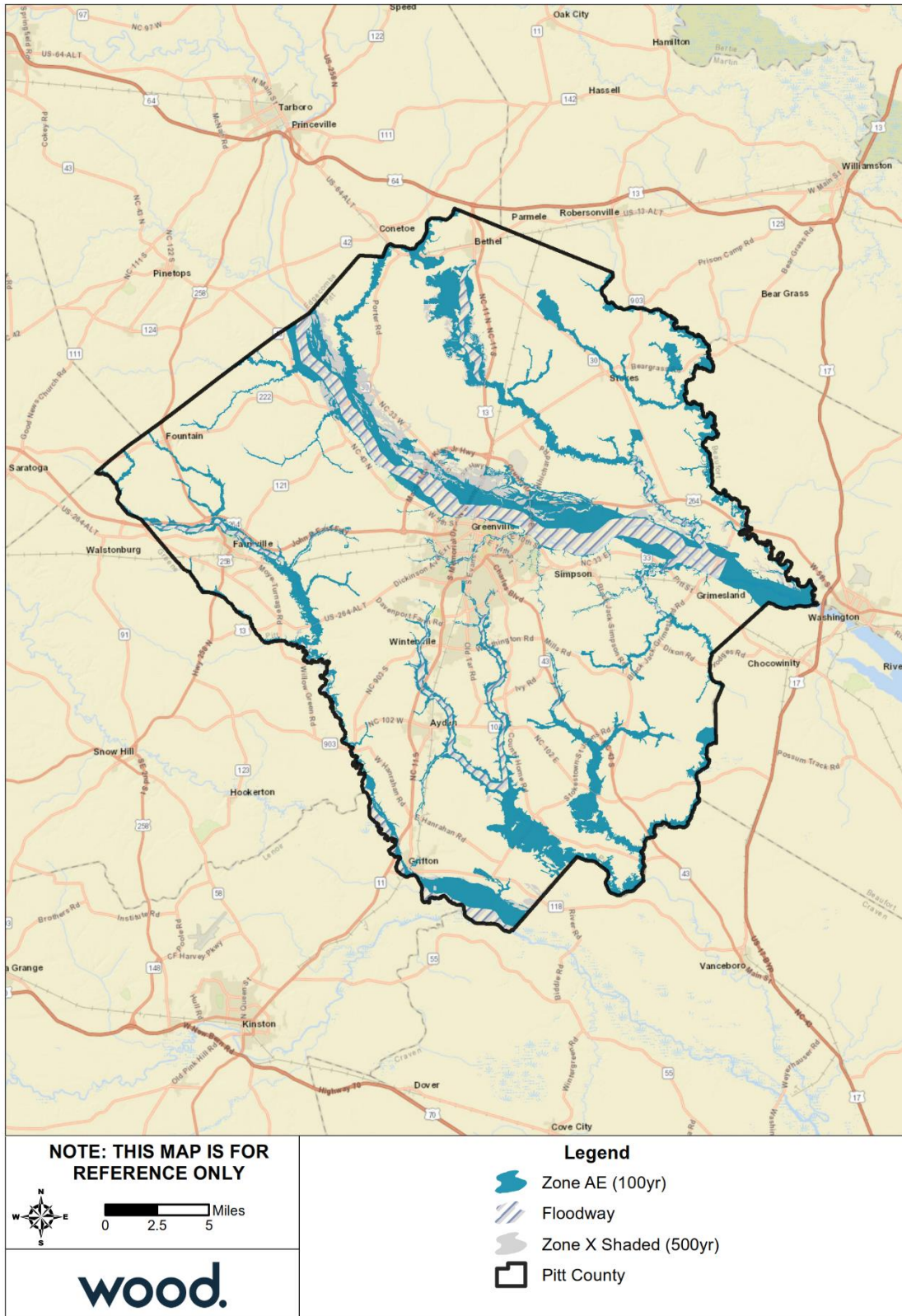
Figure 4.27 – FEMA Flood Hazard Areas in Lenoir County



Source: FEMA Effective DFIRM

SECTION 4: RISK ASSESSMENT

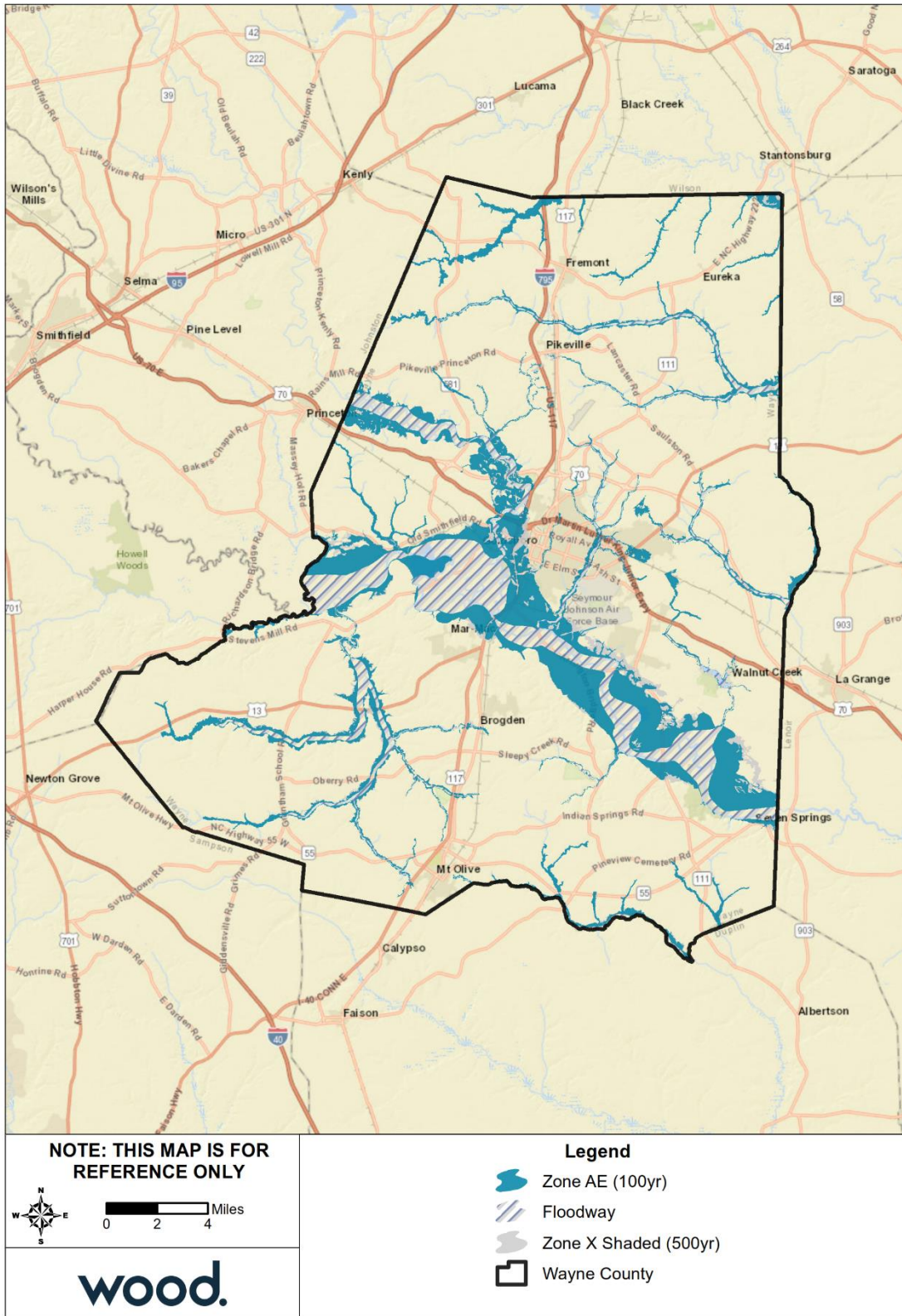
Figure 4.28 – FEMA Flood Hazard Areas in Pitt County



Source: FEMA Effective DFIRM

SECTION 4: RISK ASSESSMENT

Figure 4.29 – FEMA Flood Hazard Areas in Wayne County



Source: FEMA Effective DFIRM

SECTION 4: RISK ASSESSMENT

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.

Regulated floodplains are illustrated on inundation maps called Flood Insurance Rate Maps (FIRMs). It is the official map 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 100-year flood event. Structures located within the SFHA have a 26-percent chance of flooding during the life of a standard 30-year mortgage. Flood prone areas were identified within the Neuse River Region using the Effective DFIRMs, retrieved from the North Carolina Flood Risk Information System. Table 4.35 summarizes the flood insurance zones identified by the DFIRMs.

Table 4.35 – Mapped Flood Insurance Zones within the Neuse River Region

Zone	Description
AE	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.
A	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.
0.2% Annual Chance (shaded Zone X)	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.)
Zone X (unshaded)	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

Approximately 17% of the Region falls within the SFHA. Table 4.36 summarizes acreage of each community in the Region's total area by flood zone per the effective flood maps.

Table 4.36 – Flood Zone Acreage in the Neuse River Region

Location	Flood Zone				Total Acreage	Percent in SFHA
	Zone A	Zone AE	Zone X (500YR)	Zone X (Unshaded)		
Greene	-	19,970.8	2,546.3	149,904.6	172,421.7	11.6%
Greene County	-	19,840.7	2,539.6	148,592.7	170,973.0	11.6%
Hookerton	-	28.5	3.3	172.1	203.9	14.0%
Snow Hill	-	101.7	3.4	879.4	984.5	10.3%
Walstonburg	-	-	-	260.4	260.4	0.0%
Jones	11,529.6	35,607.1	1,000.2	255,858.9	303,995.8	15.5%

SECTION 4: RISK ASSESSMENT

Location	Flood Zone				Total Acreage	Percent in SFHA
	Zone A	Zone AE	Zone X (500YR)	Zone X (Unshaded)		
Jones County	11,529.6	35,477.5	924.6	255,160.2	303,091.9	15.5%
Maysville	-	20.0	-	528.1	548.2	3.7%
Pollocksville	-	66.0	15.5	127.8	209.3	31.5%
Trenton	-	43.6	60.0	42.9	146.4	29.8%
Lenoir	-	46,139.1	9,859.0	214,458.8	270,456.8	17.1%
Lenoir County	-	43,667.9	9,292.1	203,849.0	256,809.0	17.0%
Kinston	-	2,438.6	563.5	8,869.9	11,871.9	20.5%
La Grange	-	32.6	3.4	1,442.7	1,478.7	2.2%
Pink Hill	-	-	-	297.2	297.2	0.0%
Pitt	-	89,469.0	10,562.6	353,819.3	453,850.7	19.7%
Pitt County	-	82,502.6	9,765.6	327,305.4	419,573.6	19.7%
Ayden	-	218.2	13.8	2,226.4	2,458.3	8.9%
Bethel	-	-	0.2	678.5	678.6	0.0%
Falkland	-	-	-	157.0	157.0	0.0%
Farmville	-	38.8	23.9	2,094.3	2,157.0	1.8%
Fountain	-	5.0	-	590.0	595.0	0.8%
Greenville	-	6,068.4	645.0	16,566.2	23,279.6	26.1%
Grifton	-	408.1	69.2	838.0	1,315.3	31.0%
Grimesland	-	-	-	435.2	435.2	0.0%
Simpson	-	4.2	0.5	233.6	238.3	1.8%
Winterville	-	223.7	44.4	2,694.7	2,962.8	7.5%
Wayne	-	64,195.7	6,013.4	310,146.2	380,355.2	16.9%
Wayne County	-	58,779.4	5,162.2	292,913.7	356,855.4	16.5%
Eureka	-	-	-	218.7	218.7	0.0%
Fremont	-	-	-	867.8	867.8	0.0%
Goldsboro	-	4,942.4	804.3	12,616.2	18,363.0	26.9%
Mount Olive	-	6.1	0.5	1,788.6	1,795.2	0.3%
Pikeville	-	16.8	19.6	444.9	481.4	3.5%
Seven Springs	-	108.9	4.5	103.0	216.5	50.3%
Walnut Creek	-	342.1	22.2	1,193.1	1,557.4	22.0%
Region Total	11,529.6	255,381.4	29,981.4	1,284,187.8	1,581,080.3	16.9%

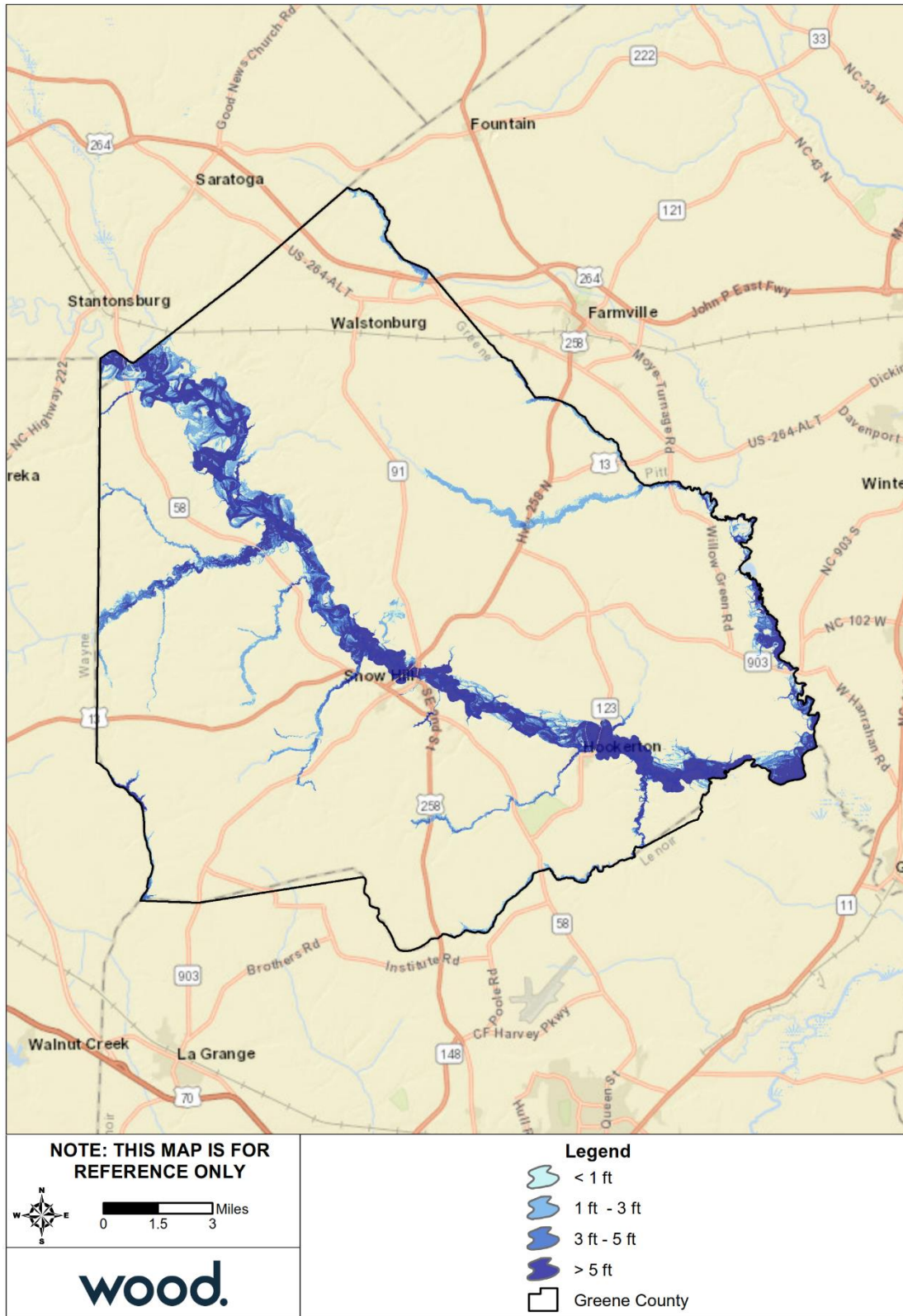
Source: FEMA Effective DFIRMs; GIS analysis

The NFIP utilizes the 100-year flood as a basis for floodplain management. The Flood Insurance Study (FIS) defines the probability of flooding as flood events of a magnitude which are expected to be equaled or exceeded once on the average during any 100-year period (recurrence intervals). Or considered another way, properties within a 100-year flood zone have a one percent probability of being equaled or exceeded during any given year. Mortgage lenders require that owners of properties with federally-backed mortgages located within SFHAs purchase and maintain flood insurance policies on their properties. Consequently, newer and recently purchased properties in the community are typically insured against flooding.

Figure 4.30 through Figure 4.34 show flood depths by county in the Neuse River Region. See the annexes for more detailed information, including flood depth maps by jurisdiction.

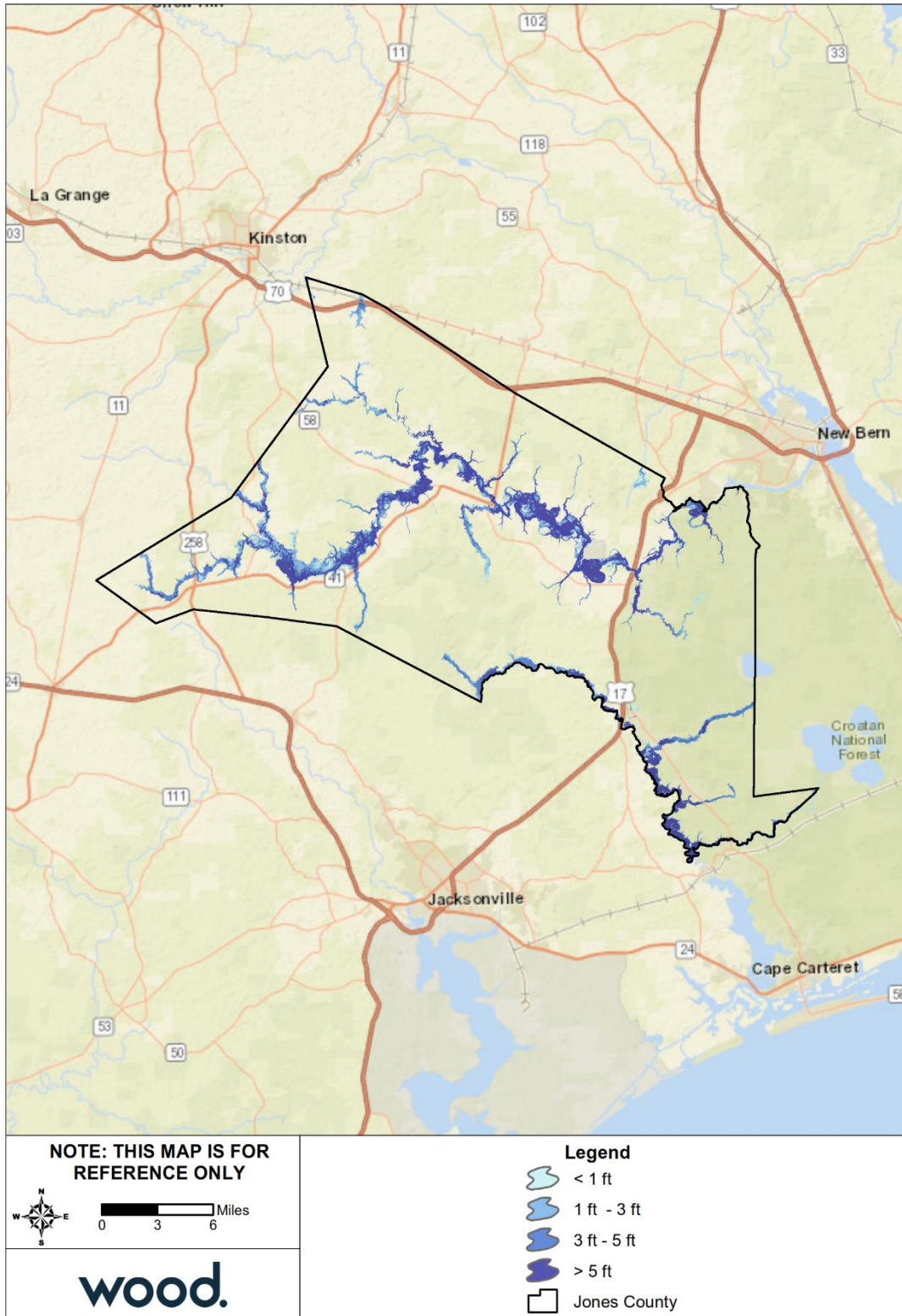
SECTION 4: RISK ASSESSMENT

Figure 4.30 – Flood Depth, 100-Year Floodplain, Greene County



Source: FEMA Effective DFIRM; GIS analysis

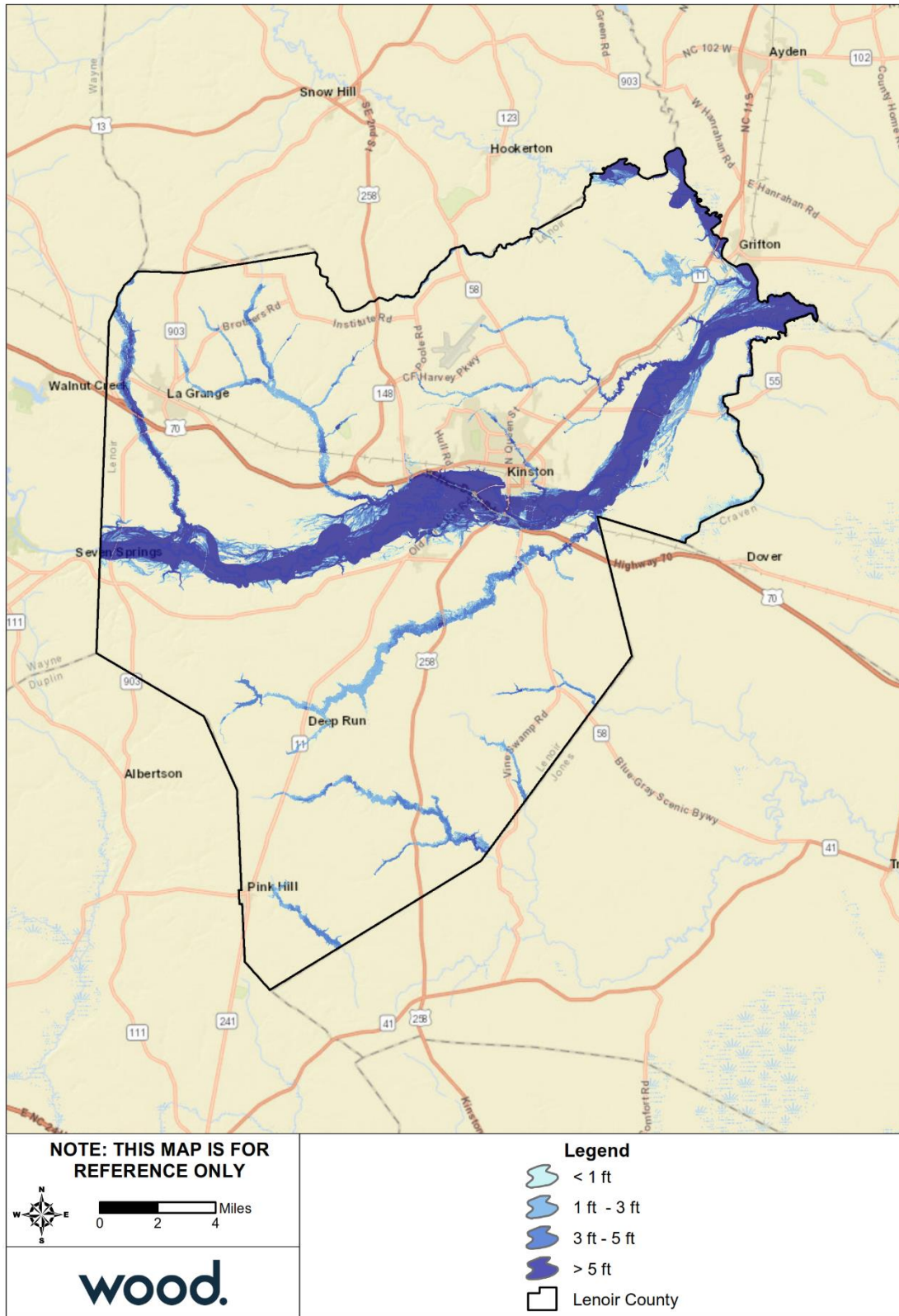
Figure 4.31 – Flood Depth, 100-Year Floodplain, Jones County



Source: FEMA Effective DFIRM; GIS analysis

SECTION 4: RISK ASSESSMENT

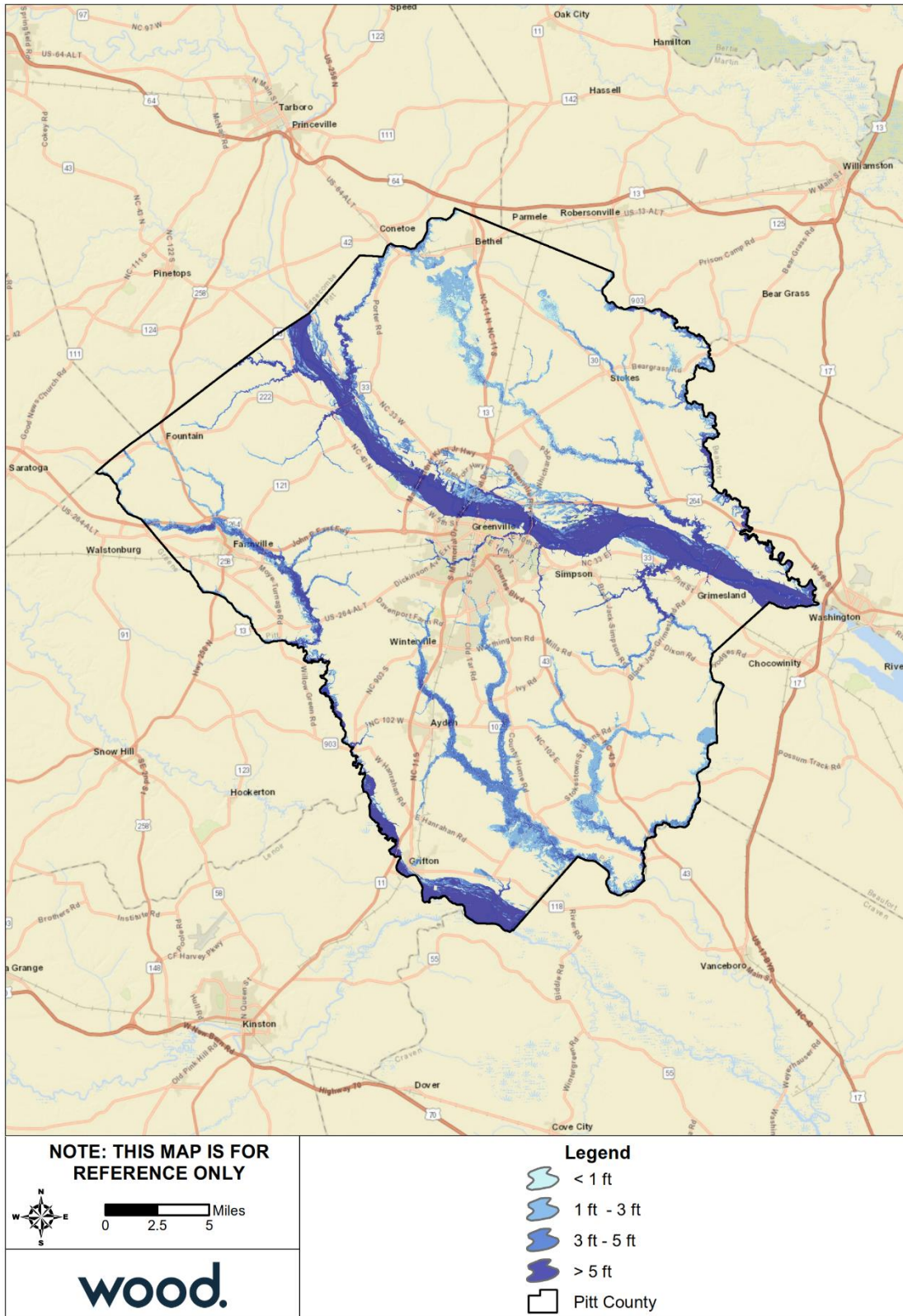
Figure 4.32 – Flood Depth, 100-Year Floodplain, Lenoir County



Source: FEMA Effective DFIRM; GIS analysis

SECTION 4: RISK ASSESSMENT

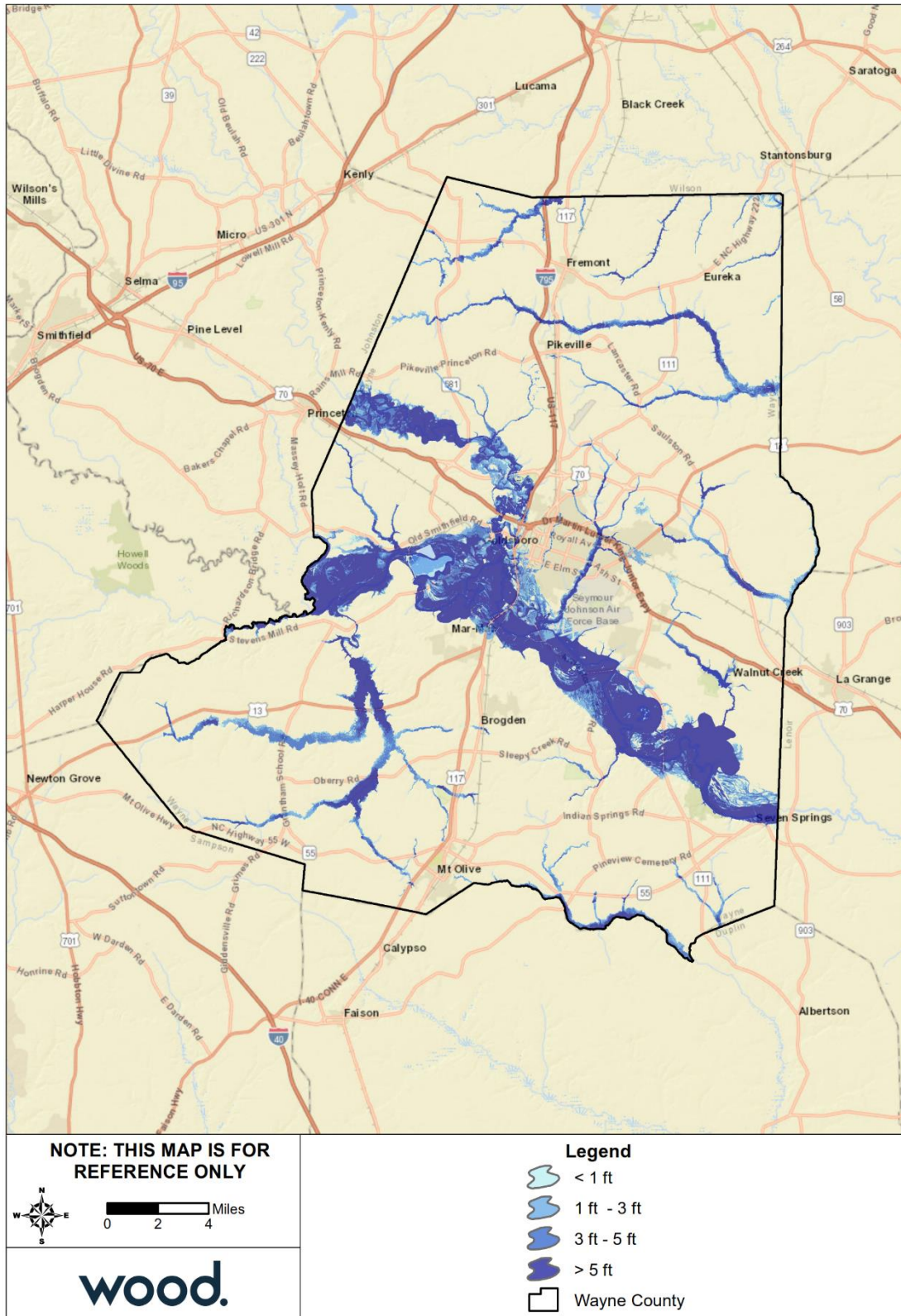
Figure 4.33 – Flood Depth, 100-Year Floodplain, Pitt County



Source: FEMA Effective DFIRM; GIS analysis

SECTION 4: RISK ASSESSMENT

Figure 4.34 – Flood Depth, 100-Year Floodplain, Wayne County



Source: FEMA Effective DFIRM; GIS analysis

SECTION 4: RISK ASSESSMENT

Impact: 3 – Critical

Spatial Extent: 3 – Moderate

Historical Occurrences

Table 4.37 summarizes the historical occurrences of flooding identified from 1999 through 2018 by the NCEI Storm Events database by county and event type. In total, 167 events were recorded across 63 separate days. In total, these events have caused 11 deaths and over \$142 million in property damages and \$61 million in crop damages.

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. It is also important to note that many of the events attributed to each county are countywide or cover large portions of the county.

Table 4.37 – Summary of NCEI Records of Flooding, 1999-2018

Event Location and Type	Event Count	Deaths	Injuries	Property Damage	Crop Damage
Greene	26	1	0	\$0	\$0
Flash Flood	24	0	0	\$0	\$0
Flood	2	1	0	\$0	\$0
Jones	15	0	0	\$500,000	\$6,000,000
Flash Flood	12	0	0	\$500,000	\$6,000,000
Flood	3	0	0	\$0	\$0
Lenoir	36	5	0	\$150,000	\$0
Flash Flood	23	0	0	\$150,000	\$0
Flood	11	5	0	\$0	\$0
Heavy Rain	2	0	0	\$0	\$0
Pitt	55	1	0	\$100,000	\$100,000
Flash Flood	31	1	0	\$100,000	\$100,000
Flood	14	0	0	\$0	\$0
Heavy Rain	10	0	0	\$0	\$0
Wayne	35	4	0	\$141,740,000	\$55,000,000
Flash Flood	28	2	0	\$10,000	\$0
Flood	3	2	0	\$141,730,000	\$55,000,000
Heavy Rain	4	0	0	\$0	\$0
Total	167	11	0	\$142,490,000	\$61,100,000

Source: NCEI Storm Events Database

The following historical flood elevations are reported in NCEI records for the region, and illustrate the potential for flooding across the region:

September 15-28, 1999 – Heavy rains fell 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. As of September 27th, river levels from Hurricane Floyd were still over ten feet above flood stage. Any rain that fell over this already saturated soil had nowhere to go. Doppler radar began showing heavy showers on the evening of Monday, September 27th. By 9 a.m. Tuesday 5 to 10 inches of rain had fell over the four counties. Lenoir County was hardest hit with over 10 inches falling in the northwest portion of the county.

Neuse River

Regional Hazard Mitigation Plan
2020

SECTION 4: RISK ASSESSMENT

Greene County received the most wide-spread area of 5 inches or greater. The Cooperative observer in Snow Hill (Greene County) reported 7.24 inches of rainfall in 24 hours. In the end this only added to the extremely swollen Neuse River and Contentnea Creek. Any additional rainfall produced immediate runoff into local streams/creeks which brought water back onto roads and into surrounding neighborhoods and communities. Since the state was still covered by a quasi-tropical airmass, even garden variety thunderstorms dropped copious rainfall amounts.

October 6, 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.

October 8-13, 2016 – Hurricane Matthew moved northeast offshore of the North Carolina coast late on October 8th through October 9th. Widespread heavy rain developed on October 8th and continued through early on October 9th as Matthew approached and moved offshore of the coast. Rainfall ranged from 2 to 4 inches on the southern beaches to 8 to 12 inches inland. This rain led to significant flash flooding over much of eastern North Carolina during the afternoon of October 8th through the morning of October 9th. Many roads were washed out and impassable for days from the serious flash flooding. Devastating river flooding then occurred several days after Matthew as most main-stem rivers exceeded major flood levels. Storm surge inundation was mainly 1 to 3 feet above ground level along the coast. There were six confirmed fatalities across the area with five in Lenoir County and one in Pitt County. Dollar damages totals will likely exceed 200 million dollars with significant agricultural losses.

Probability of Future Occurrence

By definition of the 100-year flood event, SFHAs are defined as 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 500-year flood area is defined as those areas that will be inundated by the flood event having a 0.2-percent chance of being equaled or exceeded in any given year; it is not the flood that will occur once every 500 years.

The Region is also at risk to other magnitudes of flooding and other types of flooding, such as stormwater and localized floods, which have varying probabilities. According to past records, all counties in the region have between 75% to 100% likelihood of experiencing flooding in any given year. For the region as a whole, future flooding is considered likely. 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 Walstonburg, Pink Hill, Bethel, Falkland, Grimesland, Eureka, and Fremont.

Probability: 3 – Likely

Climate Change

According to the 2018 North Carolina Hazard Mitigation Plan, changing climate and weather patterns, environmental conditions, and urban and rural development may affect the frequency and intensity of flooding. The increased likelihood of extreme precipitation events due to climate change will result in greater risks of flash flooding and impacts from stormwater runoff. The plan notes that even though there may be less precipitation overall in the long term leading to more frequent drought events, the rainfall that does occur will likely be more intense, and flooding impacts may intensify as a result.

Neuse River

Regional Hazard Mitigation Plan
2020

SECTION 4: RISK ASSESSMENT

Vulnerability Assessment

Methodologies and Assumptions

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

As a subset of the building vulnerability analysis, exposure of pre-FIRM structures was also estimated. Table 4.38 below provides the NFIP initial FIRM date for each participating jurisdiction, which was used to determine which buildings were constructed pre-FIRM. Pre-FIRM structures were built prior to the adoption of flood protection building standards and are therefore assumed to be at greater risk to the flood hazard.

Table 4.38 – NFIP Initial FIRM Dates

Jurisdiction	Initial FIRM Date
Greene County	
Town of Hookerton, Town of Snow Hill	01/20/82
Greene County (Unincorporated Area)	01/06/83
Town of Walstonburg	01/02/04
Jones County	
Town of Pollockville	09/04/86
Town of Trenton	09/01/87
Jones County (Unincorporated Area)	08/16/88
Town of Maysville	07/02/04
Lenoir County	
City of Kinston	06/15/82
Lenoir County (Unincorporated Area)	01/06/83
Town of La Grange, Town of Pink Hill	07/02/04
Pitt County	
Town of Winterville	02/24/78
City of Greenville	07/03/78
Town of Grifton	02/17/82
Town of Farmville	04/01/82
Pitt County (Unincorporated Area)	01/06/83
Town of Ayden	08/04/87
Town of Bethel, Town of Falkland, Town of Fountain, Town of Grimesland, Village of Simpson	01/02/04
Wayne County	
Town of Mount Olive, Town of Seven Springs	02/17/82
Town of Pikeville	04/01/82
City of Goldsboro	06/01/82
Wayne County (Unincorporated Area), Village of Walnut Creek	09/30/83
Town of Eureka*, Town of Fremont	12/02/05

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

*Note that the Town of Eureka is currently not participating in the NFIP. The town has no land in the SFHA.

If the NFIP initial FIRM date for a given community is between January and June, buildings constructed the same year as the initial FIRM date are considered post-FIRM (e.g., if the NFIP initial FIRM 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 initial FIRM date is between July and December, then the following

Neuse River

SECTION 4: RISK ASSESSMENT

year applies for the year built cut-off (e.g., if the NFIP initial FIRM date is 12/18/2007, buildings constructed in the year 2007 and before are pre-FIRM, 2008 and newer are post-FIRM).

Effective FEMA DFIRM data was used to identify flood hazard areas. Flood zones used in the analysis consist of Zone AE (1-percent-annual-chance flood), Zone AE Floodway, and the 0.2-percent-annual-chance flood hazard area.

People

Certain health hazards are common to flood events. While such problems are often not reported, three general types of health hazards accompany floods. The first comes from the water itself. 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.

Debris also poses a risk both during and after a flood. 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. People must be aware of these dangers prior to a flood so that they understand the risks and take necessary precautions before, during, and after a flood.

Floodwaters also saturate the ground, which leads to infiltration into sanitary sewer lines. 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.

The second type of health problem arises after most of the water has gone. Stagnant pools can become breeding grounds for mosquitoes, and wet areas of a building that have not been properly cleaned breed mold and mildew. A building that is not thoroughly cleaned becomes a health hazard, especially for small children and the elderly.

Another health hazard occurs 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 a local water system loses pressure, a boil order may be issued to protect people and animals from contaminated water.

The third problem is the long-term psychological impact of 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 puts a severe strain on people, especially the 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. According to NCEI records, there have been 11 deaths in the Region directly caused by flooding.

Table 4.39 details the population at risk from the 1% annual chance flood event, according to data from the NCEM IRISK database. Note that development and population growth have occurred since the original analysis for the IRISK dataset was performed, therefore actual population at risk is likely higher.

SECTION 4: RISK ASSESSMENT

Table 4.39 – Population Impacted by the 100 Year Flood Event

County	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
Greene	21,378	225	1.1%	2,665	28	1.1%	1,388	15	1.1%
Jones	10,171	356	3.5%	1,757	61	3.5%	617	21	3.4%
Lenoir	59,448	4,019	6.8%	9,515	615	6.5%	3,800	258	6.8%
Pitt	168,177	7,122	4.2%	16,619	710	4.3%	11,233	475	4.2%
Wayne	122,706	4,706	3.8%	16,078	616	3.8%	8,766	336	3.8%
Region Total	381,880	16,428	4.3%	46,634	2,030	4.4%	25,804	1,105	4.3%

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.

Table 4.40 details the property at risk from the 1% annual chance flood event, according to data from the NCEM IRISK database. As with population vulnerability data, actual property at risk is likely higher due to development that has occurred since the original analysis for the IRISK dataset was performed.

Table 4.41 provides building counts and estimated damages for Critical Infrastructure and Key Resources (CIKR) buildings across all jurisdictions by sector for the 100-year flood event. Table 4.42 provides this information for the 500-year event. Vulnerability of CIKR as well as High Potential Loss Properties, where applicable, can be found by jurisdiction in each community’s annex to this plan.

SECTION 4: RISK ASSESSMENT

Table 4.40 – Buildings Impacted by the 100-Year Flood Event

County	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
Greene	12,254	106	0.9%	104	0.8%	\$199,966	3	0%	\$2,820	0	0%	\$0	107	0.9%	\$202,785
Jones	7,545	221	2.9%	201	2.7%	\$1,187,621	18	0.2%	\$80,747	2	0%	\$13,631	221	2.9%	\$1,282,001
Lenoir	33,465	1,472	4.4%	1,757	5.3%	\$12,496,009	262	0.8%	\$23,611,048	13	0%	\$477,407	2,032	6.1%	\$36,584,462
Pitt	64,163	1,225	1.9%	2,125	3.3%	\$15,849,327	307	0.5%	\$10,525,353	17	0%	\$488,927	2,449	3.8%	\$26,863,607
Wayne	71,288	1,719	2.4%	2,107	3%	\$17,451,373	328	0.5%	\$7,828,581	21	0%	\$1,100,960	2,456	3.4%	\$26,380,913
Region Total	188,715	4,743	2.5%	6,294	3.3%	\$47,184,296	918	0.5%	\$42,048,549	53	0%	\$2,080,925	7,265	3.8%	\$91,313,768

Source: NCEM Risk Management Tool

SECTION 4: RISK ASSESSMENT

Table 4.41 – CIKR Buildings at Risk to Flood Events by Sector, 100-Year Flood Event

Sector	Number of Buildings at Risk	Estimated Damages
Banking and Finance	7	\$481,609
Commercial Facilities	640	\$33,870,828
Critical Manufacturing	86	\$6,135,881
Emergency Services	5	\$320,364
Energy	3	\$99,753
Food and Agriculture	192	\$1,317,495
Government Facilities	23	\$674,952
Healthcare and Public Health	6	\$530,809
Transportation Systems	6	\$567,298
Water	10	\$15,766,897
Total	978	\$59,765,886

Source: NCEM Risk Management Tool

Table 4.42 – CIKR Buildings at Risk to Flood Events by Sector, 500-Year Flood Event

Sector	Number of Buildings at Risk	Estimated Damages
Banking and Finance	1	\$49,984
Commercial Facilities	590	\$50,713,853
Critical Manufacturing	84	\$11,245,845
Emergency Services	1	\$6,453
Energy	18	\$136,246,234
Food and Agriculture	261	\$2,612,746
Government Facilities	34	\$1,298,913
Healthcare and Public Health	4	\$556,047
Transportation Systems	10	\$1,812,213
Water	1	\$34,833
Total	1,004	\$204,577,121

Source: NCEM Risk Management Tool

According to IRISK data, a total of \$91,313,768 in property damages is estimated to result from a 1%-annual-chance flood event. This damage estimate equates to a less than 1 percent loss ratio. 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.

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. An analysis of repetitive loss was completed to examine repetitive losses within the Region.

According to 2019 NFIP records, there are a total of 269 repetitive loss properties within the Neuse River Region, which have generated over \$42 million in claims payments. Data on the occupancy type of these properties was not released by FEMA. The region's previous Hazard Mitigation Plan reported there were 97 repetitive loss properties in 2015; 92% were residential and 8% were non-residential. While total property counts have increased, given this past data and knowledge of repetitive loss properties across the State of North Carolina, it is assumed that the proportion of residential and non-residential properties has remained consistent and at least 90% of the repetitive loss properties in the region are residential.

Neuse River

Regional Hazard Mitigation Plan
2020

SECTION 4: RISK ASSESSMENT

Table 4.43 summarizes repetitive loss properties by jurisdiction as identified by FEMA through the NFIP.

Table 4.43 – Repetitive Loss Properties by Jurisdiction

Jurisdiction	Total Number of Properties	Total Number of Losses	Total Amount of Claims Payments
Greene County	6	13	\$616,108.20
Snow Hill	1	2	\$28,693.02
Jones County	19	48	\$3,627,326.89
Maysville	1	2	\$49,862.30
Pollocksville	5	10	\$1,451,489.46
Trenton	2	6	\$325,175.22
Lenoir County	22	51	\$2,809,734.20
Kinston	70	170	\$18,833,975.28
Pitt County	22	62	\$1,449,281.46
Greenville	13	34	\$953,656.66
Ayden	4	13	\$286,650.43
Bethel	1	2	\$11,794.60
Grifton	8	24	\$411,065.98
Winterville	9	29	\$261,466.55
Simpson	1	3	\$36,280.88
Wayne County	26	59	\$3,487,717.50
Goldsboro	48	106	\$6,399,589.19
Mount Olive	5	11	\$254,451.47
Pikeville	1	2	\$42,848.05
Seven Springs	4	13	\$641,493.68
Walnut Creek	1	2	\$30,663.08
Total	269	662	\$42,009,324.10

Source: FEMA/ISO

Note: Data on property occupancy was not released by FEMA, however it can be assumed that the majority of these properties are residential. Communities without any repetitive losses are not shown in this table.

Environment

During a flood event, chemicals and other hazardous substances may end up contaminating local water bodies. 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 4.44 summarizes the potential detrimental consequences of flood.

Table 4.44 – 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

SECTION 4: RISK ASSESSMENT

Category	Consequences
	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.
Property, Facilities and Infrastructure	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. Impacts are expected to be localized to the area of the incident. Severe damage is possible.
Environment	During a flood event, chemicals and other hazardous substances may end up contaminating local water bodies. Flooding kills animals and in general disrupts the ecosystem. Snakes and insects may also make their way to the flooded areas. 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.
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. 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
Greene County	3	3	3	3	3	3.0	H
Hookerton	3	3	3	3	3	3.0	H
Snow Hill	3	3	3	3	3	3.0	H
Walstonburg	2	3	1	3	3	2.3	M
Jones County	3	3	3	3	3	3.0	H
Maysville	3	3	2	3	3	2.8	H
Pollocksville	3	3	3	3	3	3.0	H
Trenton	3	3	3	3	3	3.0	H
Lenoir County	3	3	3	3	3	3.0	H
Kinston	3	3	3	3	3	3.0	H
La Grange	3	3	2	3	3	2.8	H
Pink Hill	2	3	1	3	3	2.3	M
Pitt County	3	3	3	3	3	3.0	H
Ayden	3	3	3	3	3	3.0	H
Bethel	2	3	1	3	3	2.3	M
Falkland	2	3	1	3	3	2.3	M

SECTION 4: RISK ASSESSMENT

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Farmville	3	3	2	3	3	2.8	H
Fountain	3	3	2	3	3	2.8	H
Greenville	3	3	3	3	3	3.0	H
Grifton	3	3	3	3	3	3.0	H
Grimesland	2	3	1	3	3	2.3	M
Simpson	2	3	1	3	3	2.3	M
Winterville	2	3	1	3	3	2.3	M
Wayne County	3	3	3	3	3	3.0	H
Eureka	2	3	1	3	3	2.3	M
Fremont	2	3	1	3	3	2.3	M
Goldsboro	3	3	3	3	3	3.0	H
Mount Olive	2	3	1	3	3	2.3	M
Pikeville	2	3	1	3	3	2.3	M
Seven Springs	3	3	4	3	3	3.2	H
Walnut Creek	3	3	3	3	3	3.0	H

4.5.6 Hurricane and Tropical Storm

Hazard Background

Hurricanes and tropical storms are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise in the Northern Hemisphere (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.

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 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. Hurricanes are given a classification based on the Saffir-Simpson Scale; this scale is reproduced in Table 4.45.

While not directly relevant to the planning area, storm surge is another common element of hurricane activity. A storm surge is a large dome of water often 50 to 100 miles wide and rising anywhere from four to five feet in a Category 1 hurricane up to 20 feet in a Category 5 storm. The storm surge arrives ahead of the storm’s actual landfall and the more intense the hurricane is, the sooner the surge arrives. Water rise can be very rapid, posing a serious threat to those who have not yet evacuated flood-prone areas. A storm surge is a wave that has outrun its generating source and become a long period swell. The surge is always highest in the right-front quadrant of the direction in which the hurricane is moving. As the storm approaches shore, the greatest storm surge will be to the north of the hurricane eye. Such a surge of high water topped by waves driven by hurricane force winds can be devastating to coastal regions, causing severe beach erosion and property damage along the immediate coast.

Warning Time: 1 – More than 24 hours

Duration: 3 – Less than one week

Location

Hurricanes and tropical storms can occur anywhere within the planning area. While coastal areas are most vulnerable to hurricanes, their wind and rain impacts can be felt hundreds of miles inland.

Extent

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,

SECTION 4: RISK ASSESSMENT

Florida. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. Hurricane intensity is further classified by the Saffir-Simpson Scale (Table 4.45), which rates hurricane intensity on a scale of 1 to 5, with 5 being the most intense.

Table 4.45 – Saffir-Simpson Scale






Category	Maximum Sustained Wind Speed (MPH)	Types of Damage
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 4.46 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.

SECTION 4: RISK ASSESSMENT

Table 4.46 – 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

The Saffir-Simpson scale provides a measure of extent of a hurricane. Each county in the region is susceptible to the full force of every category of hurricane.

Impact: 4 – Catastrophic

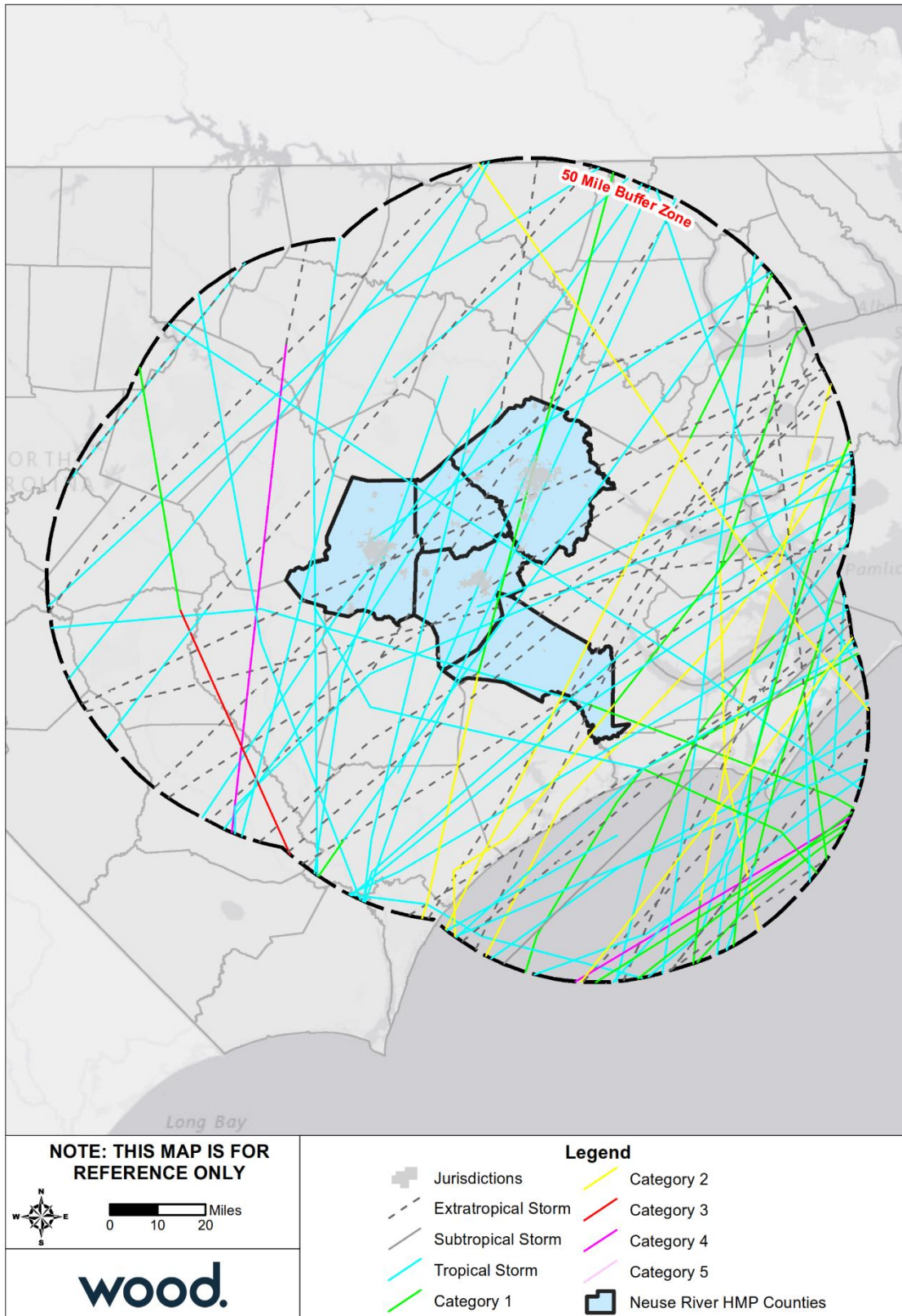
Spatial Extent: 4 – Large

Historical Occurrences

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, 78 hurricanes and tropical storms passed within 50 miles of the Neuse River Region between 1900 and 2016. These storm tracks are shown in Figure 4.35. The date, storm name, storm category, and maximum wind speed of each event are detailed in Table 4.47.

SECTION 4: RISK ASSESSMENT

Figure 4.35 –Tropical Cyclone Tracks within 50 miles of the Neuse River Region, 1900-2016



Source: NOAA Office of Coastal Management

SECTION 4: RISK ASSESSMENT

Table 4.47 – Tropical Cyclone Tracks within 50 Miles of Neuse River Region, 1900-2016

Date	Storm Name	Max Storm Category*	Max Wind Speed (mph)*
10/13/1900	UNNAMED	Extratropical Storm	40
7/11/1901	UNNAMED	Category 1	81
9/18/1901	UNNAMED	Tropical Storm	40
6/16/1902	UNNAMED	Tropical Storm	40
9/14/1904	UNNAMED	Tropical Storm	69
6/29/1907	UNNAMED	Extratropical Storm	58
7/31/1908	UNNAMED	Category 1	81
9/1/1908	UNNAMED	Tropical Storm	52
8/28/1910	UNNAMED	Extratropical Storm	46
10/20/1910	UNNAMED	Tropical Storm	69
6/14/1912	UNNAMED	Extratropical Storm	40
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
9/17/1924	UNNAMED	Extratropical Storm	46
12/2/1925	UNNAMED	Extratropical Storm	81
9/19/1928	UNNAMED	Extratropical Storm	81
10/2/1929	UNNAMED	Extratropical Storm	58
9/16/1932	UNNAMED	Extratropical Storm	52
9/3/1934	UNNAMED	Tropical Storm	46
9/6/1935	UNNAMED	Tropical Storm	58
10/12/1942	UNNAMED	Extratropical Storm	46
8/2/1944	UNNAMED	Tropical Storm	69
10/20/1944	UNNAMED	Extratropical Storm	58
6/26/1945	UNNAMED	Category 1	75
7/6/1946	UNNAMED	Tropical Storm	52
9/25/1947	UNNAMED	Extratropical Storm	40
9/13/1949	UNNAMED	Tropical Storm	46
10/15/1954	HAZEL	Category 4	132
8/12/1955	CONNIE	Category 2	98
8/17/1955	DIANE	Tropical Storm	69
9/19/1955	IONE	Category 2	109
9/27/1956	FLOSSY	Extratropical Storm	58
10/17/1956	UNNAMED	Extratropical Storm	58
9/27/1958	HELENE	Category 4	138
7/10/1959	CINDY	Tropical Storm	40
7/29/1960	BRENDA	Tropical Storm	69
9/12/1960	DONNA	Category 2	104
9/14/1961	UNNAMED	Tropical Storm	40
9/13/1964	DORA	Tropical Storm	52
10/16/1964	ISBELL	Category 1	75
6/16/1965	UNNAMED	Extratropical Storm	40
9/17/1967	DORIA	Tropical Storm	52
10/20/1968	GLADYS	Category 1	86

SECTION 4: RISK ASSESSMENT

Date	Storm Name	Max Storm Category*	Max Wind Speed (mph)*
8/27/1971	DORIA	Tropical Storm	63
9/30/1971	GINGER	Category 1	86
6/21/1972	AGNES	Tropical Storm	46
8/20/1981	DENNIS	Tropical Storm	63
6/19/1982	SUBTROP:UNNAMED	Subtropical Storm	69
9/13/1984	DIANA	Tropical Storm	63
11/22/1985	KATE	Tropical Storm	52
8/17/1986	CHARLEY	Category 1	75
6/6/1995	ALLISON	Extratropical Storm	46
6/19/1996	ARTHUR	Tropical Storm	46
7/12/1996	BERTHA	Category 2	104
9/6/1996	FRAN	Category 3	115
10/8/1996	JOSEPHINE	Extratropical Storm	52
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
9/23/2000	HELENE	Tropical Storm	40
9/18/2003	ISABEL	Category 2	104
8/14/2004	CHARLEY	Category 1	75
9/14/2005	OPHELIA	Category 1	86
6/14/2006	ALBERTO	Extratropical Storm	40
9/1/2006	ERNESTO	Tropical Storm	69
6/3/2007	BARRY	Extratropical Storm	46
9/9/2007	GABRIELLE	Tropical Storm	58
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	Tropical Storm	46
7/4/2014	ARTHUR	Category 2	98
6/7/2016	COLIN	Extratropical Storm	52
9/3/2016	HERMINE	Tropical Storm	63
10/9/2016	MATTHEW	Category 1	81

*Reports the most intense category & wind speed that occurred within 50 miles of the Neuse River Region, not for the storm event overall.
Source: Office of Coastal Management, 2019. <https://marinecadastre.gov/data/>

The above list of storms provides an indication of storm magnitude but not actual localized impacts. Not all the storms on the above list caused impacts in the Neuse River Region. NCEI reports event impacts and records 54 hurricane and tropical storm reports across 17 separate days during the 20-year period from 1999 through 2018. These events are summarized in Table 4.48 by storm. Hurricane and tropical storm events are reported in NCEI across the region by county and zone; therefore, one event that impacts all counties in the Region is recorded for each county. All death, injury, and damage records were combined from all counties/zones for each storm. 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.

SECTION 4: RISK ASSESSMENT

Table 4.48 – Recorded Hurricane/Tropical Storm Winds in Neuse River Region, 1999-2018

Date	Storm	Deaths/ Injuries	Property Damage	Crop Damage
8/30 – 9/4/1999	Hurricane Dennis	0/0	\$0	\$3,900,000
9/14 – 9/15/1999	Hurricane Floyd	7/0	\$364,000,000	\$286,500,000
9/17 – 9/18/2003	Hurricane Isabel	0/0	\$3,706,000	\$0
8/14/2004	Tropical Storm Charley	0/0	\$350,000	\$1,150,000
9/13/2005	Hurricane Ophelia	0/5	\$60,000	\$0
8/31 – 9/1/2006	Tropical Storm Ernesto	0/0	\$250,000	\$8,600,000
9/5/2008	Tropical Storm Hanna	0/0	\$50,000	\$0
8/26/2011	Hurricane Irene	2/0	\$38,000,000	\$88,000,000
6/6/2013	Tropical Storm Andrea	0/0	\$0	\$0
10/8/2016	Hurricane Matthew	1/1	\$0	\$0
9/13/2018	Hurricane Florence	0/0	\$77,200,000	\$0
	Total	10/1	\$483,616,000	\$388,150,000

Source: NCEI

September 14th-15th, 1999 - Hurricane Floyd made landfall as a Category 2 hurricane near North Topsail Beach, NC on September 16, 1999. Severe weather and rainfall preceded landfall. Rainfall estimates in Jones, Lenoir, Greene, and Pitt counties were near 6 to 10 inches with isolated areas of 12 to 15 inches. The peak inland wind reported in the Morehead City 15-county warning area was 82 miles per hour at Cherry Point Marine Corps Air Station. Still swollen from Hurricane Dennis the week before, the Neuse River in Kinston was nearly 15 feet above its 14 foot flood stage and remained above flood stage for over a month. Rainfall associated with the storm produced unprecedented flash flooding across the eastern half of North Carolina.

September 18-19th, 2003 - Hurricane Isabel made landfall early in the afternoon on September 18th as a category two hurricane across Core Banks in extreme eastern Carteret county. Isabel moved north northwest near 20 mph across eastern North Carolina during the afternoon. Hurricane force winds were also experienced in parts of the inland counties of Jones 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.

August 26th, 2011 - Hurricane Irene made landfall during the morning of the 27th, near Cape Lookout, as a large category 1 hurricane on the Saffir/Simpson Hurricane Wind Scale. 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. 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. There were two direct fatalities occurred in Pitt County, one due to a fallen tree on a house, and the second occurred when a man drove into a tree. Across Pitt County, winds gusted to 50 to 60 mph, near hurricane force resulting in minor to major structural damage to 2000 homes and businesses in Pitt County alone, mainly due to fallen trees, which also downed power lines resulting in power outages. Significant damage occurred to structures and crops. In Pitt County, agricultural losses were estimated at 38 million dollars from flooding and winds. Storm total rainfall was 7 to 13 inches with flooding of roads and low lying areas.

October 8th, 2016 – Hurricane Matthew moved northeast offshore of the North Carolina coast late on October 8th through October 9th. Widespread heavy rain and strong winds developed over the region from late morning on October 8th through the morning of October 9th. Rainfall was generally 5 to 11 inches across the region with a storm total of 10.62 inches reported in Kinston, 8.66 inches in Snow Hill, and 10.74 inches in Farmville. The heavy rainfall produced significant flash flooding with many roads

Neuse River

SECTION 4: RISK ASSESSMENT

washed out. Many homes and businesses were flooded and damaged with numerous roads closed for days. Devastating river flooding developed along the Neuse River days after the rainfall ended. The Neuse River crested at an all time record of 28.31 feet in Kinston in major flood well above the 14 foot flood stage. Contentnea Creek crested at 24.14 feet in Hookerton in major flood well above the 13 foot flood stage. At Greenville, the Tar River crested at 24.46 feet, also above the 13 foot flood stage.

Gusty north winds developed on the backside of Matthew with a peak wind gust of 51 mph recorded at the Kinston Airport in the evening of October 8th and 59 mph at the Greenville Airport. The gusty winds combined with saturated ground led to many downed trees with widespread power outages.

September 13th, 2018 - A ridge of high pressure over eastern North America stalled Florence's forward motion a few miles off the southeast North Carolina coast on September 13th. Hurricane Florence made landfall near Wrightsville Beach early on Saturday September 15 and weakened further as it moved slowly inland. Despite making landfall as a weakened Category 1 hurricane, Florence still produced 40 to 70 mph wind gusts, enough wind speed to uproot trees and cause widespread power outages throughout the Carolinas. As the storm moved inland, from September 15 to 17, heavy rain of 10 to 25 inches caused widespread inland flooding and major river flooding on main-stem rivers such as the Neuse, Cape Fear, and Little River. Most major roads and highways in the area experienced some flooding, with large stretches of I-40 and I-95 remaining impassable for days after the storm had passed. The storm also spawned tornadoes in several places along its path.

Widespread heavy rain and strong winds developed over the region from the morning of September 13th through the morning of September 16th. Rainfall was generally 10 inches to 25 inches across the region with a storm total of 19.35 inches in Trenton, 12.5 inches in Snow Hill, and 18.92 inches in Kinston. Extremely heavy rainfall across the county initially lead to flash flooding with numerous roads that were impassable. In some places, water reached the second floor of buildings, and roads were closed for several days. The Trent River crested at a record of 29.28 feet, and the Neuse River crested at 25.78 feet. The region experienced wind gusts up to 70 mph and saturated grounds lead to downed trees damaging cars, homes, and power lines. Two tornados, one EF0 and one EF1, were confirmed in Jones county.

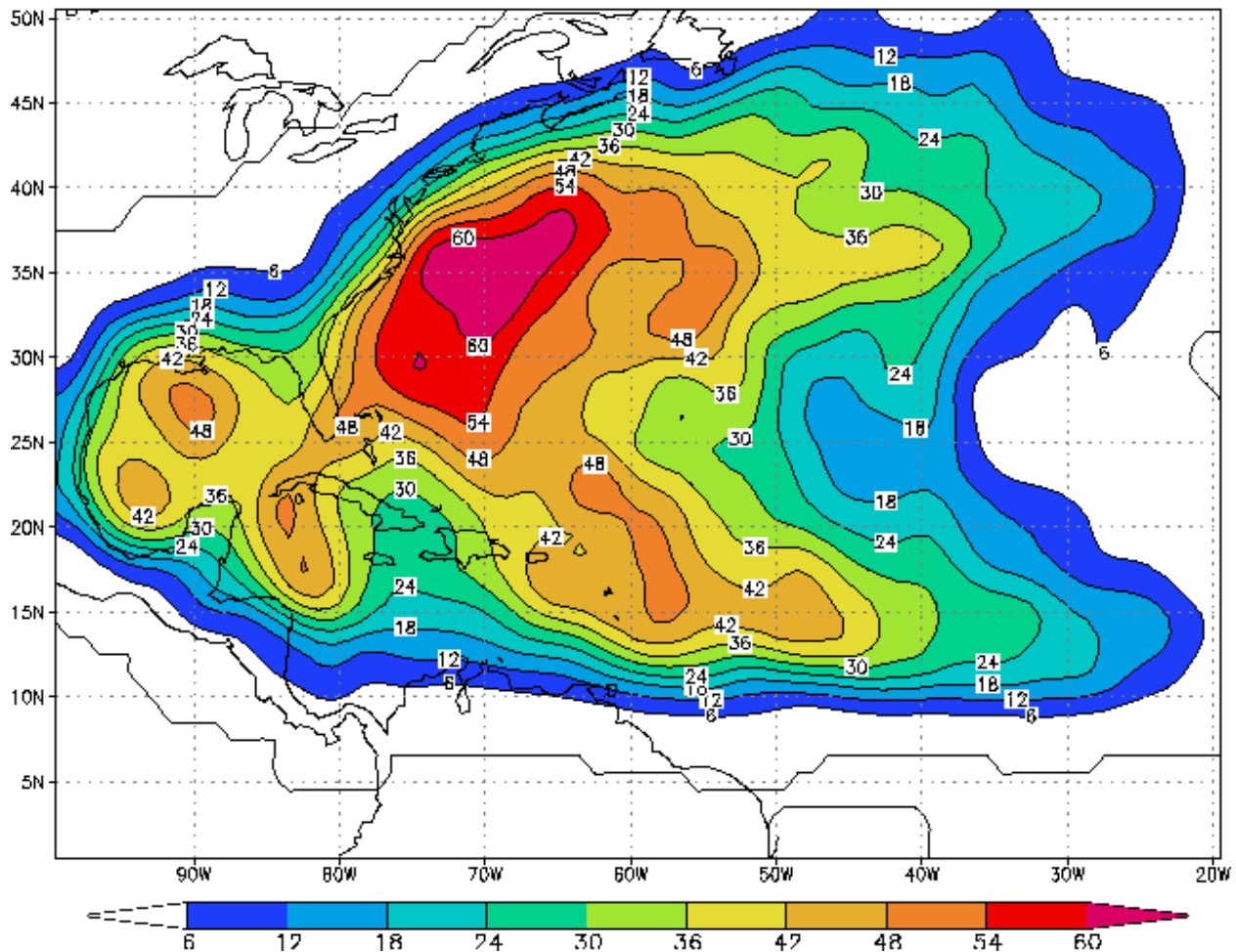
Probability of Future Occurrence

Probability: 3 – Likely

In the 20-year period from 1999 through 2018, 11 hurricanes and tropical storms impacted the Neuse River Region, which equates to a 55 percent annual probability of hurricane winds impacting the region. This probability does not account for impacts from hurricane rains, which may also be severe. The probability of a hurricane or tropical storm impacting the Neuse River Region is likely.

Figure 4.36 shows, for any particular location, the chance of a hurricane or tropical storm affecting the area sometime during the Atlantic hurricane season and supports the conclusion that a tropical storm is likely to affect the Region in any given year. The figure was created by the National Oceanic and Atmospheric Administration's (NOAA) Hurricane Research Division, using data from 1944 to 1999. The figure shows the number of times a storm or hurricane was located within approximately 100 miles (165 kilometers) of a given spot in the Atlantic basin.

Figure 4.36 – 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. Substantial hurricane damage is typically most likely to be expected in the easternmost counties of the state; however, hurricane and tropical storm-force winds have significantly impacted areas far inland.

Vulnerability Assessment

Methodologies and Assumptions

Property at risk to hurricanes was estimated using data from the NCEM 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

The very young, the elderly and the handicapped 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

SECTION 4: RISK ASSESSMENT

stress from disasters such as a hurricane can result in immediate and long-term physical and emotional health problems among victims.

Property

Hurricanes can cause catastrophic damage to coastlines and several hundred miles inland. Hurricanes can produce winds exceeding 157 mph as well as tornadoes and microbursts. Additionally, hurricanes often bring intense rainfall that can result in flash flooding. Floods and flying debris from the excessive winds are often the deadly and most destructive results of hurricanes.

Hurricanes and tropical storms can also cause agricultural damages. For the counties in the Neuse River Region, USDA RMA reports losses of \$51,148,383 impacting 82,342 acres from 2007-2017 due to hurricanes and tropical depressions, with the majority of recorded damages occurring in 2008, 2011, 2014 and 2016. Wayne County saw the most indemnities paid during this timeframe with \$13.4 million, closely followed by Pitt County with \$12.3 million. Tobacco and cotton were the two hardest hit crops. The region recorded an average annual loss of \$4,649,853. Table 4.49 shows county-specific RMA data.

Table 4.49 – Crop Indemnities due to Hurricanes in the Neuse River Region, 2007-2017

County	Total Affected Acres	Total Indemnity Paid	Average Annual Indemnity (2007-2017)
Greene	8,752.1	\$8,580,356	\$780,032
Jones	14,090.7	\$7,284,646	\$662,240
Lenoir	18,215	\$9,567,048	\$869,731
Pitt	27,142.9	\$12,317,477	\$1,119,770
Wayne	14,141.3	\$13,398,857	\$1,218,077

Source: USDA RMA

The damage estimates for the 100-year hurricane wind event total \$848,993,651, which equates to a loss ratio of 3.1 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 to buildings and actual damages would likely be higher due to flooding. Given the Therefore, the aforementioned crop losses due to hurricane winds as well as the losses due to flooding noted in Section 4.5.5, the region would likely experience a higher overall loss ratio from the 100-year hurricane event and face difficulty recovering from such an event.

Table 4.50 through Table 4.54 detail the estimated building damages from varying magnitudes of hurricane events.

SECTION 4: RISK ASSESSMENT

Table 4.50 – Estimated Buildings Impacted by 25-Year Hurricane Wind Event

County	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
Greene	12,254	9888	80.70%	\$3,565,290	2,126	17.30%	\$310,364	232	1.90%	\$464,492	12,246	99.90%	\$4,340,146
Jones	7,545	5,646	74.80%	\$4,266,402	1,697	22.50%	\$446,070	201	2.70%	\$572,463	7,544	100%	\$5,284,935
Lenoir	33,465	28,018	83.70%	\$17,918,666	4,639	13.90%	\$5,706,364	655	2%	\$2,510,287	33,312	99.50%	\$26,135,316
Pitt	64,163	50,235	78.30%	\$18,582,211	7,912	12.30%	\$3,450,224	735	1.10%	\$987,090	58,882	91.80%	\$23,019,521
Wayne	71,288	60,553	84.90%	\$22,210,522	8,414	11.80%	\$4,417,776	2,282	3.20%	\$2,877,055	71,249	99.90%	\$29,505,355
Region Total	188,715	154,340	81.80%	\$66,543,091	24,788	13.10%	\$14,330,798	4,105	2.20%	\$7,411,387	183,233	97.10%	\$88,285,273

Table 4.51 – Estimated Buildings Impacted by 50-Year Hurricane Wind Event

County	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
Greene	12,254	9,888	80.70%	\$9,833,064	2,126	17.30%	\$1,291,141	232	1.90%	\$1,693,352	12,246	99.90%	\$12,817,557
Jones	7,545	5,646	74.80%	\$17,464,033	1,697	22.50%	\$2,414,444	201	2.70%	\$2,463,781	7,544	100%	\$22,342,257
Lenoir	33,465	28,018	83.70%	\$51,453,854	4,639	13.90%	\$20,515,202	655	2%	\$8,421,499	33,312	99.50%	\$80,390,557
Pitt	64,163	50,235	78.30%	\$61,724,551	7,912	12.30%	\$13,314,476	735	1.10%	\$4,210,947	58,882	91.80%	\$79,249,977
Wayne	71,288	60,553	84.90%	\$60,568,227	8,414	11.80%	\$15,812,350	2,282	3.20%	\$10,796,064	71,249	99.90%	\$87,176,640
Region Total	188,715	154,340	81.80%	\$201,043,729	24,788	13.10%	\$53,347,613	4,105	2.20%	\$27,585,643	183,233	97.10%	\$281,976,988

SECTION 4: RISK ASSESSMENT

Table 4.52 – Estimated Buildings Impacted by 100-Year Hurricane Wind Event

County	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
Greene	12,254	9,888	80.70%	\$31,295,717	2,126	17.30%	\$4,200,320	232	1.90%	\$4,525,382	12,246	99.90%	\$40,021,420
Jones	7,545	5,646	74.80%	\$61,717,786	1,697	22.50%	\$7,736,202	201	2.70%	\$7,364,372	7,544	100%	\$76,818,359
Lenoir	33,465	28,018	83.70%	\$155,653,620	4,639	13.90%	\$60,651,730	655	2%	\$25,915,051	33,312	99.50%	\$242,220,402
Pitt	64,163	50,235	78.30%	\$171,541,486	7,912	12.30%	\$36,809,459	735	1.10%	\$9,400,032	58,882	91.80%	\$217,750,977
Wayne	71,288	60,553	84.90%	\$191,941,332	8,414	11.80%	\$47,356,662	2,282	3.20%	\$32,884,498	71,249	99.90%	\$272,182,493
Region Total	188,715	154,340	81.80%	\$612,149,941	24,788	13.10%	\$156,754,373	4,105	2.20%	\$80,089,335	183,233	97.10%	\$848,993,651

Table 4.53 – Estimated Buildings Impacted by 300-Year Hurricane Wind Event

County	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
Greene	12,254	9,888	80.70%	\$215,391,130	2,126	17.30%	\$25,792,542	232	1.90%	\$23,758,653	12,246	99.90%	\$264,942,326
Jones	7,545	5,646	74.80%	\$190,954,374	1,697	22.50%	\$22,894,396	201	2.70%	\$27,396,936	7,544	100%	\$241,245,707
Lenoir	33,465	28,018	83.70%	\$422,984,033	4,639	13.90%	\$159,915,280	655	2%	\$68,972,199	33,312	99.50%	\$651,871,514
Pitt	64,163	50,235	78.30%	\$1,063,044,323	7,912	12.30%	\$232,842,902	735	1.10%	\$56,749,076	58,882	91.80%	\$1,352,636,299
Wayne	71,288	60,553	84.90%	\$1,344,857,162	8,414	11.80%	\$300,829,944	2,282	3.20%	\$216,731,277	71,249	99.90%	\$1,862,418,384
Region Total	188,715	154,340	81.80%	\$3,237,231,022	24,788	13.10%	\$742,275,064	4,105	2.20%	\$393,608,141	183,233	97.10%	\$4,373,114,230

SECTION 4: RISK ASSESSMENT

Table 4.54 – Estimated Buildings Impacted by 700-Year Hurricane Wind Event

County	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
Greene	12,254	9,888	80.70%	\$404,134,408	2,126	17.30%	\$54,257,343	232	1.90%	\$48,366,732	12,246	99.90%	\$506,758,482
Jones	7,545	5,646	74.80%	\$303,401,248	1,697	22.50%	\$38,805,861	201	2.70%	\$47,961,220	7,544	100%	\$390,168,329
Lenoir	33,465	28,018	83.70%	\$893,548,094	4,639	13.90%	\$356,898,851	655	2%	\$153,383,653	33,312	99.50%	\$1,403,830,599
Pitt	64,163	50,235	78.30%	\$1,960,199,529	7,912	12.30%	\$380,658,636	735	1.10%	\$97,310,776	58,882	91.80%	\$2,438,168,941
Wayne	71,288	60,553	84.90%	\$2,633,806,392	8,414	11.80%	\$648,969,700	2,282	3.20%	\$474,618,465	71,249	99.90%	\$3,757,394,555
Region Total	188,715	154,340	81.80%	\$6,195,089,671	24,788	13.10%	\$1,479,590,391	4,105	2.20%	\$821,640,846	183,233	97.10%	\$8,496,320,906

SECTION 4: RISK ASSESSMENT

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.

Consequence Analysis

Table 4.55 summarizes the potential negative consequences of hurricanes and tropical storms.

Table 4.55 – Consequence Analysis – Hurricane and Tropical Storm

Category	Consequences
Public	Impacts include injury or death, loss of property, outbreak of diseases, mental trauma and loss of livelihoods. Power outages and flooding are likely to displace people from their homes. Water can become polluted such that if consumed, diseases and infection can be easily spread. 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.
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 from flooding or 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.
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.
Environment	Hurricanes can devastate wooded ecosystems and remove all the foliage from forest canopies, and they can change habitats so drastically that the indigenous animal populations suffer as a result. Specific foods can be taken away as high winds will often strip fruits, seeds and berries from bushes and trees. Secondary impacts may occur; for example, high winds and debris may result in damage to an above-ground fuel tank, resulting in a significant chemical spill.
Economic Condition of the Jurisdiction	Local economy and finances adversely affected, possibly for an extended period of time, depending on damages. Intangible impacts also likely, including business interruption and additional living expenses.
Public Confidence in the Jurisdiction’s Governance	Likely to impact public confidence due to possibility of major event requiring substantial response and long-term recovery effort.

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, Greene, Jones, Lenoir, and Wayne Counties, which have higher rates of mobile homes, may experience even more severe impacts.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Greene County	3	4	4	1	3	3.3	H
Hookerton	3	4	4	1	3	3.3	H

Neuse River

SECTION 4: RISK ASSESSMENT

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Snow Hill	3	4	4	1	3	3.3	H
Walstonburg	3	4	4	1	3	3.3	H
Jones County	3	4	4	1	3	3.3	H
Maysville	3	4	4	1	3	3.3	H
Pollocksville	3	4	4	1	3	3.3	H
Trenton	3	4	4	1	3	3.3	H
Lenoir County	3	4	4	1	3	3.3	H
Kinston	3	4	4	1	3	3.3	H
La Grange	3	4	4	1	3	3.3	H
Pink Hill	3	4	4	1	3	3.3	H
Pitt County	3	4	4	1	3	3.3	H
Ayden	3	4	4	1	3	3.3	H
Bethel	3	4	4	1	3	3.3	H
Falkland	3	4	4	1	3	3.3	H
Farmville	3	4	4	1	3	3.3	H
Fountain	3	4	4	1	3	3.3	H
Greenville	3	4	4	1	3	3.3	H
Grifton	3	4	4	1	3	3.3	H
Grimesland	3	4	4	1	3	3.3	H
Simpson	3	4	4	1	3	3.3	H
Winterville	3	4	4	1	3	3.3	H
Wayne County	3	4	4	1	3	3.3	H
Eureka	3	4	4	1	3	3.3	H
Fremont	3	4	4	1	3	3.3	H
Goldsboro	3	4	4	1	3	3.3	H
Mount Olive	3	4	4	1	3	3.3	H
Pikeville	3	4	4	1	3	3.3	H
Seven Springs	3	4	4	1	3	3.3	H
Walnut Creek	3	4	4	1	3	3.3	H

4.5.7 Severe Weather (Thunderstorm Winds, Lightning, and Hail)

Hazard Background

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 the 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

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 six hours

Duration: 1 – Less than six hours

Hail

Neuse River

SECTION 4: RISK ASSESSMENT

According to 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. Table 4.59 describes typical damage impacts of the various sizes of hail.

The onset of thunderstorms with hail is generally rapid. However, advancements in meteorological forecasting allow for some advance warning. Storms usually blow through in a few hours.

Warning Time: 4 – Less than six hours

Duration: 1 – Less than six hours

Location

Thunderstorm wind, lightning, and hail events do not have a defined vulnerability zone. The scope of wind, lightning and hail is generally defined to the footprint of its associated thunderstorm. The entirety of the Neuse River Region shares equal risk to the threat of severe weather.

Extent

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. Hurricane Wind and Tornadoes are addressed as individual hazards. 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 Beaufort Wind Force Scale is an empirical measure that relates wind speed to observed conditions at sea or on land. In the United States, winds of force 6 to 7 are designated as "strong;" 8 to 9 "gale force;"

SECTION 4: RISK ASSESSMENT

10 to 11 “usually results in a storm warning or tropical storm warning; and force 12 results in a hurricane warning.

Table 4.56 – Beaufort Wind Force Scale

Rating	(MPH)	Name	Appearance of Wind Effects	
			On Water	On Land
0	<1	Calm	Sea surface smooth and mirror-like	Calm, smoke rises vertically
1	1-3	Light Air	Scaly ripples, no foam crests	Smoke drift indicates wind direction, still wind vanes
2	4-7	Light Breeze	Small wavelets, crests glassy, no breaking	Wind felt on face, leaves rustle, vanes begin to move
3	8-12	Gentle Breeze	Large wavelets, crests begin to break, scattered whitecaps	Leaves and small twigs constantly moving, light flags extended
4	13-18	Moderate Breeze	Small waves 1-4 ft, becoming longer, numerous whitecaps	Dust, leaves, and loose paper lifted, small tree branches move
5	19-24	Fresh Breeze	Moderate waves 4-8 ft taking longer to form, many whitecaps, some spray	Small trees in leaf begin to sway
6	25-31	Strong Breeze	Larger waves 8-13 ft, whitecaps common, more spray	Larger tree branches moving, whistling in wires
7	32-38	Near Gale	Sea heaps up, waves 13-19 ft, white foam streaks of breakers	Whole trees moving, resistance felt walking against wind
8	39-46	Gale	Moderately high (18-25 ft) waves of greater length, edges of crests begin to break into spindrift, foam blown in streaks	Twigs breaking off trees, generally impedes progress
9	47-54	Strong Gale	High waves (23-32 ft), sea begins to roll, dense streaks of foam, spray may reduce visibility	Slight structural damage occurs, slate blows off roofs
10	55-63	Storm	Very high waves (29-41 ft) with overhanging crests, sea white with densely blown foam, heavy rolling, lowered visibility	Seldom experienced on land, trees broken or uprooted, “considerable structural damage”
11	64-72	Violent Storm	Exceptionally high (37-52 ft) waves, foam patches cover sea, visibility more reduced	Very rarely experienced; widespread damage
12	73+	Hurricane	Air filled with foam, waves over 45 ft, sea completely white with driving spray, visibility greatly reduced	Devastation

Source: NOAA Storm Prediction Center

The strongest wind speeds for the region approach 90 mph; these speeds were recorded three times, once each in Jones County (March 2011), Greene County (March 2015), and Pitt County (March 2015).

Impact: 2 – Limited

Spatial Extent: 4 – Large

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.

SECTION 4: RISK ASSESSMENT

Table 4.57 – Lightning Activity Level Scale

Lightning Activity Level Scale	
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 region 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.

While the total area vulnerable to a lightning strike corresponds to the footprint of a given thunderstorm, a specific lightning strike is usually a localized event and occurs randomly. 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 planning area is uniformly exposed to the threat of lightning.

Impact: 1 – Minor

Spatial Extent: 1 – Negligible

Hail

The National Weather Service classifies hail by diameter size, and corresponding everyday objects to help relay scope and severity to the population. Table 4.58 indicates the hailstone measurements utilized by the National Weather Service.

Table 4.58 – Hailstone Measurement Comparison Chart

Average Diameter	Corresponding Household Object
.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

Source: National Weather Service

SECTION 4: RISK ASSESSMENT

The Tornado and Storm Research Organization (TORRO) has further described hail sizes by their typical damage impacts. Table 4.59 describes typical intensity and damage impacts of the various sizes of hail.

Table 4.59 – TORRO Hailstorm Intensity Scale

Intensity Category	Diameter (mm)	Diameter (inches)	Size Description	Typical Damage Impacts
Hard Hail	5-9	0.2-0.4	Pea	No damage
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

Notes: 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 1998 and 2017 in across the region had a diameter of 1"; the largest stone recorded was 3 inches, recorded on June 3, 1998 in Winterville, Pitt County. The largest hailstone ever recorded in the U.S. fell in Vivian, SD on June 23, 2010, with a diameter of 8 inches and a circumference of 18.62 inches.

Hailstorms frequently accompany thunderstorms, so their locations and spatial extents coincide. The Neuse River Region is uniformly exposed to severe thunderstorms; therefore, the entire planning area is equally exposed to hail which may be produced by such storms. However, large-scale hail tends to occur in a more localized area within the storm.

Impact: 1 – Minor

Spatial Extent: 2 – Small

Historical Occurrences

Thunderstorm Winds

Between January 1, 1999 and December 31, 2018, the NCEI recorded 471 separate incidents of thunderstorm winds, strong winds and high winds across the five counties, occurring on 188 separate days. These events caused over \$3.65 million in recorded property damage, 10 injuries and 1 fatality during this timespan. Table 4.60 shows average and maximum wind speeds recorded for each county in the region.

Neuse River

SECTION 4: RISK ASSESSMENT

Ninety-four wind gusts caused property damage. Wind gusts with property damage recorded averaged almost \$39,000 in damage, with two gusts causing a reported \$1,000,000 in damage each. The NCEI also recorded \$11,000 in crop damage, occurring in Wayne and Greene counties.

Table 4.60 – Winds Summary by County, 1999-2018

Location	Wind Incidents	Average Wind Speed (MPH)	Top Wind Speed (MPH)	Recorded Fatalities	Recorded Injuries	Recorded Property Damage
Greene	59	59.2	89.8	0	0	\$202,800
Jones	45	60.4	89.8	0	0	\$107,500
Lenoir	92	59.5	80.6	0	0	\$157,500
Pitt	128	60.9	89.8	1	3	\$382,100
Wayne	147	58.8	86.3	0	7	\$2,805,200
Total	471	-	-	1	10	\$3,655,100

Source: NCEI

Table 4.61 notes NCEI-recorded incidents with injuries and fatalities.

Table 4.61 – Recorded Thunderstorm Winds with Injuries and/or Fatalities, 1999-2018

County	Location	Date	Wind Speed (MPH)	Fatalities	Injuries	Property Damage
Wayne	Goldsboro	3/8/2005	61	0	3	\$0
Pitt	Black Jack	7/28/2006	63.3	0	2	\$30,000
Wayne	Goldsboro	8/10/2007	86.3	0	4	\$1,000,000
Pitt	Calico	7/1/2012	69	1	0	\$0
Pitt	Quinerly	6/11/2014	57.5	0	1	\$10,000

Source: NCEI

A sampling of wind incidents across the region with some level of impact are recorded below:

March 8, 2005 – A wind incident occurring in Goldsboro in Wayne County resulting in three separate injuries. The roof was removed from a house on Antioch Road, and a person inside was injured. On Piedmont Airline Road, another house was heavily damaged, injuring the person inside. Structural damage was also reported on Patetown Road. On US 13 South, a few metal shelters were destroyed. Numerous trees and power lines were blown down. Strong winds damaged part of the Wayne Country Day School, with one minor injury.

July 28, 2006 – Large trees fell on residences in Black Jack in Pitt County due to high winds, causing two minor injuries. The top of a mobile home was also torn off.

August 10, 2007 – In the wake of an intense heat wave that shattered many high temperature records throughout the week, a surface trough moving southeast across the state sparked several severe thunderstorms. Numerous trees were blown down all throughout Goldsboro in Wayne County. Numerous roads were blocked by downed trees and power lines, and a motel sustained major roof damage. Four people were transported to the hospital with injuries ranging from a broken leg to scratches. The NCEI recorded \$1 million in property damage with this storm.

August 27, 2011 – Hurricane Irene made landfall over the Outer Banks on the morning of August 27 as a Category 1 hurricane. The expansive wind field associated with Irene produced strong wind gusts of 40 to 65 mph of the Central Piedmont and coastal counties of North Carolina. Widespread wind damage

Neuse River

SECTION 4: RISK ASSESSMENT

from fallen trees and power lines was felt from the Triangle eastward, with coastal counties having sustained the most extensive damage, including three related fatalities. In Wayne County, trees and power lines were blown down throughout the county. Several homes were damaged from fallen trees and a portion of the Berkeley Mall collapsed. A fatality occurred when two cars collided with another at an intersection where traffic signals were out. The NCEI recorded \$1 million in property damage with this storm.

June 11, 2014 – Scattered thunderstorms developed across eastern North Carolina during the afternoon of June 11th as an upper level impulse crossed the region. Some of the storms became severe producing damaging winds. In Quinerly in Pitt County, strong winds blew down a tree that damaged a trailer and injured one person inside. \$10,000 in property damage was associated with this storm.

Lightning

Table 4.62 shows recorded lightning strikes across the Neuse River Region between 1999 and 2018. One incident caused an injury. NCEI recorded \$578,000 in property damage, mostly house and building fires caused by lightning strikes.

Table 4.62 – Recorded Lightning Strikes in the Neuse River Region, 1999-2018

County	Location	Date	Fatalities	Injuries	Property Damage
Wayne	Goldsboro	2/28/1999	0	0	\$45,000
Wayne	Pikeville	6/22/2000	0	1	\$0
Wayne	Mt. Olive	6/17/2001	0	0	\$105,000
Lenoir	Kinston	8/28/2001	0	0	\$30,000
Wayne	Goldsboro	7/8/2002	0	0	\$190,000
Pitt	Greenville	7/27/2002	0	0	\$1,000
Pitt	Greenville	8/15/2002	0	0	\$100,000
Wayne	Goldsboro	7/10/2003	0	0	\$10,000
Wayne	Goldsboro	7/28/2004	0	0	\$15,000
Wayne	Goldsboro	6/21/2006	0	0	\$30,000
Pitt	Greenville	7/29/2010	0	0	\$50,000
Jones	Trenton	7/21/2015	0	0	\$2,000
Total			0	1	\$578,000

Source: NCEI

A sampling of lightning incidents is recorded below:

July 8, 2002 – Lightning started at least four house fires across Wayne County, most occurring near Goldsboro; \$190,000 in property damage was recorded due to this storm.

August 15, 2002 – Lightning struck a Pitt County office building main transformer, causing substantial damage to the building and electronics. \$100,000 in property damage was recorded for this incident.

Hail

Table 4.63 shows a summary of hail incidents by county for the time period between 1999 and 2018. Pitt County recorded a hailstone with a 3” inch diameter, the largest in the region during this timeframe. NCEI recorded no fatalities or injuries, \$660,000 in property damage and over \$1.4 million in crop damage. It should be noted that damage amounts are based on best available data and are probably much higher; hail damage is insured loss, and dollars paid by insurance companies are not readily made available.

Neuse River

Regional Hazard Mitigation Plan
2020

SECTION 4: RISK ASSESSMENT

Table 4.63 – Hail Summary by County, 1999-2018

Location	Hail Incidents	Average Hail Size (Inches)	Largest Hail Size (Inches)	Recorded Fatalities	Recorded Injuries	Recorded Property Damage	Recorded Crop Damage
Greene	33	1	2.75	0	0	\$0	\$0
Jones	47	1	1.75	0	0	\$0	\$605,000
Lenoir	78	1	1.75	0	0	\$410,000	\$0
Pitt	113	1.1	3	0	0	\$250,000	\$800,000
Wayne	79	.98	1.75	0	0	\$0	\$0
Total	351	-	-	0	0	\$660,000	\$1,405,000

Source: NCEI

Noteworthy hail incidents in the region are summarized below:

June 3, 1998 - A line of thunderstorms moved across eastern areas of the state producing widespread large hail. In Kinston in Lenoir County, car dealers reported over a half million dollars' worth of damage to vehicles. In Pitt County, \$100,000 of property damage was recorded during the same storm.

July 16, 2000 – NCEI recorded hail up to 2.75 inches in diameter causing \$100,000 in property damage and \$500,000 in crop damage in and around Grifton in Pitt County. An additional \$650,000 in crop damage was reported around Phillip's Crossroads in Jones County, with hail up to one inch in diameter.

August 13, 2000 – Hail of up to 1.25 inch in diameter fell in Pitt County. In Greenville, \$300,000 in crop damage was reported.

March 28, 2007 – Large hail fell over Greenville in Pitt County, resulting in dents in cars and a few reports of cracked windshields. Spotters, media and the public reported golf ball size hail that fell for 5-10 minutes. NCEI reports \$50,000 in property damage attributed to this storm in Greenville.

Probability of Future Occurrence

Based on historical occurrences recorded by NCEI for the 20-year period from 1999 through 2018, the Region averaged almost 24 thunderstorm wind, high wind or strong wind events per year. Over this same period, 12 lightning events were reported, which equates to a 60 percent annual probability of a damaging lightning strike. The Region also experienced 351 reported hail incidents over this period; this averages to 17.5 reported incidents per year somewhere in the planning area, or a 100% chance that the Region will experience a hail incident each year.

Based on these historical occurrences, there is a 100% chance that the Region will experience severe weather each year. The probability of a damaging impacts is highly likely.

Probability: 4 – Highly Likely

Vulnerability Assessment

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.

SECTION 4: RISK ASSESSMENT

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, the ignition of fires is always a concern with lightning strikes.

Since 1998, the NCEI records one fatality due to thunderstorm winds. The NCEI records one injury and one fatality attributed to lightning and no injuries or fatalities attributed to hail.

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, the vast majority of recorded property damage was due to structure fires and/or electrical damage.

NCEI records lightning impacts over 20 years (1999-2018), with \$578,000 in property damage recorded. Historically, this has resulted in \$28,900 in property impacts annually across the Region. The average impact from lightning per incident in the region is \$48,167.

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 a 30-year span between January 1, 1988 and December 31, 2017 in the region, NCEI reported \$660,000 in property damage as a direct result of hail. Additionally, the region saw \$1,405,000 in crop damage during this same timeframe attributed to hail.

According to a National Insurance Crime Bureau (NICB) study of insurance claims from the Insurance Services Office (ISO) ClaimSearch database, between 2014 and 2016, North Carolina saw 45,274 separate hail damage claims. 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 an accurate repository of hail damages in the region, thus the NCEI is still used to form a baseline.

When strong enough, wind events can cause significant direct damage to buildings and infrastructure. NCEI records \$3,895,000 in total damages from winds, with an average of \$59,000 in damages per incident. NCEM's IRISK database estimates damages from increasing magnitudes of wind events, detailed in Table 4.64 through Table 4.67.

SECTION 4: RISK ASSESSMENT

Table 4.64 – 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
Greene	12,254	9,888	80.7%	\$5,647,622	2,126	17.3%	\$630,812	232	1.9%	\$923,373	12,246	99.9%	\$7,201,810
Jones	7,545	5,646	74.8%	\$2,616,442	1,697	22.5%	\$220,379	201	2.7%	\$304,058	7,544	100%	\$3,140,879
Lenoir	33,465	28,018	83.7%	\$13,089,787	4,639	13.9%	\$3,535,023	655	2%	\$1,466,893	33,312	99.5%	\$18,091,703
Pitt	64,163	50,235	78.3%	\$38,906,534	7,912	12.3%	\$9,130,193	735	1.1%	\$2,858,855	58,882	91.8%	\$50,895,584
Wayne	71,288	60,553	84.9%	\$35,242,181	8,414	11.8%	\$8,217,875	2,282	3.2%	\$5,632,419	71,249	99.9%	\$49,092,476
Total	188,715	154,340	81.8%	\$95,502,566	24,788	13.1%	\$21,734,282	4,105	2.2%	\$11,185,598	183,233	97.1%	\$128,422,452

Source: NCEM Risk Management Tool

Table 4.65 – 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
Greene	12,254	9,888	80.7%	\$9,201,550	2,126	17.3%	\$1,222,640	232	1.9%	\$1,678,121	12,246	99.9%	\$12,102,310
Jones	7,545	5,646	74.8%	\$4,148,414	1,697	22.5%	\$437,838	201	2.7%	\$538,191	7,544	100%	\$5,124,443
Lenoir	33,465	28,018	83.7%	\$20,412,584	4,639	13.9%	\$6,652,351	655	2%	\$2,744,337	33,312	99.5%	\$29,809,271
Pitt	64,163	50,235	78.3%	\$48,614,217	7,912	12.3%	\$11,514,069	735	1.1%	\$3,459,507	58,882	91.8%	\$63,587,797
Wayne	71,288	60,553	84.9%	\$57,734,169	8,414	11.8%	\$15,024,835	2,282	3.2%	\$10,509,630	71,249	99.9%	\$83,268,634
Total	188,715	154,340	81.8%	\$140,110,934	24,788	13.1%	\$34,851,733	4,105	2.2%	\$18,929,786	183,233	97.1%	\$193,892,455

Source: NCEM Risk Management Tool

SECTION 4: RISK ASSESSMENT

Table 4.66 – 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
Greene	12,254	9,888	80.7%	\$29,299,281	2,126	17.3%	\$4,021,926	232	1.9%	\$4,494,353	12,246	99.9%	\$37,815,560
Jones	7,545	5,646	74.8%	\$12,163,633	1,697	22.5%	\$1,468,112	201	2.7%	\$1,582,590	7,544	100%	\$15,214,336
Lenoir	33,465	28,018	83.7%	\$53,738,369	4,639	13.9%	\$21,109,951	655	2%	\$8,681,055	33,312	99.5%	\$83,529,375
Pitt	64,163	50,235	78.3%	\$143,421,410	7,912	12.3%	\$33,588,932	735	1.1%	\$8,603,677	58,882	91.8%	\$185,614,019
Wayne	71,288	60,553	84.9%	\$180,140,882	8,414	11.8%	\$44,736,979	2,282	3.2%	\$31,693,951	71,249	99.9%	\$256,571,811
Total	188,715	154,340	81.8%	\$418,763,575	24,788	13.1%	\$104,925,900	4,105	2.2%	\$55,055,626	183,233	97.1%	\$578,745,101

Source: NCEM Risk Management Tool

Table 4.67 – 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
Greene	12,254	9,888	80.7%	\$54,654,006	2,126	17.3%	\$7,108,824	232	1.9%	\$7,189,366	12,246	99.9%	\$68,952,196
Jones	7,545	5,646	74.8%	\$22,486,738	1,697	22.5%	\$2,620,509	201	2.7%	\$2,805,752	7,544	100%	\$27,912,999
Lenoir	33,465	28,018	83.7%	\$94,786,008	4,639	13.9%	\$37,619,998	655	2%	\$15,731,047	33,312	99.5%	\$148,137,053
Pitt	64,163	50,235	78.3%	\$273,915,708	7,912	12.3%	\$60,059,310	735	1.1%	\$15,210,947	58,882	91.8%	\$349,185,968
Wayne	71,288	60,553	84.9%	\$335,248,883	8,414	11.8%	\$78,032,164	2,282	3.2%	\$54,954,207	71,249	99.9%	\$468,235,255
Total	188,715	154,340	81.8%	\$781,091,343	24,788	13.1%	\$185,440,805	4,105	2.2%	\$95,891,319	183,233	97.1%	\$1,062,423,471

Source: NCEM Risk Management Tool

SECTION 4: RISK ASSESSMENT

Severe weather can also cause significant agricultural losses. Between 2007-2017, the sum of claims paid for crop damage due to hail and wind damages in across the region was \$12,913,063.03, or an average of \$1,173,914.82 in losses every year. Table 4.68 summarizes the crop losses due to drought in reported in the RMA system.

Table 4.68 – Crop Losses Resulting from Severe Weather in the Neuse River Region, 2007-2017

Year	Cause Description	Determined Acres	Indemnity Amount
2007	Hail	1303.00	924536
2008	Hail	861.60	1143201
2009	Hail	856.33	1041731
2010	Hail	7.72	1246
2011	Hail	737.79	730186
2012	Hail	965.25	731654
2013	Hail	46.69	65680
2014	Hail	57.74	8798.7
2015	Hail	844.81	732593.93
2016	Hail	309.67	274456.65
2017	Hail	219.96	94626.15
Hail Subtotal		3,105.28	\$5,748,709.43
2007	Wind/Excess Wind	312.88	\$455,053
2008	Wind/Excess Wind	1,327.15	\$1,513,505
2009	Wind/Excess Wind	508.03	\$901,573
2010	Wind/Excess Wind	86.64	\$10,882
2011	Wind/Excess Wind	746.78	\$310,793
2012	Wind/Excess Wind	2,716.20	\$868,858
2013	Wind/Excess Wind	247.38	\$277,220
2014	Wind/Excess Wind	314.20	\$469,614.25
2015	Wind/Excess Wind	469.93	\$1,061,805.41
2016	Wind/Excess Wind	1,060.13	\$1,009,017.74
2017	Wind/Excess Wind	421.69	\$286,032.2
Wind Subtotal		8,211.01	\$7,164,353.60
TOTAL		11,316.29	\$12,913,063.03

Source: USDA Risk Management Agency

Environment

The main environmental impact from wind is damage to trees or crops. 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 4.69 summarizes the potential negative consequences of severe weather.

Table 4.69 – Consequence Analysis – Severe Weather (Thunderstorm Winds, Lightning, and Hail)

Category	Consequences
Public	Injuries; fatalities

SECTION 4: RISK ASSESSMENT

Category	Consequences
Responders	Injuries; fatalities; potential impacts to response capabilities due to storm impacts
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; mobile homes see increased risk
Environment	Potential fire ignition from lightning; hail damage to wildlife and foliage
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 table summarizes severe weather hazard risk by jurisdiction. Most aspects of severe weather risk do not vary substantially by jurisdiction; however, wind and hail impacts may be greater in more highly developed areas with higher exposure in terms of both property and population density. Additionally, mobile home units are more vulnerable to wind damage. Communities with mobile homes accounting for more than 20% of their housing units were assigned an impact rating of critical to account for more severe impacts from wind. Where priority ratings vary between thunderstorm wind, lightning, and hail for impact and spatial extent, these scores represent an average rating with greater weight given to thunderstorm wind because it occurs much more frequently.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Greene County	4	3	3	4	1	3.2	H
Hookerton	4	3	3	4	1	3.2	H
Snow Hill	4	2	3	4	1	2.9	H
Walstonburg	4	2	3	4	1	2.9	H
Jones County	4	3	3	4	1	3.2	H
Maysville	4	2	3	4	1	2.9	H
Pollocksville	4	2	3	4	1	2.9	H
Trenton	4	2	3	4	1	2.9	H
Lenoir County	4	2	3	4	1	2.9	H
Kinston	4	2	3	4	1	2.9	H
La Grange	4	2	3	4	1	2.9	H
Pink Hill	4	2	3	4	1	2.9	H
Pitt County	4	3	3	4	1	3.2	H
Ayden	4	2	3	4	1	2.9	H
Bethel	4	2	3	4	1	2.9	H
Falkland	4	2	3	4	1	2.9	H
Farmville	4	2	3	4	1	2.9	H
Fountain	4	2	3	4	1	2.9	H
Greenville	4	2	3	4	1	2.9	H
Grifton	4	3	3	4	1	3.2	H
Grimesland	4	3	3	4	1	3.2	H
Simpson	4	2	3	4	1	2.9	H
Winterville	4	2	3	4	1	2.9	H
Wayne County	4	3	3	4	1	3.2	H

SECTION 4: RISK ASSESSMENT

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Eureka	4	2	3	4	1	2.9	H
Fremont	4	2	3	4	1	2.9	H
Goldsboro	4	2	3	4	1	2.9	H
Mount Olive	4	3	3	4	1	3.2	H
Pikeville	4	2	3	4	1	2.9	H
Seven Springs	4	3	3	4	1	3.2	H
Walnut Creek	4	2	3	4	1	2.9	H

4.5.8 Severe Winter Storm

Hazard Background

A winter storm 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 of 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. Impacts can last a few days after the initial incident until cleanup is completed.

Location

Severe winter storms are usually a countywide or regional hazard, impacting the entire county at the same time. The risk of severe winter storm occurring is uniform across the Region.

Extent

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

SECTION 4: RISK ASSESSMENT

any level on the RSI scale. During the snowstorm of February 27 to March 3, 1927, which produced the greatest one-day snowfall amounts the region has experienced, the Region was classified as a Category 5 on the RSI scale.

Table 4.70 – 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

Table 4.71 lists the greatest recorded one-day snowfall totals for each county in the Region.

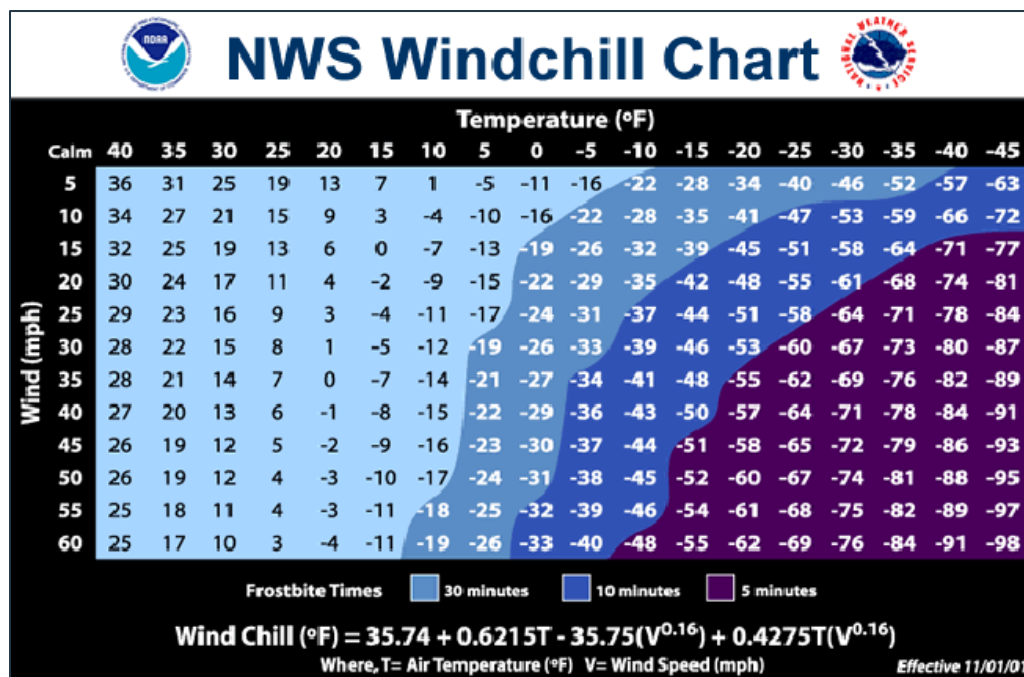
Table 4.71 – Greatest One-Day Snowfall by County

County	Inches	Location	Date
Greene	11.0"	Snow Hill	2/11/1927
Jones	14.6"	Trenton	3/3/1980
Lenoir	13.0"	Kinston	3/2/1927
Pitt	13.0"	Greenville	2/18/1896
Wayne	26.0"	Goldsboro	3/2/1927

Source: NOAA Climate Monitoring Snowfall Extremes

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 factor involved, including precipitation type, precipitation accumulation amounts, temperature, and wind. The NWS Wind Chill Temperature Index, shown in Figure 4.37, provides a formula for calculating the dangers of winter winds and freezing temperatures.

Figure 4.37 – NWS Wind Chill Temperature Index



Source: <http://www.nws.noaa.gov/om/winter/windchill.shtml>

SECTION 4: RISK ASSESSMENT

Impact: 2 – Limited

Spatial Extent: 4 – Large

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 Region is accustomed to smaller scale severe winter weather conditions and often receives winter weather during the winter months. Given the atmospheric nature of the hazard, the entire Region 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 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.

Summarized impacts from data collected for the years 1999 through 2018 for each county are included in Table 4.72. In this timeframe, NCEI recorded two injuries and \$10,000 in property damage from the impacts of severe winter storm in the Neuse River Region. Table 4.72 shows historical hazard occurrence by county in the Region; no blizzard, cold/wind chill, extreme cold/wind chill or sleet events were recorded during this timeframe.

SECTION 4: RISK ASSESSMENT

Table 4.72 – Historical Hazard Occurrence 1999-2018

Hazard	Greene	Jones	Lenoir	Pitt	Wayne	Total
Blizzard	-	-	-	-	-	-
Cold/Wind Chill	-	-	-	-	-	-
Extreme Cold/Wind Chill	-	-	-	-	-	-
Frost/Freeze	1	1	1	1	-	4
Heavy Snow	6	4	6	5	-	21
Ice Storm	1	2	1	1	-	5
Sleet	-	-	-	-	-	-
Winter Storm	9	9	11	10	19	58
Winter Weather	6	3	6	8	11	34
Total	23	19	25	25	30	122

Source: NCEI

The Neuse River Region received four presidential disaster declarations 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 4.73 – Disaster Declarations in Neuse River Region due to Severe Winter Storms

Disaster Number	Disaster Type	Incident Start	Incident End	Counties Declared
234	Severe Ice Storm	2/10/1968	2/10/1968	Greene, Lenoir, Pitt, Wayne
3110	Severe Snow and Winter Storm	3/13/1993	3/17/1993	Lenoir
1087	Blizzard	1/6/1996	1/12/1996	Pitt
1448	Severe Ice Storm	12/4/2002	12/6/2002	Wayne

Source: FEMA

Probability of Future Occurrence

Probability: 4 – Highly Likely

According to the NCEI, the Neuse River Region experienced 122 separate severe winter storm-related incidents occurring on over 45 days between 1999 and 2018. This averages to over two incidents recorded per year somewhere in the Region. Based on this historical analysis, there is a 100% chance of experiencing a severe winter weather incident in an average year.

Vulnerability Assessment

In the 20-year period from 1999 through 2018, the Neuse River Region experienced two injuries and \$10,000 in property damage related to severe winter storm, with no fatalities or crop damage from the impacts of any aspect of severe winter storm, though these types of impacts are possible in future events.

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; the two recorded injuries for the region due to winter weather were traffic accidents in Pitt County. Additionally, exhaustion and heart attacks caused by overexertion may result from winter storms.

SECTION 4: RISK ASSESSMENT

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, \$10,000 of property damage was recorded in Wayne County in 2016, though no additional details were present. The Region didn't experience any recorded crop damage related to the impacts of severe winter storm.

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 4.74 summarizes the potential negative consequences of severe winter storm.

Table 4.74 – Consequence Analysis – Severe Winter Storm

Category	Consequences
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.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Greene County	4	2	4	1	3	3.0	H
Hookerton	4	2	4	1	3	3.0	H
Snow Hill	4	2	4	1	3	3.0	H
Walstonburg	4	2	4	1	3	3.0	H
Jones County	4	2	4	1	3	3.0	H
Maysville	4	2	4	1	3	3.0	H

SECTION 4: RISK ASSESSMENT

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Pollocksville	4	2	4	1	3	3.0	H
Trenton	4	2	4	1	3	3.0	H
Lenoir County	4	2	4	1	3	3.0	H
Kinston	4	2	4	1	3	3.0	H
La Grange	4	2	4	1	3	3.0	H
Pink Hill	4	2	4	1	3	3.0	H
Pitt County	4	2	4	1	3	3.0	H
Ayden	4	2	4	1	3	3.0	H
Bethel	4	2	4	1	3	3.0	H
Falkland	4	2	4	1	3	3.0	H
Farmville	4	2	4	1	3	3.0	H
Fountain	4	2	4	1	3	3.0	H
Greenville	4	2	4	1	3	3.0	H
Grifton	4	2	4	1	3	3.0	H
Grimesland	4	2	4	1	3	3.0	H
Simpson	4	2	4	1	3	3.0	H
Winterville	4	2	4	1	3	3.0	H
Wayne County	4	2	4	1	3	3.0	H
Eureka	4	2	4	1	3	3.0	H
Fremont	4	2	4	1	3	3.0	H
Goldsboro	4	2	4	1	3	3.0	H
Mount Olive	4	2	4	1	3	3.0	H
Pikeville	4	2	4	1	3	3.0	H
Seven Springs	4	2	4	1	3	3.0	H
Walnut Creek	4	2	4	1	3	3.0	H

4.5.9 Tornado

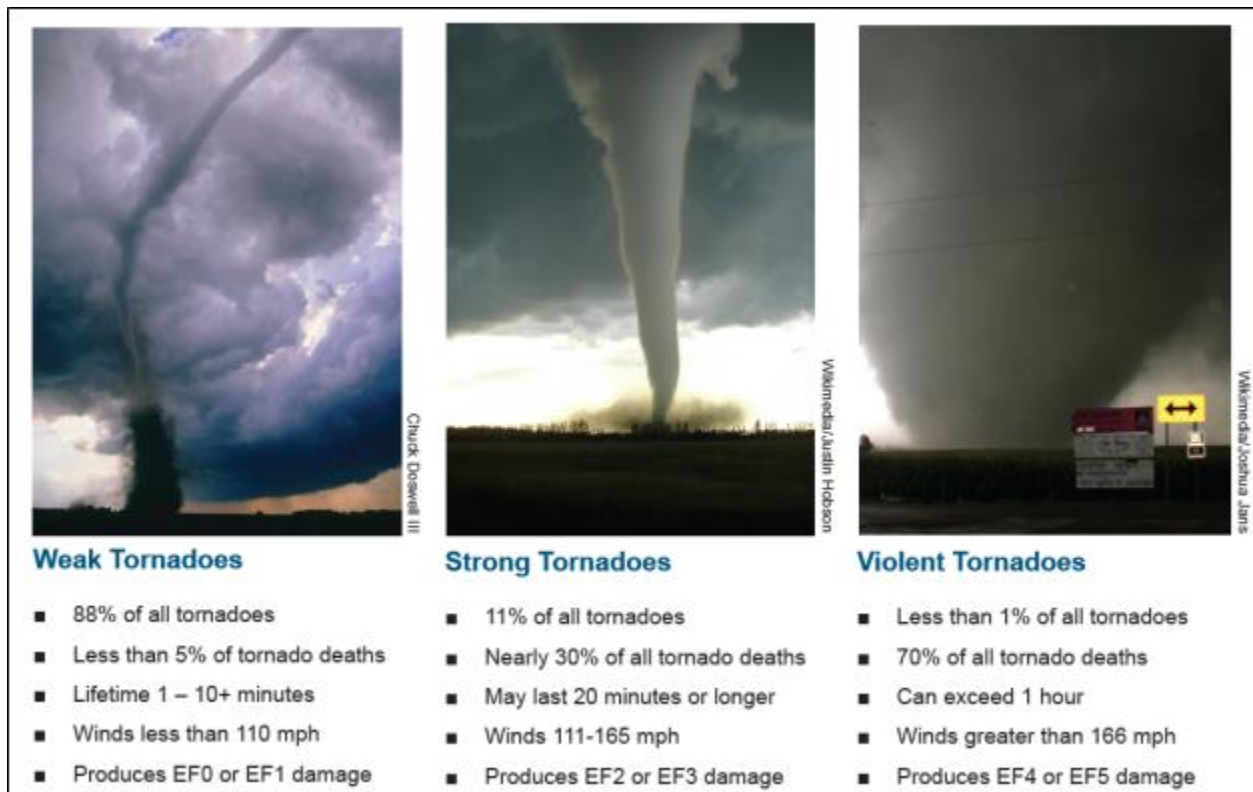
Hazard Background

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 amid path, 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 4.38 – Types of Tornadoes



Source: NOAA National Weather Service

Warning Time: 4 – Less than six hours

Duration: 1 – Less than six hours

SECTION 4: RISK ASSESSMENT

Tornados can occur anywhere in the region. 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. The entirety of the Neuse River Region is uniformly exposed to this hazard.

Figure 4.39 – Tornado Activity in the United States

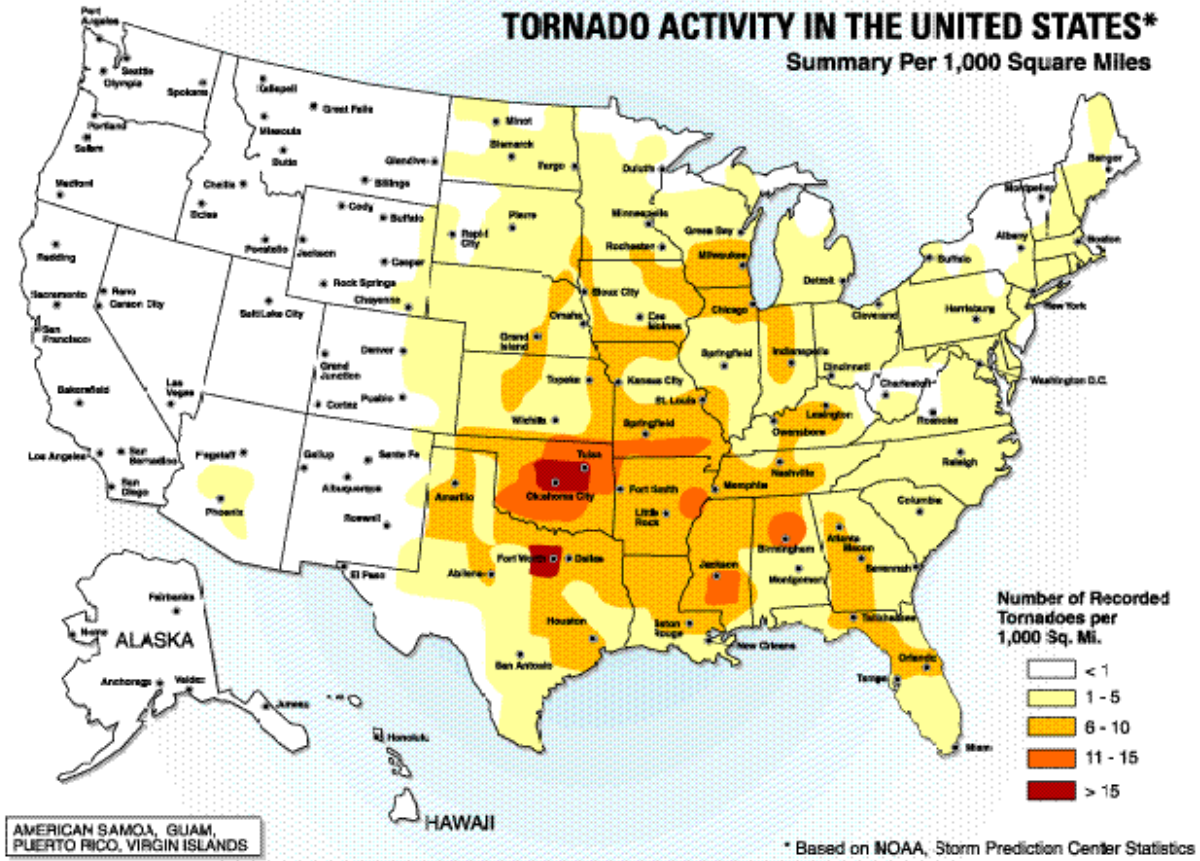


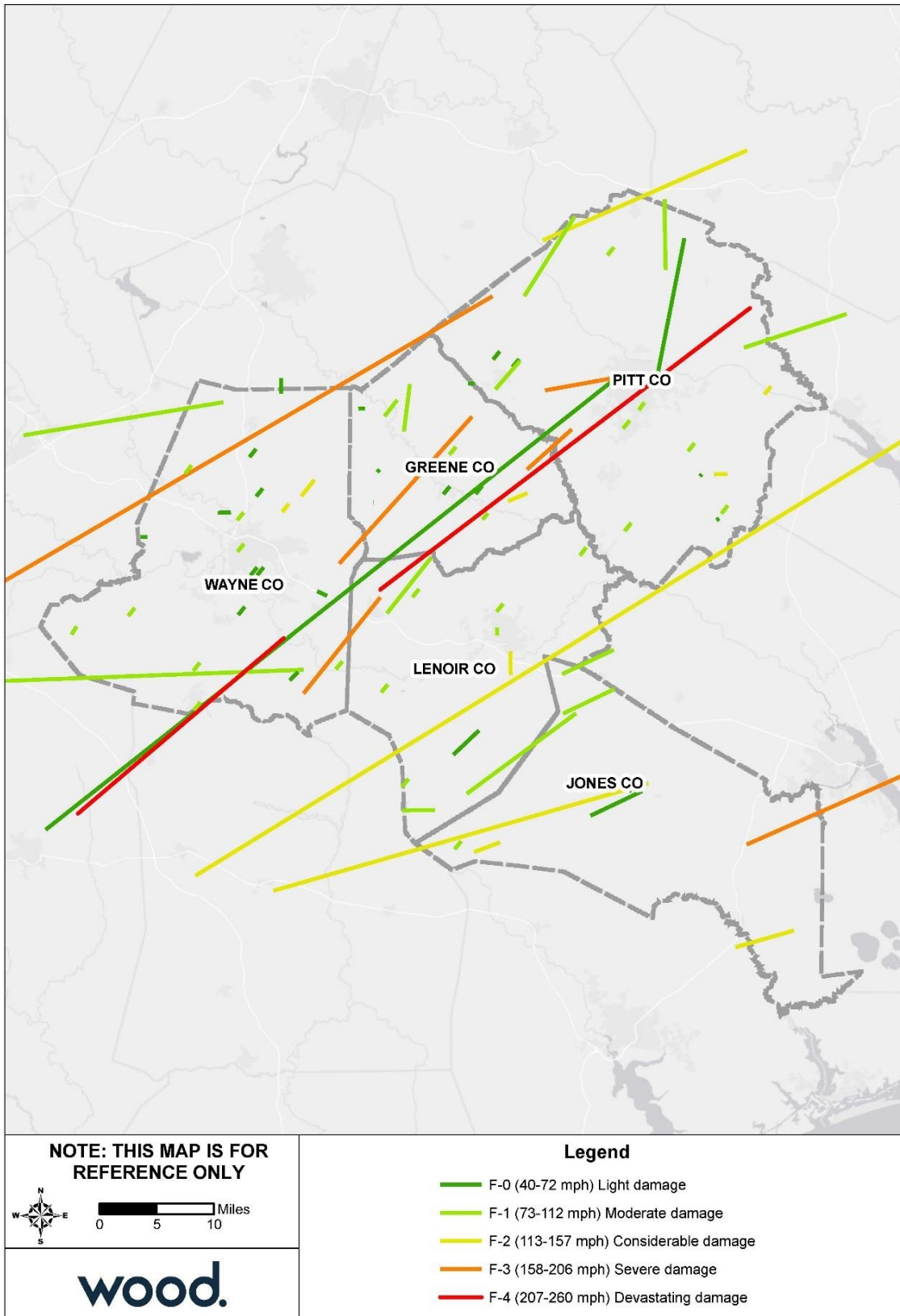
Figure 1.1 The number of tornadoes recorded per 1,000 square miles

Source: American Society of Civil Engineers

Location

Figure 4.40 reflects the tracks the paths of past tornadoes that have passed through the counties of the Neuse River Region.

Figure 4.40 – Tornado Paths Across Neuse River Region



SECTION 4: RISK ASSESSMENT

Extent

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 new scale provides more damage indicators (28) and associated degrees of damage, allowing for more detailed analysis, better correlation between damage and wind speed. It is also more precise because it takes into account the materials affected and the construction of structures damaged by a tornado. Table 4.75 shows the wind speeds associated with the enhanced Fujita scale ratings and the damage that could result at different levels of intensity.

Table 4.75 – Enhanced Fujita Scale

EF Number	3 Second Gust (mph)	Damage
0	65-85	Light damage. Peels surface off some roofs; some damage to gutters or siding; branches broken off trees; shallow-rooted trees pushed over.
1	96-110	Moderate damage. Roofs severely stripped; mobile homes overturned or badly damaged; loss of exterior doors; windows and other glass broken.
2	111-135	Considerable damage. 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	Severe damage. Entire stories of well-constructed houses destroyed; severe damage to large buildings such as shopping malls; trains overturned; trees debarked; heavy cars lifted off the ground and thrown; structures with weak foundations blown away some distance.
4	166-200	Devastating damage. Well-constructed houses and whole frame houses completely leveled; cars thrown and small missiles generated.
5	Over 200	Incredible damage. 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 Neuse River Region occurred in Greene County in April 2011 and was rated EF3; this tornado also resulted in the second-most injuries (30 people) and most property damage (\$30 million). An F1 tornado in Lenoir County in March 1991 caused 33 injuries.

Impact: 3 – Critical

Spatial Extent: 2 – Small

Historical Occurrences

According to the NCEI, 85 tornado segments impacted the Neuse River Region between 1989 and 2018, causing no deaths, 108 injuries, over \$46.7 million in property damage and \$175,000 in crop damage. Table 4.76 shows historical tornadoes in the Region during this time. While NCEI data on tornadoes ranges back to 1950, this date range was used to account for more modern techniques in tornado detection.

Table 4.76 – Recorded Tornadoes in the Neuse River Region, 1989-2018

County	Event Count	Deaths	Injuries	Total Property Damage	Total Crop Damage
Greene	13	0	33	\$32,057,000	\$0
Jones	15	0	8	\$4,625,000	\$50,000
Lenoir	21	0	40	\$5,194,000	\$0
Pitt	21	0	5	\$19,400,000	\$0
Wayne	15	0	22	\$2,910,000	\$125,000
Total	85	0	108	\$46,726,000	\$175,000

Source: NCEI

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2020

SECTION 4: RISK ASSESSMENT

Of the tornadoes recorded by NCEI between 1989 and 2018, 53 were categorized as F0 or EF0, 23 were categorized as F1 or EF1, eight were categorized as F2 or EF2, and one was categorized as an EF3. The average tornado caused \$56,891 in recorded property damage; crop damage averaged \$58,333, though there were only three incidents with recorded crop damage and amounts of varied widely. Specific incidents with some level of impact include:

March 29, 1991 – A tornado touched down at Irving’s Crossroads and moved northeast to just inside Jones County near State Routes 1305 and 1306, about 11 miles northwest of Trenton. The tornado caused intermittent damage along the track including 11 homes, 20 farm buildings, and 1 business. Damage was estimated at \$150,000 in Lenoir County. The tornado caused 33 injuries.

January 7, 1995 – A tornado damaged many homes, farm and outbuildings in Seven Springs in Wayne County. Widespread damage to trees and outbuildings due to downburst winds occurred over the rest of the county. Overall, 62 structures were affected. The tornado caused 22 injuries and \$1.5 million in damage.

September 16, 1996 – Kinston Public Service complex on Highway 258 south of Kinston was hit by an F2 tornado. Steel I-beams were twisted and bent upwards. Wind equipment measured 145 mph winds before it stopped working. Two other sets of wind equipment were blown away, and a warehouse across the street lost its roof. Damages were recorded at the Lenoir Community College and Diamond Warehouse on Highway 58. A roof was sheared off a house on Highway 55 in Sand Hill. The tornado resulted in one recorded injury and \$1 million in property damage in Lenoir County.

April 15, 1999 – Several tornadoes touched down on the night of April 15th. One multi-vortex tornado touched down in Duplin County about a half mile south of Kenansville. The tornado tracked east northeast between Pink Hill and Beulaville and just to the north of Potters Hill before entering Jones County. Once in Jones County the tornado passed just north of Hargett’s Crossroads and traced north of Route 41, ending near the intersection of Routes 58 and 41. The tornado track covered nearly 30 miles and ranged between a half mile to around one mile wide. An unconfirmed wind report of 165 mph was measured near Trenton. In total... hundreds of trees were knocked down, over 30 homes were destroyed, 60 homes suffered major damage, and a significant number of livestock were killed. NCEI recorded 10 direct injuries and \$2 million in property damages in Lenoir and Jones counties directly attributable to this storm.

April 16, 2011 – Scattered severe thunderstorms produced damaging winds, large hail and several tornadoes across portions of eastern North Carolina. A tornado moved into Greene county just west of Highway 903, producing mainly EF0 and EF1 damage across the southern part of Greene County with damage to trees and a few homes. The tornado intensified to EF3 with winds estimated up to 160 mph southwest of Snow Hill. The tornado continued at EF3 intensity as it crossed Highway 13 just west of Snow Hill. Numerous homes and businesses were severely damaged or destroyed in this area with some almost completely flattened. Numerous vehicles were also destroyed. The strong EF3 tornado continued as it moved north of Snow Hill and severely damaged the Greene County middle school where the roof was torn off. The tornado continued to produce EF3 damage as it moved along Albritton Road where large metal power poles were bent over or completely ripped out of the ground. The tornado finally began to weaken as it passed Taylor road and dissipated near Tysons Church Road. In all about 30 million dollars of damage occurred in Greene County. There were numerous injuries, 2 serious. There were no fatalities. The tornado caused \$30 million in property damage in Greene County. The tornado spawned additional tornadoes in Jones, Pitt, Wayne and Lenoir counties, resulting in an additional 1.1 million in property damage and five additional injuries. Most of these impacts were associated with an EF1 tornado in Pitt County. The tornado spun up just south of Farmville near the intersection of Highway 258 and Highway 264A. The tornado was estimated at EF1 with winds to 90 mph as it lifted rapidly northeast through the eastern sections of Farmville. Numerous homes had significant damage mainly to roofs. Trees and power

Neuse River

SECTION 4: RISK ASSESSMENT

lines were blown down. The tornado began to weaken north of Farmville as it crossed Highway 264 and lifted near Wesley Church Road. About 1 million dollars of damage occurred with this tornado with 5 minor injuries.

April 25, 2014 – A localized tornado outbreak struck North Carolina, killing one person and injuring 27 others. Tornadoes associated with this outbreak struck Greene and Pitt counties, causing over \$905,000 in property damage; NCEI recorded damages to trees, several mobile homes, businesses, farm equipment, and outbuildings. While the larger outbreak caused injuries and fatalities, none were recorded in the Neuse River Region. This storm resulted in a declared state of emergency for the areas impacted but did not result in a FEMA disaster declaration.

Probability of Future Occurrence

In a thirty-year span between 1989 and 2018, the region experienced 63 separate tornado incidents. This correlates to over two tornado incidents per year, or a 100% historical probability that the planning area will experience at least one tornado somewhere in its boundaries every year. Table 4.77 shows probability of future occurrence by county in the region.

Table 4.77 – Annual Probability by County

County	Tornadoes	Timespan (in years)	Probability of Annual Future Occurrence
Greene	10	30	33.3%
Jones	11	30	36.7%
Lenoir	11	30	36.7%
Pitt	19	30	63.3%
Wayne	10	30	33.3%

Source: NCEI

Probability: 4 – Highly Likely

Climate Change

There presently is not enough data or research to quantify the magnitude of change that climate change may have related to tornado frequency and intensity. NASA’s Earth Observatory has conducted studies which aim to understand the interaction between climate change and tornadoes. Based on these studies 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. Because of uncertainty with the influence of climate change on tornadoes, future updates to the mitigation plan should include the latest research on how the tornado hazard frequency and severity could change. The level of significance of this hazard should be revisited over time.

Vulnerability Assessment

Methodologies and Assumptions

Probability of future occurrence was calculated based on past occurrences and was assumed to be uniform across the region; date range was used to account for improved modern tornado detection technology.

SECTION 4: RISK ASSESSMENT

People

People and populations exposed to the elements are most vulnerable to tornados. The availability of sheltered locations such as basements, buildings constructed using tornado-resistant materials and methods, and public storm shelters, all reduce the exposure of the population. According to 2017 data from the U.S. Census Community Fact Finder, 34,702 homes are classified as “mobile homes,” 26.46% of homes across the region. Based on an average estimate of household size across the region, there are over 86,500 people living in mobile homes. Table 4.78 shows total mobile housing units and potential populations impacted by county.

Table 4.78 – Mobile Home Units in the Neuse River Region, 2017

County	Total Mobile Housing Units	Percentage of Total Housing	Estimated Average Household	Population at Risk
Greene	3,027	36.5%	2.56	7,749
Jones	1,694	34.2%	2.33	3,947
Lenoir	6,494	23.6%	2.43	15,780
Pitt	9,810	12.6%	2.47	24,231
Wayne	13,677	25.4%	2.55	34,876
Region Total	34,702	26.46%	2.47	86,583

Source: 2017 American Community Survey

Since 1950, the NCEI records no fatalities and 108 injuries attributed to tornados across the region; these fatalities and injuries were the result of tornados rated as low as F1, illustrating the destructive power of tornados and the dangers they pose to exposed populations without proper shelter.

Property

General damages to property are both direct (what the tornado physically destroys) and indirect, which focuses on additional costs, damages and losses attributed to secondary hazards spawned by the tornado, or due to the damages caused by the tornado. Depending on the size of the tornado and its path, a tornado is capable of damaging and eventually destroying almost anything. Construction practices and building codes can help maximize the resistance of the structures to damage.

Secondary impacts of tornado damage 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 indirect impacts of a tornado put tremendous strain on a community. In the immediate aftermath, the focus is on emergency services.

Since 1950, damaging tornados across the region are directly responsible for at least \$46.7 million in recorded damage to property. This includes damages to homes, buildings, businesses, and belongings. These tornados also caused \$175,000 in reported damage to crops, according to NCEI data.

Table 4.79 details the estimated buildings impacted from an EF4 tornado (no analysis was done on a potential EF5 tornado). Note that the table provides an estimate of building damages should all exposed property be impacted by an event of the stated magnitude; actual damages resulting from a tornado event of each magnitude would be lower because the event would impact only a fraction of the region. The EF5 analysis is presented as a top-end estimation of impacts; while the same numbers of buildings would be vulnerable to a tornado rated EF0 through EF3, the damages would not be as high. A full accounting of each jurisdiction’s vulnerability to all tornados and ratings can be found in the jurisdictional annexes.

SECTION 4: RISK ASSESSMENT

Table 4.79 – Potential Tornado Damages from EF4 Tornado

County	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
Greene	12,254	9,888	80.7%	\$1,095,914,572	2,126	17.3	\$511,693,351	232	1.9%	\$373,521,052	12,246	99.9%	\$1,981,128,974
Jones	7,545	5,646	74.8%	\$662,505,561	1,697	22.5%	\$231,655,163	201	2.7%	\$201,404,240	7,544	100%	\$1,095,564,963
Lenoir	33,465	28,018	83.7%	\$3,134,189,393	4,639	13.9%	\$2,438,965,961	655	2%	\$939,901,092	33,312	99.5%	\$6,513,056,446
Pitt	64,163	50,235	78.3%	\$7,886,701,847	7,912	12.3%	\$3,899,863,236	735	1.1%	\$990,411,460	58,882	91.8%	\$12,776,976,544
Wayne	71,288	60,553	84.9%	\$8,059,961,882	8,414	11.8%	\$5,183,830,134	2,282	3.2%	\$2,880,518,516	71,249	99.9%	\$16,124,310,534
Region Total	188,715	154,340	81.8%	\$20,839,273,255	24,788	13.1%	\$12,266,007,845	4,105	2.2%	\$5,385,756,360	183,233	97.1%	\$38,491,037,461

Source: GIS Analysis

SECTION 4: RISK ASSESSMENT

Environment

Tornadoes can cause massive damage to the natural environment, uprooting trees and other debris within the tornado's path. This is part of a natural process, however, and the environment will return to its original state in time.

Consequence Analysis

Table 4.80 summarizes the potential negative consequences of tornado in the Region.

Table 4.80 – Consequence Analysis - Tornado

Category	Consequences
Public	Injuries; fatalities
Responders	Injuries; fatalities; potential impacts to response capabilities due to storm impacts
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	The weakest tornadoes, EF0, can cause minor roof damage, while strong tornadoes can destroy frame buildings and even badly damage steel reinforced concrete structures. Buildings are vulnerable to direct impact from tornadoes and also from wind borne debris. Mobile homes are particularly susceptible to damage during tornadoes.
Environment	Potential devastating impacts in storm's path
Economic Condition of the Jurisdiction	Contingent on tornado's path; can severely impact/destroy critical infrastructure and other economic drivers
Public Confidence in the Jurisdiction's Governance	Public confidence in the jurisdiction's governance may be influenced by severe tornado events if response and recovery are not timely and effective.

Hazard Summary by Jurisdiction

The following table summarizes tornado hazard risk by jurisdiction. Tornado risk does not vary substantially by jurisdiction.

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Greene County	4	3	2	4	1	3.0	H
Hookerton	4	3	2	4	1	3.0	H
Snow Hill	4	3	2	4	1	3.0	H
Walstonburg	4	3	2	4	1	3.0	H
Jones County	4	3	2	4	1	3.0	H
Maysville	4	3	2	4	1	3.0	H
Pollocksville	4	3	2	4	1	3.0	H
Trenton	4	3	2	4	1	3.0	H
Lenoir County	4	3	2	4	1	3.0	H
Kinston	4	3	2	4	1	3.0	H
La Grange	4	3	2	4	1	3.0	H
Pink Hill	4	3	2	4	1	3.0	H
Pitt County	4	3	2	4	1	3.0	H
Ayden	4	3	2	4	1	3.0	H
Bethel	4	3	2	4	1	3.0	H
Falkland	4	3	2	4	1	3.0	H
Farmville	4	3	2	4	1	3.0	H

SECTION 4: RISK ASSESSMENT

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Fountain	4	3	2	4	1	3.0	H
Greenville	4	3	2	4	1	3.0	H
Grifton	4	3	2	4	1	3.0	H
Grimesland	4	3	2	4	1	3.0	H
Simpson	4	3	2	4	1	3.0	H
Winterville	4	3	2	4	1	3.0	H
Wayne County	4	3	2	4	1	3.0	H
Eureka	4	3	2	4	1	3.0	H
Fremont	4	3	2	4	1	3.0	H
Goldsboro	4	3	2	4	1	3.0	H
Mount Olive	4	3	2	4	1	3.0	H
Pikeville	4	3	2	4	1	3.0	H
Seven Springs	4	3	2	4	1	3.0	H
Walnut Creek	4	3	2	4	1	3.0	H

4.5.10 Wildfire

Hazard Background

A wildfire is an uncontained fire that spreads through the environment. Wildfires can consume large areas, including infrastructure, property, and resources. When massive fires, or conflagrations, develop near populated areas, evacuations possibly ensue. Not only do the flames impact the environment, but the massive volumes of smoke spread by certain atmospheric conditions also impact the health of nearby populations. There are three general types of fire spread that are recognized.

- ▶ **Ground fires** – burn organic matter in the soil beneath surface litter and are sustained by glowing combustion.
- ▶ **Surface fires** – spread with a flaming front and burn leaf litter, fallen branches and other fuels located at ground level.
- ▶ **Crown fires** – burn through the top layer of foliage on a tree, known as the canopy or crown fires. Crown fires, the most intense type of fire and often the most difficult to contain, need strong winds, steep slopes and a heavy fuel load to continue burning.

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, can become additional fuel for the fire. The worst conditions occur when dry, gusty winds blow across dry vegetation.

Weather plays a major role in the birth, growth and death of a wildfire. The National Weather Service (NWS) Fire Weather Program emerged in response to a need for weather support to forecast large and dangerous wildfires. This service is provided to federal and state land management agencies for the prevention, suppression, and management of forest and rangeland fires. The NWS Newport/Morehead City Forecast Office provides fire weather forecasts for the Neuse River Region.

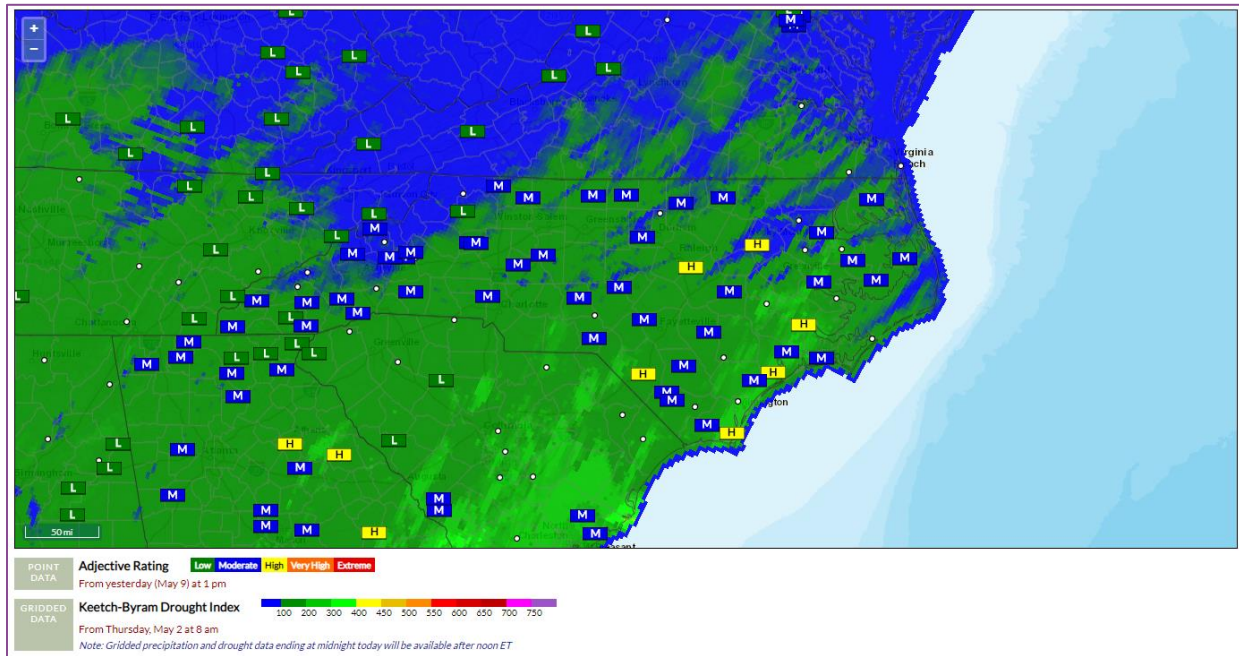
Weather conditions favorable to wildfire include drought, which increases flammability of surface fuels, and winds, which aid a wildfire’s progress. The combination of wind, temperature, and humidity affects how fast wildland fires can spread. Rapid response can contain wildfires and limit their threat to property.

The Neuse River Region experiences a variety of wildfire conditions found in the Keetch-Byram Drought Index, which is described in Table 4.81. The Keetch-Byram Drought Index (KBDI) for May 9, 2019 is shown in Figure 4.41 along with a Daily Fire Danger Estimate Adjective Rating for certain points across the state. The KBDI for the Neuse River Region at this time was between 100 and 300, and the Fire Danger Estimate for the nearby area was “Moderate” to “High.”

Table 4.81 – 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.

Figure 4.41 – Keetch-Byram Drought Index, May 2019



Source: USFS Wildland Fire Assessment System

Warning Time: 4 – Less than 6 hours

Duration: 3 – Less than 1 week

Location

The location of wildfire risk can be defined by the Wildland Urban Interface (WUI), described as the area where structures and other human improvements intermingle with undeveloped wildland or vegetative fuels, and demarcating the spatial extent of wildfire risk. The WUI is essentially all the land in the county that is not heavily urbanized. The Southern Wildfire Risk Assessment (SWRA) estimates that 98.8 percent of the Neuse River Region population lives within the WUI. Expansion of residential development into rural areas increases the potential for wildfire threat to public safety and the potential for damage to forest resources and dependent industries. Population growth within the WUI substantially increases wildfire risk. Table 4.82 details the extent of the WUI in the Region, and Figure 4.42 maps the WUI. More detailed maps showing WUI within jurisdiction boundaries are provided in the annexes.

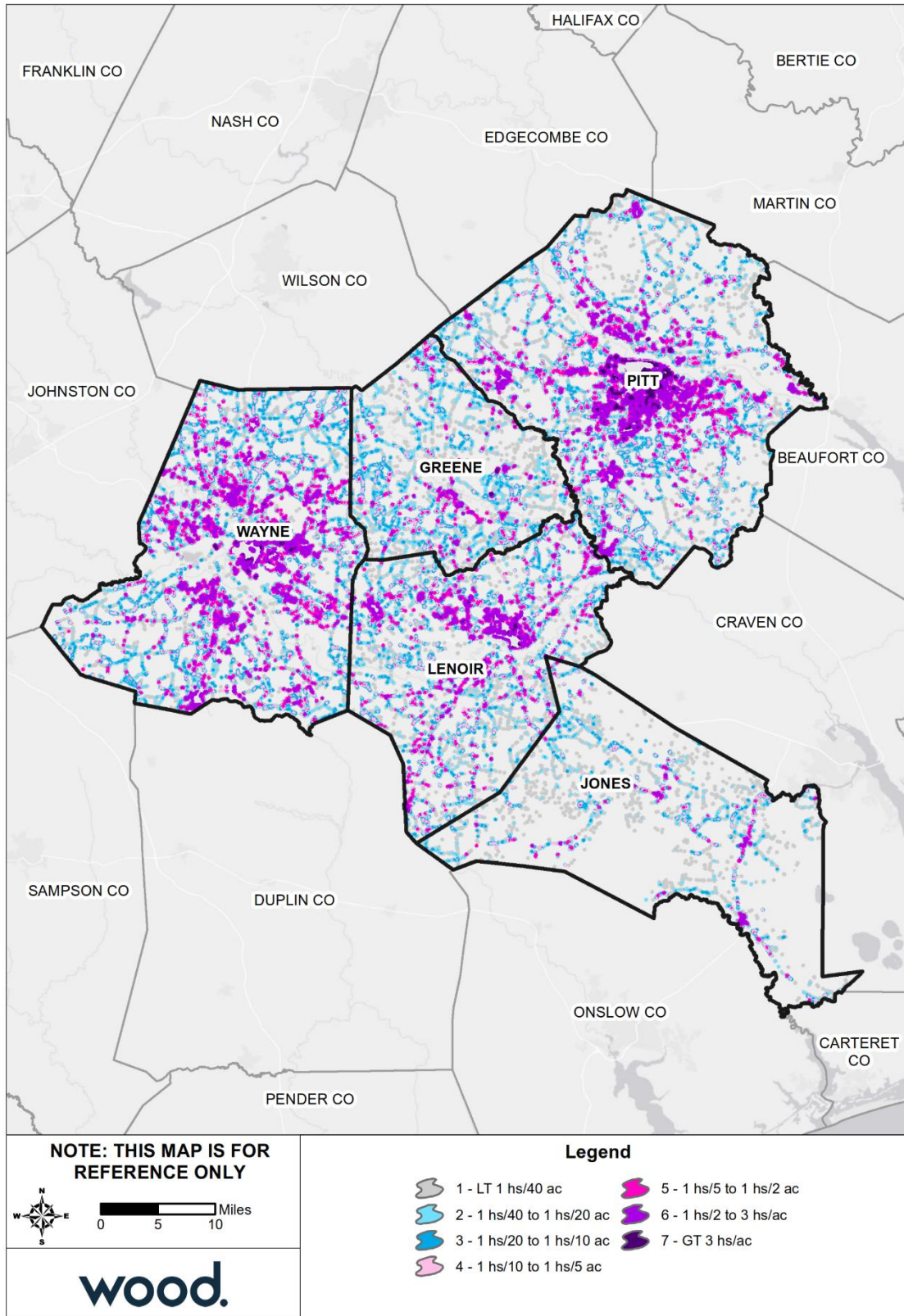
Table 4.82 – Wildland Urban Interface, Population and Acres

	Housing Density	WUI	Percent of WUI	WUI Acres	Percent of
	LT 1hs/40ac	4,431	1.2 %	229,325	32.0 %
	1hs/40ac to 1hs/20ac	6,919	1.9 %	111,431	15.6 %
	1hs/20ac to 1hs/10ac	15,640	4.4 %	117,142	16.4 %
	1hs/10ac to 1hs/5ac	25,531	7.1 %	93,903	13.1 %
	1hs/5ac to 1hs/2ac	56,861	15.9 %	86,391	12.1 %
	1hs/2ac to 3hs/1ac	194,653	54.4 %	73,296	10.2 %
	GT 3hs/1ac	53,739	15.0 %	4,539	0.6 %
	Total	357,774	100.0 %	716,027	100.0 %

Source: Southern Wildfire Risk Assessment

SECTION 4: RISK ASSESSMENT

Figure 4.42 – Wildland Urban Interface, Neuse River Region



Source: Southern Wildfire Risk Assessment

SECTION 4: RISK ASSESSMENT

Extent

Wildfire extent can be defined by the fire’s intensity and measured by the Characteristic Fire Intensity Scale, which identifies areas where significant fuel hazards which could produce dangerous fires exist. Fire Intensity ratings identify where significant fuel hazards and dangerous fire behavior potential exist based on fuels, topography, and a weighted average of four percentile weather categories. The Fire Intensity Scale consists of five classes, as defined by Southern Wildfire Risk Assessment. Table 4.84 details the Characteristic Fire Intensity within the Neuse River Region by category and Figure 4.43 shows the potential fire intensity across the Region. More detailed maps showing Characteristic Fire Intensity within jurisdiction boundaries are provided in the annexes.

Table 4.83 – Fire Intensity Scale

Class	Description
1, Very Low	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.
2, Low	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.
3, Moderate	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.
4, High	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.
5, Very High	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.

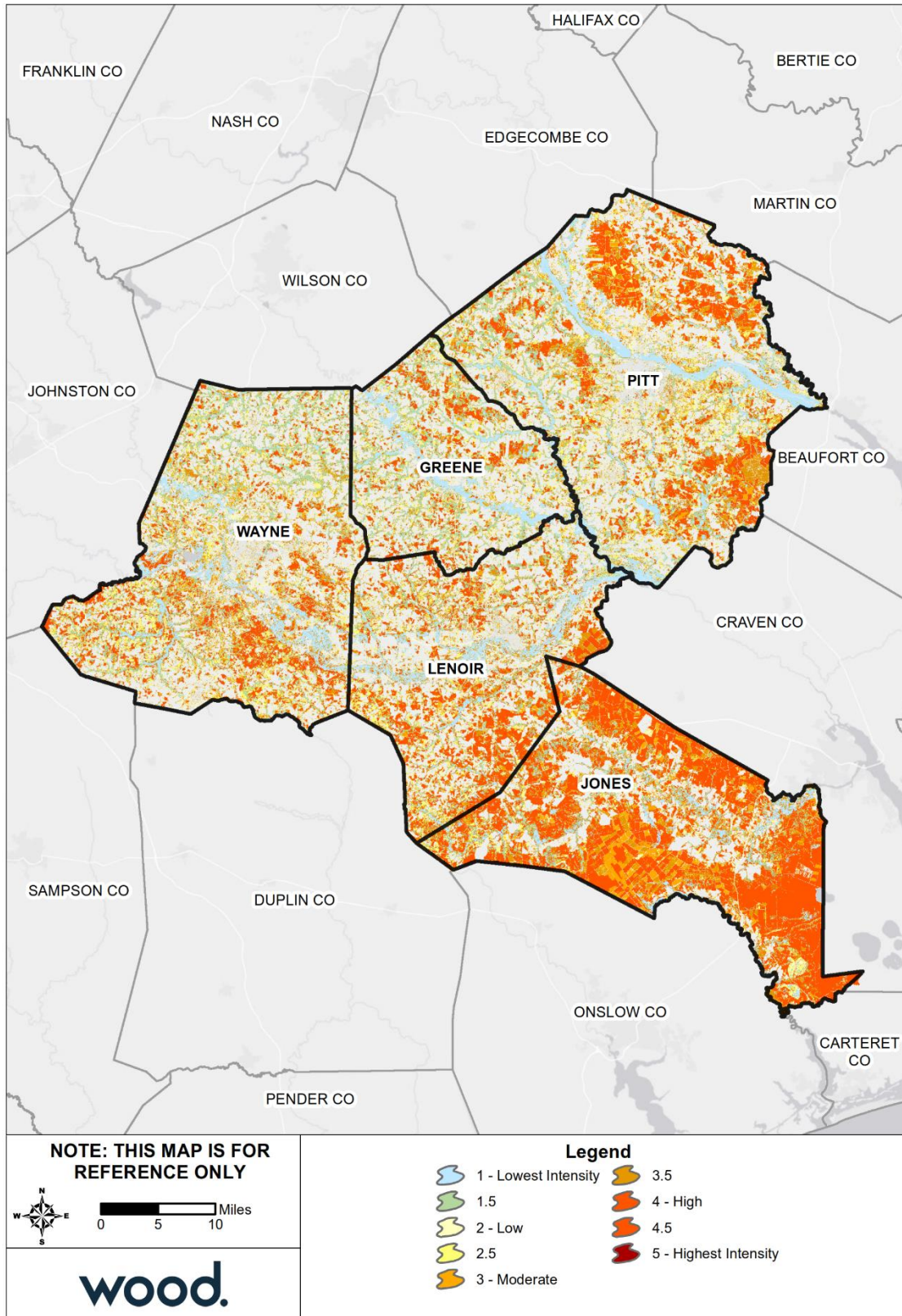
Source: Southern Wildfire Risk Assessment

Table 4.84 – Characteristic Fire Intensity, Neuse River Region

Class	Acres	Percent
Non-Burnable	547,902	36.4 %
1 Lowest Intensity	122,536	8.1 %
1.5	172,168	11.4 %
2 Low	57,056	3.8 %
2.5	86,452	5.7 %
3 Moderate	104,332	6.9 %
3.5	111,175	7.4 %
4 High	176,225	11.7 %
4.5	127,762	8.5 %
5 Highest Intensity	0	0.0 %
Total	1,505,608	100.0 %

Source: Southern Wildfire Risk Assessment

Figure 4.43 – Characteristic Fire Intensity, Neuse River Region



Source: Southern Wildfire Risk Assessment

SECTION 4: RISK ASSESSMENT

Approximately 20 percent of the Neuse River 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 (36.4%) or would face a Class 1 or Class 2 Fire Intensity, which are easily suppressed.

Impact: 2 – Limited

Spatial Extent: 3 – Moderate

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 4,000 fires burning more than 115,000 acres annually. Recently, within the last 10 years, the State has averaged closer to 3,200 fires per year and 15,000 acres burned annually.

Table 4.85 lists past occurrences of wildfire in the Neuse River 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 may be higher than what can be reported here.

Table 4.85 – Records for Wildfire in the Neuse River Region, 1999-2018

Year	Wildfire Count	Acres Burned	Average Acreage Burned
1999	165	409.3	2.48
2000	134	762.7	5.69
2001	223	489.6	2.20
2002	94	422.7	4.50
2003	53	136.3	2.57
2004	109	195.5	1.79
2005	154	437.4	2.84
2006	163	558.4	3.43
2007	284	722.4	2.54
2008	159	920.1	5.79
2009	106	605.3	5.71
2010	141	323.4	2.29
2011	156	487.7	3.13
2012	80	181.5	2.27
2013	75	329.2	4.39
2014	127	278.1	2.19
2015	95	144.1	1.52
2016	86	65.2	0.76
2017	139	214.9	1.55
2018	92	206.3	2.24
Total	2,635	7,890.1	2.99

Source: NC Forest Service

SECTION 4: RISK ASSESSMENT

Based on NCFS records, over the 20-year period from 1999 through 2018, the Neuse River Region experienced 2,635 wildfire events that have burned over 7,800 acres of land, or approximately 3 acres per fire on average. Total fire counts and acreage burned by county are reported in each county's jurisdictional annex.

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 Neuse River Region is presented in Table 4.86 and illustrated in Figure 4.44. More detailed maps showing Burn Probability within jurisdiction boundaries are provided in the annexes.

Table 4.86 – Burn Probability, Neuse River Region

	Class	Acres	Percent
	1	274,731	36.1 %
	2	156,271	20.6 %
	3	126,602	16.7 %
	4	70,993	9.3 %
	5	86,341	11.4 %
	6	36,875	4.9 %
	7	8,340	1.1 %
	8	0	0.0 %
	9	0	0.0 %
	10	0	0.0 %
	Total	760,153	100.0 %

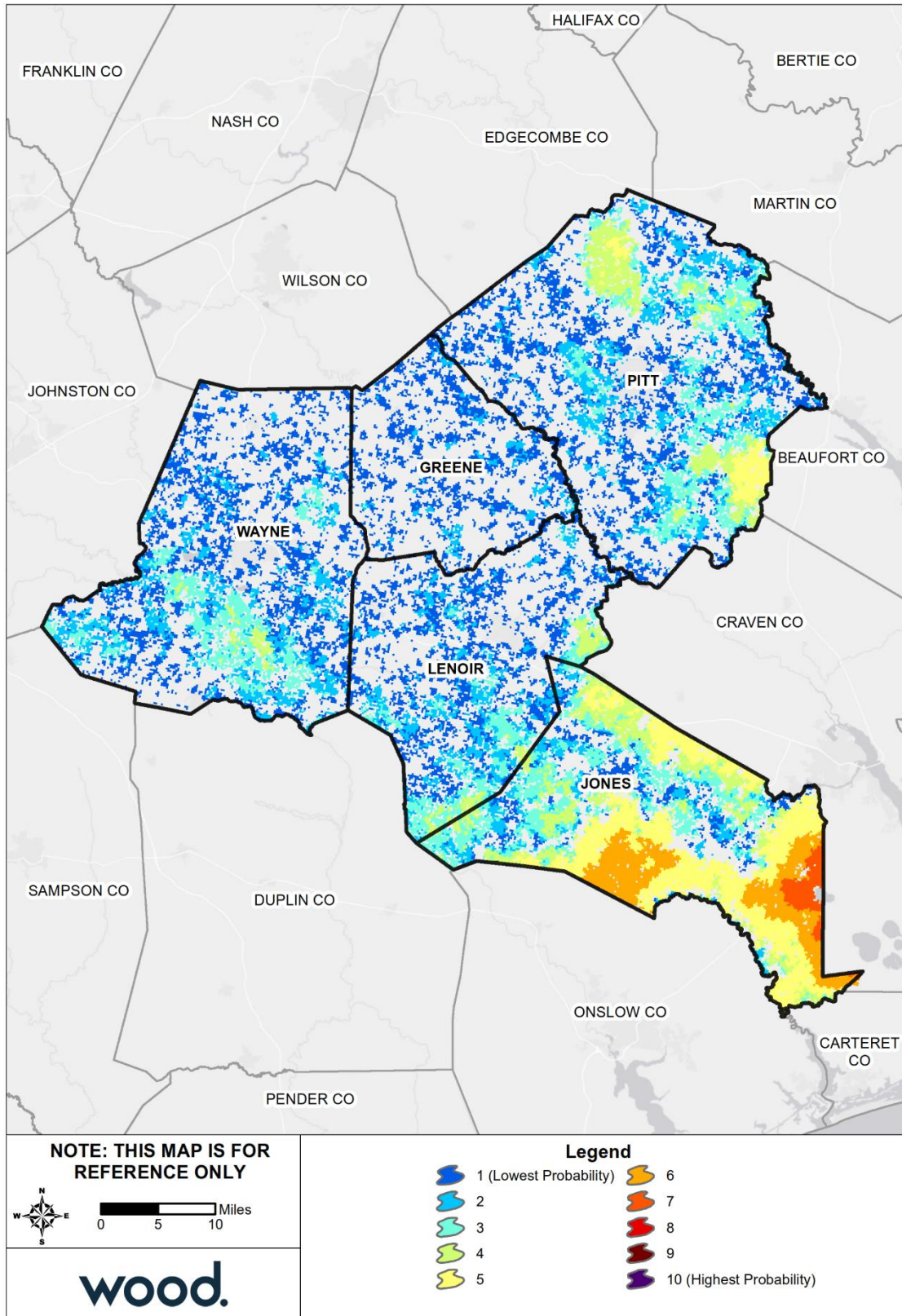
Source: Southern Wildfire Risk Assessment

The entirety of the Neuse River Region has a burn probability of 7 or less, though over 73 percent of the Region has a burn probability of 3 or less. The areas of highest burn probability are located in south and southeast Jones County. Areas of moderate burn probability can also be found in northern Jones County and eastern Pitt 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 to high burn probability, noted above, have a comparatively higher probability of occurrence.

Probability: 3 – Likely

Figure 4.44 – Burn Probability, Neuse River Region



Source: Southern Wildfire Risk Assessment

SECTION 4: RISK ASSESSMENT

Climate Change

Wildfires are usually prevalent with a combination of high temperatures and dry conditions, combustible fuels and an ignition source. Climate change has been linked to longer, warmer and drier conditions in the southeast, exacerbating key potential conditions for a wildfire to spread.

Vulnerability Assessment

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.

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 4.87 details the population estimated to be at risk to wildfire according to the NCEM IRISK database.

Table 4.87 – Estimated Population Impacted by Wildfire

County	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
Greene	21,378	5,086	23.8%	2,665	633	23.8%	1,388	329	23.7%
Jones	10,171	5,539	54.5%	1,757	957	54.5%	617	335	54.3%
Lenoir	59,448	7,829	13.2%	9,515	1,185	12.5%	3,800	504	13.3%
Pitt	168,177	23,427	13.9%	16,619	2,330	14%	11,233	1,565	13.9%
Wayne	122,706	54,347	44.3%	16,078	7,120	44.3%	8,766	3,883	44.3%
Region Total	381,880	96,228	25.2%	46,634	12,225	26.2%	25,804	6,616	25.6%

Source: NCEM Risk Management Tool

Property

Wildfire can cause direct property losses, including damage to buildings, vehicles, landscaped areas, agricultural lands, and livestock. Construction practices and building codes can increase fire resistance and fire safety of structures. Techniques for reducing vulnerability to wildfire include using street design to ensure accessibility to fire trucks, incorporating fire resistant materials in building construction, and using landscaping practices to reduce flammability and the ability for fire to spread.

The sectors facing the greatest risk to wildfire in the Neuse River Region are commercial facilities and food and agriculture. Table 4.88 details the buildings at risk to wildfire in the Neuse River Region and Table 4.89 provides estimated critical facilities risk.

Neuse River

Regional Hazard Mitigation Plan
2020

SECTION 4: RISK ASSESSMENT

Table 4.88 – Estimated Buildings Impacted by Wildfire

County	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
Greene	12,254	2,324	19%	\$278,442,304	504	4.1%	\$115,507,522	50	0.4%	\$94,022,514	2,878	23.5%	\$487,972,340
Jones	7,545	3,134	41.5%	\$371,264,179	723	9.6%	\$113,441,918	114	1.5%	\$129,278,419	3,971	52.6%	\$613,984,518
Lenoir	33,465	3,709	11.1%	\$374,742,745	528	1.6%	\$271,340,701	49	0.1%	\$90,302,635	4,286	12.8%	\$736,386,083
Pitt	64,163	7,418	11.6%	\$1,122,602,866	1,181	1.8%	\$538,756,844	85	0.1%	\$61,241,655	8,684	13.5%	\$1,722,601,362
Wayne	71,288	27,981	39.3%	\$3,657,561,023	3,164	4.4%	\$1,739,003,316	477	0.7%	\$749,014,852	31,622	44.4%	\$6,145,579,193
Region Total	188,715	44,566	23.6%	\$5,804,613,117	6,100	3.2%	\$2,778,050,301	775	0.4%	\$1,123,860,075	51,441	27.3%	\$9,706,523,496

Source: NCEM Risk Management Tool

SECTION 4: RISK ASSESSMENT

Table 4.89 – Critical Facilities at Risk to Wildfire

Sector	Number of Buildings at Risk	Estimated Damages
Banking and Finance	251	\$450,685,224
Chemical	1	\$13,765,180
Commercial Facilities	1,607	\$1,512,448,537
Communications	6	\$3,481,272
Critical Manufacturing	498	\$525,767,045
Emergency Services	156	\$162,360,516
Energy	3	\$682,926,911
Food and Agriculture	3,814	\$418,588,706
Government Facilities	210	\$481,838,922
Healthcare and Public Health	129	\$201,088,967
Transportation Systems	184	\$113,122,969
All Categories	6,859	\$4,566,074,249

Source: NCEM Risk Management Tool

Environment

Wildfires have the potential to destroy forest and forage resources and damage natural habitats. Wildfire can also damage agricultural crops on private land. Wildfire is part of a natural process, however, and the environment will return to its original state in time.

Consequence Analysis

Table 4.90 summarizes the potential detrimental consequences of wildfire.

Table 4.90 – Consequence Analysis - Wildfire

Category	Consequences
Public	In addition to the potential for fatalities, wildfire and the resulting diminished air quality pose health risks. Exposure to wildfire smoke can cause serious health problems within a community, including asthma attacks and pneumonia, and can worsen chronic heart and lung diseases. Vulnerable populations include children, the elderly, people with respiratory problems or with heart disease. Even healthy citizens may experience minor symptoms, such as sore throats and itchy eyes.
Responders	Public and firefighter safety is the first priority in all wildland fire management activities. Wildfires are a real threat to the health and safety of the emergency services. Most fire-fighters in rural areas are 'retained'. This means that they are part-time and can be called away from their normal work to attend to fires.
Continuity of Operations (including Continued Delivery of Services)	Wildfire events can result in a loss of power which may impact operations. Downed trees, power lines and damaged road conditions may prevent access to critical facilities and/or emergency equipment.
Property, Facilities and Infrastructure	Wildfires frequently damage community infrastructure, including roadways, communication networks and facilities, power lines, and water distribution systems. Restoring basic services is critical and a top priority. Efforts to restore roadways include the costs of maintenance and damage assessment teams, field data collection, and replacement or repair costs. 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.

SECTION 4: RISK ASSESSMENT

Category	Consequences
Environment	Wildfires cause damage to the natural environment, killing vegetation and animals. The risk of floods and debris flows increases after wildfires due to the exposure of bare ground and the loss of vegetation. In addition, the secondary effects of wildfires, including erosion, landslides, introduction of invasive species, and changes in water quality, are often more disastrous than the fire itself.
Economic Condition of the Jurisdiction	Wildfires can have significant short-term and long-term effects on the local economy. Wildfires, and extreme fire danger, may reduce recreation and tourism in and near the fires. If aesthetics are impaired, local property values can decline. Extensive fire damage to trees can significantly alter the timber supply, both through a short-term surplus from timber salvage and a longer-term decline while the trees regrow. Water supplies can be degraded by post-fire erosion and stream sedimentation. Wildfires can also have positive effects on local economies. Positive effects come from economic activity generated in the community during fire suppression and post-fire rebuilding. These may include forestry support work, such as building fire lines and performing other defenses, or providing firefighting teams with food, ice, and amenities such as temporary shelters and washing machines.
Public Confidence in the Jurisdiction's Governance	Wildfire events may cause issues with public confidence because they have very 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. 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 other jurisdictions 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
Greene County	2	2	3	4	3	2.5	H
Hookerton	2	2	3	4	3	2.5	H
Snow Hill	2	2	3	4	3	2.5	H
Walstonburg	2	2	3	4	3	2.5	H
Jones County	3	3	2	4	3	2.9	H
Maysville	3	3	3	4	3	3.1	H
Pollocksville	3	3	3	4	3	3.1	H
Trenton	3	3	3	4	3	3.1	H
Lenoir County	3	2	3	4	3	2.8	H
Kinston	2	2	3	4	3	2.5	H
La Grange	2	2	3	4	3	2.5	H
Pink Hill	3	3	3	4	3	3.1	H
Pitt County	3	2	3	4	3	2.8	H
Ayden	2	2	3	4	3	2.5	H
Bethel	3	2	3	4	3	2.8	H
Falkland	2	2	3	4	3	2.5	H
Farmville	2	2	3	4	3	2.5	H
Fountain	2	2	3	4	3	2.5	H
Greenville	3	2	3	4	3	2.8	H

SECTION 4: RISK ASSESSMENT

Jurisdiction	Probability	Impact	Spatial Extent	Warning Time	Duration	Score	Priority
Grifton	2	2	3	4	3	2.5	H
Grimesland	3	2	3	4	3	2.8	H
Simpson	3	2	3	4	3	2.8	H
Winterville	2	2	3	4	3	2.5	H
Wayne County	3	2	3	4	3	2.8	H
Eureka	2	2	3	4	3	2.5	H
Fremont	2	2	3	4	3	2.5	H
Goldsboro	2	2	3	4	3	2.5	H
Mount Olive	2	2	3	4	3	2.5	H
Pikeville	2	2	3	4	3	2.5	H
Seven Springs	2	2	3	4	3	2.5	H
Walnut Creek	2	2	3	4	3	2.5	H

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. The conclusions drawn from this process are summarized below.

Table 4.91 summarizes the degree of risk assigned to each identified hazard using the PRI method.

Table 4.91 – Summary of PRI Results

Hazard	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Dam Failure	Possible	Limited	Negligible	Less than 6 hrs	Less than 1 week	2.1
Drought	Likely	Limited	Large	More than 24 hrs	More than 1 week	2.8
Earthquake	Unlikely	Minor	Large	Less than 6 hrs	Less than 6 hrs	1.9
Extreme Heat	Highly Likely	Critical	Large	More than 24 hrs	Less than 1 week	3.3
Flood	Possible	Critical	Moderate	6 to 12 hours	Less than 1 week	2.7
Hurricane & Tropical Storm	Likely	Catastrophic	Large	More than 24 hrs	Less than 1 week	3.3
Severe Weather: Hail ¹	Highly Likely	Minor	Small	Less than 6 hrs	Less than 6 hrs	2.4
Severe Weather: Lightning ¹	Highly Likely	Minor	Negligible	Less than 6 hrs	Less than 6 hrs	2.2
Severe Weather: Thunderstorm Winds ¹	Highly Likely	Limited	Large	Less than 6 hrs	Less than 6 hrs	3.1
Severe Winter Storm	Highly Likely	Limited	Large	More than 24 hrs	Less than 1 week	3.0
Tornado	Highly Likely	Critical	Small	Less than 6 hrs	Less than 6 hrs	3.0
Wildfire	Likely	Limited	Moderate	Less than 6 hrs	Less than 1 week	2.8

¹Note: Severe Weather hazards average to a score of 2.6 and are therefore considered together as a high risk hazard.

The results from the PRI have been classified into three categories based on the assigned risk value which are summarized in Table 4.92:

- ▶ **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.

SECTION 4: RISK ASSESSMENT

Table 4.92 – Summary of Hazard Risk Classification

<p>High Risk (> 2.4)</p>	<p>Hurricane & Tropical Storm Extreme Heat Severe Winter Storm Tornado Drought Wildfire Flood Severe Weather</p>
<p>Moderate Risk (2.0 – 2.4)</p>	<p>Dam Failure</p>
<p>Low Risk (< 2.0)</p>	<p>Earthquake</p>

5 Capability Assessment

This section discusses the capability of the Neuse River 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 Neuse River 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.

5.2 CONDUCTING THE CAPABILITY ASSESSMENT

To facilitate the inventory and analysis of local government capabilities within the planning area, a detailed Local Capability Self-Assessment worksheet was distributed to members of the HMPC after the first planning committee meeting. The survey questionnaire 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. Communities 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.

At a minimum, the survey results provide an extensive and consolidated inventory of existing local plans, ordinances, programs, and resources in place or under development. With this information, inferences can be made about the overall effect on hazard loss reduction in each community. 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.

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 Neuse River region 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.

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 Neuse River 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 Neuse River 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 Redevelopment Ordinance	Building Code	Fire Code	Community Wildfire Protection Plan	National Flood Insurance Program	Community Rating System
Greene County	√		√		√	√	√	√	√	√					√	√	√	√	√			√	√		√	
Town of Hookerton	√					+	+	+	+	+					√	√						√	√		√	
Town of Snow Hill	√	√				+	+	+	+	+		√			√	√	√	√	√			√	√		√	
Town of Walstonburg	√					+	+	+	+	+					√	√						√	√		√	
Jones County	√	√				√	√	√	√	√					√	√		√	√			√	√		√	
Town of Maysville	√					+	+	+	+	+					+	√	√	√	√			√	√		√	
Town of Pollocksville	√					+	+	+	+	+			*	*	+	√	√	√	√			√	√		√	
Town of Trenton	√					+	+	+	+	+					+	√		√	√			√	√		√	
Lenoir County	√	√				√	√	√	√	√					√	√	√	√	√			√	√		√	√
City of Kinston	√	√				+	+	+	+	+		√	√		√	√	√	√	√	√		√	√		√	√
Town of La Grange	√	√	√			+	+	+	+	+		√			√	√	√	√	√			√	√		√	
Town of Pink Hill	√					+	+	+	+	+						√						√	√		√	
Pitt County	√	√		√	√	√	√	√	√	√	√	√	√		√	√	√	√	√			√	√		√	√
Town of Ayden	√	√		√	√	+	+	+	+	+		√			√	√	√	√	√	√		√	√		√	
Town of Bethel	√	√		√		+	+	+	+	+		√			√	√	√	√	√	√		√	√		√	
Town of Falkland	√	√				+	+	+	+	+						√	√	√	√			√	√		√	
Town of Parmville	√	√		√	√	+	+	+	+	+	√	√			√	√	√	√	√	√		√	√		√	√
Town of Fountain	√	√				+	+	+	+	+						√	√	√	√			√	√		√	

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 Redevelopment Ordinance	Building Code	Fire Code	Community Wildfire Protection Plan	National Flood Insurance Program	Community Rating System
City of Greenville	√	√	√	√	√	+	+	+	+	+		√	√	√	√	√	√	√	√			√	√		√	√
Town of Grifton	√	√		√	√	+	+	+	+	+	√	√			√	√	√	√	√	√		√	√		√	√
Town of Grimesland	√	√				+	+	+	+	+						√	√	√	√			√	√		√	
Village of Simpson	√	√				+	+	+	+	+						√	√	√	√			√	√		√	
Town of Winterville	√	√		√	√	+	+	+	+	+	√	√			√	√	√	√	√	√		√	√		√	√
Wayne County	√	√				√	√	√	√	√		√	√		√	√	√	√	√	√		√	√		√	√
Town of Eureka	√					+	+	+	+	+												√	√			
Town of Fremont	√															√						√	√		√	
City of Goldsboro	√	√		√	√	+	+	+	√	+		√	√	√	√	√	√	√	√	√		√	√		√	√
Town of Mount Olive	√					+	+	+	+	+						√	√	√	√			√	√		√	
Town of Pikeville	√															√	√	√				√	√		√	
Town of Seven Springs	√															√						√	√		√	
Village of Walnut Creek	√					+	+	+	+	+						√	√	√	√			√	√		√	√

Source: Local Capability Assessment Survey

SECTION 5: CAPABILITY ASSESSMENT

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 Neuse River Regional Hazard Mitigation Plan.

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

SECTION 5: CAPABILITY ASSESSMENT

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.

- ▶ 4 of the 31 participating jurisdictions have 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.

- ▶ 28 of the 31 participating jurisdictions have an emergency operations plan either in place or are covered under a county plan (5 jurisdictions have one in place; 23 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.

- ▶ 28 of 31 participating jurisdiction have a continuity of operations plan either in place or are covered under a county plan (6 jurisdictions have one in place; 22 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.

- ▶ 18 of the 31 participating jurisdictions have a comprehensive land use plan in place.

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.

- ▶ 12 of the 31 participating jurisdictions have a capital improvements plan in place.

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

SECTION 5: CAPABILITY ASSESSMENT

meet current building standards or are within a historic district that cannot easily be relocated out of harm's way.

- ▶ 3 of the 31 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.

- ▶ 23 of the 31 participating jurisdictions have a zoning ordinance in place.

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.

- ▶ 25 of the 31 participating jurisdictions have a subdivision ordinance in place.

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 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 policy and claim information for each participating jurisdiction in the Neuse River region.

All jurisdictions in the region, with the exception of the Town of Eureka, 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.

Community Rating System

An additional indicator of floodplain management capability is active participation in the CRS program. 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.

- ▶ 10 of 31 participating jurisdictions in the Neuse River Region 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 Policy and Claim Information

Jurisdiction	Date of Initial FIRM/FHBM	CRS Class	Current Effective Map Date	NFIP Policies in Force	Insurance in Force	Written Premium in Force	Closed Losses	Total Payments
Greene County	12/02/77	-	04/16/13	82	\$15,040,100	\$45,122	43	\$1,688,573
Town of Hookerton	09/26/75	-	04/16/13	1	\$118,800	\$1,270	1	\$52,610
Town of Snow Hill	12/28/73	-	04/16/13	20	\$4,991,000	\$14,954	21	\$789,927
Town of Walstonburg	01/02/04	-	04/16/13	0	0	0	0	0
Jones County	06/02/78	-	04/16/13	107	\$27,897,700	\$60,390	55	\$2,384,083
Town of Maysville	07/02/04	-	04/16/13	6	\$1,173,000	\$2,697	1	\$33,809
Town of Pollocksville	03/15/74	-	04/16/13	14	\$3,618,800	\$9,685	14	\$560,778
Town of Trenton	03/01/74	-	04/16/13	12	\$2,247,500	\$10,161	16	\$285,912
Lenoir County	12/27/74	8	04/16/13	175	\$29,721,400	\$112,302	147	\$5,729,700
City of Kinston	03/15/74	7	04/16/13	342	\$76,610,900	\$365,290	421	\$28,304,705
Town of La Grange	07/02/04	-	04/16/13	9	\$1,963,000	\$2,730	1	\$13,422
Town of Pink Hill	07/02/04	-	04/16/13	0	0	0	0	0
Pitt County	06/30/78	8	07/07/14	407	\$88,661,200	\$223,285	338	\$10,437,400
Town of Ayden	05/24/74	-	07/07/14	22	\$4,745,100	\$10,396	15	\$266,042
Town of Bethel	01/02/04	-	07/07/14	1	\$105,000	\$256	3	\$12,469
Town of Falkland	01/02/04	-	04/16/13	2	\$512,500	\$2,407	1	\$21,317
Town of Farmville	04/12/74	7	04/16/13	75	\$20,862,100	\$30,664	27	\$791,622
Town of Fountain	01/02/04	-	04/16/13	0	0	0	0	0
City of Greenville	06/14/74	7	07/07/14	1,174	\$261,343,800	\$793,560	494	\$21,324,523
Town of Grifton	12/17/73	7	07/07/14	65	\$10,668,300	\$49,343	53	\$2,523,909
Town of Grimesland	01/02/04	-	07/07/14	4	\$1,260,000	\$1,523	1	\$40,880
Village of Simpson	06/07/74	-	07/07/14	97	\$26,243,600	\$40,240	25	\$250,257
Town of Winterville	01/02/04	10	07/07/14	6	\$1,750,000	\$2,148	0	0
Wayne County	12/27/74	8	04/16/13	349	\$70,721,200	\$225,258	238	\$12,798,514
Town of Eureka*	12/02/05	-	04/16/13	n/a	n/a	n/a	0	0
Town of Fremont	12/02/05	-	04/16/13	3	\$595,000	\$1,814	0	0
City of Goldsboro	06/07/74	8	04/16/13	661	\$138,642,500	\$743,950	519	\$23,770,109

Neuse River

 Regional Hazard Mitigation Plan
 2020

SECTION 5: CAPABILITY ASSESSMENT

Jurisdiction	Date of Initial FIRM/FHBM	CRS Class	Current Effective Map Date	NFIP Policies in Force	Insurance in Force	Written Premium in Force	Closed Losses	Total Payments
Town of Mount Olive	06/17/77	-	04/16/13	12	\$2,708,000	\$9,191	18	\$257,180
Town of Pikeville	03/13/81	-	04/16/13	7	\$1,014,200	\$1,897	2	\$57,621
Town of Seven Springs	07/15/77	-	04/16/13	19	\$2,709,900	\$25,618	31	\$2,315,346
Village of Walnut Creek	01/21/83	8	04/16/13	32	\$9,134,800	\$28,996	16	\$1,037,577
Total Region	-	-	-	3,704	\$805,059,400	\$2,815,147	2,501	\$115,748,285

Source: FEMA NFIP Policy Statistics

*Note that the Town of Eureka is currently Not Participating in the NFIP. The Town has no land in the SFHA.

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.

- ▶ 3 of the 31 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.

- ▶ 8 of the 31 participating jurisdictions have an open space management plan in place.

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 31 participating jurisdictions have a stormwater management plan in place.

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 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 5.3 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.

Note that while all jurisdictions are participants in the NFIP, several jurisdictions do not have a local floodplain manager. In these cases, due to the limited capacity of these small jurisdictions, the County is the designated floodplain administrator for the jurisdiction.

SECTION 5: CAPABILITY ASSESSMENT

Table 5.3 – 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 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
Greene County	√		√	√	√	√			√	√		√	√	√
Town of Hookerton				√	√	√							√	
Town of Snow Hill	√		√	√		√			√	√	√		√	√
Town of Walstonburg				√	√	√							√	
Jones County	√		√	√	√	√			√	√		√	√	√
Town of Maysville									√				√	
Town of Pollocksville									√				√	√
Town of Trenton									√				√	
Lenoir County	√		√	√	√	√			√	√	√	√	√	√
City of Kinston	√	√	√	√	√	√			√	√	√	√	√	√
Town of La Grange	√	√	√	√		√			√	√			√	√
Town of Pink Hill													√	
Pitt County	√	√	√	√	√	√			√	√	√	√	√	√
Town of Ayden	√		√			√			√	√		√	√	√
Town of Bethel	√		√			√			√	√		√	√	√
Town of Falkland									√				√	
Town of Farmville	√		√	√		√			√	√	√	√	√	√
Town of Fountain									√				√	

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 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
City of Greenville	√	√	√	√	√	√			√	√	√	√	√	√
Town of Grifton	√		√	√		√			√			√	√	√
Town of Grimesland									√				√	
Village of Simpson									√				√	
Town of Winterville	√		√	√		√			√	√	√	√	√	√
Wayne County	√	√	√	√	√	√			√	√	√	√	√	√
Town of Eureka														
Town of Fremont														
City of Goldsboro	√	√	√	√		√			√	√	√	√	√	√
Town of Mount Olive													√	
Town of Pikeville													√	√
Town of Seven Springs														
Village of Walnut Creek						√							√	√

Source: Local Capability Assessment Survey

SECTION 5: CAPABILITY ASSESSMENT

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 5.4 provides a summary of the results for the region with regard to relevant fiscal resources. A checkmark (v) indicates that the given fiscal resource is locally available for hazard mitigation purposes (including match funds for state and federal mitigation grant funds).

Table 5.4 – 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
Greene County					√						
Town of Hookerton											
Town of Snow Hill				√	√						
Town of Walstonburg											
Jones County					√						
Town of Maysville											
Town of Pollocksville					√						
Town of Trenton											
Lenoir County		√			√						
City of Kinston	√	√		√	√						
Town of La Grange	√			√	√				√		
Town of Pink Hill											
Pitt County	√	√						√	√	√	
Town of Ayden	√			√	√						
Town of Bethel	√			√	√						
Town of Falkland					√						
Town of Farmville	√			√	√						
Town of Fountain				√	√						
City of Greenville	√	√				√					

SECTION 5: CAPABILITY ASSESSMENT

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
Town of Grifton	√				√	√					
Town of Grimesland					√						
Village of Simpson					√						
Town of Winterville	√			√	√						
Wayne County	√	√			√	√					
Town of Eureka											
Town of Fremont											
City of Goldsboro	√	√	√	√	√	√		√			
Town of Mount Olive					√						
Town of Pikeville				√	√				√		
Town of Seven Springs											
Village of Walnut Creek				√		√					

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 5.5 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. No communities reported having any other education or outreach programs beyond the provided list.

SECTION 5: CAPABILITY ASSESSMENT

Table 5.5 – 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
Greene County	√	√	√	√		√
Town of Hookerton						
Town of Snow Hill	√	√				
Town of Walstonburg						
Jones County	√	√	√			√
Town of Maysville						
Town of Pollocksville						
Town of Trenton						
Lenoir County	√	√	√			√
City of Kinston	√	√	√			√
Town of La Grange						
Town of Pink Hill						
Pitt County	√	√	√	√		√
Town of Ayden	√	√				
Town of Bethel	√	√				
Town of Falkland						
Town of Farmville	√	√				√
Town of Fountain						
City of Greenville	√	√	√			√
Town of Grifton	√	√				√
Town of Grimesland						
Village of Simpson						
Town of Winterville	√	√				√
Wayne County	√	√	√	√		√
Town of Eureka						
Town of Fremont						
City of Goldsboro	√	√				
Town of Mount Olive						
Town of Pikeville						
Town of Seven Springs						
Village of Walnut Creek						

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, with a focus on experience with typical HMGP mitigation projects. Table 5.6 provides a summary of the results for the planning area regarding this experience. A checkmark (√) indicates that local experience or capability exists.

Table 5.6 – Mitigation Resources

Jurisdiction	Do you apply for mitigation grant funding?	Do you perform reconstruction projects?	Do you perform building elevations?	Do you perform acquisitions?
Greene County	√	√	√	√
Town of Hookerton	√	√	√	√
Town of Snow Hill	√	√	√	√
Town of Walstonburg	√	√	√	√
Jones County	√	√	√	√
Town of Maysville	√	√	√	√
Town of Pollockville	√	√	√	√
Town of Trenton	√	√	√	√
Lenoir County	√	√	√	√
City of Kinston	√	√	√	√
Town of La Grange	√			
Town of Pink Hill	√	√	√	√
Pitt County	√	√		√
Town of Ayden	√	√	√	√
Town of Bethel	√	√	√	√
Town of Falkland	√	√	√	√
Town of Farmville	√	√	√	√
Town of Fountain	√	√	√	√
City of Greenville	√	√	√	√
Town of Grifton	√	√	√	√
Town of Grimesland	√	√	√	√
Village of Simpson	√	√	√	√
Town of Winterville	√	√	√	√
Wayne County	√	√	√	√
Town of Eureka	√	√	√	√
Town of Fremont	√	√	√	√
City of Goldsboro	√	√	√	√
Town of Mount Olive	√	√	√	√
Town of Pikeville	√	√	√	√
Town of Seven Springs	√	√	√	√
Village of Walnut Creek	√	√	√	√

Source: Local Capability Assessment Survey

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, all participating jurisdictions have some local standards that exceed state requirements. For example, Greene County, Hookerton, Snow Hill, Walstonburg, Lenoir County, Kinston, La Grange, Pink Hill, Jones County, Maysville, Pollocksville, Trenton, Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Grifton, Grimesland, Simpson, Winterville, Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, and Walnut Creek have a two-foot freeboard requirement; Greenville requires a one-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 Neuse River region to assign a rating of their perceived capability across each of the capability categories and overall as either “limited,” “moderate,” or “high.” Table 5.7 summarizes the results of the self-assessment ratings for each community in the Neuse River Region.

Table 5.7 – Self-Assessment of Capability

Jurisdiction	Plans, Ordinances, Codes and Programs	Administrative and Technical Capability	Fiscal Capability	Education and Outreach Capability	Mitigation Capability	Political Capability	Overall Capability
Greene County	High	High	High	High	High	High	High
Town of Hookerton	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Town of Snow Hill	High	High	High	High	High	High	High
Town of Walstonburg	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Jones County	High	High	High	High	High	High	High
Town of Maysville	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Town of Pollocksville	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Town of Trenton	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Lenoir County	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
City of Kinston	High	High	High	High	High	High	High
Town of La Grange	High	High	High	High	High	High	High
Town of Pink Hill	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Pitt County	High	High	High	High	High	High	High
Town of Ayden	High	High	High	High	High	High	High
Town of Bethel	High	High	High	High	High	High	High
Town of Falkland	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Town of Farmville	High	High	High	High	High	High	High
Town of Fountain	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
City of Greenville	High	High	High	High	High	High	High
Town of Grifton	High	High	Limited	Moderate	Limited	Moderate	Moderate
Town of Grimesland	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Village of Simpson	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Town of Winterville	High	High	High	High	High	High	High
Wayne County	High	High	High	High	High	High	High
Town of Eureka	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Town of Fremont	Limited	Limited	Limited	Limited	Limited	Limited	Limited
City of Goldsboro	High	High	High	High	High	High	High
Town of Mount Olive	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Town of Pikeville	High	High	Moderate	Limited	Limited	Moderate	Limited
Town of Seven Springs	Limited	Limited	Limited	Limited	Limited	Limited	Limited
Village of Walnut Creek	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 Neuse River region to implement hazard mitigation actions.

Table 5.8 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 68, which falls into the Low capability ranking.

SECTION 5: CAPABILITY ASSESSMENT

Table 5.8 – Capability Assessment Results

Jurisdiction	Overall Capability Score	Overall Capability Rating
Greene County	89	Moderate
Town of Hookerton	43	Low
Town of Snow Hill	81	Moderate
Town of Walstonburg	43	Low
Jones County	82	Moderate
Town of Maysville	49	Low
Town of Pollocksville	53	Low
Town of Trenton	46	Low
Lenoir County	90	Moderate
City of Kinston	97	Moderate
Town of La Grange	81	Moderate
Town of Pink Hill	37	Low
Pitt County	109	High
Town of Ayden	90	Moderate
Town of Bethel	87	Moderate
Town of Falkland	58	Low
Town of Farmville	99	Moderate
Town of Fountain	59	Low
City of Greenville	105	High
Town of Grifton	90	Moderate
Town of Grimesland	58	Low
Village of Simpson	58	Low
Town of Winterville	99	Moderate
Wayne County	60	Low
Town of Eureka	30	Low
Town of Fremont	26	Low
City of Goldsboro	107	High
Town of Mount Olive	54	Low
Town of Pikeville	43	Low
Town of Seven Springs	26	Low
Village of Walnut Creek	60	Low

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 Neuse River 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 Neuse River planning area, 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 improvements to existing capabilities can be made so that community vulnerability is reduced. Goals are also necessary to guide the review of possible mitigation measures. This plan needs to make sure that recommended actions are consistent with what is 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 counties’ and participating jurisdictions’ comprehensive plans. Comprehensive plans are important because they are developed and designed to guide future growth within their communities. 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 second planning meeting, the HMPC reviewed and discussed the goals from the 2015 plan. The goals of the 2015 Neuse River Regional Hazard Mitigation Plan were as follows:

#1

Promote the public health, safety, and general welfare of residents and minimize public and private losses due to natural hazards.

SECTION 6: MITIGATION STRATEGY

#2	Reduce the risk and impact of future natural disasters by regulating development in known high hazard areas.
#3	Pursue funds to reduce the risk of natural hazards to existing developments where such hazards are clearly identified and the mitigation efforts are cost-effective.
#4	Effectively expedite post-disaster reconstruction.
#5	Provide education to citizens that empower them to protect themselves and their families from natural hazards.
#6	Protect fragile natural and scenic areas within the planning jurisdiction.

The HMPC was presented with recommended changes to delete goal #2 and goal #6 and revise goal #1 and goal #4 in order to consolidate into fewer, stronger goals.

During the third planning meeting, held on June 20, 2019, the HMPC discussed objectives within each goal in order to better facilitate the development of clearly defined mitigation actions.

The revised goals and the new objectives of this plan update are detailed below in Section 6.1.3.

6.1.3 Resulting Goals and Objectives

The HMPC agreed upon seven general goals for this planning effort and included specific objectives in support of each goal. The refined goals and objectives are as follows:

Goal 1 – Promote the public health, safety, and general welfare of residents and minimize public and private losses due to natural hazards through local land development regulations, capital improvements, planning/investment, and proactive long-range planning regarding land use and post-disaster redevelopment.

Objective 1.1: Reduce the length of time that local infrastructure systems are deemed inoperable due to the impacts of natural hazards.

Objective 1.2: Preserve open space in floodplain areas.

Objective 1.3: Reduce flooding and erosion vulnerability through land development initiatives, maintenance, and improvement of storm drainage.

Goal 2 – Pursue funds to reduce the risk of natural hazards to existing developments where such hazards are clearly identified and the mitigation efforts are cost-effective.

Objective 2.1: Improve all participating Jurisdictions' general hazard mitigation capability.

Objective 2.2: 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.

Goal 3 – Effectively expedite post-disaster reconstruction through the implementation of mitigation strategies and intergovernmental coordination.

Objective 3.1: Reduce the risk of damage from wildfires (including under fires) to existing and future development.

Objective 3.2: Ensure effective local/interagency communication and response during disaster events.

SECTION 6: MITIGATION STRATEGY

Goal 4 – Provide education to citizens that empowers them to protect themselves and their families from natural hazards.

Objective 4.1: 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 4.2: Improve the public awareness and understanding of local vulnerability to hazards and improve disaster warning/post-disaster information efforts.

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, each hazard identified in Section 4 Hazard Identification was evaluated. The following were determined based on the Priority Risk Index scores to be high and medium priority hazards:

- ▶ Dam Failure
- ▶ Drought
- ▶ Extreme Heat
- ▶ Flood
- ▶ Hurricane & Tropical Storm
- ▶ Severe Weather (Thunderstorm Wind, Lightning, & Hail)
- ▶ Severe Winter Storm
- ▶ Tornado
- ▶ Wildfire

Once it was determined which hazards warranted the development of specific mitigation actions, the HMPC analyzed viable mitigation options that supported the identified goals and objectives. 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. Acronyms used in the Mitigation Action Plans to identify each action's category are listed in parentheses.

- ▶ Prevention (P)
- ▶ Property Protection (PP)
- ▶ Natural Resource Protection (NRP)
- ▶ Emergency Services (ES)
- ▶ Structural Projects (SP)
- ▶ Public Information and Outreach (PIO)

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.

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. The prioritization criteria 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
- ▶ 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
- ▶ PDM – Pre-Disaster Mitigation
- ▶ UHMA – Unified Hazard Mitigation Assistance
- ▶ USDA – United States Department of Agriculture

SECTION 7: MITIGATION ACTION PLANS

Table 7.1 – Mitigation Action Plan, Greene County

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
G1	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.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	High	2.2	ES	<ul style="list-style-type: none"> Greene County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing - Annually	In Progress – Carry Forward	Greene County will work with all County municipalities to review and improve the County Emergency Operations Plan on an annual basis.
G2	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.	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	2.1	ES	<ul style="list-style-type: none"> Greene County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – As Needed	As Needed – Carry Forward	Greene County will continue to carry this effort out as natural hazard events occur throughout the County, including all participating municipalities.
G3	Request Hazard Mitigation Grant Program (HMGP) funding for the elevation and/or acquisition of structures substantially damaged during a natural hazard event. This funding may also be utilized to address infrastructure needs, if it is determined that facilities within the County or any of the participating jurisdictions are adversely impacted by flood events.	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	High	1.2	PP	<ul style="list-style-type: none"> Greene County Administration Greene County Emergency Management Municipal Administrations 	Staff Time	HMGP, PDM, UHMA	Ongoing – As Needed	As Needed – Carry Forward	Greene County will continue to apply for this funding as the need and/or opportunity arises.
G4	Work to educate and inform local real estate agents, contractors, developers and citizens about issues associated with development in the floodplain by Ensuring that a range of materials related to flood insurance, flood protection, floodplain management, information on floodplains, and listings of qualified contractors familiar with floodproofing and elevation techniques, are available through various avenues including: <ul style="list-style-type: none"> Placing materials in the local library Maintaining documents at the County Planning and Economic Development Office Disseminating information to local contractors 	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	High	4.2	PIO	<ul style="list-style-type: none"> Greene County Planning and Administration Municipal Administrations 	Staff Time	General Fund, NCDPS	1 year	Not Started – Carry Forward	Greene County will initiate these efforts in conjunction with the County’s application to the Community Rating System Program.
G5	Ensure information is available on the County's website regarding hazards and development regulations within floodplains, including a link to FEMA and NFIP resources relating to emergency preparedness, flood protection, wind proofing, and proper evacuation procedures.	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	High	4.2	PIO	<ul style="list-style-type: none"> Greene County Administration Municipal Administrations 	\$2,500	General Fund, NCDPS	1 year	Not Started – Carry Forward	Greene County has not yet initiated these efforts but will do so through implementation of this plan.
G6	Consider joining the Community Rating System (CRS). The County will assess the cost benefit of joining this program for County residents and property owners.	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	Medium	1.3	PP	<ul style="list-style-type: none"> Greene County Administration Municipal Administrations 	\$3,500	General Fund, NCDPS	2 to 3 years	Not Started – Carry Forward	Greene County has not yet made application to the CRS program. The County anticipates moving forward with this effort through implementation of this plan.

SECTION 7: MITIGATION ACTION PLANS

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
G7	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).	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	High	2.2	NRP	<ul style="list-style-type: none"> Greene County Administration Municipal Administrations 	Staff Time	General Fund	Ongoing – Over Next Five Years	In Progress – Carry Forward	Greene County, as well as all participating municipal jurisdictions will continue to assist the State in enforcing the land development regulatory mechanisms.
G8	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.	Greene County, Hookerton, Snow Hill, Walstonburg	Severe Winter Storm	Medium	1.1	P	<ul style="list-style-type: none"> Greene County Public Services NCDOT 	To be determined	General Fund, NCDOT	2 to 3 years	Not Started – Carry Forward	This issue has presented problems over the last few years; therefore, the County will continue to undertake efforts to improve upon response capacity regarding snow and ice removal on both rural and urban roadways.
G9	Continue to inspect and monitor the county's fire hydrant system to ensure that there are adequate quantities of fire hydrants for fire safety purposes and that all hydrants are maintained on a regular basis. The County will also evaluate pressures to ensure fire flow demands are met.	Greene County, Hookerton, Snow Hill, Walstonburg	Wildfire	High	3.1	ES	<ul style="list-style-type: none"> Volunteer and Municipal Fire Departments 	Staff Time	General Fund	Ongoing – Over Next Five Years	In Progress – Carry Forward	Greene County Emergency Services will continue to work closely with all local fire departments to inspect and maintain all fire hydrants.
G10	Pursue all avenues available to secure grant funding to address improvements to the Town of Hookerton's WWTP. Currently, Contentnea Creek is encroaching upon the plant's lagoon dike wall. NCDEQ has stated that the integrity of the lagoon structure is at imminent risk.	Hookerton	Flood, Hurricane & Tropical Storm, Dam Failure	Low	1.1	P	<ul style="list-style-type: none"> Greene County Administration Town of Hookerton Elected Board 	To be determined	General Fund, NCDPS	3 to 5 years	Not Started – Carry Forward	The County nor Town has moved forward with a solution to this problem. Both jurisdictions will work towards a solution to this problem through implementation of this plan.
G11	Continue to expand upon the county's Code Red Emergency Notification System available to all residents. Greene County Emergency Services will coordinate with all municipal jurisdictions regarding registration through the Greene County Emergency Notification Registration Portal.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	High	4.1	ES	<ul style="list-style-type: none"> Greene County Emergency Management Municipal Administrations 	\$7,500	General Fund, NCDPS	Ongoing – Review annually	In Progress – Carry Forward	Greene County will review all emergency notification protocols on an annual basis and attempt to improve upon these efforts based on experiences regarding passed events and the outcomes of annual tabletop exercises.
G12	Consider establishing a program to establish CERT teams within the County. This effort will involve both the recruitment and training of potential team members.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	Medium	3.2	ES	<ul style="list-style-type: none"> Greene County Emergency Management Municipal Administrations 	\$5,000	General Fund, NCDPS	2 to 3 years	Not Started – Carry Forward	Greene County intends to initiate efforts to establish Community Emergency Response Teams over the next 2 to 3 years.
G13	Continue to maintain the County's Local Emergency Planning Committee (LEPC) focused on monitoring the presence and proliferation of hazard materials throughout the County.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	High	3.2	P	<ul style="list-style-type: none"> Greene County Local Emergency Planning Committee 	Staff Time	General Fund	Ongoing – over next five years	In Progress – Carry Forward	Greene County will continue to facilitate and maintain the County LEPC.

SECTION 7: MITIGATION ACTION PLANS

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
G14	Work closely with local media outlets to disseminate timely and accurate information relating to natural hazard events. This task will involve reporting on weather, evacuations, sheltering and facility closures.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	High	4.2	PIO	<ul style="list-style-type: none"> Greene County Emergency Management Local Media Outlets Municipal Administrations 	Staff Time	General Fund, Local Media Outlets	Ongoing – As the need arises	In Progress – Carry Forward	Greene County will continue to work closely with local media outlets to provide information and notification regarding the impact of natural hazard events.
G15	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 EM and local government staff members. All jurisdictions will work to advertise the availability of this service within their respective communities.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	High	4.2	ES	<ul style="list-style-type: none"> Greene County Emergency Management Municipal Administrations 	Staff Time	General Fund	Ongoing – Next Five years	In Progress – Carry Forward	Greene County will continue to work with County residents, as well as all participating municipal jurisdictions to expand upon the Special Medical Needs Registry serving the County's at-risk populations.
G16	Actively work with Federal, State, local and private partners to identify mitigation measures and secure funding via grants to alleviate flooding. These efforts should focus on the following areas: <ul style="list-style-type: none"> Develop a Blueway Plan for Contentnea Creek County-wide stream snagging and cleanout Expand beaver management program Expand greenways in Hookerton Develop a Riparian Buffer program 	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	Low	1.3	SP	<ul style="list-style-type: none"> Greene County Board of Commissioners Municipal Administrations 	To be determined	General Fund, NCDPS, NCDEQ	3 to 5 years	New	N/A
G17	Work closely with the American Red Cross to establish a site for the development of a local animal shelter to be utilized in the event of a natural disaster.	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	4.1	ES	<ul style="list-style-type: none"> Greene County Emergency Management American Red Cross 	To be Determined	General Fund, American Red Cross	2 to 3 years	New	N/A

SECTION 7: MITIGATION ACTION PLANS

Table 7.2 – Mitigation Action Plan, Jones County

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
J1	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, and hazardous waste. The County will review and update the EOP annually to ensure that it coordinates with the most recent NCDPS and NCOEMS directives. This review will involve the conducting of an annual tabletop exercise that will incorporate a review of sheltering procedures defined within the "CRES" plan.	Jones County, Trenton, Maysville, Pollocksville	All Hazards	High	2.2	ES	<ul style="list-style-type: none"> Jones County Emergency Services Municipal Administrations 	Staff Time	General Fund, NCDPS, FEMA	Ongoing - annually	In Progress – Carry Forward	All jurisdictions will participate in the annual review and update of the Jones County Emergency Operations Plan.
J2	Consider establishing a program to establish CERT teams within the County. This effort will involve both the recruitment and training of potential team members.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	3.2	ES	<ul style="list-style-type: none"> Jones County Emergency Services 	\$2,500	General Fund, NCDPS	2 to 3 years	Not Started – Carry Forward	Jones County will continue to work with County residents to expand upon the County Community Emergency Response Team program.
J3	Continue working towards a long-term solution to maintaining emergency backup generators at all facilities deemed critical in the event of a natural disaster. At a minimum, the County will aim to establish a permanent backup generator at the following locations: County Administration Building, Town of Maysville Town Hall, Comfort Volunteer Fire Department.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	4.2	PIO	<ul style="list-style-type: none"> Jones County Emergency Services Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing - annually	Not Started – Carry Forward	The County will continue to diligently promote and enroll individuals into the Special Medical Needs Registry focused on providing emergency response resources to at-risk populations.
J4	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 EM and local government staff members. All jurisdictions will work to advertise the availability of this service within their respective communities.	Jones County, Trenton, Maysville, Pollocksville	All Hazards	High	4.2	PIO	<ul style="list-style-type: none"> Jones County Emergency Services Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing - annually	Not Started – Carry Forward	The County will continue to diligently promote and enroll individuals into the Special Medical Needs Registry focused on providing emergency response resources to at-risk populations.
J5	Continue to improve upon capabilities available through the Nixle Based Emergency Notification System. These efforts will involve educating the public, municipal partners, and elected officials about the system's capabilities and registration requirements.	Jones County, Trenton, Maysville, Pollocksville	All Hazards	High	4.1	PIO	<ul style="list-style-type: none"> Jones County Emergency Management Municipal Administrations 	\$10,000	General Fund, NCDPS	Ongoing - annually	In Progress – Carry Forward	The County will assess the effectiveness of the County's existing emergency notification system through review of the County Emergency Operations Plan and the scheduled tabletop exercise which will occur annually.
J6	Update the County's Comprehensive Land Use Plan to ensure that the Future Land Use Map adequately delineates portions of the County deemed unsuitable for development due to existing environmental conditions resulting in potential impacts from natural disasters. All municipal jurisdictions will also take this plan into consideration when amending or developing land use plans and/or land development regulations.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	1.3	PP	<ul style="list-style-type: none"> Jones County Administration Municipal Administrations 	Staff Time	General Fund, NC CAMA	2 to 3 years	Not Started – Carry Forward	The County will work to update the Jones County Land Use Plan over the five-year implementation period of this plan.
J7	Continue to maintain and enforce the County's Water Shortage Ordinance. These efforts will involve monitoring of regional drought conditions and coordination with NCDEQ	Jones County, Trenton, Maysville, Pollocksville	Drought	High	1.1	NRP	<ul style="list-style-type: none"> Jones County Public Services Municipal Administration 	Staff Time	General Fund	Ongoing – over next five years	In Progress – Carry Forward	The County will continue to carry out this effort as a function of the County-wide Emergency Operations Plan.

SECTION 7: MITIGATION ACTION PLANS

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
J8	Continue to participate in the Beaver Control Program (BCP) offered through NCDEQ. Additionally, the County will continue to support the Town of Trenton in its efforts to conduct its own BCP.	Jones County, Trenton	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	1.3	P	<ul style="list-style-type: none"> Jones County Administration NCDEQ 	To be determined	General Fund, NCDEQ, NCDPS	2 to 3 years	In Progress – Carry Forward	The County deals with this issue annually and will make this a priority through the implementation of this plan.
J9	Through the NC Forest Service present in the County, annual meetings will be held prior to fire season to discuss preventing, mitigating and fighting wildfires.	Jones County, Trenton, Maysville, Pollocksville	Wildfire	High	3.1	P	<ul style="list-style-type: none"> Jones County Emergency Management US Forestry Service 	Staff Time	General Fund, US Forestry Service	Ongoing – over next five years	In Progress – Carry Forward	The County will continue to work closely with the US Forestry Service to carry out this strategy focused on minimizing the impacts of wildfire on the community.
J10	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. Jones County will assist all municipal jurisdictions in working through the structural mitigation grant funding process.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.2	PP	<ul style="list-style-type: none"> Jones County Administration Municipal Administrations 	Staff Time	General Fund, NCDPS, FEMA	Ongoing – as opportunities arise	In Progress – Carry Forward	All participating jurisdictions will apply for funding to carry out structural mitigation projects both following natural hazard events, as well as through annual funding programs awarded through FEMA.
J11	Review respective Flood Damage Prevention Ordinances annually 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. Through these efforts, the County will continue to enforce a two-foot freeboard requirement.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.1	P	<ul style="list-style-type: none"> Jones County Inspections (including municipalities under interlocal agreement) Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	Jones County, as well as all participating municipal jurisdictions, will continue to enforce their respective freeboard elevation standards. As flooding events occur during the planning period, each community will revisit and consider increasing this standard.
J12	Ensure that a range of materials related to flood insurance, flood protection, floodplain management, information on floodplains, and listings of qualified contractors familiar with floodproofing and elevation techniques, are available to the realtors, developers, contractors, and citizens through various means including: <ul style="list-style-type: none"> Placing materials in the local library. Maintaining documents at the County Administration Building. Disseminating information to local contractors. Maintaining information in the County inspection offices. 	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.2	PIO	<ul style="list-style-type: none"> Jones County Administration Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	The Jones County Inspections Department will continue to maintain material, as well as educate contractors, realtors, developers, and citizens regarding best management practices related to development within the defined flood hazard area.
J13	Ensure information is available on the County's website regarding hazards and development regulations within floodplains, including a link to FEMA and NFIP resources relating to emergency preparedness, flood protection, wind-proofing, and proper evacuation procedures. Additionally, the Towns will provide a link to this page through their respective municipal websites.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	PP	<ul style="list-style-type: none"> Jones County Administration Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	The County website already provides some of this information. This information will be improved through the implementation of this plan.
J14	Work closely with all electric service providers operating throughout the County, to ensure that tree trimming carried out to protect the integrity of service lines is conducted on an ongoing basis.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	1.1	P	<ul style="list-style-type: none"> Jones County Administration Municipal Administration Electric Service Providers 	To be determined	General Fund, Electric Service Providers	Ongoing – next five years	In Progress – Carry Forward	The County will continue to work with all existing electric service providers to carry out this strategy.

SECTION 7: MITIGATION ACTION PLANS

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
J15	Due to the widespread impacts of Hurricanes Matthew and Florence, work to identify funding to assist with the acquisition of non-residential structures in need of assistance.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm	High	1.2	PP	<ul style="list-style-type: none"> • Jones County Administration • Municipal Administrations 	To be determined	HMGP, NCDPS	Ongoing – As need is determined	In Progress – Carry Forward	The County continue to work towards implementation of this strategy.
J16	Create a guidebook for non-governmental organizations and Faith-based organizations on emergency preparedness and their role in outreach, sheltering, and recovery.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	4.1	ES	<ul style="list-style-type: none"> • Jones County Emergency Management • American Red Cross • Faith-Based Organizations 	Staff time	Staff Time, Non-profit funding	2 to 3 years	Not Started – Carry Forward	The County has not initiated this effort but will do so through implementation of this plan.
J17	Work closely with the Town of Trenton in identifying funding and a location for the relocation of the County water treatment plant.	Jones County, Trenton	Flood, Hurricane & Tropical Storm, Dam Failure	Medium	1.3	P	<ul style="list-style-type: none"> • Jones County Board of Commissioners • Town of Trenton Town Council 	To be determined	NCDEQ, NCDPS	2 to 3 years	Not Started – Carry Forward	This effort has not been initiated but will be carried out through implementation of this plan.
J18	Relocate the Jones County Courthouse Basement Magistrate's Office and Jail to a higher, safer level of the building or to an alternate site.	Jones County	Flood, Hurricane & Tropical Storm, Dam Failure	Medium	1.3	P	<ul style="list-style-type: none"> • Jones County Board of Commissioners 	To be determined	General Fund, NCDEQ, NCDPS	2 to 3 years	Not Started – Carry Forward	This effort has not been initiated but will be carried out through implementation of this plan.
J19	Back wire electrical systems to accept permanent generators and provide generators for three county elementary schools. Also, establish permanent pad mount generators at these facilities.	Jones County	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	1.1	SP	<ul style="list-style-type: none"> • Jones County Administration 	To be determined	General Fund, NCDPS	2 to 3 years	In Progress – Carry Forward	This effort has not been initiated but will be carried out through implementation of this plan.
J20	Obtain county-wide fiber optic communications to facilitate dependable communications connectivity.	Jones County, Trenton, Maysville, Pollocksville	All Hazards	Medium	4.2	PIO	<ul style="list-style-type: none"> • Jones County Emergency Management • Municipal Administrations 	To be determined	General Fund, NCDPS	2 to 3 years	New	N/A
J21	Implement all strategies outlined within the Hurricane Matthew Resilient Redevelopment Plan.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	1.1	SP	<ul style="list-style-type: none"> • Jones County Emergency Management • Municipal Administrations 	To be determined	General Fund, NCDPS	2 to 3 years	New	N/A

SECTION 7: MITIGATION ACTION PLANS

Table 7.3 – Mitigation Action Plan, Lenoir County

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
L1	Continue to pro-actively educate the public about services and ways to deal with extreme heat and dehydration. This task will be carried out through the following means: <ul style="list-style-type: none"> • Education through the Social Services Department • Maintain state Crisis Intervention Program • Disseminate pamphlets • Run local print ads • Utilize other local media 	Lenoir County, Kinston, La Grange, Pink Hill	Extreme Heat	High	4.2	PIO	<ul style="list-style-type: none"> • Lenoir County Emergency Services • Lenoir County Health Department • Municipal Jurisdictions 	\$3,000	General Fund, NCDPS	Ongoing – Next Five Years	In Progress – Carry Forward	Lenoir County maintains a comprehensive campaign regarding the issue of heat exhaustion and dehydration. This will continue through implementation of this plan.
L2	Work with and assist the Neuse Regional Water and Sewer Authority in enforcing its Water Shortage Ordinance. These efforts will involve monitoring of regional drought conditions and coordination with NCDEQ.	Lenoir County, Kinston, La Grange, Pink Hill	Drought	High	1.1	P	<ul style="list-style-type: none"> • Neuse Regional Water and Sewer Authority • Lenoir County Administration • Municipal Administrations 	Staff Time	General Fund	Ongoing – As needed	In Progress – Carry Forward	Lenoir County will continue to assist the Water and Sewer Authority in their efforts to impose water use restrictions when deemed necessary.
L3	Continue to coordinate annually with the NC Forestry Division 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.	Lenoir County, Kinston, La Grange, Pink Hill	Wildfire	High	3.1	ES	<ul style="list-style-type: none"> • Lenoir County Emergency Management • NC Forestry Division • Municipal Administrations 	Staff Time	General Fund, NC Forestry Division	Ongoing – over next five years	In Progress – Carry Forward	The County will continue efforts to work closely with the NC Forestry Division educate and inform citizens about dangers associated with wildfire.
L4	Continue to maintain CRS rating through implementation of a comprehensive floodplain management program.	Lenoir County, Kinston	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	P	<ul style="list-style-type: none"> • Lenoir County Administration • Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry Forward	Lenoir County and the City of Kinston will continue to maintain and attempt to improve upon each communities existing CRS rating. The Towns of La Grange and Pink Hill will consider joining the CRS program through implementation of this plan.
L5	Work closely with all electric service providers operating throughout the County to ensure that tree trimming necessary to protect the integrity of service lines is conducted on an ongoing basis.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	3.2	P	<ul style="list-style-type: none"> • Electric Service Providers • Lenoir County Public Services 	Staff Time	Electric Service Providers, Staff Time	Ongoing – over next five years	In Progress – Carry Forward	Lenoir County continues to work closely with local electric service providers to undertake efforts to minimize the likelihood of power outages during natural hazard events.
L6	Work closely with the American Red Cross to address the sheltering needs of County residents. The County will continue to work on improving the preparedness of all existing shelter facilities, including the installation of on-site transformers at all shelter locations. Additionally, these efforts will involve support of the NC Coastal Region Evacuation and Sheltering (CRES) plan aimed at providing inland sheltering resources for coastal counties.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	4.1	ES	<ul style="list-style-type: none"> • Lenoir County Emergency Services • Municipal Administrations 	\$50,000	General Fund, NCDPS, American Red Cross	Ongoing – as funding becomes available	In Progress – Carry Forward	Lenoir County continues to work closely with the American Red Cross to improve upon shelter facilities, including the establishment of redundant power supplies at all shelters.
L7	Educate, inform, and provide educational materials to citizens, contractors, local real estate agents, and homeowners regarding the hazards associated with floodplain development. Additionally, the County will utilize this service to inform the public about the potential natural hazards impact throughout Lenoir County and services available to provide assistance if the County is impacted.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.1	PIO	<ul style="list-style-type: none"> • Lenoir County Planning • Lenoir County Administration • Municipal Administrations 	\$14,000	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry Forward	This effort is a component of the County's Community Rating System Program. The County will continue to provide this materials and information focused on improving upon the development within the defined flood hazard area.

SECTION 7: MITIGATION ACTION PLANS

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
L8	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 utilize E-Plan to monitor these materials.	Lenoir County, Kinston, La Grange, Pink Hill	All Hazards	High	3.2	ES	<ul style="list-style-type: none"> • Lenoir County LEPC 	Staff Time	General Fund	Ongoing – next five years	In Progress – Carry Forward	Lenoir County will continue to maintain the County LEPC in an effort to address issues related to hazardous materials and the risk they pose in relation to natural hazard events.
L9	Ensure that a variety of materials related to flood insurance, emergency response, flood protection, floodplain management, increased cost of compliance coverage, information on floodplains, and listings of qualified contractors familiar with floodproofing and elevation techniques, are available through various methods including: <ul style="list-style-type: none"> • Placing materials in the County library • Maintaining documents at the Building • Inspections office • Disseminating information to local contractors • On the County website 	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.1	PIO	<ul style="list-style-type: none"> • Lenoir County Planning • Lenoir County Administration • Municipal Administrations 	\$14,000	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry Forward	This effort is a component of the County's Community Rating System Program. The County will continue to provide this materials and information focused on improving upon the development within the defined flood hazard area.
L10	Review the County's Comprehensive Land Use Plan to ensure that the Future Land Use Map adequately delineates portions of the County deemed unsuitable for development due to existing environmental conditions or the presence of natural hazard areas.	Lenoir County, Kinston, La Grange, Pink Hill	All Hazards	Medium	1.3	P	<ul style="list-style-type: none"> • Lenoir County Planning • Lenoir County Administration • Municipal Administrations 	Staff Time	General Fund	2 to 3 years	Not Started – Carry Forward	Lenoir County will work to incorporate these factors into land use planning and policy documents during implementation of this plan.
L11	Work closely with local media outlets to disseminate timely and accurate information relating to natural hazard events. This task will involve reporting on weather, evacuations, sheltering and facility closures.	Lenoir County, Kinston, La Grange, Pink Hill	All Hazards	High	4.2	PIO	<ul style="list-style-type: none"> • Lenoir County Emergency Management • Municipal Administrations 	Staff Time	General Fund	Ongoing – Next Five Years	In Progress – Carry Forward	Lenoir County will continue to carry out and maintain emergency notification procedures as outlined within the County's Emergency Operations Plan.
L12	Continue to monitor drainage conditions throughout the County. Additionally, the County will continue to enforce and support the following programs relating to stormwater management: <ul style="list-style-type: none"> • NCDEQ Coastal Stormwater Rules • NCDEQ Sedimentation & Erosion Control Regulations • NCDEQ Statewide Stormwater Regulations • NCDEQ CAMA Regulations • US Army Corps of Engineers Non Coastal Wetland Regulations 	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.3	NRP	<ul style="list-style-type: none"> • Lenoir County Administration • Municipal Administrations 	Staff Time	General Fund	Ongoing – Next Five Years	In Progress – Carry Forward	Lenoir County, as well as all participating municipal jurisdictions, will work to support all state and federal agencies in their efforts to enforce land development policies and regulations.
L13	Following the impacts of Hurricanes Mathew and Florence, establish new development within sites throughout the County that were cleared for development following Hurricane Floyd in 1998. This effort will address both redevelopment, as well as affordable housing needs.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.2	SP	<ul style="list-style-type: none"> • Lenoir County Administration • Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – As opportunities arise	In Progress – Carry Forward	These efforts will be carried out through implementation of this plan; however, this will not apply to buyout properties that are subject to FEMA related development restrictions.
L14	Work to develop a management/reuse plan to address property acquired through the HMGP Program.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	1.2	P	<ul style="list-style-type: none"> • Lenoir County Administration • Municipal Administration 	\$5,500	General Fund, NCDPS	2 to 3 years	New	N/A

SECTION 7: MITIGATION ACTION PLANS

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
L15	Actively work with Federal, State, local and private partners to identify mitigation measures and secure funding via grants to alleviate flooding. These efforts should focus on the following areas: <ul style="list-style-type: none"> • Arterial stream and ditch cleanup • MS4 in La Grange • MS4 in Kinston • Dam facilities at Till's Mill Pond • Stormwater improvements at Tick Bite 	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Low	1.3	SP	<ul style="list-style-type: none"> • Lenoir County Administration • Municipal Administration 	To be determined	General Fund, NCDPS, NCDEQ	5 years	New	N/A
L16	Acquire generators or other forms of redundant power supply to ensure that critical facilities and infrastructure remain operational where normal power supply is not available.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	4.1	ES	<ul style="list-style-type: none"> • Lenoir County Emergency Services • Municipal Administrations 	To be Determined	General Fund, NCDPS	2 to 3 years	New	N/A
L17	Seek grant funding for mitigation opportunities eligible under the most current version of the UHMA guidance and Public Assistance 406 Mitigation Guidance at the time of application. Projects may include but are not limited to: acquisition/elevation, mitigation/reconstruction, and wet/dry floodproofing to residential and non-residential structures. Funding may also be utilized for redundant power to critical facilities, wind retrofits to critical facilities, storm shelters and other activities that reduce the loss of life and property.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure	High	1.2	SP	<ul style="list-style-type: none"> • Lenoir County Administration • Municipal Administrations 	To be determined	General Fund, NCDPS, FEMA	Ongoing – As Needed	New	N/A

SECTION 7: MITIGATION ACTION PLANS

Table 7.4 – Mitigation Action Plan, Pitt County

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
P1	Review the County's Comprehensive Land Use Plan (adopted December 5, 2011) annually to ensure that the Future Land Use Map adequately delineates portions of the County deemed unsuitable for development due to existing environmental conditions.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	1.3	P	<ul style="list-style-type: none"> Pitt County Planning Department Pitt County Board of Commissioners Municipal Administrations 	Staff Time	General Fund	Ongoing – review annually	In Progress – Carry Forward	The Comprehensive Plan has been amended to address recommendations outlined in the Southwest Bypass LUP. An NC 43 S corridor land use plan is scheduled for FY19/20
P2	Continue to coordinate and collaborate with East Carolina University and Pitt Community College through the development of their respective hazard mitigation plans. Through implementation of this update, Pitt County Planning will incorporate Vidant, GUC, and Duke Energy into the County's Mitigation Planning efforts.	Pitt County	All Hazards	High	3.2	ES	<ul style="list-style-type: none"> Pitt County Administration Municipal Administrations East Carolina University Pitt Community College 	Staff Time	General Fund, NCDPS, UNC University System	Ongoing – over the next five years	In Progress – Carry Forward	Planning staff works closely with ECU & PCC on annual mitigation planning efforts.
P3	Continue to impose a two-foot freeboard requirement for all development located within a defined flood hazard area. Through this plan update, Pitt County will consider amending its Flood Damage Prevention Ordinance to require two feet finished floor elevation above the lowest adjacent grade within the FEMA defined shaded X zone.	Pitt County	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.3	P	<ul style="list-style-type: none"> Pitt County Board of Commissioners Pitt County Planning Board 	Staff Time	General Fund	Ongoing – Review Annually	In Progress – Carry Forward	Pitt County continues to impose a two-foot freeboard requirement for development in the SFHA.
P4	Maintain all FEMA Elevation Certificates and FEMA Floodproofing Certificates for residential and non-residential structures for all structures built or floodproofed since application to the CRS. Non-CRS communities will also carry out this strategy in an effort to prepare for a potential application to the CRS Program.	Pitt County, Farmville, Greenville, Grifton, Winterville, Ayden, Bethel, Falkland, Fountain, Grimesland, Simpson	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	P	<ul style="list-style-type: none"> Pitt County Planning Department Municipal Administration 	Staff Time	General Fund	Ongoing – over next five years	In Progress – Carry Forward	Pitt County keeps all elevation certificates submitted for SFHA development in Pitt County's jurisdiction.
P5	Consider the data and recommendations outlined within this plan when preparing updates to the County's Capital Improvements Plan. All recommendations regarding capital expenditures will focus on siting all infrastructure and critical facilities outside of the Flood Hazard Area.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.3	P	<ul style="list-style-type: none"> Pitt County Planning Department Pitt County Board of Commissioners Municipal Administrations 	Staff Time	General Fund, Grant Funds	Ongoing – Annually	In Progress – Carry Forward	Pitt County will continue to seek funding for Special Medical Needs Shelter and may include this project in the County's Capital Improvements Plan.
P6	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 will apply for funding for all structures that meet cost-benefit thresholds as defined by FEMA. Pitt County will assist all municipal jurisdictions in working through the structural mitigation grant funding process.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.2	SP	<ul style="list-style-type: none"> Pitt County Board of Commissioners Municipal Administrations 	To be Determined	General Fund, NCPS, FEMA	Ongoing – as opportunities arise	In Progress – Carry Forward	This effort was carried out following the effects of Hurricanes Irene, Matthew, and Florence. Five properties were acquired after Hurricane Irene through 2 HMGP grant cycles. The County is in the process of acquiring units funded after Matthew, while applications for acquisition following Florence are still under review.
P7	Coordinate with NCDEQ to enforce all NC State Erosion and Sedimentation and Erosion Control Regulations.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	P	<ul style="list-style-type: none"> Pitt County Planning Department Municipal Administrations 	Staff Time	General Fund, NCDEQ	Ongoing – over next five years	In Progress – Carry Forward	This is an ongoing activity.

SECTION 7: MITIGATION ACTION PLANS

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
P8	Continue to expand upon the Alert Emergency Notification System available to all residents. Pitt County Emergency Management will coordinate with all municipal jurisdictions regarding registration through the Pitt County Emergency Notification Registration Portal (https://pittcountync.onthealert.com). The County will work with NCDPS to incorporate the "Know Your Zone" program into this process. Efforts will be made to educate the public about the location and published resources defining evacuation zones and procedures.	Pitt County	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	4.2	PIO	<ul style="list-style-type: none"> Pitt County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – Review Annually	In Progress – Carry Forward	Ongoing activity for Pitt County Emergency Management.
P9	Pitt County Emergency Management, in conjunction with the County Planning Department, will evaluate and assess the availability and effectiveness of all critical facilities outlined within this plan. Pitt County will coordinate with NCEM, Red Cross, local animal shelters, local care homes etc. in making determinations relating to need and capacity.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	4.1	ES	<ul style="list-style-type: none"> Pitt County Emergency Management American Red Cross Municipal Administrations 	Staff Time	General Fund, American Red Cross	Ongoing – Review Annually	Not Started – Carry Forward	The County is currently investigating the need and location for a Special Medical Needs Shelter. Refer to updated strategy P12 and the top priority.
P10	Pitt County Emergency Management, in conjunction with annual EOP updates, will 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, Pitt County will establish a plan for alternative transportation.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	3.2	ES	<ul style="list-style-type: none"> Pitt County Emergency Management American Red Cross Municipal Administrations 	Staff Time	General Fund, American Red Cross	Ongoing – Review Annually	Not Started – Carry Forward	The County is currently investigating the need and location for a Special Medical Needs Shelter.
P11	Continue to maintain the County's Continuity of Operations Plan (COOP). This effort will include an annual update addressing risk management, service retention, alternative staffing procedures and recovery checklist for each County department.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	All Hazards	High	2.2	ES	<ul style="list-style-type: none"> Pitt County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – Review annually	In Progress – Carry Forward	The County COOP is reviewed annually by each department and updated by Pitt County Emergency Management.
P12	Pitt County Emergency Management will 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.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	All Hazards	High	2.2	ES	<ul style="list-style-type: none"> Pitt County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – Review annually	In Progress – Carry Forward	The County EOP is reviewed annually and utilized during the County's annual tabletop exercise whereby EOP and COOP effectiveness are evaluated. The results of this effort are outlined in a detailed after-action report.
P13	Pitt County in coordination with all municipalities, will maintain the County's Special Medical Needs Registry (SMNR). The SMNR is available to all County residents. Effective participation will require close cooperation between County EM and local government staff members. All jurisdictions will work to advertise the availability of this service within their respective communities.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	All Hazards	High	4.2	PIO	<ul style="list-style-type: none"> Pitt County Social Services Pitt County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry forward	Pitt County Emergency Management maintains the list and it is utilized by Social Services.
P14	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 utilize E-Plan to monitor these materials. Pitt County will support efforts of the State of NC to develop an alternative to the Federal E-Plan system.	Pitt County	All Hazards	High	3.2	P	<ul style="list-style-type: none"> Pitt County LEPC 	Staff Time	General Fund	Ongoing – over next five years	In Progress – Carry forward	The LEPC meets quarterly and monitors hazardous materials in Pitt County.

SECTION 7: MITIGATION ACTION PLANS

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
P15	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 on these issues to work with prospective builders.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.2	PIO	<ul style="list-style-type: none"> Pitt County Planning Department Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry forward	Pitt County continues to provide this information to interested parties and employs a certified floodplain manager to assist citizens with construction in the SFHA.
P16	Continue to work closely with real estate agents to ensure that prospective buyers are educated about development within a flood hazard area. The County will prepare materials for dissemination to local real estate agents to assist in this education process.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.2	PIO	<ul style="list-style-type: none"> Pitt County Planning Department Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry forward	Pitt County regularly supplies floodplain certifications and other SFHA information to real estate agents.
P17	Work closely with the Greenville Utilities Commission and the Neuse Regional Water & Sewer Authority to establish a memorandum of understanding regarding supplemental resource and capacity availability in the event of an emergency.	Pitt County, Greenville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	3.2	ES	<ul style="list-style-type: none"> Pitt County Board of Commissioners Municipal Administrations 	Staff Time	General Fund	2 TO 3 YEARS	Not Started - Carry Forward	Greenville Utilities Commission and the Neuse Regional Water & Sewer Authority have the ability to share water resources.
P18	Utilize recently upgraded storm surge inundation data provided through NCEM. This data will be utilized when making changes to land use policy and regulatory documents. This data will also be utilized as a component of the NCDPS “Know Your Zone” program.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	4.2	PIO	<ul style="list-style-type: none"> Pitt County Emergency Management Municipal Administrations 	Staff Time	General Fund	2 to 3 years	New	N/A
P19	Work closely with the American Red Cross, NCDPS, and local care homes to identify a location for and ultimately establish a special medical needs shelter for County residents.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Low	4.2	ES	<ul style="list-style-type: none"> Pitt County Board of Commissioners Municipal Administrations 	\$6 to \$7 million dollars	General Fund, NCDPS, FEMA	3 to 5 years	New	N/A
P20	Work to proactively implement the recommendations of the Hurricane Matthew Resilient Redevelopment Plan developed in coordination with the NCDPS.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Low	1.3	SP	<ul style="list-style-type: none"> Pitt County Board of Commissioners Municipal Administrations 	To be determined	General Fund, NCDPS, FEMA, NCDEQ	3 to 5 years	New	N/A
P21	The City of Greenville will strengthen the City’s existing stormwater control ordinances to require new residential development to provide 10-year flood ponds, instead of 1-year flood ponds. The City will ensure that development complies with all stormwater regulations.	Greenville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Low	1.3	PP	<ul style="list-style-type: none"> Greenville City Council Greenville Community Development Department 	Staff Time	General Fund	2 to 3 years	Not Started – Carry Forward	Final determination has not been made regarding this standard; the City will continue to consider operations relating to local stormwater management policy during implementation of this plan.
P22	The Town of Farmville will build a new 500,000 gallon above ground storage tank to enhance/increase the town’s storage capacity to 1.8 million gallons of water, which exceeds current average daily consumption.	Farmville	All Hazards	Low	1.1	ES	<ul style="list-style-type: none"> Farmville Town Council Farmville Staff 	To be determined	General Fund; Grant Funding	5 years	Not Started – Carry Forward	The town will continue to research options regarding logistics and funding to carry out this capital improvement project.

SECTION 7: MITIGATION ACTION PLANS

Table 7.5 – Mitigation Action Plan, Wayne County

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
W1	Continue to impose a freeboard requirement through enforcement of their respective Flood Damage Prevention Ordinances. The freeboard requirement for Wayne County (including communities under interlocal agreement) and Goldsboro is two feet; Mount Olive is one foot.	Wayne County, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.1	P	<ul style="list-style-type: none"> Wayne County Inspections (including municipalities under interlocal agreement) Goldsboro Inspections Mount Olive Inspections 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	Wayne County, as well as all participating municipal jurisdictions, will continue to enforce their respective freeboard elevation standards. As flooding events occur during the planning period, each community will revisit and consider increasing this standard.
W2	Maintain a comprehensive Floodplain Management Program through the Community Rating System Program aimed at maintaining the lowest rating available to Wayne County flood insurance policyholders.	Wayne County, Goldsboro, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	PP	<ul style="list-style-type: none"> Wayne County Planning Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	Wayne County, Goldsboro, and Walnut Creek will continue to participate in the CRS program. Those communities not currently part of the program will consider participating through implementation of this plan.
W3	Review the vulnerability of all critical facilities identified in this plan as a component of annual County Emergency Operations Plan updates. This effort will involve an assessment of whether facilities are readily accessible before, during, or after a natural hazard event has transpired. The County will also consider all information and data outlined in this plan when making determinations on the location of all future critical facilities to ensure that they are not located within the Flood Hazard Area.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	All Hazards	High	4.1	ES	<ul style="list-style-type: none"> Wayne County Emergency Services Wayne County Administration Municipal Jurisdictions 	Staff Time	General Fund, NCDPS, FEMA	Ongoing - annually	In Progress – Carry Forward	In conjunction with the annual review and update of the County EOP, all jurisdictions will assess their respective critical facilities. This review will address each facilities effectiveness based on use during past events, as well as the outcomes of annual scheduled tabletop exercises.
W4	Continue to support and participate in the directives of the County Emergency Operations Plan (EOP). This plan 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 this document annually to ensure that it coordinates with the most recent NCEM and NCOEMS directives.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	All Hazards	High	2.2	ES	<ul style="list-style-type: none"> Wayne County Emergency Services Municipal Administrations 	Staff Time	General Fund, NCDPS, FEMA	Ongoing - annually	In Progress – Carry Forward	All jurisdictions will participate in the annual review and update of the Wayne County Emergency Operations Plan.
W5	Educate, inform, and provide educational materials to citizens, contractors, local real estate agents and homeowners regarding information that will advise individuals about the hazards associated with floodplain development. Additionally, the County will utilize this service to inform a range of interest groups about the natural hazards present throughout Wayne County and services available to provide assistance, if and when the County is impacted.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.2	PIO	<ul style="list-style-type: none"> Wayne County Emergency Services Wayne County Administration 	\$4,000	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	Wayne County will maintain and distribute information regarding the promotion of proper development techniques within the defined flood hazard area.
W6	Post flood level signs at prominent locations throughout the County displaying past flood levels to remind citizens of the past and potential flood dangers that exist within their community.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	4.2	PIO	<ul style="list-style-type: none"> Wayne County Emergency Services Wayne County Administration 	\$5,000	General Fund, NCDPS	2 to 3 years	Not Started – Carry Forward	To date, the County has not undertaken this effort, but will aim to move forward with the project through implementation of this plan.

SECTION 7: MITIGATION ACTION PLANS

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
W7	Continue to promote the availability of flood insurance available through the National Flood Insurance Program (NFIP) using the following means: <ul style="list-style-type: none"> • Post on County website • Provide information on building permit applications • Make available at the County library • Display information in the Inspections Department 	Wayne County, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	PP	<ul style="list-style-type: none"> • Wayne County Inspections • Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	Wayne County, as well as each participating municipal jurisdiction, will work to educate property owners about the availability of NFIP flood insurance through the various mechanisms outlined within this strategy.
W8	Continue to proactively seek out grant funding through NCEM and FEMA for mitigation of repetitive loss properties (RLP) 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. The priority will be for the elevation of structures in Seven Springs and acquisition of structures in all other jurisdictions. The County will assist municipal jurisdictions in facilitating the grant submittal process.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.2	PP	<ul style="list-style-type: none"> • Wayne County Administration • Municipal Administrations 	Staff Time	General Fund, NCDPS, FEMA	Ongoing – as opportunities arise	In Progress – Carry Forward	All participating jurisdictions will apply for funding to carry out structural mitigation projects both following natural hazard events, as well as through annual funding programs awarded through FEMA.
W9	Continue to monitor drainage conditions throughout the County. Additionally, the County will continue to enforce and support the following programs relating to stormwater management: <ul style="list-style-type: none"> • NCDEQ Coastal Stormwater Rules • NCDEQ Sedimentation & Erosion Control Regulations • NCDEQ Statewide Stormwater Regulations • NCDEQ CAMA Regulations • US Army Corps of Engineers Non-Coastal Wetland Regulations 	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.3		<ul style="list-style-type: none"> • Wayne County Public Works • Municipal Public Works Departments 	Staff Time	General Fund	Ongoing – next five years	In Progress – Carry Forward	All jurisdictions will continue to coordinate with and support State and Federal efforts to manage non-point source stormwater runoff through all relevant land development regulations.
W10	Continue to maintain and enforce respective Water Shortage Ordinance. These efforts will involve monitoring of regional drought conditions and coordination with NCDENR.	Wayne County, Fremont, Goldsboro, Mount Olive, Pikeville, Walnut Creek	Drought	High	4.2	NRP	<ul style="list-style-type: none"> • Wayne Water Districts • Municipal Administrations 	Staff Time	General Fund	Ongoing – as necessary	In Progress – Carry Forward	Wayne County will continue to work in concert with NCDEQ to establish, and when necessary, impose water use restrictions to minimize issues associated with drought conditions.
W11	Continue to support and recruit for participants for Community Emergency Response Teams (CERT). This effort will be coordinated with NCEM.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	All Hazards	Medium	3.2	ES	<ul style="list-style-type: none"> • Wayne County Emergency Services 	\$2,500	General Fund, NCDPS	2 to 3 years	Not Started – carry forward	Wayne County will continue to work with County residents to expand upon the County Community Emergency Response Team program.
W12	Continue to expand upon the County's Code Red Emergency Notification System available to all residents. The Wayne County Office of Emergency Services will coordinate with all municipal jurisdictions regarding registration through the Wayne County Emergency Notification Registration Portal.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	All Hazards	High	4.2	PIO	<ul style="list-style-type: none"> • Wayne County Emergency Services 	\$10,000	General Fund, NCDPS	1 year	Not Started – Carry Forward	The County will review emergency notification protocols on an annual basis and where feasible improve upon the effectiveness of the overall system.

SECTION 7: MITIGATION ACTION PLANS

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
W13	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 OES and local government staff members. All jurisdictions will work to advertise the availability of this service within their respective communities.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	All Hazards	High	4.2	PIO	<ul style="list-style-type: none"> Wayne County Emergency Services Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing - annually	Not Started – Carry Forward	The County will continue to diligently promote and enroll individuals into the Special Medical Needs Registry focused on providing emergency response resources to at-risk populations.
W14	Ensure that there is adequate capacity for snow and ice removal in the event of a major snowstorm. Wayne 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.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Severe Winter Storm	High	1.1	P	<ul style="list-style-type: none"> Wayne County Administration Wayne County Emergency Services 	To be determined	General Fund, NCDPS	Ongoing – as opportunities arise	Not Started – Carry Forward	The County will work with NCDOT and municipal administrations to improve upon capacity associated with snow and ice removal during severe winter weather events.
W15	Continue to pro-actively educate the public about services and means to deal with extreme heat and dehydration. This effort will be carried out through the following means: <ul style="list-style-type: none"> Education through DSS Maintain Crisis Prevention Program Disseminate pamphlets Run local print ads Utilize other local media 	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Extreme Heat	High	4.2	PIO	<ul style="list-style-type: none"> Wayne County Health Department Wayne County Social Services Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing - annually	In Progress – Carry Forward	In response to periods of extreme heat, the County Emergency Management Department will work with the Wayne County Public Health Department to educate citizens about the dangers of dehydration and heat exhaustion during peak summer months.
W16	Actively work with Federal, State, local and private partners to identify mitigation measures and secure funding via grants to alleviate flooding. These efforts should focus on the following areas: <ul style="list-style-type: none"> Stormwater Assessment/Repair – Fremont Stormwater Assessment/Repair – Pikeville Dixie Trail and John St (Flooding/Stormwater) – Goldsboro Engineering study of existing stormwater utility/drainage – County 	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	1.3	P	<ul style="list-style-type: none"> Wayne County Public Works Municipal Administrations 	To be determined	General Fund, NCDPS, NCDEQ	3 to 5 years	New	N/A
W17	Work to establish pad mount backup generators at all county/critical facilities to facilitate the efficient utilization of designated shelter facilities and facilitate post disaster response.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	1.1	ES	<ul style="list-style-type: none"> Wayne County Emergency Services Wayne County Board of Commissioners Municipal Administrations 	To be determined	General Fund, NCDPS, FEMA	2 to 3 years	New	N/A
W18	Work to proactively implement the recommendations of the Hurricane Matthew Resilient Redevelopment Plan developed in coordination with the NCDPS.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Tornado	Low	1.3	P	<ul style="list-style-type: none"> Wayne County Emergency Services Municipal Administrations 	To be determined	General Fund, NCDPS, FEMA, NCDEQ	5 years	New	N/A

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

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 and increase the likelihood of subsequent implementation. This approach enables individual jurisdictions to update their own unique mitigation action list as needed without altering the broader focus of the regional plan.

In addition to the assignment of a local lead department or agency, an implementation timeline or a specific implementation date or window has been assigned to each mitigation action to help assess whether reasonable progress is being made toward implementation. The participating jurisdictions will seek outside funding sources to implement mitigation projects in both the pre-disaster and post-disaster environments. When applicable, potential funding sources have been identified for proposed actions listed in the Mitigation Action Plan.

An important implementation mechanism that is highly effective and low-cost is incorporation of the Hazard Mitigation Plan recommendations and their underlying principles into other plans and mechanisms. 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 requirements of this plan with other local planning documents and 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 Plan Area. Methods for integration may include:

- ▶ Monitoring other planning/program agendas;
- ▶ Attending other planning/program meetings;
- ▶ Participating in other planning processes; and
- ▶ Monitoring community budget meetings for other community program opportunities.

Table 8.1 details each jurisdiction's integration of the 2015 Neuse River Basin Regional Hazard Mitigation Plan into other local planning efforts as well as any identified opportunities for integration of this plan update.

SECTION 8: PLAN MAINTENANCE

Table 8.1 – Integration Efforts

Jurisdiction	Integration of 2015 plan	Intended integration of this plan update
Greene County	The County has utilized the mitigation plan during the development and consideration of land development regulations.	The County will continue to utilize the plan for this purpose.
Hookerton	The existing plan was referenced in discussions regarding relocation of portions of the Town’s wastewater treatment system.	The Town will continue to reference the Hazard Mitigation Plan while reviewing solutions relating to modifications to the wastewater treatment system.
Snow Hill	No integration occurred.	Integration will be pursued as opportunities arise.
Walstonburg	No integration occurred.	Integration will be pursued as opportunities arise.
Jones County	Jones County has utilized the information presented in the existing plan during the recovery efforts of both Hurricane Matthew and Florence.	The strategies in this plan will be carried out as a function of the County’s ongoing hurricane recovery efforts.
Maysville	No integration occurred.	Integration will be pursued as opportunities arise.
Pollocksville	No integration occurred.	Integration will be pursued as opportunities arise.
Trenton	No integration occurred.	Integration will be pursued as opportunities arise.
Lenoir County	Lenoir County utilizes the existing plan during their annual review of the County’s Emergency Operations and Continuity of Operations Plan.	The County will continue to utilize the plan for this purpose.
Kinston	Kinston factored the recommendations and information presented in the exiting plan into the City’s updated Comprehensive Plan adopted in 2015.	The City will continue to utilize this plan when making decisions relating to the City’s Land Development Regulations.
La Grange	No integration occurred.	Integration will be pursued as opportunities arise.
Pink Hill	The existing mitigation plan was utilized to access recovery needs associated with Hurricane Matthew.	Additional integration will be pursued as opportunities arise.
Pitt County	Strategies defined within the plan were utilized in the implementation of the County’s Community Rating System Program.	The County will continue to utilize the plan in this manner, as well as for guidance regarding capital expenditures that will involve projects outlined within this plan.
Ayden	The Town of Ayden utilized the mitigation plan during development of planning policy associated with the recently completed NC Hwy 11 Bypass Corridor Plan.	The Town will continue to review the document in association with all development requests and potential policy amendments.

SECTION 8: PLAN MAINTENANCE

Jurisdiction	Integration of 2015 plan	Intended integration of this plan update
Bethel	No integration occurred.	Integration will be pursued as opportunities arise.
Falkland	No integration occurred.	Integration will be pursued as opportunities arise.
Farmville	No integration occurred.	Integration will be pursued as opportunities arise.
Fountain	No integration occurred	Integration will be pursued as opportunities arise.
Greenville	The City of Greenville is very diligent about utilizing the mitigation plan in decisions associated with land development regulatory and/or policy changes. Additionally, the City reviews the plan in association with all subdivision development and rezoning requests.	The City will continue to utilize the plan in this manner, as well as for guidance regarding capital expenditures that will involve projects outlined within this plan.
Grifton	The Town of Grifton utilized the mitigation plan during development of planning policy associated with the recently completed NC Hwy 11 Bypass Corridor Plan.	The Town will continue to review the document in association with all development requests and potential policy amendments.
Grimesland	No integration occurred.	Integration will be pursued as opportunities arise.
Simpson	No integration occurred.	Integration will be pursued as opportunities arise.
Winterville	The Town of Grifton utilized the mitigation plan during development of planning policy associated with the recently completed NC Hwy 11 Bypass Corridor Plan.	The Town will continue to review the document in association with all development requests and potential policy amendments.
Wayne County	The existing mitigation plan was utilized during the development of the Hurricane Matthew Resilient Redevelopment Plan.	Additional integration will be pursued as opportunities arise.
Eureka	No integration occurred.	Integration will be pursued as opportunities arise.
Fremont	No integration occurred.	Integration will be pursued as opportunities arise.
Goldsboro	The City of Goldsboro actively utilizes the existing plan as a tool for assessing potential capital expenditures for infrastructure during the City's annual budgeting process.	The City will continue to utilize the plan for these purposes.
Mount Olive	No integration occurred.	Mount Olive intends to utilize the plan when considering potential inclusion in the NFIP Community Rating System Program. The plan will serve as a guide regarding potential programmatic requirements.

SECTION 8: PLAN MAINTENANCE

Jurisdiction	Integration of 2015 plan	Intended integration of this plan update
Pikeville	No integration occurred.	Integration will be pursued as opportunities arise.
Seven Springs	No integration occurred.	Integration will be pursued as opportunities arise.
Walnut Creek	Strategies defined within the plan were utilized in the implementation of the Village's Community Rating System Program.	The community will continue to utilize the plan in this manner, as well as for guidance regarding capital expenditures that will involve projects outlined within this plan.

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 at this time.

8.2 MONITORING, EVALUATION, AND ENHANCEMENT

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 Emergency Services Directors or Planning Directors will take the lead in all plan monitoring and update procedures. As such, the County Emergency Services Directors/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

SECTION 8: PLAN MAINTENANCE

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.

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 Emergency Services Directors/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 IV, 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 2020, the next plan update for the Neuse River Region will be completed by 2025.

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 Services Directors/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

SECTION 8: PLAN MAINTENANCE

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 Emergency Services Directors/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.

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;

SECTION 8: PLAN MAINTENANCE

- ▶ 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.

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 will be provided below.

Note: As of July 1, 2016, the Town of Eureka's charter has been suspended. Therefore, at the time of this plan update, the Town of Eureka is considered to be included in the Wayne County adoption as an "unincorporated" area of Wayne County. The suspension of the Town's charter is currently set to expire on June 30, 2023. If the Town resumes its government operations per this schedule, it will formally adopt this plan at that time.

U. S. Department of Homeland Security
Region IV
3005 Chamblee Tucker Road
Atlanta, GA 30341



FEMA

September 18, 2020

Mr. Steve McGugan
State Hazard Mitigation Officer
Assistant Director / Mitigation Section Chief
Division of Emergency Management
NC Department of Public Safety
200 Park Offices Drive
Durham, NC 27713

Reference: Multi-Jurisdictional Hazard Mitigation Plan: Neuse River Regional

Dear Mr. McGugan:

We are pleased to inform you that the Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan Update is in compliance with the Federal hazard mitigation planning requirements resulting from the Disaster Mitigation Act of 2000, as contained in 44 CFR 201.6. The plan is approved for a period of five (5) years effective September 18, 2020 to September 17, 2025.

This plan approval extends to the following participating jurisdictions that provided a copy of their resolutions adopting the plan:

- Town of Ayden
- Town of Bethel
- Town of Farmville
- Town of Fountain
- Town of Fremont
- City of Goldsboro
- Greene County, Unincorporated
- City of Greenville
- Town of Grifton
- Town of Grimesland
- Town of Hookerton
- Jones County, Unincorporated
- City of Kinston
- Town of La Grange
- Lenoir County, Unincorporated
- Town of Pikeville
- Town of Pink Hill
- Pitt County, Unincorporated
- Town of Pollocksville
- Village of Simpson
- Town of Snow Hill
- Village of Walnut Creek
- Town of Walstonburg
- Wayne County, Unincorporated
- Town of Winterville

The approved participating jurisdictions are hereby eligible applicants through the State for the following mitigation grant programs administered by the Federal Emergency Management Agency (FEMA):

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

SECTION 9: PLAN ADOPTION

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

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

We strongly encourage each community to perform an annual review and assessment of the effectiveness of their hazard mitigation plan; however, a formal plan update is required at least every five (5) years. We also encourage each community to conduct a plan update process within one (1) year of being included within a Presidential Disaster Declaration or of the adoption of major modifications to their local Comprehensive Land Use Plan or other plans that affect hazard mitigation or land use and development. When you prepare a comprehensive plan update, it must be resubmitted through the State as a “plan update” and is subject to a formal review and approval process by our office. If the plan is not updated prior to the required five (5) year update, please ensure that the Draft update is submitted at least six (6) months prior to expiration of this plan approval.

The State and participants in the Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan should be commended for their close coordination and communications with our office in the review and subsequent approval of the plan. If you or the participants in the Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan have any questions or need any additional information, please do not hesitate to contact Jean Neptune, of the Hazard Mitigation Assistance Branch, at (770) 220-5474 or Edwardine S. Marrone, of my staff, at (404) 433-3968.

Sincerely,



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

U. S. Department of Homeland Security
Region IV
3005 Chamblee Tucker Road
Atlanta, GA 30341



FEMA

October 14, 2020

Mr. Steve McGugan
State Hazard Mitigation Officer
Assistant Director / Mitigation Section Chief
Division of Emergency Management
NC Department of Public Safety
200 Park Offices Drive
Durham, NC 27713

Reference: Multi-Jurisdictional Hazard Mitigation Plan: Neuse River Regional

Dear Mr. McGugan:

This is a follow-up to our previous correspondence of September 18, 2020, in which we approved the Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan and all the participating communities that submitted their resolutions at the time of plan approval. We have recently received from your office the following resolution for inclusion within this plan and subsequently have approved the community under the approved Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan effective October 8, 2020:

- Town of Falkland

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

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

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

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

We strongly encourage each community to perform an annual review and assessment of the effectiveness of their hazard mitigation plan; however, a formal plan update is required at least every five (5) years. We also encourage each community to conduct a plan update process within one (1) year of being included within a Presidential Disaster Declaration or of the adoption of major modifications to their local Comprehensive Land Use Plan or other plans that affect hazard mitigation or land use and development.

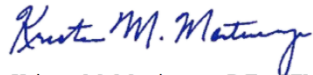
www.fema.gov

SECTION 9: PLAN ADOPTION

When the Plan is amended or revised, the amendments and revisions should be incorporated into the next plan update. If the Plan is not updated prior to the required five (5) year update, please ensure that the Draft update is submitted at least six (6) months prior to expiration of this plan approval.

If you or the participants in the Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan have any further questions or need any additional information, please do not hesitate to contact Catherine Strickland, of the Hazard Mitigation Assistance Branch, at (770) 220-5328 or Edwardine S. Marrone, of my staff, at (404) 433-3968.

Sincerely,



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

U. S. Department of Homeland Security
Region IV
3005 Chamblee Tucker Road
Atlanta, GA 30341



FEMA

November 3, 2020

Mr. Steve McGugan
State Hazard Mitigation Officer
Assistant Director / Mitigation Section Chief
Division of Emergency Management
NC Department of Public Safety
200 Park Offices Drive
Durham, NC 27713

Reference: Multi-Jurisdictional Hazard Mitigation Plan: Neuse River Regional

Dear Mr. McGugan:

This is a follow-up to our previous correspondence of September 18, 2020, in which we approved the Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan and all the participating communities that submitted their resolutions at the time of plan approval. We have recently received from your office the following resolution for inclusion within this plan and subsequently have approved the community under the approved Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan effective November 3, 2020:

- Town of Seven Springs

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

- Hazard Mitigation Grant Program (HMGP)
- Flood Mitigation Assistance (FMA)
- Building Resilient Infrastructure and Communities (BRIC)

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

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

We strongly encourage each community to perform an annual review and assessment of the effectiveness of their hazard mitigation plan; however, a formal plan update is required at least every five (5) years. We also encourage each community to conduct a plan update process within one (1) year of being

www.fema.gov

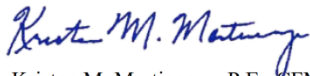
SECTION 9: PLAN ADOPTION

included within a Presidential Disaster Declaration or of the adoption of major modifications to their local Comprehensive Land Use Plan or other plans that affect hazard mitigation or land use and development.

When the Plan is amended or revised, the amendments and revisions should be incorporated into the next plan update. If the Plan is not updated prior to the required five (5) year update, please ensure that the Draft update is submitted at least six (6) months prior to expiration of this plan approval.

If you or the participants in the Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan have any further questions or need any additional information, please do not hesitate to contact Catherine Strickland, of the Hazard Mitigation Assistance Branch, at (770) 220-5328 or Edwardine S. Marrone, of my staff, at (404) 433-3968.

Sincerely,



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

U. S. Department of Homeland Security
Region IV
3005 Chamblee Tucker Road
Atlanta, GA 30341



FEMA

November 12, 2020

Mr. Steve McGugan
State Hazard Mitigation Officer
Assistant Director / Mitigation Section Chief
Division of Emergency Management
NC Department of Public Safety
200 Park Offices Drive
Durham, NC 27713

Reference: Multi-Jurisdictional Hazard Mitigation Plan: Neuse River Regional

Dear Mr. McGugan:

This is a follow-up to our previous correspondence of September 18, 2020, in which we approved the Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan and all the participating communities that submitted their resolutions at the time of plan approval. We have recently received from your office the following resolution for inclusion within this plan and subsequently have approved the community under the approved Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan effective November 12, 2020:

- Town of Mount Olive
- Town of Maysville

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

- Hazard Mitigation Grant Program (HMGP)
- Flood Mitigation Assistance (FMA)
- Building Resilient Infrastructure and Communities (BRIC)

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

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

We strongly encourage each community to perform an annual review and assessment of the effectiveness of their hazard mitigation plan; however, a formal plan update is required at least every five (5) years. We, also, encourage each community to conduct a plan update process within one (1) year of being

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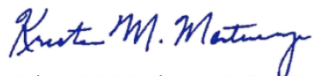
SECTION 9: PLAN ADOPTION

included within a Presidential Disaster Declaration or of the adoption of major modifications to their local Comprehensive Land Use Plan or other plans that affect hazard mitigation or land use and development.

When the Plan is amended or revised, the amendments and revisions should be incorporated into the next plan update. If the Plan is not updated prior to the required five (5) year update, please ensure that the Draft update is submitted at least six (6) months prior to expiration of this plan approval.

If you or the participants in the Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan have any further questions or need any additional information, please do not hesitate to contact Catherine Strickland, of the Hazard Mitigation Assistance Branch, at (770) 220-5328 or Edwardine S. Marrone, of my staff, at (404) 433-3968.

Sincerely,



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

U. S. Department of Homeland Security
Region IV
3005 Chamblee Tucker Road
Atlanta, GA 30341



FEMA

November 16, 2020

Mr. Steve McGugan
State Hazard Mitigation Officer
Assistant Director / Mitigation Section Chief
Division of Emergency Management
NC Department of Public Safety
200 Park Offices Drive
Durham, NC 27713

Reference: Multi-Jurisdictional Hazard Mitigation Plan: Neuse River Regional

Dear Mr. McGugan:

This is a follow-up to our previous correspondence of September 18, 2020, in which we approved the Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan and all the participating communities that submitted their resolutions at the time of plan approval. We have recently received from your office the following resolution for inclusion within this plan and subsequently have approved the community under the approved Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan effective November 16, 2020:

- Town of Trenton

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

- Hazard Mitigation Grant Program (HMGP)
- Flood Mitigation Assistance (FMA)
- Building Resilient Infrastructure and Communities (BRIC)

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

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

We strongly encourage each community to perform an annual review and assessment of the effectiveness of their hazard mitigation plan; however, a formal plan update is required at least every five (5) years. We also encourage each community to conduct a plan update process within one (1) year of being

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SECTION 9: PLAN ADOPTION

included within a Presidential Disaster Declaration or of the adoption of major modifications to their local Comprehensive Land Use Plan or other plans that affect hazard mitigation or land use and development.

When the Plan is amended or revised, the amendments and revisions should be incorporated into the next plan update. If the Plan is not updated prior to the required five (5) year update, please ensure that the Draft update is submitted at least six (6) months prior to expiration of this plan approval.

If you or the participants in the Neuse River Regional Multi-Jurisdictional Hazard Mitigation Plan have any further questions or need any additional information, please do not hesitate to contact Catherine Strickland, of the Hazard Mitigation Assistance Branch, at (770) 220-5328 or Edwardine S. Marrone, of my staff, at (404) 433-3968.

Sincerely,



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

Commissioners
Bennie Heath - Chairman
James T. Shackleford – Vice Chairman
Jerry Jones
Susan Blizzard
Antonio Blow

County Manager
Kyle J. DeHaven

Finance Officer
Beverly T. Stroud



RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN

WHEREAS, the County of Greene is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Greene County Board of Commissioners to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Greene County Board of Commissioners to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the County of Greene; and

WHEREAS, the County of Greene actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the Board of Commissioners of Greene County hereby;

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Greene County Emergency Services Director with the responsibility, authority, and the means to:

229 Kingold Blvd., Suite D • Snow Hill, NC 28580 • (252) 747-3446 • FAX (252) 747-3884
www.greencountync.gov

The mission of Greene County Government is to serve and improve the lives of all citizens by providing high-quality, cost-effective services in an open, profession, and ethical environment

"Greene County is an equal opportunity provider, employer and lender."
To file a complaint of discrimination write USDA, Director, Office of Civil Rights, 1400 Independence Ave., SW, Washington, DC 20250-9410 or call (800) 795-3272 or (202) 720-6382 (TDD)

SECTION 9: PLAN ADOPTION

Commissioners
Bennie Heath - Chairman
James T. Shackelford – Vice Chairman
Jerry Jones
Susan Blizzard
Antonio Blow

County Manager
Kyle J. DeHaven

Finance Officer
Beverly T. Stroud



- (a) Inform all concerned parties of this action.
- (b) Cooperate with Federal, State and local agencies and private firms which Undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

3. Appoints the Director of the Greene County Office of Emergency Services to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Greene County Board of Commissioners for consideration.

4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

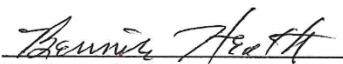
Adopted this 8th day of June, 2020.



ATTEST:



Kyle J. DeHaven, Clerk to the Board



Bennie Heath, Chairman
Greene County Board of Commissioners

229 Kingold Blvd., Suite D • Snow Hill, NC 28580 • (252) 747-3446 • FAX (252) 747-3884
www.greencountync.gov

The mission of Greene County Government is to serve and improve the lives of all citizens by providing high-quality, cost-effective services in an open, professional, and ethical environment

"Greene County is an equal opportunity provider, employer and lender."
To file a complaint of discrimination write USDA, Director, Office of Civil Rights, 1400 Independence Ave., SW, Washington, DC 20250-9410 or call (800) 795-3272 or (202) 720-6382 (TDD)

GREENE COUNTY/TOWN OF HOOKERTON

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the GREENE COUNTY/TOWN OF HOOKERTON is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the COUNTY OF GREENE, TOWN OF HOOKERTON to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the COUNTY OF GREENE, TOWN OF HOOKERTON to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the GREENE COUNTY, TOWN OF HOOKERTON; and

WHEREAS, the GREENE COUNTY/TOWN OF HOOKERTON actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the TOWN OF HOOKERTON of GREENE COUNTY hereby:


1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the TOWN OF HOOKERTON UTILITIES SUPERINTENDENT (Tyler Shirley) with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain

SECTION 9: PLAN ADOPTION


and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

3. Appoints the TOWN OF HOOKERTON UTILITIES SUPERINTENDENT (Tyler Shirley) to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the COUNTY OF GREENE, TOWN OF HOOKERTON for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 29th day of June, 2020.

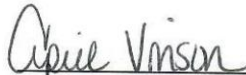


TYLER SHIRLEY
RESPONSIBLE PERSON



ROBERT TAYLOR
MAYOR





APRIL VINSON
TOWN CLERK (SEAL)



TOWN OF SNOW HILL

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the Town of Snow Hill is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Town of Snow Hill Commissioners to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Town of Snow Hill Commissioners to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Snow Hill; and

WHEREAS, the Town of Snow Hill actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

SECTION 9: PLAN ADOPTION

NOW, THEREFORE, be it resolved that the Commissioners of Town of Snow Hill hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Town Manager, John Bauer, and successors so titled, with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.
3. Appoints the Town Manager, John Bauer, and successors so titled, to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Town of Snow Hill Commissioners for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 11 day of May, 2020.


Dennis Liles, Mayor

ATTEST:


Laquita Davis, Town Clerk (SEAL)



SECTION 9: PLAN ADOPTION

WHEREAS, The Town of Walstonburg is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the Town of Walstonburg desires to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Town of Walstonburg Board of Commissioners to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Town of Walstonburg Board of Commissioners to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Walstonburg and

WHEREAS, the Town of Walstonburg, in coordination with other jurisdictions participating in the Neuse River Region has prepared a multi-jurisdictional hazard mitigation plan with input from the appropriate local and state officials;

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Regional Hazard Mitigation Plan for legislative compliance and has approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, BE IT RESOLVED that the Town of Walstonburg Board of Commissioners hereby:

1. Adopts the Neuse River Regional Hazard Mitigation Plan; and
2. Agrees to take such other official action as may be reasonably necessary to carry out the proposed actions of the Plan.

Resolution adopted on the 4th day of August, 2020

Motion made by Ray Holloman

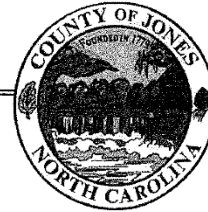
Seconded by Ron Dwyer

Mayor Brenda Kaymal

Town Clerk Burs Patton

BOARD OF COMMISSIONERS

Frank Emory, Chairman
Charlie Dunn, Jr., Vice-Chairman
Michael Haddock, Commissioner
Sondra Ipoock Riggs, Commissioner
James Harper, Commissioner
April Aycock, Commissioner
Charlie Gray, Commissioner



Jones County

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the County of Jones is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Jones County Board of Commissioners to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Jones County Board of Commissioners to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the County of Jones; and

WHEREAS, the County of Jones actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the Board of Commissioners of Jones County hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the County Manager with the responsibility, authority, and the means to:

SECTION 9: PLAN ADOPTION

- (a) Inform all concerned parties of this action.
- (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

3. Appoints the County Manager to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Jones County Board of Commissioners for consideration.

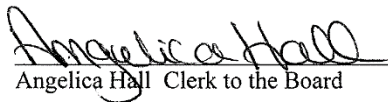
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 18th day of May, 2020.



Chairman Frank Emory

ATTEST:


Angelica Hall Clerk to the Board



Town of Maysville

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the Town of Maysville is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Board of Commissioners of the Town of Maysville to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Board of Commissioners of the Town of Maysville to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town; and

WHEREAS, the Town actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the Board of Commissioners of the Town of Maysville hereby:

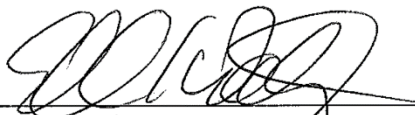
1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Town Manager, or his/her designee, with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain

SECTION 9: PLAN ADOPTION

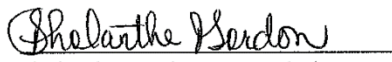
and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

3. Appoints the Town Manager, or his/her designee, to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Board of Commissioners of the Town of Maysville for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 5th day of November, 2020.


Edward Waltz, Mayor

ATTEST:


Sholanthe Gordon, Town Clerk



TOWN OF POLLOCKSVILLE

RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN

WHEREAS, the Town of Pollocksville is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Board of Commissioners of the Town of Pollocksville to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Board of Commissioners of the Town of Pollocksville to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town; and

WHEREAS, the Town actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

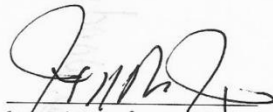
NOW, THEREFORE, be it resolved that the Board of Commissioners of the Town of Pollocksville hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Mayor, or his/her designee, with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.
3. Appoints the Mayor, or his/her designee, to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Board of Commissioners of the Town of Pollocksville for consideration.

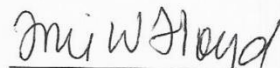
SECTION 9: PLAN ADOPTION

4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 12th day of May, 2020.


James V. Bender, Jr., Mayor

ATTEST:


Toni W Floyd, Town Clerk (SEAL)

Town of Trenton

P.O. Box 399
Trenton, North Carolina 28585
(252) 448-1784

<http://www.co.jones.nc.us/Trenton.htm>

Mayor – Darlene Spivey
Town Clerk - Glenn Spivey
Town Attorney – Jim Cauley

Commissioners - Charles Jones
Robert Horvath
Rick Green

May 12, 2020

Special Meeting
Public Hearing
Neuse River Basin Hazard Mitigation Plan

Present: Mayor, Darlene Spivey
Commissioners, Charles Jones, Robert Horvath
And Rick Green
Attorney, Jim Cauley
Clerk, Glenn Spivey

The meeting was called to order by the Mayor. Roll call. A copy of the Neuse River Hazard Mitigation Plan was presented to the Mayor and Board. There were no town citizens present for the meeting. After discussion by the Board, a motion was made by Commissioner Horvath to adopt the following resolution:

TOWN OF TRENTON

RESOLUTION ADOPTING THE NEUSE RIVER BASIN HAZARD MITIGATION PLAN

WHEREAS, the Town of Trenton is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Town of Trenton Board of Commissioners to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Town of Trenton Board of Commissioners to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Trenton; and

WHEREAS, the Town of Trenton actively participated in the planning process for the Neuse River Basin Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal

SECTION 9: PLAN ADOPTION

Emergency Management Agency have reviewed the Neuse River Basin Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the Board of Commissioners of the Town of Trenton hereby:

1. Adopts the Neuse River Basin Hazard Mitigation Plan; and
2. Vests Clerk Glenn Spivey with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State, and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.
3. Appoints the Clerk Glenn Spivey to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Town of Trenton Board of Commissioners for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the Neuse River Basin Hazard Mitigation Plan.

Adopted this 12th day of May, 2020.

Commissioner Horvath moved to close the public hearing, Seconded by Commissioner Green. Motion carried.

Commissioner Jones moved to adjourn. Seconded by Commissioner Green. Motion carried.


Mayor


Clerk

Item #5.

RESOLUTION

INTRODUCED BY: Michael S. James, County Manager **DATE:** 05/18/2020

SUBJECT AREA Administrative **PRESENTED BY:** Last Name

RESOLUTION: The Board is requested to approve the adoption of the 2020 Neuse Basin Regional Hazard Mitigation Plan.

ACTION REQUESTED:

The Board is requested to approve the adoption of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

HISTORY/BACKGROUND:

Lenoir County is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property. The County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances. The development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards. It is the intent of the County to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan. It is also the intent of the County to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the County. The County has actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials. The North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures.

EVALUATION:

Lenoir County has performed a comprehensive review and evaluation of each section of the previously approved Hazard Mitigation Plan and has updated the said plan as required under regulations at 44 CFR Part 201 and according to guidance issued by the Federal Emergency Management Agency and the North Carolina Division of Emergency Management. The approval by the Board of Commissioners will allow the fulfillment of this obligation in order that the County will be eligible for federal and state assistance in the event that a state of disaster is declared for a hazard event affecting the County.

SECTION 9: PLAN ADOPTION

MANAGER'S RECOMMENDATION: X Approve Deny

RESOLUTION: NOW THEREFORE BE IT RESOLVED:

that the Lenoir County Board of Commissioners, Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and Vests the Emergency Services Director with the responsibility, authority, and the means to Inform all concerned parties of this action, Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards; Appoints the Emergency Services Director to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Board of County Commissioners for consideration.

FUNDING SOURCE: N/A

AMENDMENTS

MOVED: *Cummings*

SECOND: *Hill*

APPROVED:

DENIED:

UNANIMOUS: *✓*

YEA VOTES:

 Sutton
 Harris

 Best
 Hill

 Daughety
 Rouse

 Cummings

Linda Rouse Sutton 

05-18-2020

Linda Rouse Sutton, Chairman

Date

05-18-2020

MSJ

ATTEST

DATE

**CITY OF KINSTON RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the City of Kinston is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the City of Kinston City Council to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the City of Kinston City Council to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the City of Kinston; and

WHEREAS, the City of Kinston actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

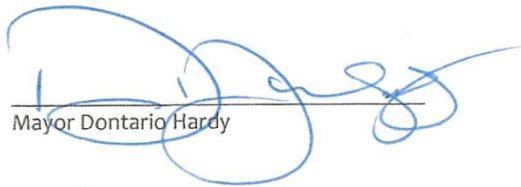
NOW, THEREFORE, be it resolved that the City Council of City of Kinston hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the City Manager or his designee with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

SECTION 9: PLAN ADOPTION

3. Appoints the City Manager or his designee to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the City of Kinston City Council for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 19TH day of May, 2020.



Mayor Dontario Hardy

ATTEST:



City Clerk, Debra Thompson (SEAL)



2020-06-457



TOWN OF LA GRANGE

203 South Center Street
La Grange, NC 28551
Office (252) 566-3186 • Fax (252) 566-2201

RESOLUTION ADOPTING THE NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN

WHEREAS, the Town of La Grange is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Town of La Grange Town Council to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Town of La Grange Town Council to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of La Grange; and

WHEREAS, the Town of La Grange actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the Town Council of Town of La Grange hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and

SECTION 9: PLAN ADOPTION

2. Vests the Town Manager or his designee with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.
3. Appoints the Town Manager or his designee to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Town of La Grange Town Council for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 22ND day of June, 2020.



Bobby R. Wooten, Mayor

ATTEST:



Wendy S. Morton, Town Clerk
(SEAL)



8A.

[Town of Pink Hill]

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the [Town of Pink Hill] is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the [Town of Pink Hill] [Board of Commissioners] to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the [Town Of Pink Hill [Board of Commissioners] to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the [Town of Pink Hill]; and

WHEREAS, the [Town of Pink Hill] actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the [Board of Commissioners] of [Town of Pink Hill] hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the [Town Clerk, Crystal Heath] with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of

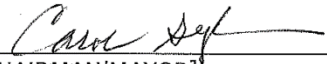
SECTION 9: PLAN ADOPTION

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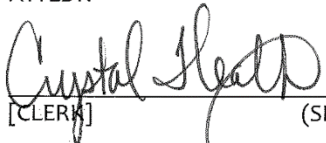
adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

3. Appoints the [Town Clerk, Crystal Heath] to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the [Town of Pink Hill] [Board of Commissioners] for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 12th day of May, 2020.


[CHAIRMAN/MAYOR]

ATTEST:


[CLERK] (SEAL)

PITT COUNTY

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, Pitt County is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Pitt County Board of Commissioners to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Pitt County Board of Commissioners to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting Pitt County; and

WHEREAS, Pitt County actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the Board of Commissioners of Pitt County hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the County Manager with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

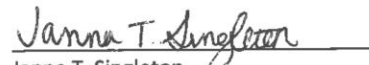
SECTION 9: PLAN ADOPTION

3. Appoints the County Manager to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Pitt County Board of Commissioners for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

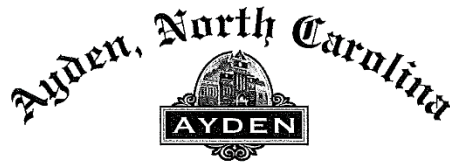
Adopted this 1st day of June, 2020.


Melvin McLawhorn
Pitt County Board of Commissioners

ATTEST:


Janna T. Singleton
Deputy Clerk to the Board





RESOLUTION 20-21-01 ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN
TOWN OF AYDEN
July 13, 2020

WHEREAS, the Town of Ayden is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Board of Commissioners of the Town of Ayden to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Board of Commissioners of the Town of Ayden to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Ayden; and

WHEREAS, the Town of Ayden actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the Board of Commissioners of the Town of Ayden hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Planning Director with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities

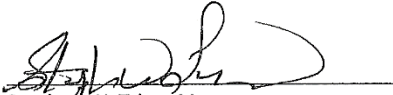
SECTION 9: PLAN ADOPTION

with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

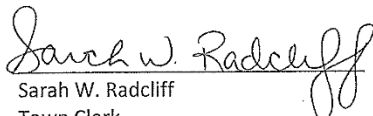
3. Appoints the Planning Director to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to Board of Commissioners of the Town of Ayden for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 13th day of July, 2020 in Ayden, North Carolina




Stephen W. Tripp, Mayor
Town of Ayden

ATTEST:


Sarah W. Radcliff
Town Clerk

TOWN OF BETHEL

RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN

WHEREAS, the Town of Bethel is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the TOWN OF BETHEL BOARD OF COMMISSIONERS to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the TOWN OF BETHEL BOARD OF COMMISSIONERS to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the TOWN OF BETHEL; and

WHEREAS, the TOWN OF BETHEL actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

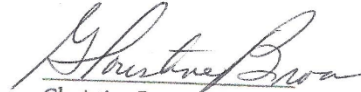
NOW, THEREFORE, be it resolved that the BOARD OF COMMISSIONERS of the TOWN OF BETHEL hereby:

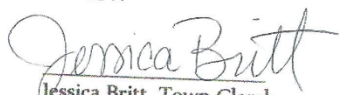
1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the BETHEL TOWN MANAGER with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.
3. Appoints the BETHEL TOWN MANAGER to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the TOWN OF BETHEL BOARD OF COMMISSIONERS for consideration.

SECTION 9: PLAN ADOPTION

4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 2nd day of June, 2020.


Gloristine Brown, Mayor

ATTEST:

Jessica Britt, Town Clerck

(SEAL)



FALKLAND

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the Town of Falkland is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Town of Falkland Town Board to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Town of Falkland Town Board to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Falkland; and

WHEREAS, the Town of Falkland actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW THEREFORE BE IT RESOLVED, that the Town Board of the Town of Falkland hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Town Clerk with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.


SECTION 9: PLAN ADOPTION

3. Appoints the Town Clerk to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Town of Falkland Town Board for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 6th day of October, 2020.


Ginger Little, Mayor

ATTEST:


Vickie Wells, Town Clerk

RESOLUTION (2020) 1492

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the Town of Farmville is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Town of Farmville Board of Commissioners to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Town of Farmville Board of Commissioners to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Farmville; and

WHEREAS, the Town of Farmville actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

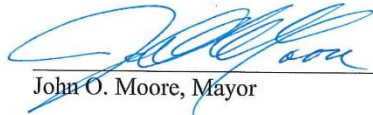
NOW THEREFORE BE IT RESOLVED, that the Board of Commissioners of the Town of Farmville hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Planning Director with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

SECTION 9: PLAN ADOPTION

3. Appoints the Planning Director to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Town of Farmville Board of Commissioners for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 1st day of June, 2020.



John O. Moore, Mayor

ATTEST:



Amy Johnson, Town Clerk

TOWN OF FOUNTAIN

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the TOWN of Fountain is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Town of Fountain Board of Commissioners to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Town of Fountain Board of Commissioners to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Fountain; and

WHEREAS, the Town of Fountain actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the Board of Commissioners of Town of Fountain hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Town Clerk with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of

SECTION 9: PLAN ADOPTION

adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

3. Appoints the Town Clerk to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Town of Fountain Board of Commissioners for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 12 day of May, 2020.



Mayor Shirley Mitchell

ATTEST:



Town Clerk Letha Hines

(SEAL)

RESOLUTION NO. 027-20
RESOLUTION OF THE CITY OF GREENVILLE, NORTH CAROLINA
ADOPTING THE NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN

WHEREAS, the citizens and property within Pitt County, including the citizens and property within the city of Greenville, are subject to the effects of natural hazards and man-made hazard events that pose threats to lives and cause damage to property, and with the knowledge and experience that certain areas of Pitt County and the city of Greenville are particularly vulnerable to flooding, high winds, and severe winter weather; and

WHEREAS, Pitt County and participating municipal jurisdictions, including the City of Greenville, desire to seek ways to mitigate the impact of identified hazard risks;

WHEREAS, the North Carolina General Assembly has in Part 6, Article 21 of Chapter 143, Parts 3, 5, and 8 of Article 19 of Chapter 160A, and Article 8 of Chapter 160A of the North Carolina General Statutes, delegated to local governmental units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry;

WHEREAS, the North Carolina General Assembly has in North Carolina General Statute 166A-19.41(b)(2)a.3. stated that: "For a state of emergency declared pursuant to G.S. 166A-19.20(a) after the deadline established by the Federal Emergency Management Agency pursuant to the Disaster Mitigation Act of 2002, P.L. 106-390, the eligible entity shall have a hazard mitigation plan approved pursuant to the Stafford Act";

WHEREAS, Section 322 of the Federal Disaster Mitigation Act of 2000 states that local governments must develop an All-Hazards Mitigation Plan in order to be eligible to receive future Hazard Mitigation Grant Program Funds and other disaster-related assistance funding and that said Plan must be updated and adopted within a five-year cycle;

WHEREAS, Pitt County and its participating municipal jurisdictions, including the City of Greenville, have performed a comprehensive review and evaluation of each section of the previously approved Hazard Mitigation Plan and have updated the said plan as required under regulations at 44 CFR Part 201 and according to guidance issued by the Federal Emergency Management Agency and the North Carolina Division of Emergency Management;

WHEREAS, it is the intent of the Pitt County Board of Commissioners to fulfill this obligation in order that the county will be eligible for federal and state assistance in the event that a state of disaster is declared for a hazard event affecting Pitt County;

WHEREAS, it is the intent of the City Council of the City of Greenville to fulfill this obligation in order that the City of Greenville will be eligible for federal and state assistance in the event that a state of disaster is declared for a hazard event affecting the City of Greenville; and

SECTION 9: PLAN ADOPTION

WHEREAS, the City of Greenville actively participated in the planning process of the Neuse River Basin Regional Hazard Mitigation Plan and has fulfilled all of its part of the multi-jurisdictional planning elements required by FEMA;

NOW, THEREFORE, BE IT RESOLVED by the City Council of the City of Greenville as follows:

Section 1. That the City Council of the City of Greenville does hereby adopt the Neuse River Basin Regional Hazard Mitigation Plan.

Section 2. That the City Council of the City of Greenville does hereby separately adopt the sections of the Neuse River Basin Regional Hazard Mitigation Plan that are specific to the City of Greenville.

Section 3. That the City Council of the City of Greenville does hereby repeal the Neuse River Basin Regional Hazard Mitigation Plan adopted on June 11, 2015, by Resolution Number 032-15.

Section 4. That the City Council of the City of Greenville does hereby vest the Director of Planning and Development Service or his/her designee with the responsibility, authority, and the means to:

- (a) Inform all concerned parties of this action; and
- (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

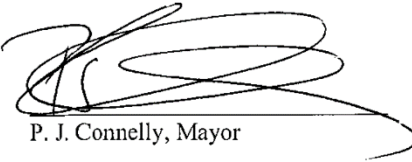
Section 5. That the City Council of the City of Greenville does hereby appoint the Director of Planning and Development Services or his/her designee to assure that, in cooperation with Pitt County, the Neuse River Basin Regional Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the City of Greenville City Council for consideration.

Section 6. That the City Council of the City of Greenville does hereby agree to take such other official action as may be reasonably necessary to carry out the objectives of the Neuse River Basin Regional Hazard Mitigation Plan.

Section 7. This resolution shall become effective immediately upon adoption.

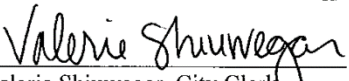
SECTION 9: PLAN ADOPTION

Adopted this 15th day of June, 2020.



P. J. Connelly, Mayor

ATTEST:



Valerie Shiuwegar, City Clerk

TOWN OF GRIFTON

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the Town of Grifton is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Grifton Board of Commissioners to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Grifton Board of Commissioners to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Grifton and

WHEREAS, the Town of Grifton actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the Board of Commissioners Grifton

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Town Manager] with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

P11

SECTION 9: PLAN ADOPTION

3. Appoints the Town Manager to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Grifton Board of Commissioners for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 12th day of May, 2020.


B.R. Jackson, Mayor

ATTEST:


Angel Hudson, Clerk (SEAL)



P12

Res. 2019-20:003

**TOWN OF GRIMESLAND
RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the TOWN OF GRIMESLAND is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the TOWN OF GRIMESLAND BOARD OF ALDERMEN to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the TOWN OF GRIMESLAND BOARD OF ALDERMEN to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the TOWN OF GRIMESLAND; and

WHEREAS, the TOWN OF GRIMESLAND actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the BOARD OF ALDERMEN of TOWN OF GRIMESLAND hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the MAYOR with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

SECTION 9: PLAN ADOPTION

3. Appoints the MAYOR to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the TOWN OF GRIMESLAND BOARD OF ALDERMEN for consideration.

4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 14TH day of JULY 2020.


Eleanor H Farr
ELEANOR H FARR, MAYOR

(SEAL)

ATTEST:

Barbara M. Chitmon
BARBARA M CHITMON, TOWN CLERK

VILLAGE OF SIMPSON

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the Simpson is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Village of Simpson Council to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Village of Simpson Council to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Village of Simpson and

WHEREAS, the Village of Simpson actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

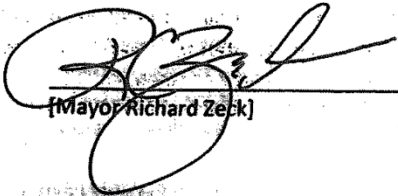
NOW, THEREFORE, be it resolved that the Simpson Council of Simpson hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Mayor and/or Council with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain

and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

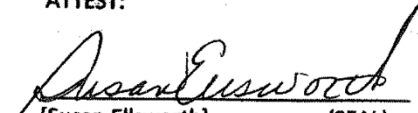
3. Appoints the Mayor Richard Zeck to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Village of Simpson Council for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 18th day of May 2020.

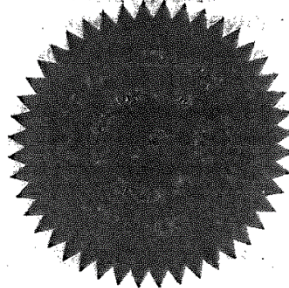


(Mayor Richard Zeck)

ATTEST:



(Susan Ellsworth) (SEAL)



TOWN OF WINTERVILLE
RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN

WHEREAS, the Town of Winterville is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the Town of Winterville desires to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Winterville Town Council to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Winterville Town Council to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Winterville; and

WHEREAS, the Town of Winterville actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency will review the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, BE IT RESOLVED that the Town Council of Winterville, North Carolina hereby:

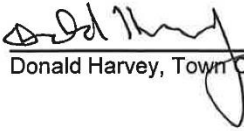
1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Planning Director with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.
3. Appoints the Planning Director to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Winterville Town Council for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

SECTION 9: PLAN ADOPTION

Resolution No. 20-R-061

Adopted this the 8th day of June, 2020.

ATTEST:



Donald Harvey, Town Clerk





Douglas A. Jackson, Mayor

County of Wayne

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the County of Wayne is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Wayne County Board of Commissioners to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Wayne County Board of Commissioners to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the County of Wayne; and

WHEREAS, the County of Wayne actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the Board of Commissioners of Wayne County hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Wayne County Planning Director with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of

SECTION 9: PLAN ADOPTION

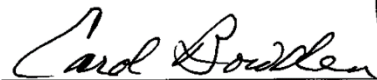
adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

3. Appoints the Director of the Wayne County Office of Emergency Services to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Wayne County Board of Commissioners for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 19th day of May, 2020.


Chairman

ATTEST:


Clerk (SEAL)



**NORTH CAROLINA
WAYNE COUNTY**

**RESOLUTION BY THE TOWN OF FREMONT
BOARD OF ALDERMEN/ALDERWOMEN
ADOPTING THE NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the Town of Fremont is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Town Board of Aldermen/Alderwomen of the Town of Fremont to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Town Board of Aldermen/Alderwomen of the Town of Fremont to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Fremont; and

WHEREAS, the Town of Fremont actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the Town Board of Aldermen/Alderwomen of the Town of Fremont hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the Mayor of Fremont with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.

SECTION 9: PLAN ADOPTION

(b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

3. Appoints the Mayor of Fremont to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Town Board of Aldermen/Alderwomen of the Town of Fremont for consideration.

4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 30th day of June, 2020.

W. Dana Flowers
MAYOR

ATTEST:

Sharon A. Daly
CLERK





**City of Goldsboro
P.O. Drawer A
North Carolina
27533-9701**

**CERTIFICATION
OFFICE OF THE CITY CLERK**

This is to certify that the foregoing and attached is a true and accurate copy of Resolution No. 2020-36 adopted by the City Council of the City of Goldsboro, North Carolina, at a regularly scheduled meeting held on the 18th day of May, 2020.

Witness my Hand and the Seal of the City of Goldsboro, North Carolina, this the 26th day of May, 2020.

**Melissa D. Capps
City Clerk
City of Goldsboro
Goldsboro, NC**



RESOLUTION NO. 2020- 36

**CITY OF GOLDSBORO
RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the City of Goldsboro is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the City of Goldsboro City Council to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the City of Goldsboro City Council to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the City of Goldsboro; and

WHEREAS, the City of Goldsboro actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the City Council of the City of Goldsboro hereby:

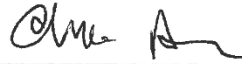
1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the City Engineer with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.
3. Appoints the City Engineer to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and

SECTION 9: PLAN ADOPTION

every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the City of Goldsboro City Council for consideration.

4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 18th day of May, 2020.



Mayor

Attested by:


City Clerk

SECTION 9: PLAN ADOPTION

RESOLUTION ADOPTING NEUSE RIVER HAZARD MITIGATION PLAN 2020

WHEREAS, Town of Mount Olive is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the Town of Mount Olive desires to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Town of Mount Olive to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Town of Mount Olive to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Mount Olive; and

WHEREAS, the Town of Mount Olive, in coordination with other jurisdictions participating in the Neuse River Region has prepared a multi-jurisdictional hazard mitigation plan with input from the appropriate local and state officials;

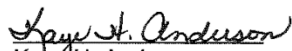
WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Regional Hazard Mitigation Plan for legislative compliance and has approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, BE IT RESOLVED that the Mayor and Town Board of Commissioners of the Town of Mount Olive hereby:

1. Adopts the Neuse River Regional Hazard Mitigation Plan; and
2. Agrees to take such other official action as may be reasonably necessary to carry out the proposed actions of the Plan.


Kenneth K. Talton 11-2-2020
Mayor

ATTEST:

 11-2-2020
Kaye H. Anderson
Town Clerk

Town of Pikeville

**RESOLUTION ADOPTING THE
NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN**

WHEREAS, the **Town of Pikeville** is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the County and participating municipal jurisdictions desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the **Town of Pikeville Mayor and Board of Commissioners** to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the **Town of Pikeville Mayor and Board of Commissioners** to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the **Town of Pikeville**; and

WHEREAS, the **Town of Pikeville** actively participated in the planning process for the Neuse River Basin Regional Hazard Mitigation Plan and has prepared a regional hazard mitigation plan update with input from the appropriate local and state officials; and

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Basin Regional Hazard Mitigation Plan for legislative compliance and have approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, be it resolved that the **Mayor and Board of Commissioners** of the **Town of Pikeville** hereby:

1. Adopts the Neuse River Basin Regional Hazard Mitigation Plan; and
2. Vests the **Town Administrator** with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain

SECTION 9: PLAN ADOPTION

and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

3. Appoints the **Town Administrator** to assure that, in cooperation with the other participating jurisdictions, the Hazard Mitigation Plan is reviewed annually and every five years as specified in the Plan to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the **Town of Pikeville Mayor and Board of Commissioners** for consideration.
4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the 2020 Neuse River Basin Regional Hazard Mitigation Plan.

Adopted this 10th day of August, 2020.



Mayor, Charles T. Hooks

ATTEST:


Acting Town Clerk, Katie Johnson

(SEAL)



A Resolution for Board Adoption

The Town of Seven Springs

Resolution Supporting The Neuse River Basin Regional Hazard Mitigation Plan

WHEREAS, Seven Springs is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the Town of Seven Springs desires to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Seven Springs Town Council to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Seven Springs Town Council to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Town of Seven Springs; and

WHEREAS, the Town of Seven Springs, in coordination with other jurisdictions participating in the Neuse River Region has prepared a multi-jurisdictional hazard mitigation plan with input from the appropriate local and state officials;

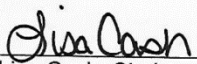
WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Regional Hazard Mitigation Plan for legislative compliance and has approved the plan pending the completion of local adoption procedures;

NOW, THEREFORE, BE IT RESOLVED that the Town of Seven Springs hereby:

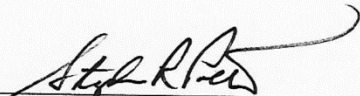
1. Adopts the Neuse River Regional Hazard Mitigation Plan; and
2. Agrees to take such other official action as may be reasonably necessary to carry out the proposed actions of the Plan.

Adopted this 27th day of October 2020

Attest:



Lisa Cash, Clerk
Town of Seven Springs



Stephen Potter, Mayor
Town of Seven Springs

A RESOLUTION FOR BOARD ADOPTION

THE VILLAGE OF WALNUT CREEK

RESOLUTION SUPPORTING THE NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN

WHEREAS, Village of Walnut Creek is vulnerable to an array of natural hazards that can cause loss of life and damages to public and private property; and

WHEREAS, the Village of Walnut Creek desires to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the development and implementation of a hazard mitigation plan can result in actions that reduce the long-term risk to life and property from natural hazards; and

WHEREAS, it is the intent of the Village Council to protect its citizens and property from the effects of natural hazards by preparing and maintaining a local hazard mitigation plan; and

WHEREAS, it is also the intent of the Village Council to fulfill its obligation under North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act and Section 322: Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act to remain eligible to receive state and federal assistance in the event of a declared disaster affecting the Village of Walnut Creek; and

WHEREAS, the Village of Walnut Creek, in coordination with other jurisdictions participating in the Neuse Region has prepared a multi-jurisdictional hazard mitigation plan with input from the appropriate local and state officials.

WHEREAS, the North Carolina Division of Emergency Management and the Federal Emergency Management Agency have reviewed the Neuse River Regional Hazard Mitigation Plan for legislative compliance and has approved the plan pending the completion of local adoption procedures.


NOW, THEREFORE, BE IT RESOLVED that the Village of Walnut Creek hereby:

1. Adopts the Neuse River Regional Hazard Mitigation Plan; and
2. Agrees to take such other official action as may be reasonably necessary to carry out the proposed actions of the Plan.

Adopted this 24th day of JUNE 2020.

Attest:


Peggy Q. Page, Village Clerk
Village of Walnut Creek


Danny Jackson, Mayor
Village of Walnut Creek

Annex A Greene County

A.1 COMMUNITY PROFILE

This section contains a summary of maps and statistics for current conditions and characteristics of Greene County, including information on population, asset exposure, housing, and economy.

Geography

Figure A.1 shows a base map of Greene County and participating jurisdictions as well as major transportation routes in the county.

Population and Demographics

Table A.1 provides population counts and growth estimates for Greene County and participating jurisdictions as compared to the Region overall. Table A.2 provides demographic information for the County.

Table A.1 – Population Counts, Greene County, 2000-2017

Jurisdiction	2000	2010	2017	% Change 2000-2010	% Change 2010-2017	Overall % Change 2000-2017
Hookerton	467	409	397	-12.4%	-2.9%	-15.0%
Snow Hill	1,514	1,595	1,820	5.4%	14.1%	20.2%
Walstonburg	224	219	242	-2.2%	10.5%	8.0%
Municipalities	2,205	2,223	2,459	0.8%	10.6%	11.5%
Unincorporated Areas	16,769	19,139	18,600	14.1%	-2.8%	10.9%
Greene County	18,974	21,362	21,059	12.6%	-1.4%	11.0%
Region Total	336,130	381,781	389,749	13.6%	2.1%	16.0%

Source: US Census Bureau American Community Survey.

Table A.2 – Racial Demographics, Greene County, 2017

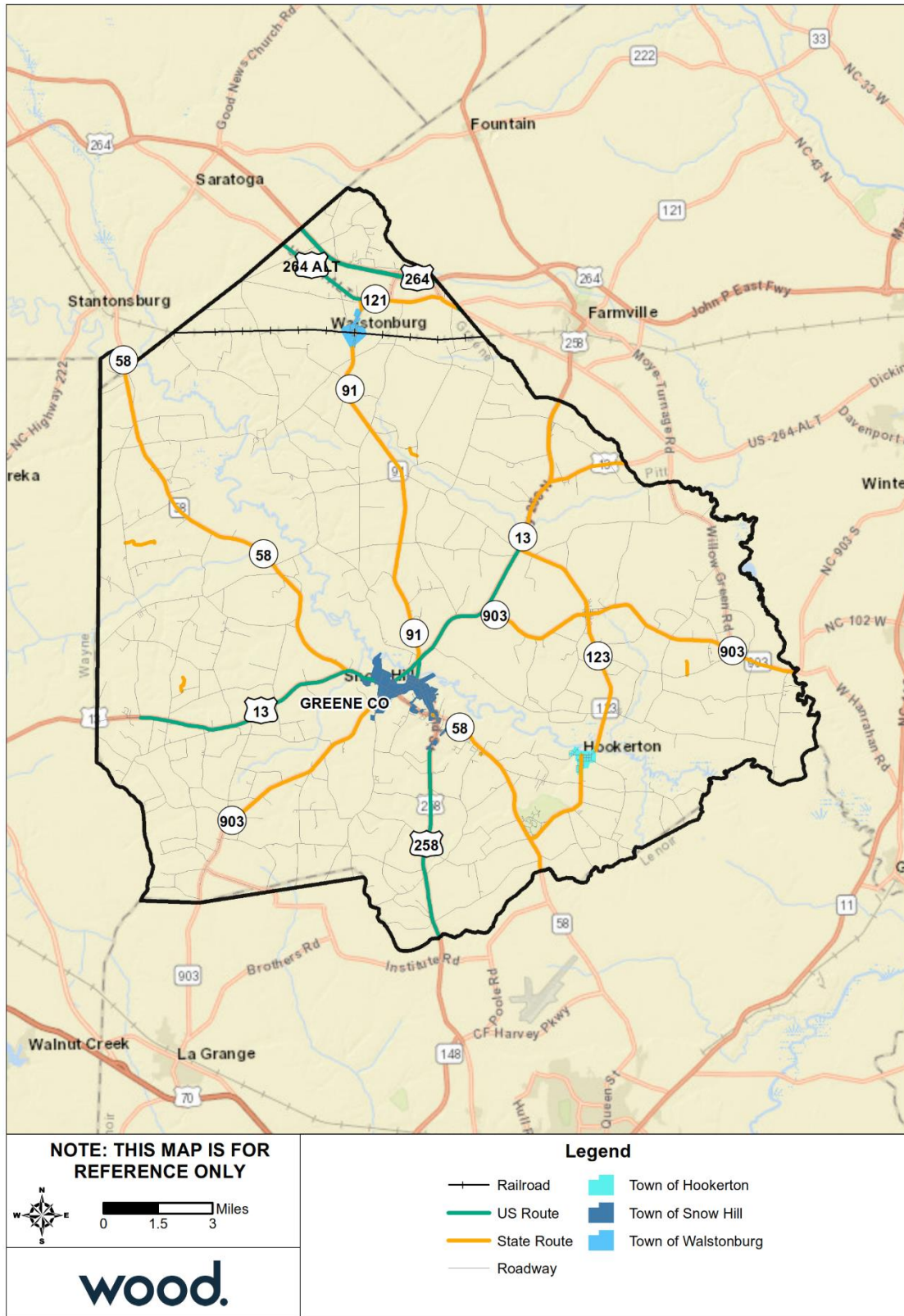
Jurisdiction	Caucasian	African-American	Asian	Other Race*	Two or More Races	Persons of Hispanic or Latino Origin**
Hookerton	55.7%	43.8%	0.0%	0.0%	0.5%	1.0%
Snow Hill	47.7%	48.3%	0.3%	0.9%	2.9%	13.4%
Walstonburg	71.9%	20.2%	0.0%	3.8%	4.1%	1.2%
Greene County	57.9%	35.9%	0.1%	3.1%	3.1%	14.9%

*Other races include 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.

Figure A.1 – Jurisdictional Locations, Greene County



Asset Inventory

The following tables summarize the asset inventory for Greene County unincorporated areas and incorporated jurisdictions in order to estimate the total physical exposure to hazards in this area. The locations of critical facilities are shown in Figure A.2. Critical facilities are a subset of identified assets from the Critical Infrastructure & Key Resources dataset. Note that the counts are by building; where a critical facility comprises a cluster of buildings, each building is counted and displayed.

Table A.3 – Critical Infrastructure & Key Resources by Type

Jurisdiction	Food and Agriculture	Banking and Finance	Chemical & Hazardous	Commercial	Communications	Critical Manufacturing	Defense Industrial Base	Government Facilities	Healthcare	Nuclear Reactors, Materials and Waste	Postal and Shipping	Transportation Systems	Energy	Emergency Services	Water	Total
Greene County	1,658	0	0	245	0	60	0	60	5	0	0	29	2	9	0	2,068
Town of Hookerton	0	1	0	20	0	5	0	4	1	0	0	2	0	1	0	34
Town of Snow Hill	28	3	0	109	0	13	0	46	13	0	0	16	6	2	0	236
Town of Walstonburg	0	0	0	12	0	7	0	4	0	0	0	3	0	1	0	27
Greene County Total	1,686	4	0	386	0	85	0	114	19	0	0	50	8	13	0	2,365

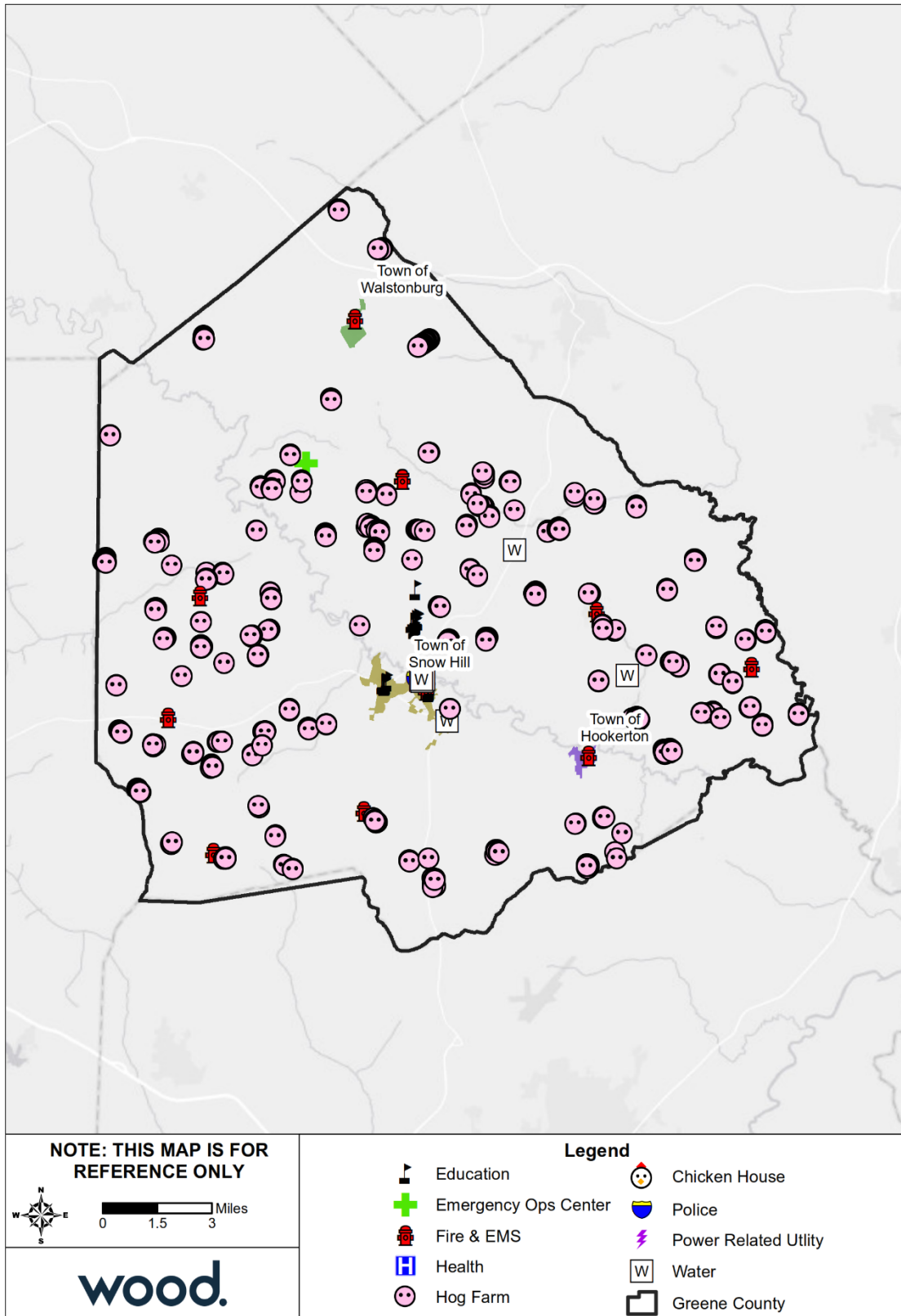
Source: NCEM Risk Management Tool

Table A.4 – High Potential Loss Facilities by Use

Jurisdiction	Residential	Commercial	Industrial	Government	Agricultural	Religious	Utilities	Total
Greene County	5	21	11	24	1	42	2	106
Town of Hookerton	0	3	1	0	0	1	0	5
Town of Snow Hill	2	16	7	15	0	4	6	50
Town of Walstonburg	0	0	0	1	0	0	0	1
Greene County	7	40	19	40	1	47	8	162

Source: NCEM Risk Management Tool

Figure A.2 – Critical Facilities, Greene County



Source: NCEM IRISK Database, GIS Analysis

Housing

The table below details key housing statistics for Greene County. As a percent of growth from 2010 housing, Greene County’s housing stock has grown by less than one percent.

Table A.5 – Housing Statistics, Greene County, 2010-2017

Jurisdiction	Housing Units (2010)	Housing Units (2017)	% Change 2010-2017	% Owner Occupied (2017)	% Vacant Units (2017)
Hookerton	212	238	12.3%	79.0%	21.0%
Snow Hill	804	836	4.0%	91.7%	8.3%
Walstonburg	107	105	-1.9%	85.7%	14.3%
Greene County	8,213	8,289	0.9%	88.6%	11.4%

Source: US Census Bureau American Community Survey.

Economy

The following tables present key economic statistics for Greene County.

Table A.6 – Economic Indicators, Greene County, 2017

Jurisdiction	Population in Labor Force	Percent Employed (%)	Percent Unemployed (%)	Percent Not in Labor Force (%)	Unemployment Rate (%)
Hookerton	174	49.8%	2.7%	47.4%	5.2%
Snow Hill	761	47.1%	6.0%	46.9%	11.3%
Walstonburg	98	42.9%	7.1%	50.0%	14.3%
Greene County	9,008	47.6%	4.9%	47.2%	9.4%

Source: US Census Bureau American Community Survey.

Table A.7 – Employment by Industry, Greene County, 2017

Jurisdiction	Management, Business, Science and Arts (%)	Service (%)	Sales and Office (%)	Natural Resources, Construction, and Maintenance (%)	Production, Transportation, and Material Moving (%)
Hookerton	32.7%	26.7%	13.9%	12.7%	13.9%
Snow Hill	28.0%	20.6%	14.5%	14.7%	22.2%
Walstonburg	46.4%	4.8%	15.5%	15.5%	17.9%
Greene County	26.8%	19.8%	14.4%	18.6%	20.5%

Source: US Census Bureau American Community Survey.

A.2 RISK ASSESSMENT

This section contains a hazard profile and vulnerability assessment for those hazards that were rated with a higher priority by jurisdiction in Greene County than for the Neuse River Region as a whole. Risk and vulnerability findings are also presented here for those hazards that are spatially defined and have variations in risk that could be evaluated quantitatively on a jurisdictional level. The hazards included in this section are flood and wildfire.

A.2.1 Flood

Table A.8 details the acreage of Greene County’s total area by jurisdiction and flood zone on the Effective DFIRM. Per this assessment, at 14 percent, the Town of Hookerton has the largest portion of its land area within the mapped 1%-annual-chance floodplain. Overall, just under 12 percent of the total land in the county is within the mapped 1%-annual-chance floodplain, although none of the land in Walstonburg falls within this area.

Table A.8 – Flood Zone Acreage by Jurisdiction, Greene County

Flood Zone	Acreage	Percent of Total (%)
Hookerton		
Zone AE	28.5	14.0
Zone X (500-year)	3.3	1.6
Zone X Unshaded	172.1	84.4
Total	203.9	--
Snow Hill		
Zone AE	101.7	10.3
Zone X (500-year)	3.4	0.3
Zone X Unshaded	879.4	89.3
Total	984.5	--
Walstonburg		
Zone X Unshaded	260.4	100
Total	260.4	--
Greene County Unincorporated		
Zone AE	19,840.7	11.6
Zone X (500-year)	2,539.6	1.5
Zone X (unshaded)	148,592.7	86.9
Total	170,973.0	--
Greene County Total		
Zone AE	19,970.8	11.6
Zone X (500-year)	2,546.3	1.5
Zone X (unshaded)	149,904.6	86.9
Total	172,421.7	--

Source: FEMA Effective DFIRM; U.S. Census Bureau

Figure A.3 through Figure A.6 reflect the effective mapped flood hazard zones for all jurisdictions in Greene County with land in or near the SFHA, and Figure A.7 through Figure A.10 display the depth of flooding estimated to occur in these areas during the 1%-annual-chance flood.

Table A.9 provides building counts and estimated damages for Critical Infrastructure and Key Resources (CIKR) buildings by sector and event in Greene County and incorporated jurisdictions. Table A.10 provides building counts and estimated damages for High Potential Loss Structures exposed to flooding.

Table A.9 – CIKR Exposed to Flooding by Event and Jurisdiction

Sector	Event	Number of Buildings at Risk	Estimated Damages
Greene County Unincorporated Areas			
Commercial Facilities	100 Year	1	\$687
	500 Year	4	\$5,343
Food and Agriculture	100 Year	2	\$2,133
	500 Year	7	\$115,953
All Categories	100 Year	3	\$2,820
	500 Year	11	\$121,296
Town of Snow Hill			
Commercial Facilities	500 Year	2	\$3,442
Energy	500 Year	1	\$328,433
All Categories	500 Year	3	\$331,875

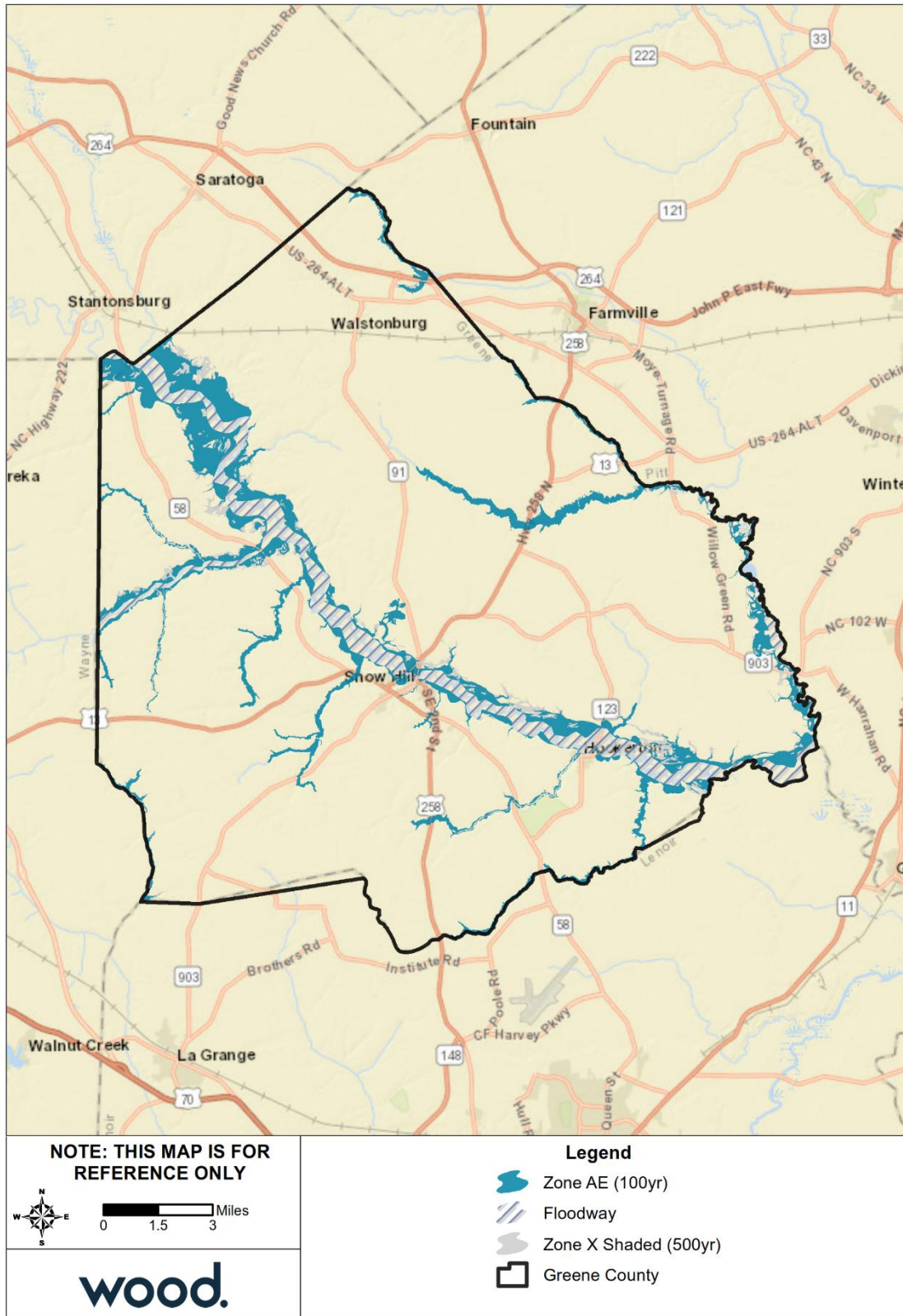
Source: NCEM Risk Management Tool

Table A.10 – High Potential Loss Properties Exposed to Flooding by Event and Jurisdiction

Sector	Event	Number of Buildings at Risk	Estimated Damages
Town of Snow Hill			
Utilities	500 Year	1	\$328,433
All Categories	500 Year	1	\$328,433

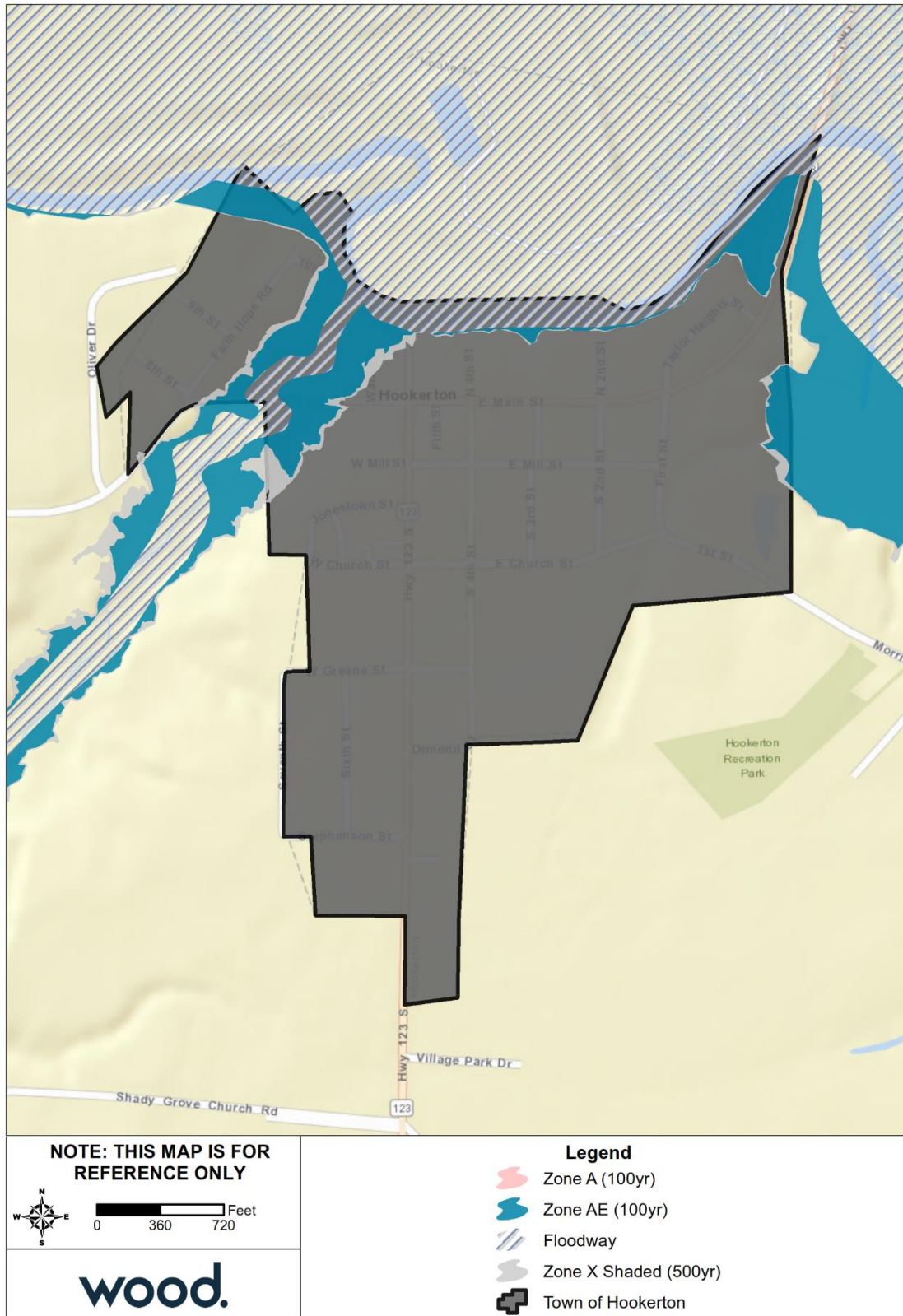
Source: NCEM Risk Management Tool

Figure A.3 – FEMA Flood Hazard Areas, Unincorporated Greene County



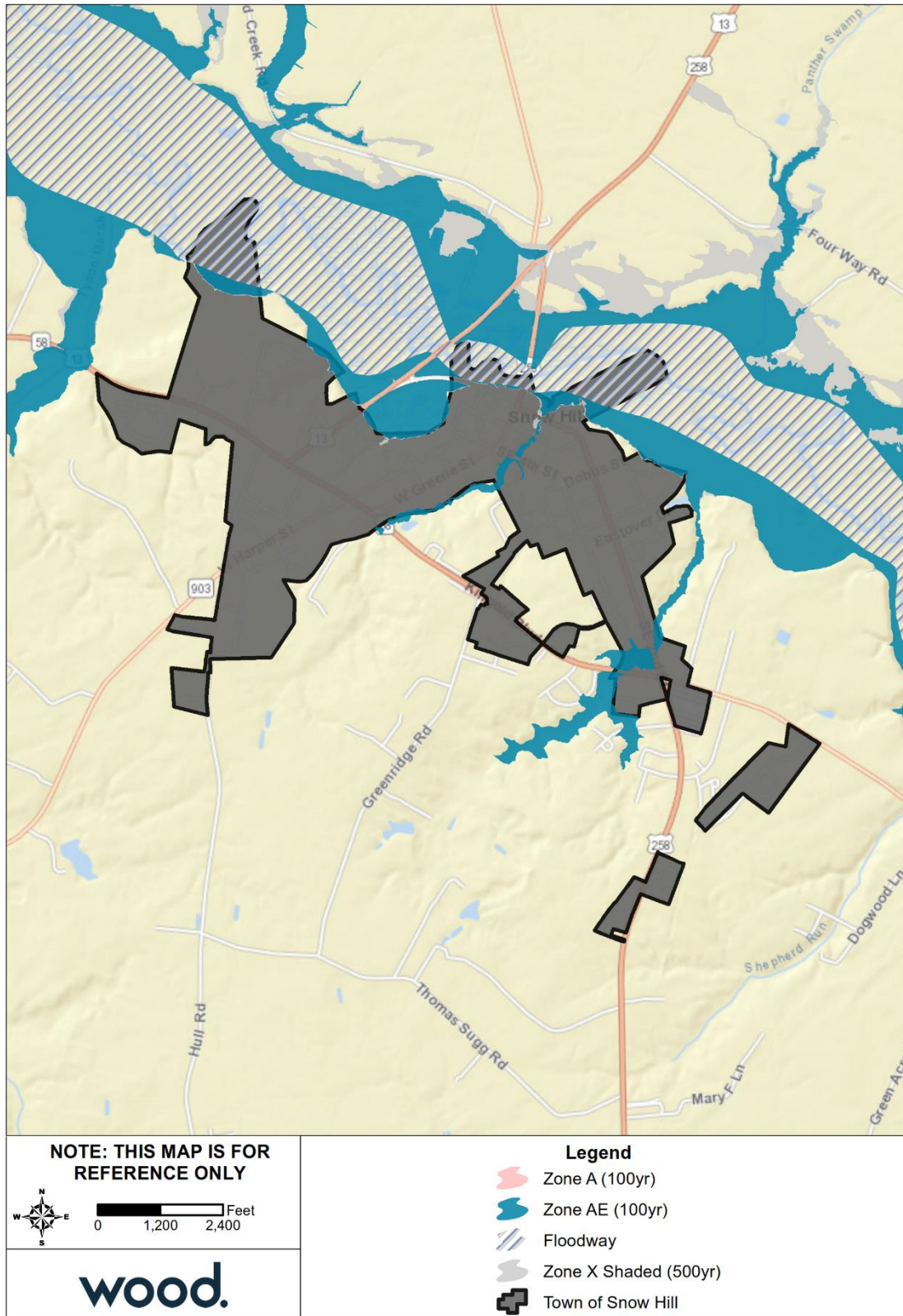
Source: FEMA Effective DFIRM

Figure A.4 – FEMA Flood Hazard Areas, Town of Hookerton



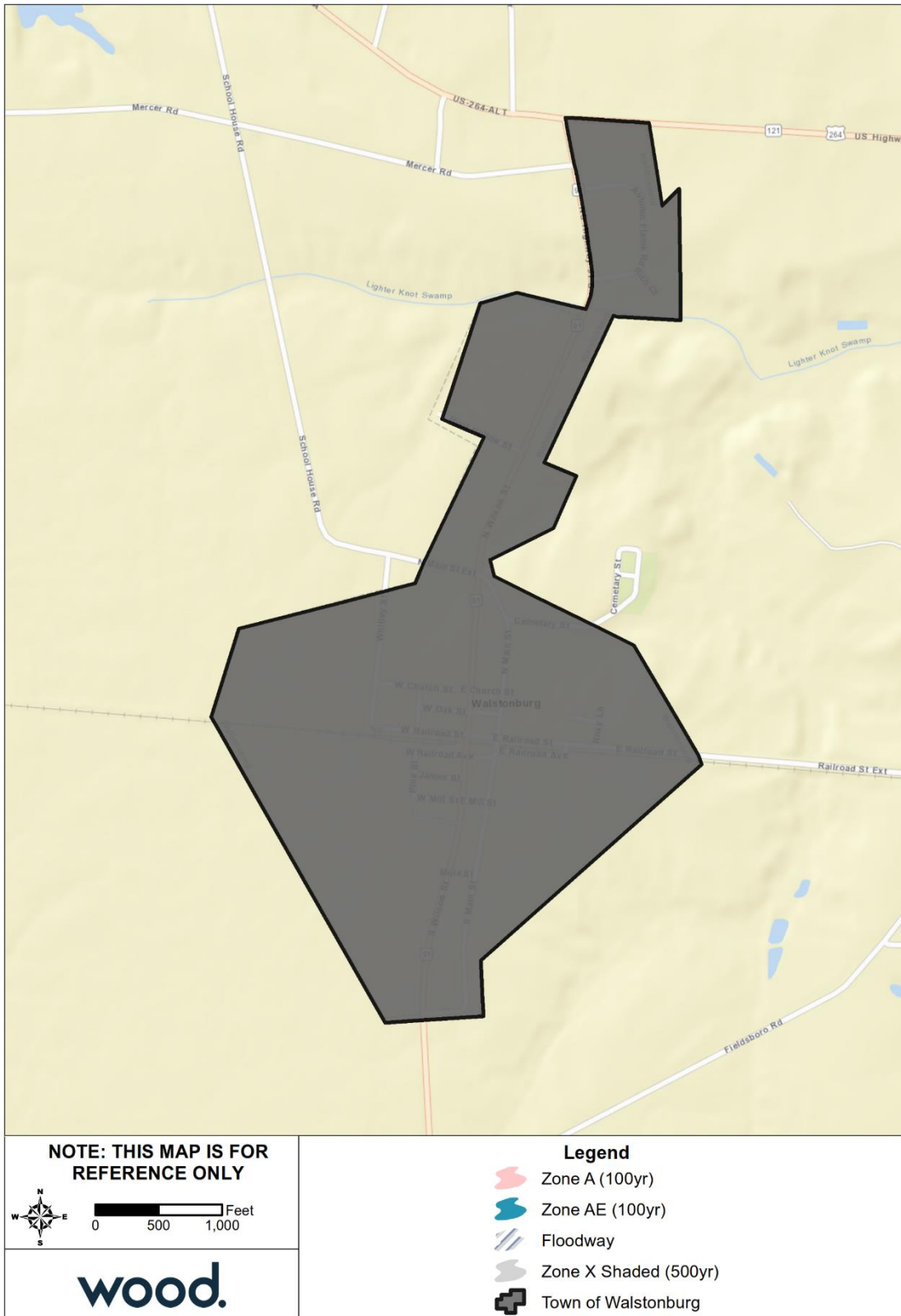
Source: FEMA Effective DFIRM

Figure A.5 – FEMA Flood Hazard Areas, Town of Snow Hill



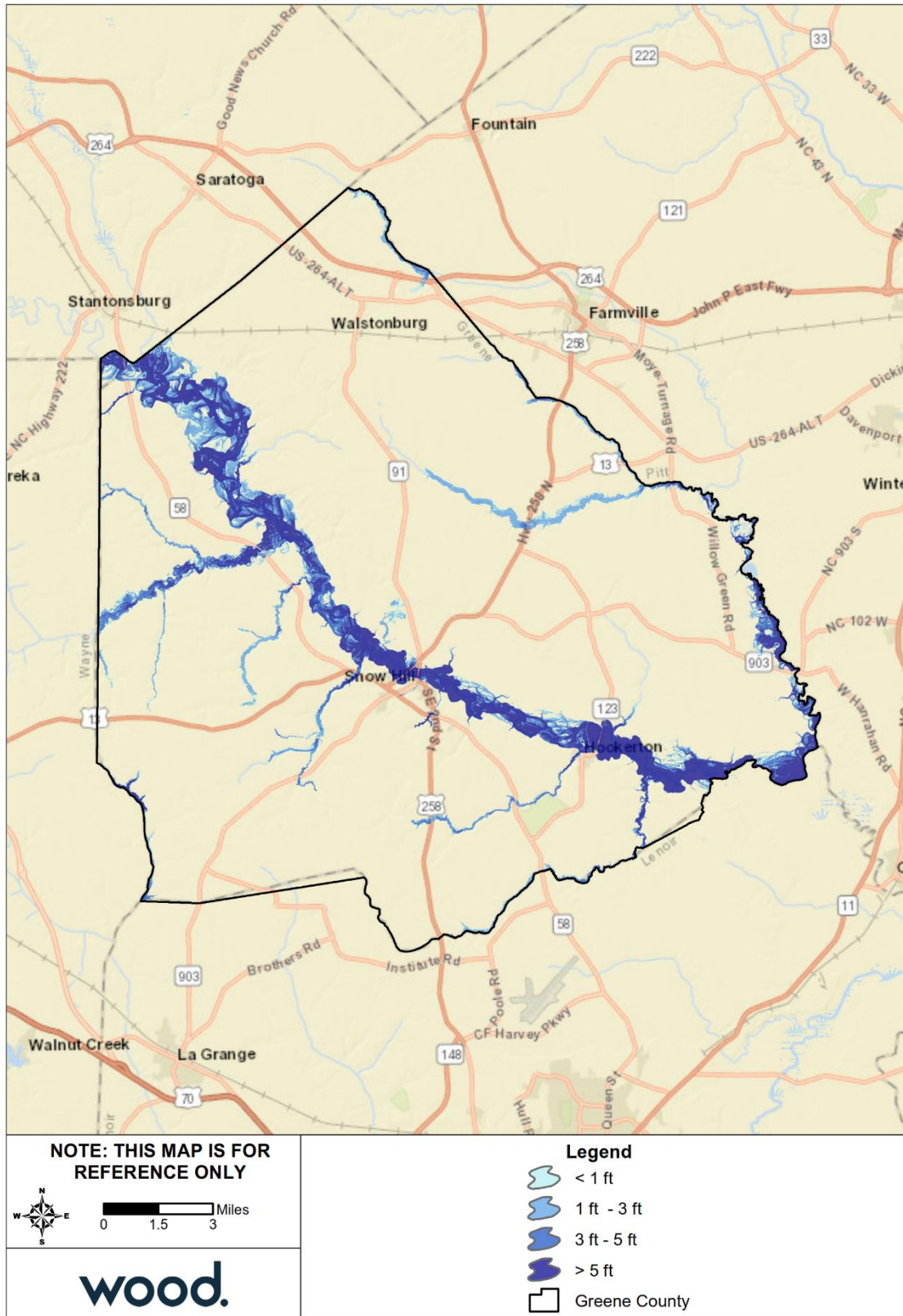
Source: FEMA Effective DFIRM

Figure A.6 – FEMA Flood Hazard Areas, Town of Walstonburg



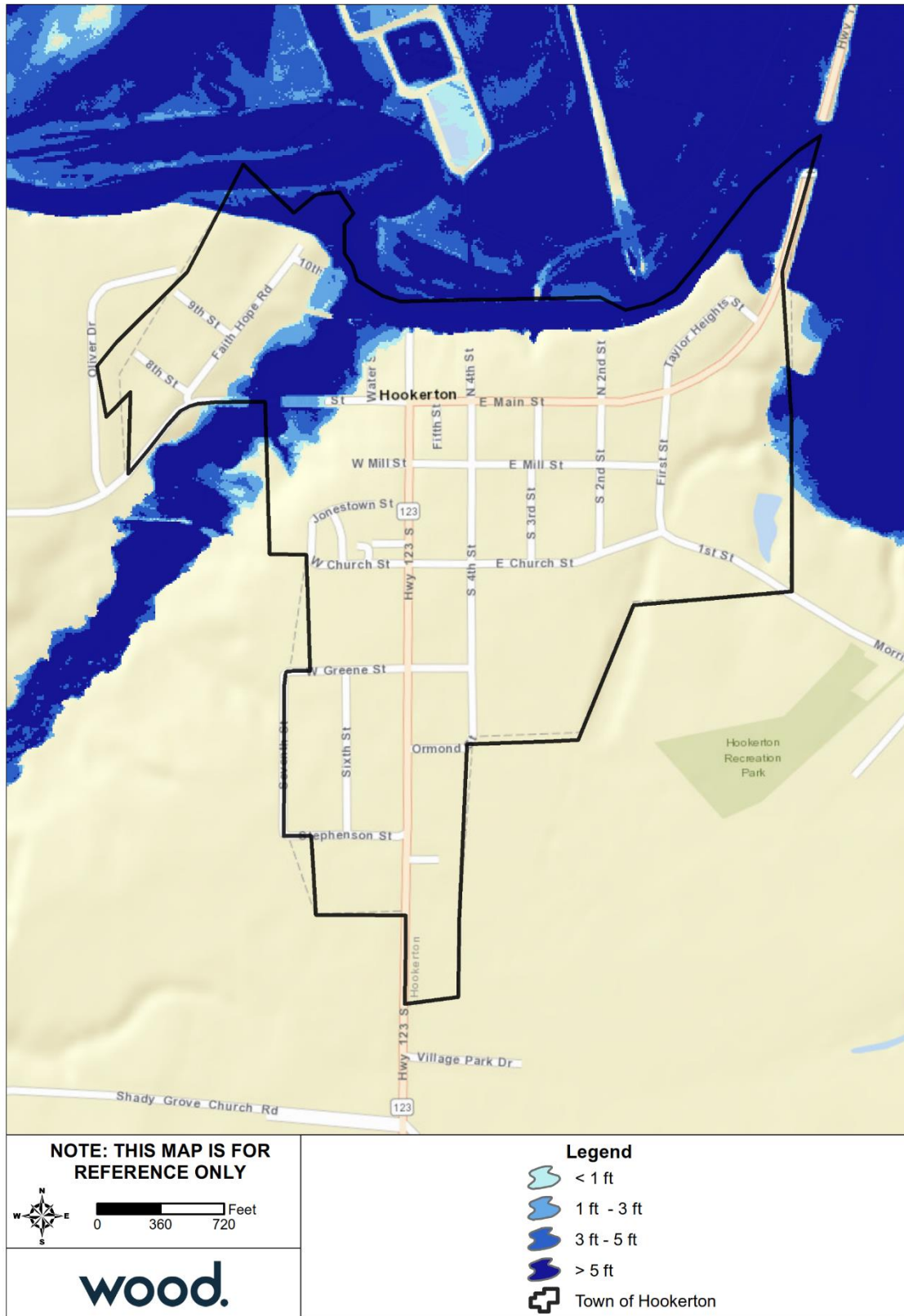
Source: FEMA Effective DFIRM

Figure A.7 – Flood Depth, 1%-Annual-Chance Floodplain, Unincorporated Greene County



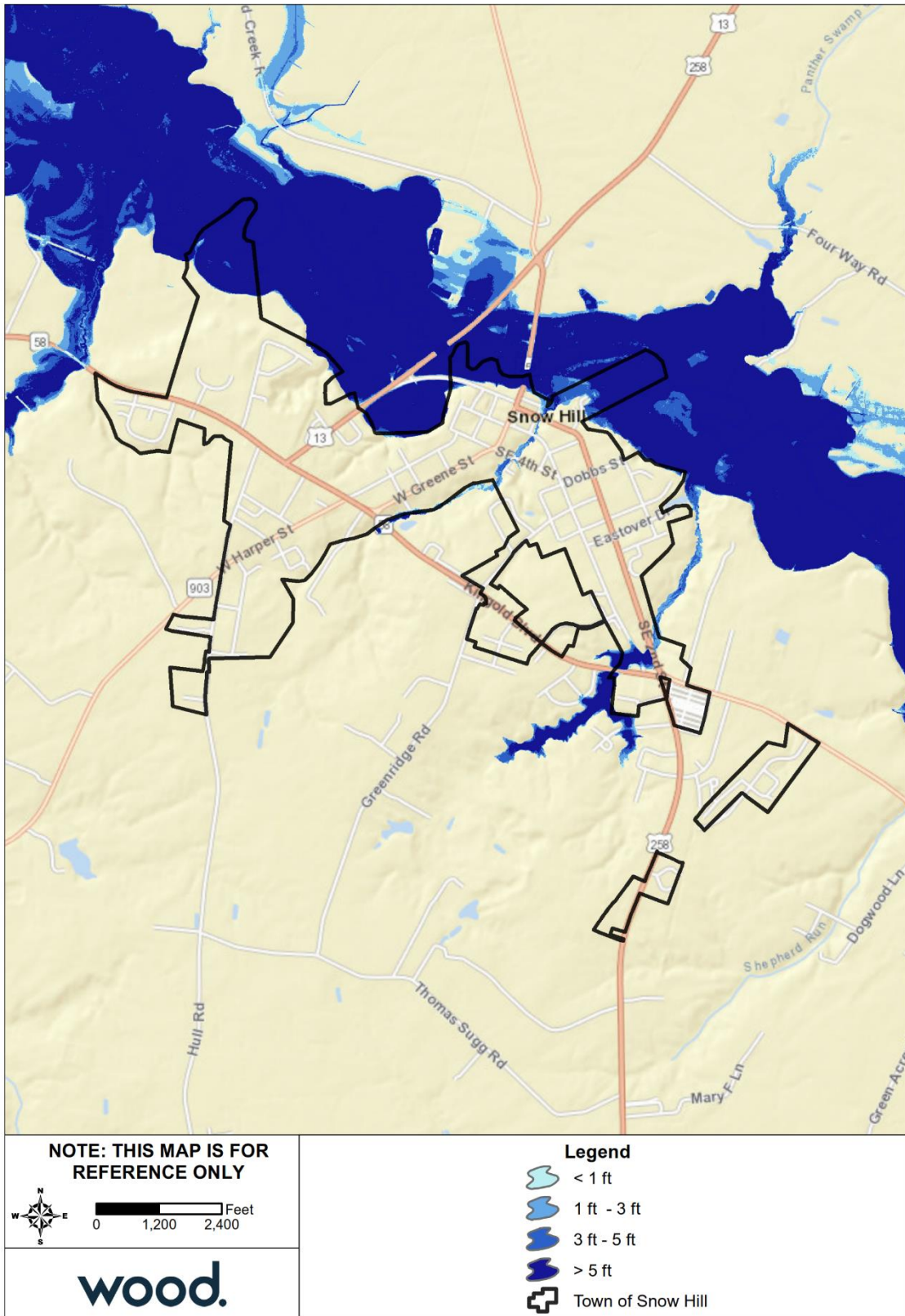
Source: FEMA Effective DFIRM

Figure A.8 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Hookerton



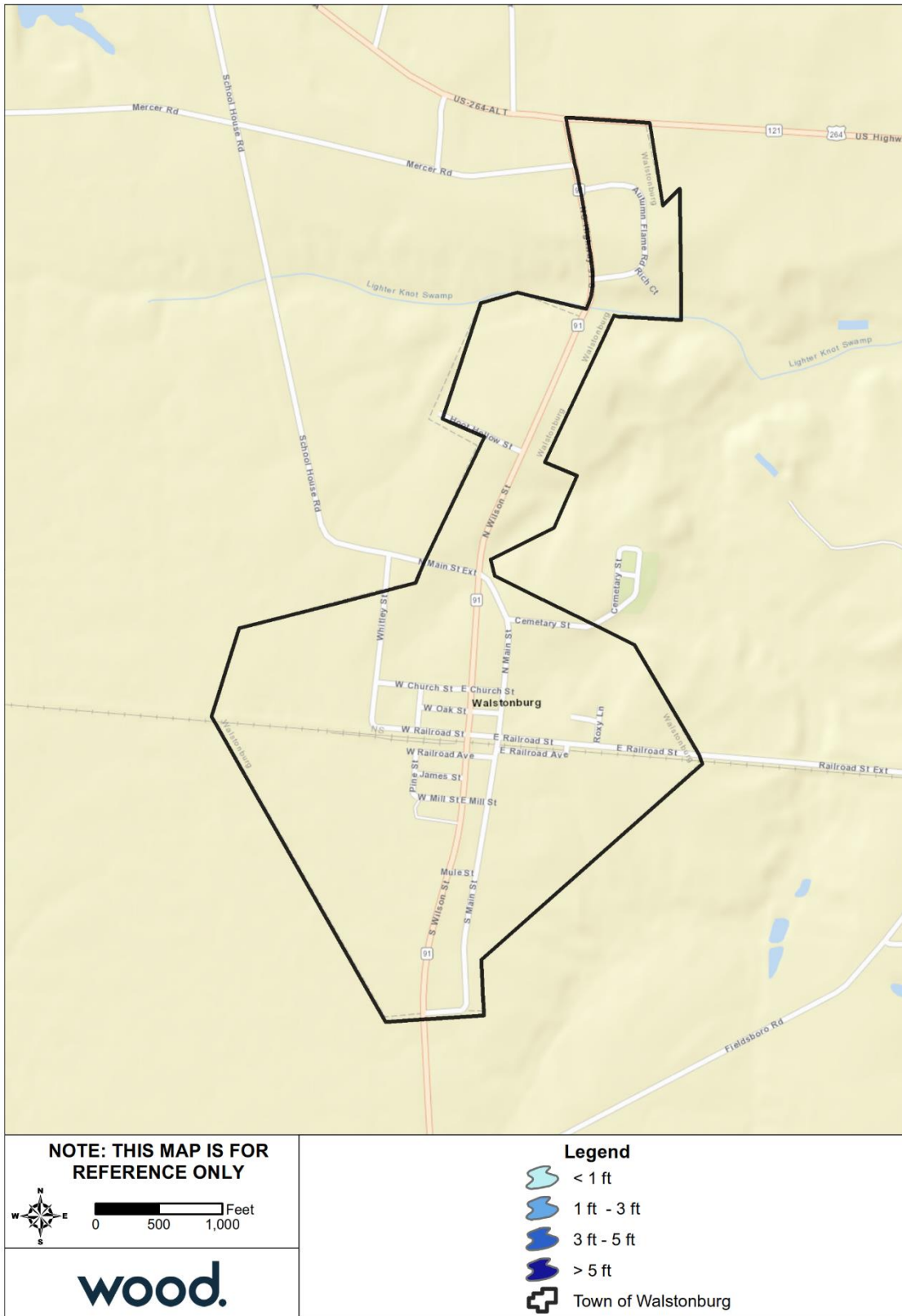
Source: FEMA Effective DFIRM

Figure A.9 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Snow Hill



Source: FEMA Effective DFIRM

Figure A.10 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Walstonburg



Source: FEMA Effective DFIRM

A.2.2 Wildfire

Table A.11 summarizes the acreage in Greene 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 46 percent of Greene County is not included in the WUI.

Table A.11 – Wildland Urban Interface Acreage, Greene County

	Housing Density	Total Acreage	Percent of Total Acreage
	<i>Not in WUI</i>	79,176.8	46.4%
	LT 1hs/40ac	37,684.8	22.1%
	1hs/40ac to 1hs/20ac	19,849.5	11.6%
	1hs/20ac to 1hs/10ac	15,229.4	8.9%
	1hs/10ac to 1hs/5ac	9,085.7	5.3%
	1hs/5ac to 1hs/2ac	7,173.8	4.2%
	1hs/2ac to 3hs/1ac	2,339.5	1.4%
	GT 3hs/1ac	128.5	0.1%
	Total	170,668.0	

Source: Southern Wildfire Risk Assessment

Figure A.11 depicts the WUI for Greene County and all participating jurisdictions. The WUI is the area where housing development is built near or among areas of vegetation that may be prone to wildfire. Figure A.12 and Figure A.13 detail the Fire Intensity Scale, which indicates the potential severity of fire based on fuel loads, topography, and other factors. Figure A.14 depicts Burn Probability based on landscape conditions, percentile weather, historical ignition patterns, and historical prevention and suppression efforts.

There are areas of high potential fire intensity throughout the county, but the largest contiguous areas are concentrated in the eastern portion of Greene County, with some clusters around Walstonburg. Burn probability is low throughout the county. Additionally, many of the areas with higher potential fire intensity are largely outside of the WUI, so a fire might not pose as high a risk to human settlement and the built environment.

Table A.12 provides building counts and estimated damages for Critical Infrastructure and Key Resources (CIKR) buildings by sector at risk to wildfire hazard in Greene County and participating jurisdictions. Table A.13 provides counts and estimated damages for High Potential Loss Properties in these areas.

Table A.12 – Critical Facilities Exposed to Wildfire by Jurisdiction, Greene County

Sector	Number of Buildings at Risk	Estimated Damages
Greene County Unincorporated Area		
Commercial Facilities	50	\$48,536,585
Critical Manufacturing	20	\$5,854,535
Food and Agriculture	395	\$53,431,758
Government Facilities	5	\$36,701,894
Healthcare and Public Health	1	\$3,907,009
Transportation Systems	9	\$6,659,791
All Categories	480	\$155,091,572

Sector	Number of Buildings at Risk	Estimated Damages
Town of Snow Hill		
Banking and Finance	1	\$815,895
Commercial Facilities	23	\$23,759,204
Critical Manufacturing	9	\$10,393,427
Emergency Services	1	\$603,411
Food and Agriculture	18	\$946,376
Government Facilities	14	\$9,086,069
Healthcare and Public Health	1	\$7,360,060
Transportation Systems	2	\$358,195
All Categories	69	\$53,322,637
Town of Walstonburg		
Commercial Facilities	1	\$199,983
Critical Manufacturing	4	\$915,844
All Categories	5	\$1,115,827

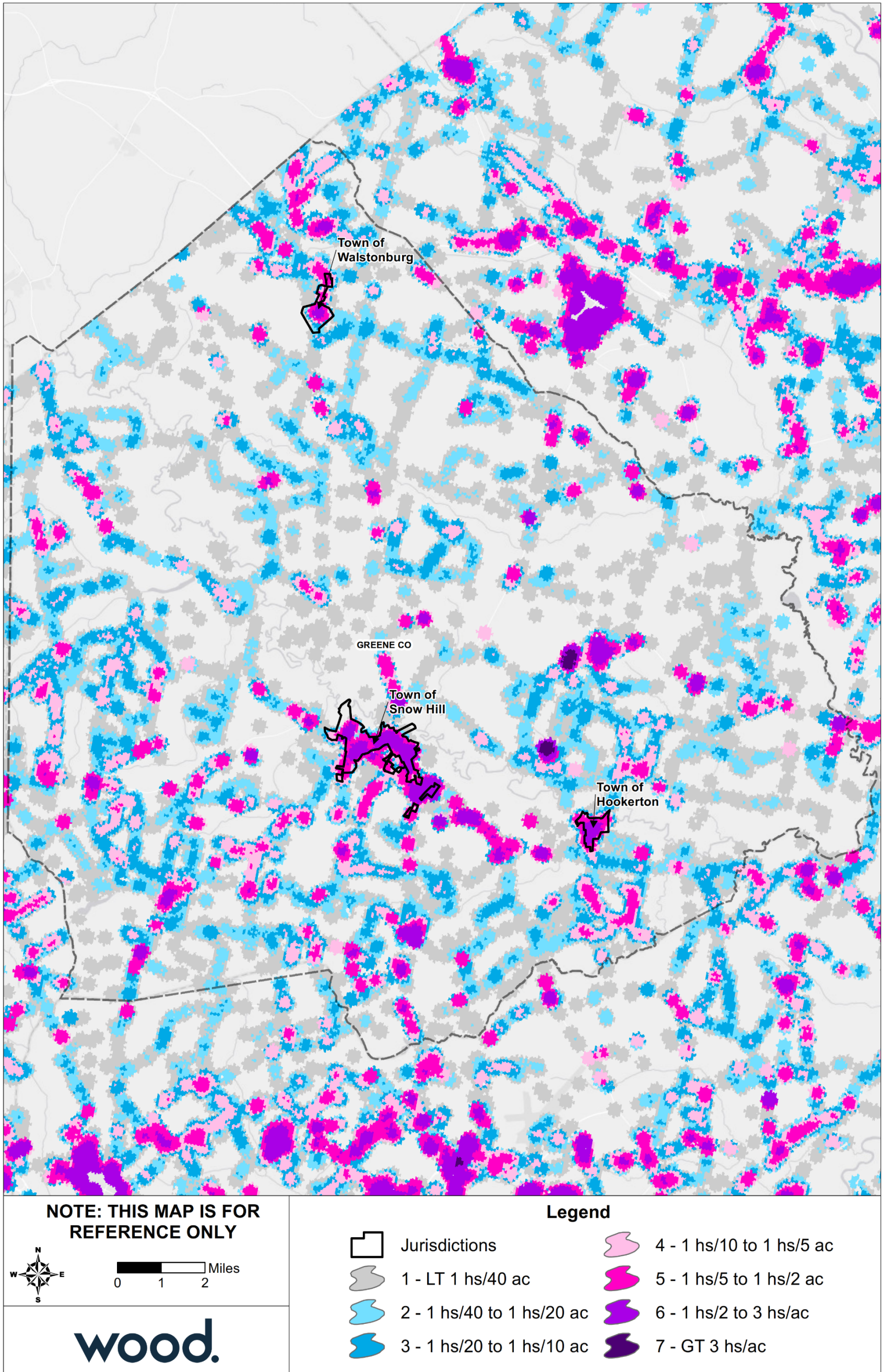
Source: NCEM Risk Management Tool

Table A.13 – High Potential Loss Properties Exposed to Wildfire by Jurisdiction, Greene County

Category	Number of Buildings at Risk	Estimated Damages
Greene County Unincorporated Area		
Commercial	6	\$10,424,431
Government	3	\$35,560,082
Industrial	1	\$1,021,988
Religious	13	\$34,838,393
All Categories	23	\$81,844,894
Town of Snow Hill		
Commercial	5	\$19,928,265
Government	2	\$4,211,279
Industrial	3	\$8,617,697
Religious	2	\$5,972,406
Residential	1	\$1,169,233
All Categories	13	\$39,898,880

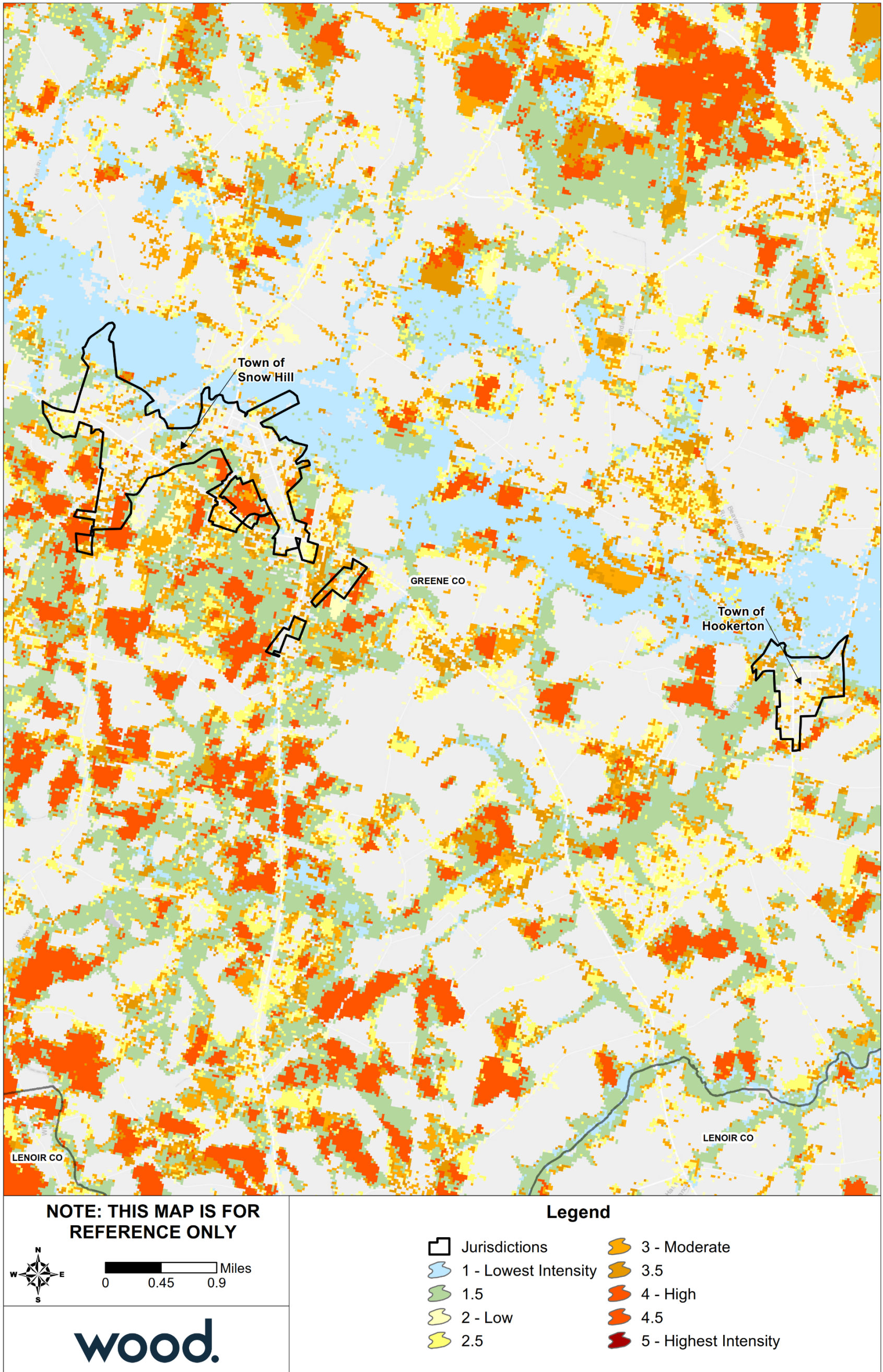
Source: NCEM Risk Management Tool

Figure A.11 – Wildland Urban Interface, Greene County



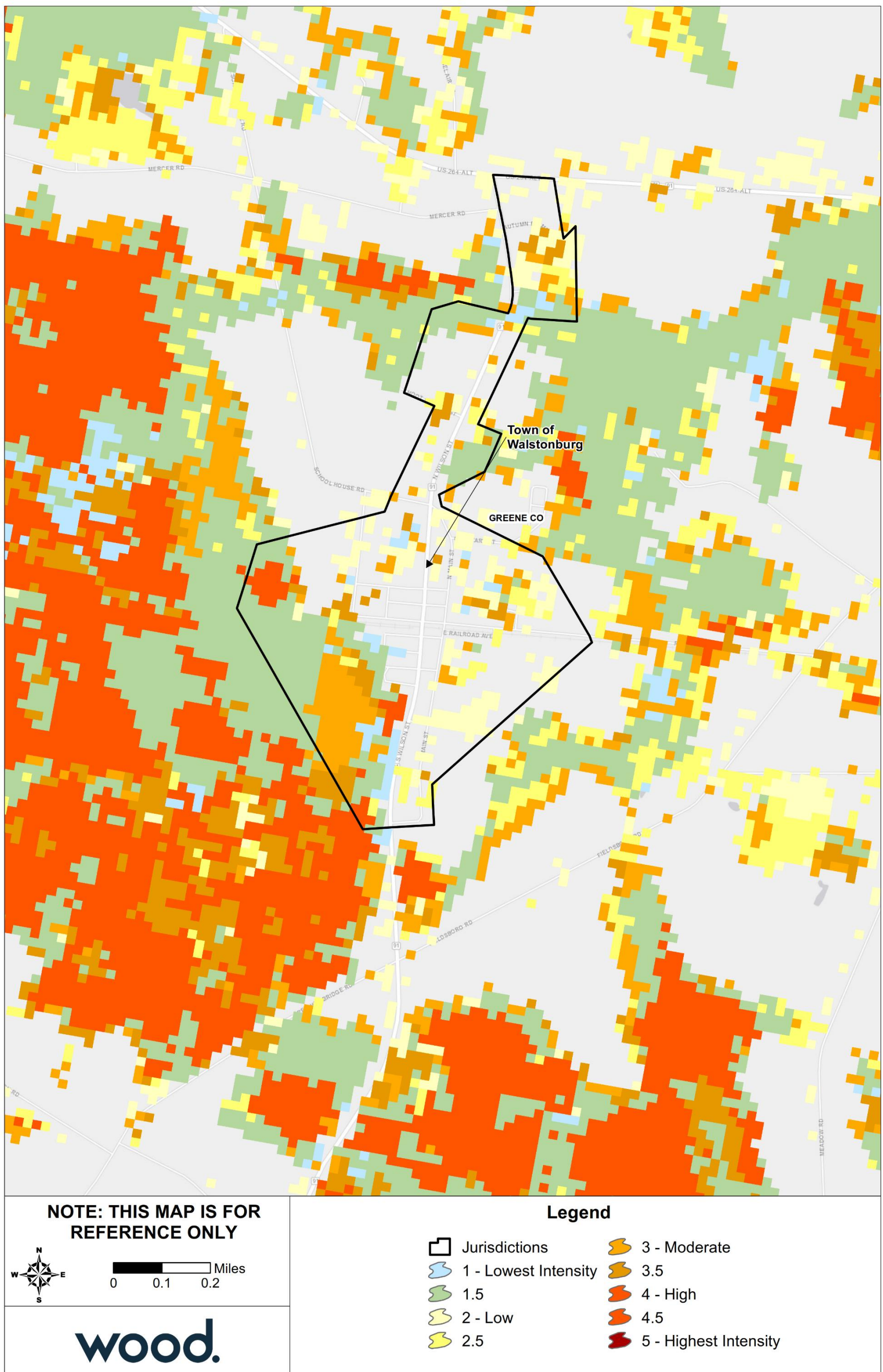
Source: Southern Wildfire Risk Assessment

Figure A.12 – Fire Intensity Scale, Greene County (Detail 1)



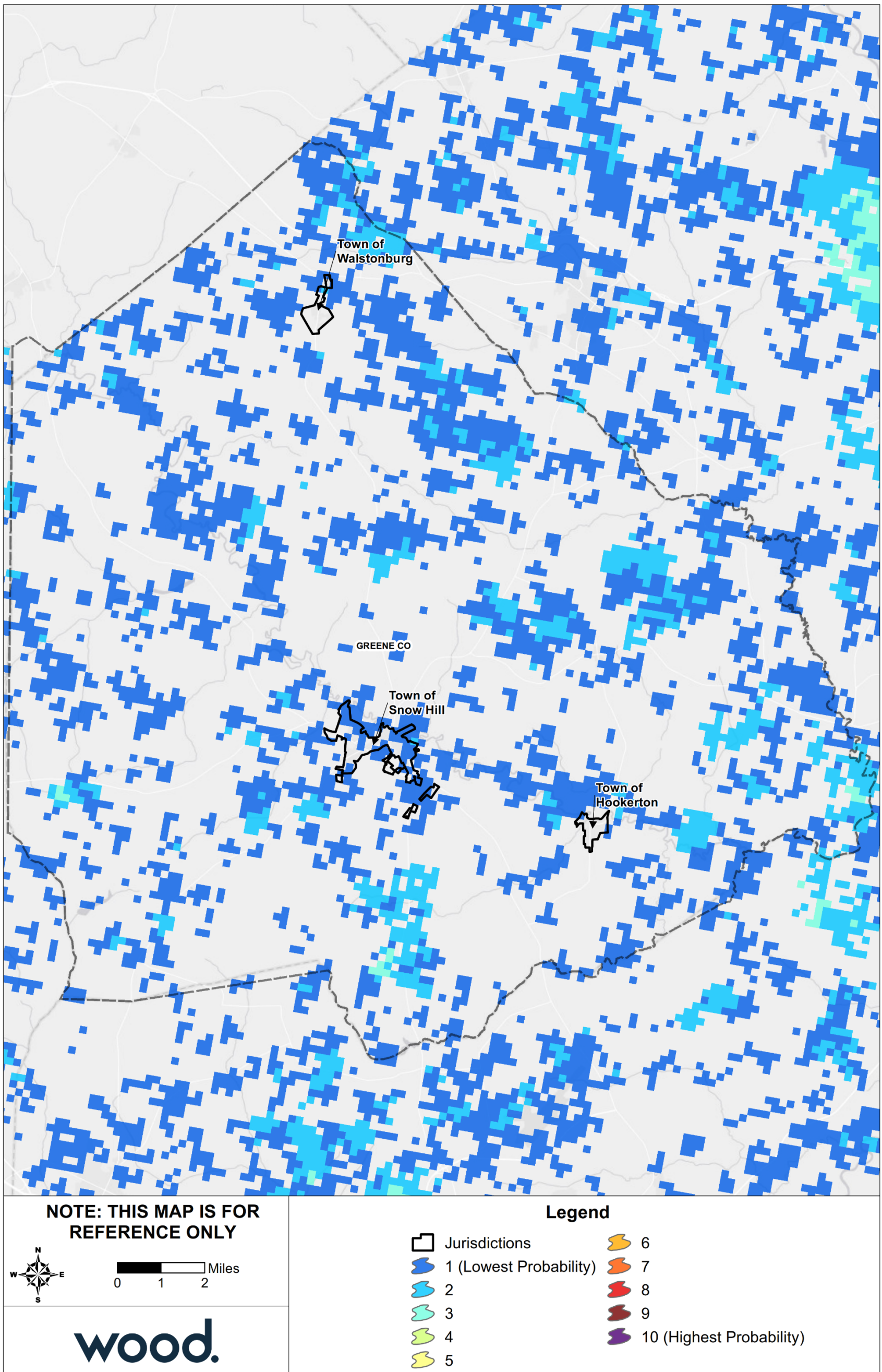
Source: Southern Wildfire Risk Assessment

Figure A.13 – Fire Intensity Scale, Greene County (Detail 2)



Source: Southern Wildfire Risk Assessment

Figure A.14 – Burn Probability, Greene County



Source: Southern Wildfire Risk Assessment

A.3 CAPABILITY ASSESSMENT

A.3.1 Overall Capability

Details on the tools and resources in place and available to Greene County were provided by the County’s HMPC representatives and are summarized in Section 5 Capability Assessment. Based on that information and using the scoring methodology detailed in that section, Greene County has an overall capability rating of Moderate, however the County self-assessed its overall capability as High. Although some of the incorporated jurisdictions have lower capability, Greene County provides many resources for its incorporated jurisdictions and many of the mitigation projects in this plan are regional in nature, with the County serving as the project lead; therefore, the County’s capability is also an indicator for its incorporated areas. The County’s Self-Assessment of key capability areas is summarized in Table A.14.

Table A.14 – Capability Self-Assessment, Greene County

Capability Area	Rating
Plans, Ordinances, Codes and Programs	High
Administrative and Technical Capability	High
Fiscal Capability	High
Education and Outreach Capability	High
Mitigation Capability	High
Political Capability	High
Overall Capability	High

A.3.2 Floodplain Management

The following tables reflect NFIP entry dates as well as policy and claims data for Greene County and incorporated categorized by structure type, flood zone, Pre-FIRM and Post-FIRM.

Table A.15 – NFIP Program Entry Dates

Community	Regular Program Entry
Greene County (Unincorporated Area)	June 12, 1995
Town of Hookerton	November 24, 1999
Town of Snow Hill	January 20, 1982
Town of Walstonburg	December 28, 1998

Source: FEMA Community Information System

Table A.16 – 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
Greene County Unincorporated Area					
Single Family	102	\$51,699	\$21,480,900	45	\$1,592,199.33
All Other Residential	2	\$750	\$830,000	0	\$0.00
Non-Residential	3	\$4,078	\$397,500	3	\$152,534.38
Total	107	\$56,527	\$22,708,400	48	\$1,744,733.71
Town of Hookerton					
Single Family	0	\$0	\$0	1	\$52,610.84
Non-Residential	1	\$2,011	\$700,000	0	\$0.00
Total	1	\$2,011	\$700,000	1	\$52,610.84
Town of Snow Hill					
Single Family	20	\$9,022	\$4,496,300	17	\$602,060.31
2-4 Family	0	\$0	\$0	1	\$3,357.95

ANNEX A: GREENE COUNTY

Structure Type	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Non-Residential	8	\$12,992	\$2,302,500	2	\$179,600.00
Total	28	\$22,014	\$6,798,800	20	\$785,018.26

Source: FEMA Community Information System, accessed January 2020

Table A.17 – 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
Greene County Unincorporated Area					
A01-30 & AE Zones	12	\$12,505	\$2,212,500	17	\$1,042,321.06
B, C & X Zone					
Standard	9	\$9,547	\$1,722,400	9	\$403,585.09
Preferred	71	\$25,475	\$18,250,000	21	\$293,937.85
Total	92	\$47,527	\$22,184,900	47	\$1,739,844.00
Town of Hookerton					
A01-30 & AE Zones	0	\$0	\$0	1	\$52,610.84
B, C & X Zone					
Preferred	1	\$2,011	\$700,000	0	\$0.00
Total	1	\$2,011	\$700,000	1	\$52,610.84
Town of Snow Hill					
A01-30 & AE Zones	5	\$2,974	\$821,300	9	\$253,215.52
B, C & X Zone					
Standard	5	\$8,036	\$1,992,500	6	\$158,862.52
Preferred	18	\$11,004	\$3,985,000	5	\$372,940.22
Total	28	\$22,014	\$6,798,800	20	\$785,018.26

Source: FEMA Community Information System, accessed January 2020

Table A.18 – 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
Greene County Unincorporated Area					
A01-30 & AE Zones	6	\$8,121	\$1,065,100	7	\$651,754.11
B, C & X Zone					
Standard	9	\$9,547	\$1,722,400	7	\$377,743.14
Preferred	38	\$13,143	\$9,270,000	17	\$227,732.86
Total	53	\$30,811	\$12,057,500	31	\$1,257,230.11
Town of Hookerton					
A01-30 & AE Zones	0	\$0	\$0	1	\$52,610.84
B, C & X Zone					
Preferred	1	\$2,011	\$700,000	0	\$0.00
Total	1	\$2,011	\$700,000	1	\$52,610.84
Town of Snow Hill					
A01-30 & AE Zones	2	\$1,491	\$242,400	4	\$122,664.73
B, C & X Zone					
Standard	5	\$8,036	\$1,992,500	6	\$158,862.52
Preferred	8	\$5,367	\$1,760,000	4	\$279,940.22
Total	15	\$14,894	\$3,994,900	14	\$561,467.47

Source: FEMA Community Information System, accessed January 2020

Table A.19 – 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
Greene County Unincorporated Area					
A01-30 & AE Zones	6	\$4,384	\$1,147,400	10	\$390,566.95
B, C & X Zone	33	\$12,332	\$8,980,000	6	\$92,046.94
Standard	0	\$0	\$0	2	\$25,841.95
Preferred	33	\$12,332	\$8,980,000	4	\$66,204.99
Total	39	\$16,716	\$10,127,400	16	\$482,613.89
Town of Snow Hill					
A01-30 & AE Zones	3	\$1,483	\$578,900	5	\$130,550.79
B, C & X Zone	10	\$5,637	\$2,225,000	1	\$93,000.00
Preferred	10	\$5,637	\$2,225,000	1	\$93,000.00
Total	13	\$7,120	\$2,803,900	6	\$223,550.79

Source: FEMA Community Information System, accessed January 2020

A.4 MITIGATION STRATEGY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
G1	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.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	High	2.2	ES	<ul style="list-style-type: none"> Greene County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing - Annually	In Progress – Carry Forward	Greene County will work with all County municipalities to review and improve the County Emergency Operations Plan on an annual basis.
G2	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.	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	2.1	ES	<ul style="list-style-type: none"> Greene County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – As Needed	As Needed – Carry Forward	Greene County will continue to carry this effort out as natural hazard events occur throughout the County, including all participating municipalities.
G3	Request Hazard Mitigation Grant Program (HMGP) funding for the elevation and/or acquisition of structures substantially damaged during a natural hazard event. This funding may also be utilized to address infrastructure needs, if it is determined that facilities within the County or any of the participating jurisdictions are adversely impacted by flood events.	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	High	1.2	PP	<ul style="list-style-type: none"> Greene County Administration Greene County Emergency Management Municipal Administrations 	Staff Time	HMGP, PDM, UHMA	Ongoing – As Needed	As Needed – Carry Forward	Greene County will continue to apply for this funding as the need and/or opportunity arises.
G4	Work to educate and inform local real estate agents, contractors, developers and citizens about issues associated with development in the floodplain by Ensuring that a range of materials related to flood insurance, flood protection, floodplain management, information on floodplains, and listings of qualified contractors familiar with floodproofing and elevation techniques, are available through various avenues including: <ul style="list-style-type: none"> Placing materials in the local library Maintaining documents at the County Planning and Economic Development Office Disseminating information to local contractors 	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	High	4.2	PIO	<ul style="list-style-type: none"> Greene County Planning and Administration Municipal Administrations 	Staff Time	General Fund, NCDPS	1 year	Not Started – Carry Forward	Greene County will initiate these efforts in conjunction with the County’s application to the Community Rating System Program.
G5	Ensure information is available on the County's website regarding hazards and development regulations within floodplains, including a link to FEMA and NFIP resources relating to emergency preparedness, flood protection, wind proofing, and proper evacuation procedures.	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	High	4.2	PIO	<ul style="list-style-type: none"> Greene County Administration Municipal Administrations 	\$2,500	General Fund, NCDPS	1 year	Not Started – Carry Forward	Greene County has not yet initiated these efforts but will do so through implementation of this plan.
G6	Consider joining the Community Rating System (CRS). The County will assess the cost benefit of joining this program for County residents and property owners.	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	Medium	1.3	PP	<ul style="list-style-type: none"> Greene County Administration Municipal Administrations 	\$3,500	General Fund, NCDPS	2 to 3 years	Not Started – Carry Forward	Greene County has not yet made application to the CRS program. The County anticipates moving forward with this effort through implementation of this plan.

ANNEX A: GREENE COUNTY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
G7	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).	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	High	2.2	NRP	<ul style="list-style-type: none"> Greene County Administration Municipal Administrations 	Staff Time	General Fund	Ongoing – Over Next Five Years	In Progress – Carry Forward	Greene County, as well as all participating municipal jurisdictions will continue to assist the State in enforcing the land development regulatory mechanisms.
G8	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.	Greene County, Hookerton, Snow Hill, Walstonburg	Severe Winter Storm	Medium	1.1	P	<ul style="list-style-type: none"> Greene County Public Services NCDOT 	To be determined	General Fund, NCDOT	2 to 3 years	Not Started – Carry Forward	This issue has presented problems over the last few years; therefore, the County will continue to undertake efforts to improve upon response capacity regarding snow and ice removal on both rural and urban roadways.
G9	Continue to inspect and monitor the county's fire hydrant system to ensure that there are adequate quantities of fire hydrants for fire safety purposes and that all hydrants are maintained on a regular basis. The County will also evaluate pressures to ensure fire flow demands are met.	Greene County, Hookerton, Snow Hill, Walstonburg	Wildfire	High	3.1	ES	<ul style="list-style-type: none"> Volunteer and Municipal Fire Departments 	Staff Time	General Fund	Ongoing – Over Next Five Years	In Progress – Carry Forward	Greene County Emergency Services will continue to work closely with all local fire departments to inspect and maintain all fire hydrants.
G10	Pursue all avenues available to secure grant funding to address improvements to the Town of Hookerton's WWTP. Currently, Contentnea Creek is encroaching upon the plant's lagoon dike wall. NCDEQ has stated that the integrity of the lagoon structure is at imminent risk.	Hookerton	Flood, Hurricane & Tropical Storm, Dam Failure	Low	1.1	P	<ul style="list-style-type: none"> Greene County Administration Town of Hookerton Elected Board 	To be determined	General Fund, NCDPS	3 to 5 years	Not Started – Carry Forward	The County nor Town has moved forward with a solution to this problem. Both jurisdictions will work towards a solution to this problem through implementation of this plan.
G11	Continue to expand upon the county's Code Red Emergency Notification System available to all residents. Greene County Emergency Services will coordinate with all municipal jurisdictions regarding registration through the Greene County Emergency Notification Registration Portal.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	High	4.1	ES	<ul style="list-style-type: none"> Greene County Emergency Management Municipal Administrations 	\$7,500	General Fund, NCDPS	Ongoing – Review annually	In Progress – Carry Forward	Greene County will review all emergency notification protocols on an annual basis and attempt to improve upon these efforts based on experiences regarding passed events and the outcomes of annual tabletop exercises.
G12	Consider establishing a program to establish CERT teams within the County. This effort will involve both the recruitment and training of potential team members.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	Medium	3.2	ES	<ul style="list-style-type: none"> Greene County Emergency Management Municipal Administrations 	\$5,000	General Fund, NCDPS	2 to 3 years	Not Started – Carry Forward	Greene County intends to initiate efforts to establish Community Emergency Response Teams over the next 2 to 3 years.
G13	Continue to maintain the County's Local Emergency Planning Committee (LEPC) focused on monitoring the presence and proliferation of hazard materials throughout the County.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	High	3.2	P	<ul style="list-style-type: none"> Greene County Local Emergency Planning Committee 	Staff Time	General Fund	Ongoing – over next five years	In Progress – Carry Forward	Greene County will continue to facilitate and maintain the County LEPC.

ANNEX A: GREENE COUNTY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
G14	Work closely with local media outlets to disseminate timely and accurate information relating to natural hazard events. This task will involve reporting on weather, evacuations, sheltering and facility closures.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	High	4.2	PIO	<ul style="list-style-type: none"> Greene County Emergency Management Local Media Outlets Municipal Administrations 	Staff Time	General Fund, Local Media Outlets	Ongoing – As the need arises	In Progress – Carry Forward	Greene County will continue to work closely with local media outlets to provide information and notification regarding the impact of natural hazard events.
G15	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 EM and local government staff members. All jurisdictions will work to advertise the availability of this service within their respective communities.	Greene County, Hookerton, Snow Hill, Walstonburg	All Hazards	High	4.2	ES	<ul style="list-style-type: none"> Greene County Emergency Management Municipal Administrations 	Staff Time	General Fund	Ongoing – Next Five years	In Progress – Carry Forward	Greene County will continue to work with County residents, as well as all participating municipal jurisdictions to expand upon the Special Medical Needs Registry serving the County's at-risk populations.
G16	Actively work with Federal, State, local and private partners to identify mitigation measures and secure funding via grants to alleviate flooding. These efforts should focus on the following areas: <ul style="list-style-type: none"> Develop a Blueway Plan for Contentnea Creek County-wide stream snagging and cleanout Expand beaver management program Expand greenways in Hookerton Develop a Riparian Buffer program 	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure	Low	1.3	SP	<ul style="list-style-type: none"> Greene County Board of Commissioners Municipal Administrations 	To be determined	General Fund, NCDPS, NCDEQ	3 to 5 years	New	N/A
G17	Work closely with the American Red Cross to establish a site for the development of a local animal shelter to be utilized in the event of a natural disaster.	Greene County, Hookerton, Snow Hill, Walstonburg	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	4.1	ES	<ul style="list-style-type: none"> Greene County Emergency Management American Red Cross 	To be Determined	General Fund, American Red Cross	2 to 3 years	New	N/A

Annex B Jones County

B.1 COMMUNITY PROFILE

This section contains a summary of maps and statistics for current conditions and characteristics of Jones County, including information on population, asset exposure, housing, and economy. Throughout the section, information will be reported at the jurisdictional level. In some cases, information will only be reported for communities participating in the Community Rating System (CRS).

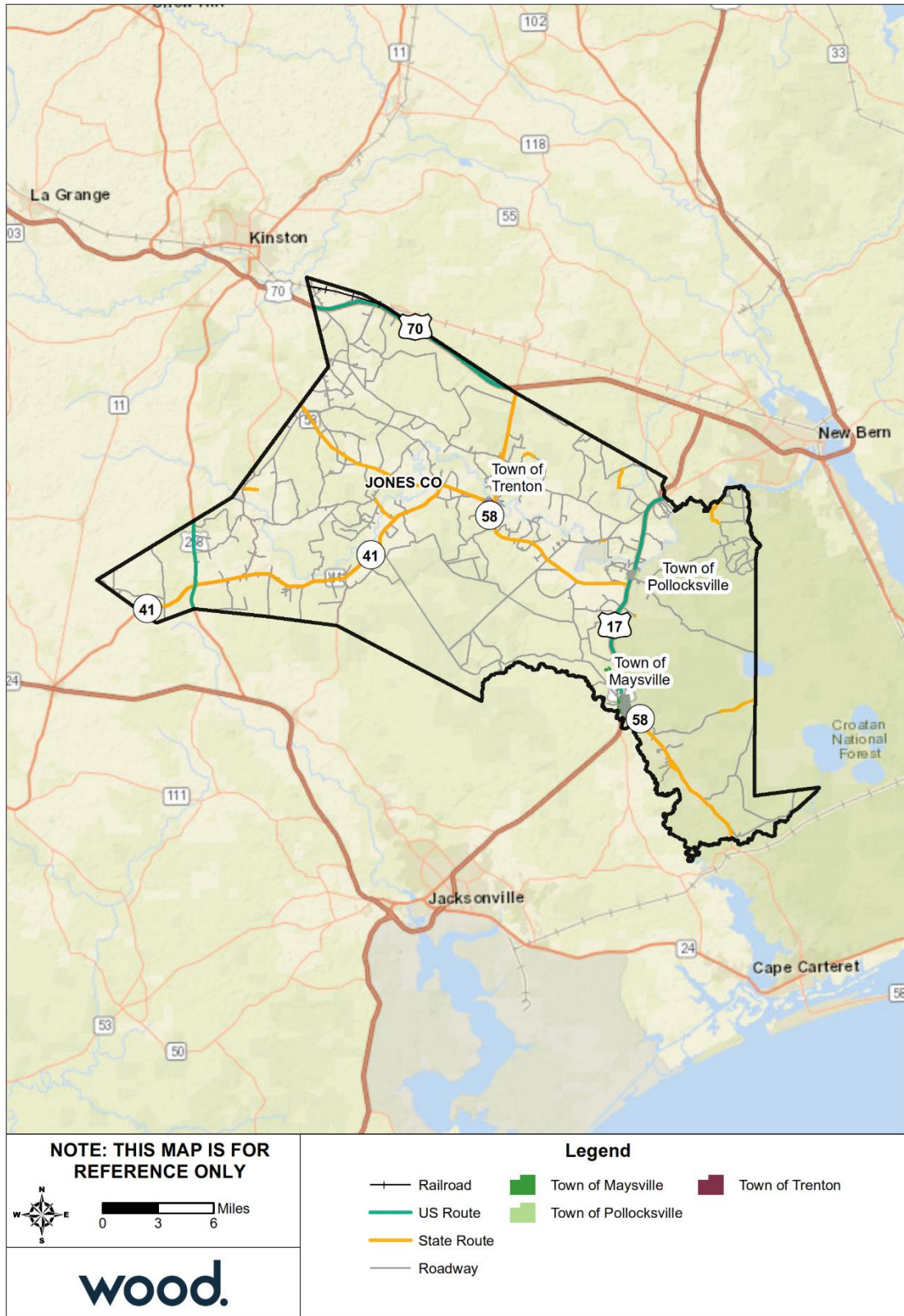
Table B.1 – CRS Participation by Jurisdiction, Jones County

Jurisdiction	CRS Participant
Unincorporated Jones County	No
Town of Maysville	No
Town of Pollocksville	No
Town of Trenton	No

Geography

Figure B.1 shows a base map of Jones County and participating jurisdictions as well as major transportation routes in the county.

Figure B.1 – Jurisdictional Locations, Jones County



Population and Demographics

Table B.2 provides population counts and growth estimates for Jones County and participating jurisdictions as compared to the Region overall. Table B.3 provides demographic information for the County.

Table B.2 – Population Counts, Jones County, 2000-2017

Jurisdiction	2000	2010	2017	% Change 2000-2010	% Change 2010-2017	Overall % Change 2000-2017
Maysville	1,002	1,019	970	1.7%	-4.8%	-3.2%
Pollocksville	269	311	456	15.6%	46.6%	69.5%
Trenton	206	287	315	39.3%	9.8%	52.9%
Municipalities	1,477	1,617	1,741	9.5%	7.7%	17.9%
Unincorporated Areas	8,904	8,536	8,035	-4.1%	-5.9%	-9.8%
Jones County	10,381	10,153	9,776	-2.2%	-3.7%	-5.8%
Region Total	336,130	381,781	389,749	13.6%	2.1%	16.0%

Source: US Census Bureau American Community Survey.

Table B.3 – Racial Demographics, Jones County, 2017

Jurisdiction	Caucasian	African-American	Asian	Other Race*	Two or More Races	Persons of Hispanic or Latino Origin**
Maysville	57.1%	38.8%	0.0%	1.3%	2.8%	5.7%
Pollocksville	45.2%	52.6%	0.0%	0.8%	1.3%	2.2%
Trenton	60.3%	34.6%	0.0%	2.9%	2.2%	13.0%
Jones County	66.0%	30.5%	0.2%	0.8%	2.4%	4.5%

*Other races include 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.

Asset Inventory

The following tables summarize the asset inventory for Jones County unincorporated areas and incorporated jurisdictions in order to estimate the total physical exposure to hazards in this area. The locations of critical facilities are shown in Figure B.2. Critical facilities are a subset of identified assets from the Critical Infrastructure & Key Resources dataset. Note that the counts are by building; where a critical facility comprises a cluster of buildings, each building is counted and displayed.

Table B.4 – Critical Infrastructure & Key Resources by Type

Jurisdiction	Food and Agriculture	Banking and Finance	Chemical & Hazardous	Commercial	Communications	Critical Manufacturing	Defense Industrial Base	Government Facilities	Healthcare	Nuclear Reactors, Materials and Waste	Postal and Shipping	Transportation Systems	Energy	Emergency Services	Water	Total
Jones County	1,547	1	0	148	0	12	0	64	7	0	0	12	0	0	0	1,791
Town of Maysville	1	1	0	32	0	1	0	3	1	0	0	4	0	0	1	44
Town of Pollocksville	0	1	0	23	0	0	0	7	0	0	0	0	0	0	0	31
Town of Trenton	0	1	0	12	0	0	0	17	1	0	0	4	0	0	0	35
Jones County Total	1,548	4	0	215	0	13	0	91	9	0	0	20	0	0	1	1,901

Source: NCEM Risk Management Tool

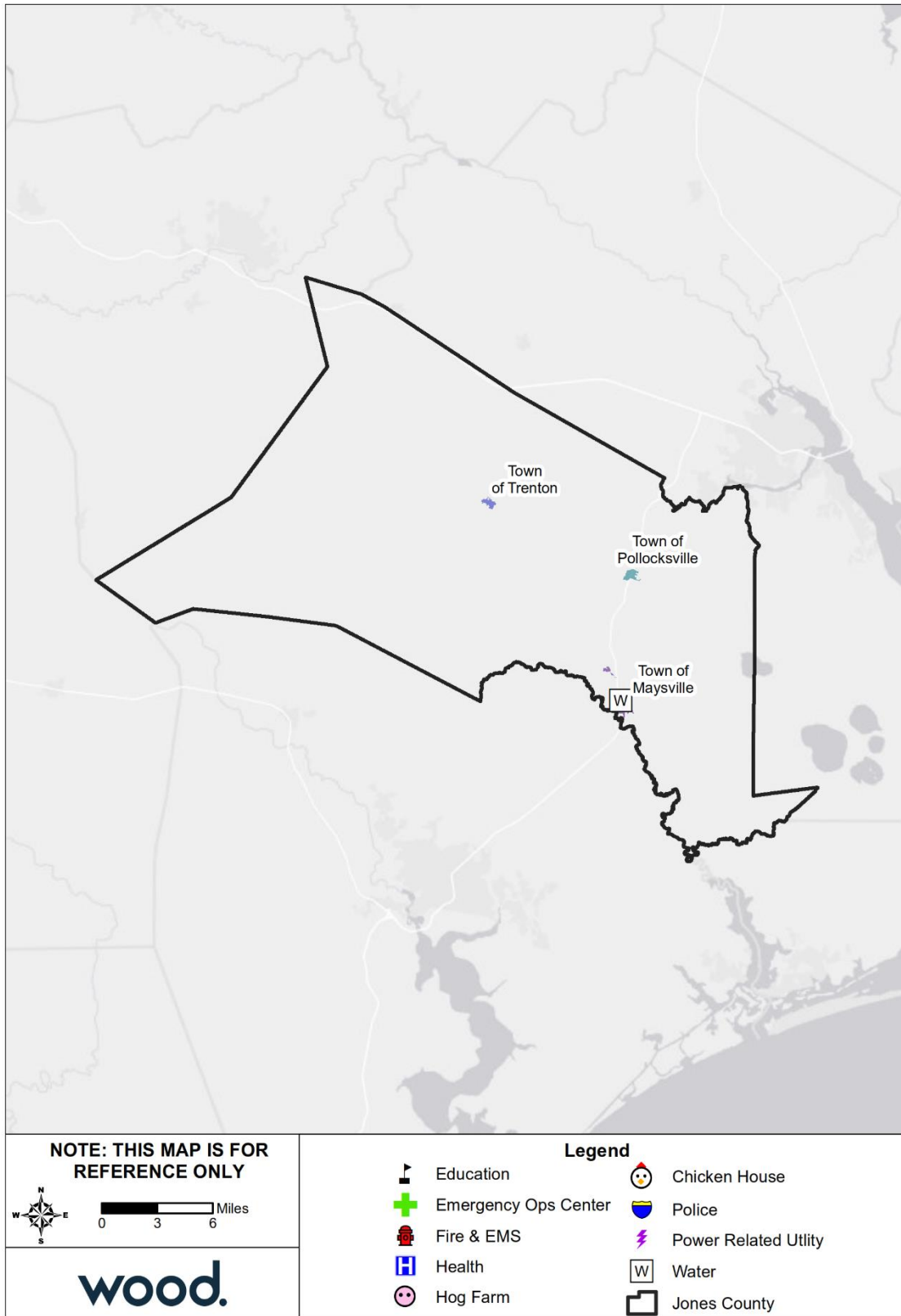
Table B.5 – High Potential Loss Facilities by Use

Jurisdiction	Residential	Commercial	Industrial	Government	Agricultural	Religious	Utilities	Total
Jones County	0	3	1	18	2	28	0	52
Town of Maysville	0	0	0	1	0	2	0	3
Town of Pollocksville	0	0	0	1	0	2	0	3
Town of Trenton	0	0	0	4	0	1	0	5
Jones County Total	0	3	1	24	2	33	0	63

Source: NCEM Risk Management Tool

Note: A dash (-) indicates that no high potential loss facilities were reported in RMT.

Figure B.2 – Critical Facilities, Jones County



Source: NCEM IRISK Database, GIS Analysis

Housing

The table below details key housing statistics for Jones County. As a percent of growth from 2010 housing, Jones County’s housing stock has grown by 2.3%.

Table B.6 – Housing Statistics, Jones County, 2010-2017

Jurisdiction	Housing Units (2010)	Housing Units (2017)	% Change 2010-2017	% Owner Occupied (2017)	% Vacant Units (2017)
Maysville	489	496	1.4%	81.3%	18.8%
Pollocksville	167	222	32.9%	83.3%	16.7%
Trenton	137	147	7.3%	72.1%	27.9%
Jones County	4,838	4,948	2.3%	83.8%	16.2%

Source: US Census Bureau American Community Survey.

Economy

The following tables present key economic statistics for Jones County.

Table B.7 – Economic Indicators, Jones County, 2017

Jurisdiction	Population in Labor Force	Percent Employed (%)	Percent Unemployed (%)	Percent Not in Labor Force (%)	Unemployment Rate (%)
Maysville	468	49.2%	7.2%	42.2%	12.7%
Pollocksville	205	57.1%	3.3%	38.4%	5.5%
Trenton	134	49.8%	5.3%	44.9%	9.7%
Jones County	4,478	47.9%	6.2%	45.2%	11.5%

Source: US Census Bureau American Community Survey.

Table B.8 – Employment by Industry, Jones County, 2017

Jurisdiction	Management, Business, Science and Arts (%)	Service (%)	Sales and Office (%)	Natural Resources, Construction, and Maintenance (%)	Production, Transportation, and Material Moving (%)
Maysville	28.4%	16.8%	27.4%	8.8%	18.6%
Pollocksville	56.8%	24.2%	6.8%	8.9%	3.2%
Trenton	12.4%	13.2%	33.9%	12.4%	28.1%
Jones County	30.8%	16.0%	21.1%	15.3%	16.8%

Source: US Census Bureau American Community Survey.

B.2 RISK ASSESSMENT

This section contains a hazard profile and vulnerability assessment for those hazards that were rated with a higher priority by jurisdiction in Jones County than for the Neuse River Region as a whole. Risk and vulnerability findings are also presented here for those hazards that are spatially defined and have variations in risk that could be evaluated quantitatively on a jurisdictional level. The hazards included in this section are flood and wildfire.

B.2.1 Flood

Table B.9 details the acreage of Jones County’s total area by jurisdiction and flood zone on the Effective DFIRM. Per this assessment, at over 31 percent, the Town of Pollocksville has the largest portion of its land area within the mapped 1%-annual-chance floodplain, followed closely by Trenton at just under 30 percent. Overall, just over 15 percent of the county’s total land area falls within this floodplain.

Table B.9 – Flood Zone Acreage by Jurisdiction, Jones County

Flood Zone	Acreage	Percent of Total (%)
Maysville		
Zone AE	20.0	3.6%
Zone X Unshaded	528.2	96.4%
Total	548.2	--
Pollocksville		
Zone AE	66.0	31.5%
Zone X (500-year)	15.5	7.4%
Zone X Unshaded	127.8	61.1%
Total	209.3	--
Trenton		
Zone AE	43.6	29.8%
Zone X (500-year)	60.0	41.0%
Zone X Unshaded	42.9	29.3%
Total	146.4	--
Jones County Unincorporated		
Zone A	11,529.6	3.8%
Zone AE	35,477.5	11.7%
Zone X (500-year)	924.6	0.3%
Zone X (unshaded)	255,160.2	84.2%
Total	303,091.9	--
Jones County Total		
Zone A	11,529.6	3.8%
Zone AE	35,607.1	11.7%
Zone X (500-year)	1,000.2	0.3%
Zone X (unshaded)	255,858.9	84.2%
Total	303,995.8	--

Source: FEMA Effective DFIRM

Figure B.3 through Figure B.6 reflect the effective mapped flood hazard zones for all jurisdictions in Jones County, and Figure B.7 through Figure B.10 display the depth of flooding estimated to occur in these areas during the 1%-annual-chance flood.

Table B.10 provides building counts and estimated damages for Critical Infrastructure and Key Resources (CIKR) buildings by sector and event in Jones County and incorporated jurisdictions.

Table B.10 – CIKR Exposed to Flooding by Event and Jurisdiction

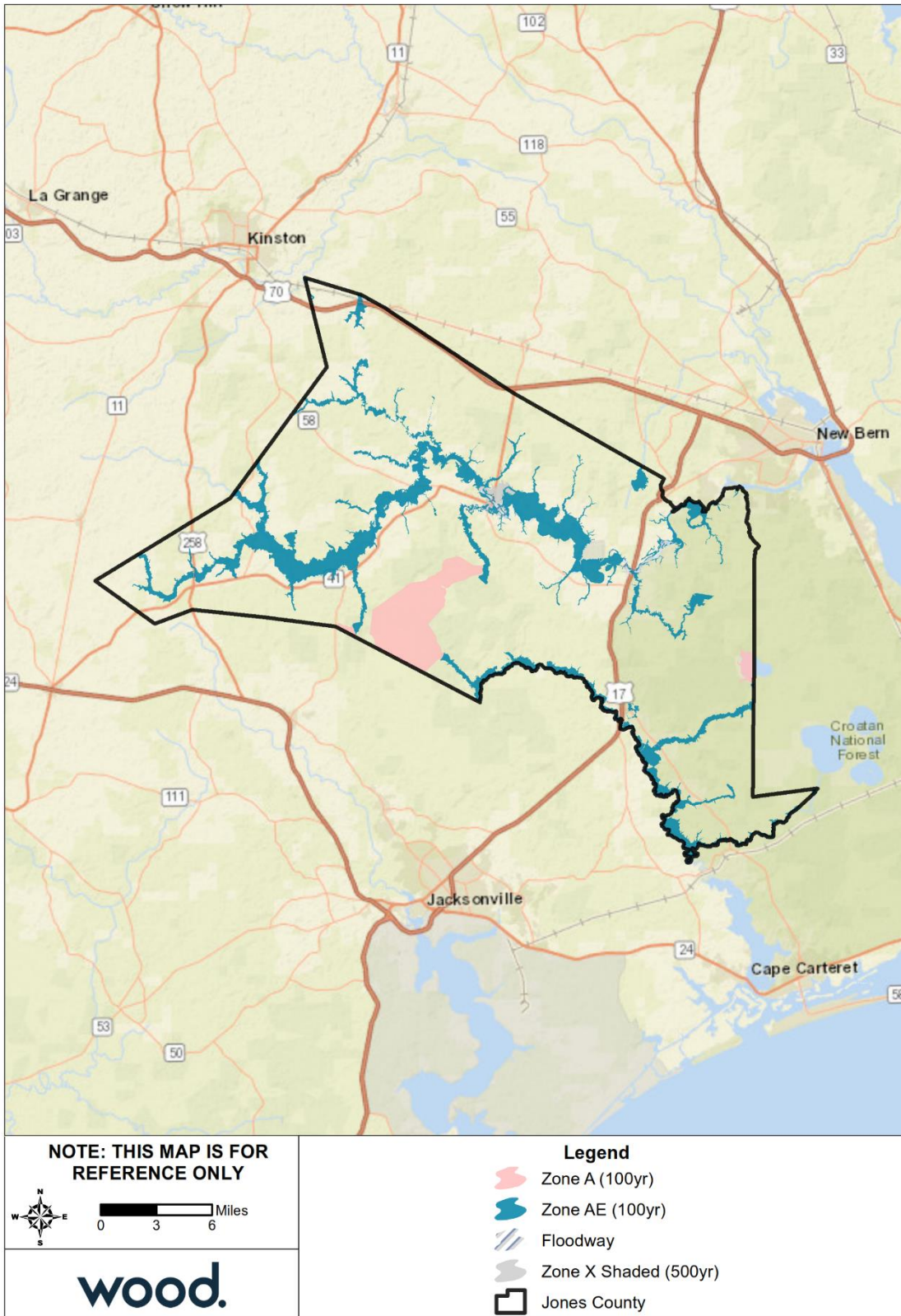
Sector	Event	Number of Buildings at Risk	Estimated Damages
Jones County Unincorporated Areas			
Commercial Facilities	100 Year	3	\$28,871
Food and Agriculture	100 Year	7	\$46,990
Government Facilities	100 Year	2	\$13,631
	Floodway	1	\$13,342
All Categories	100 Year	12	\$89,492
	Floodway	1	\$13,342
Town of Pollocksville			
Commercial Facilities	100 Year	7	\$4,305
All Categories	100 Year	7	\$4,305
Town of Trenton			

ANNEX B: JONES COUNTY

Sector	Event	Number of Buildings at Risk	Estimated Damages
Commercial Facilities	100 Year	1	\$581
All Categories	100 Year	1	\$581

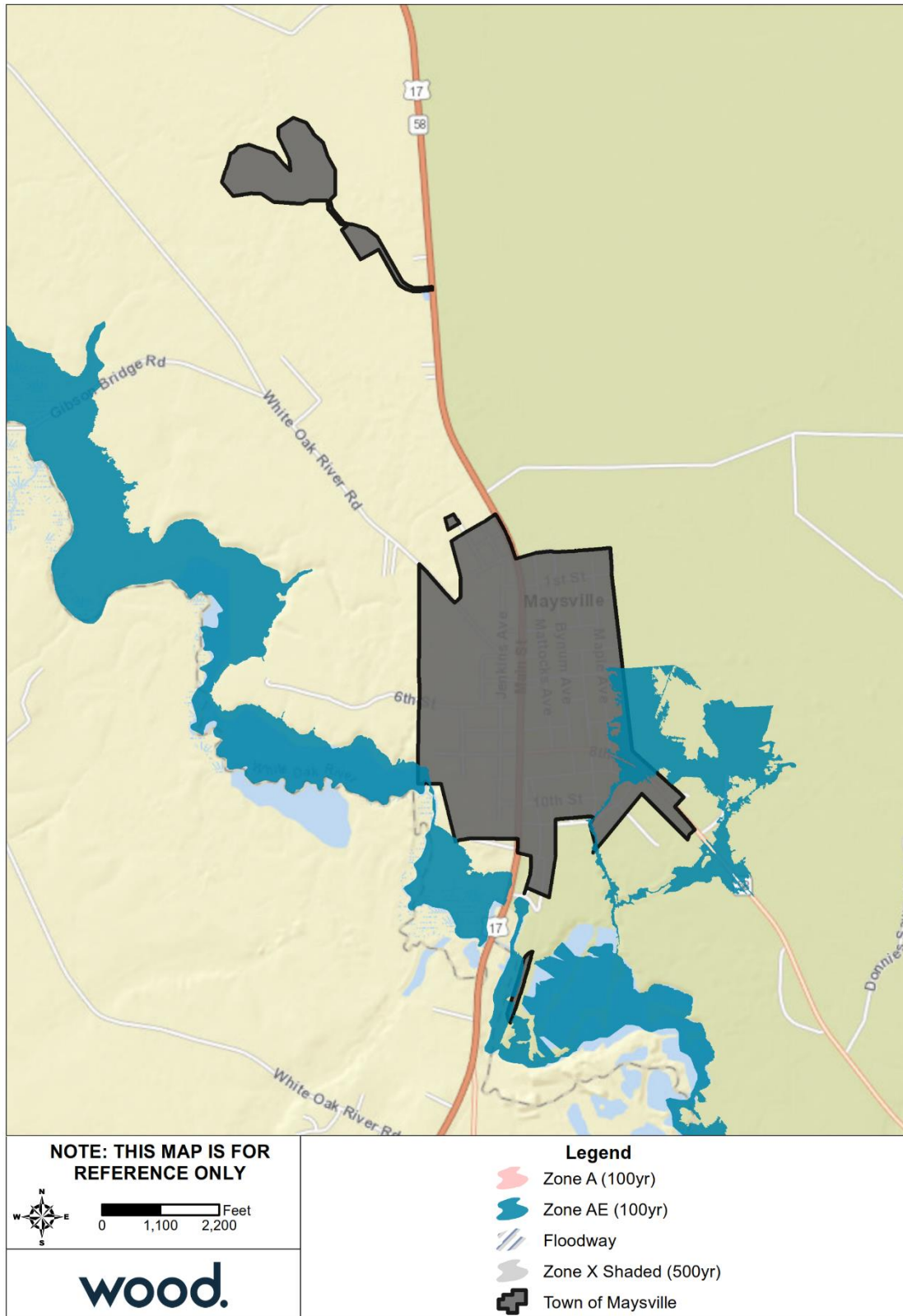
Source: NCEM Risk Management Tool

Figure B.3 – FEMA Flood Hazard Areas, Unincorporated Jones County



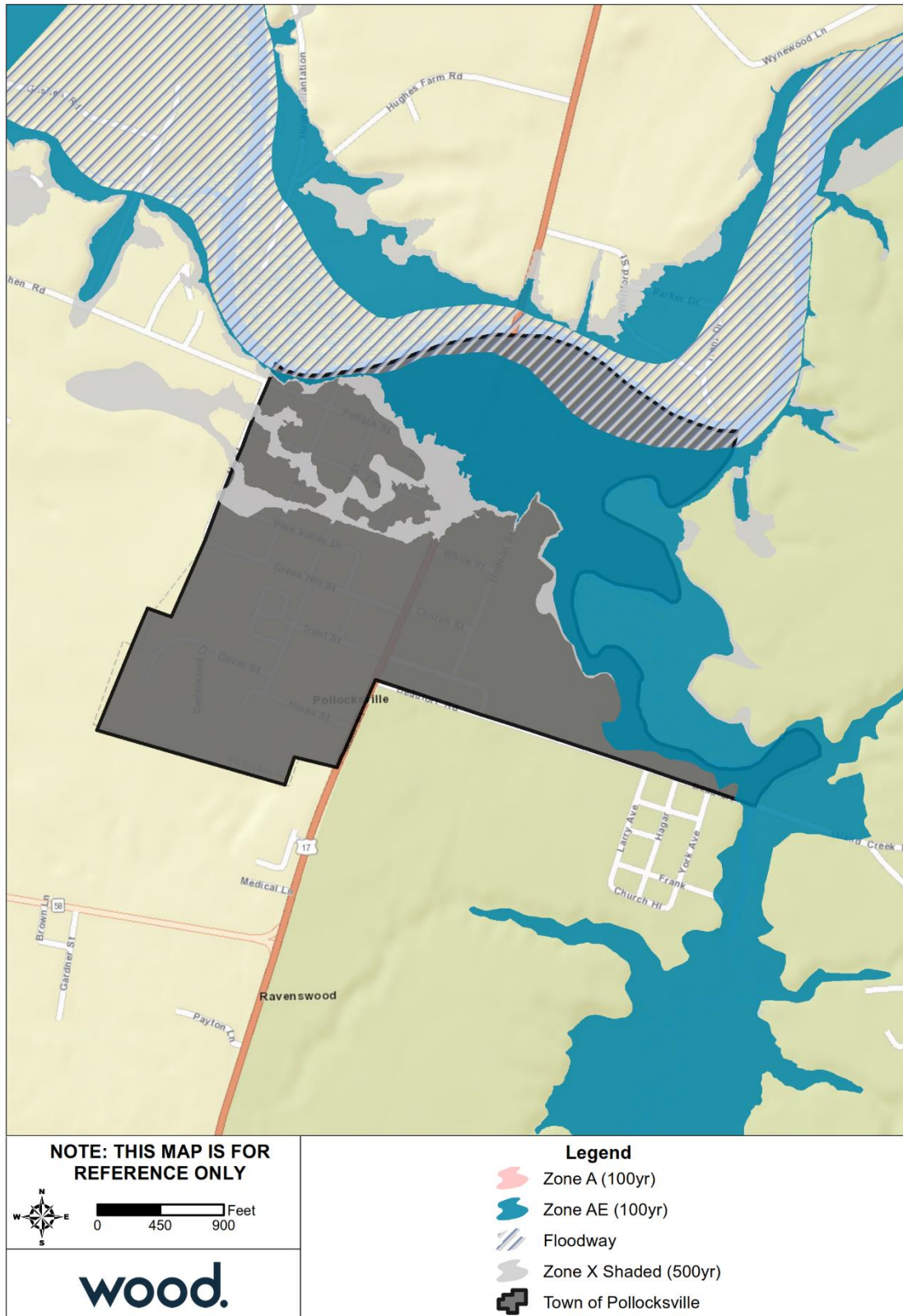
Source: FEMA Effective DFIRM

Figure B.4 – FEMA Flood Hazard Areas, Town of Maysville



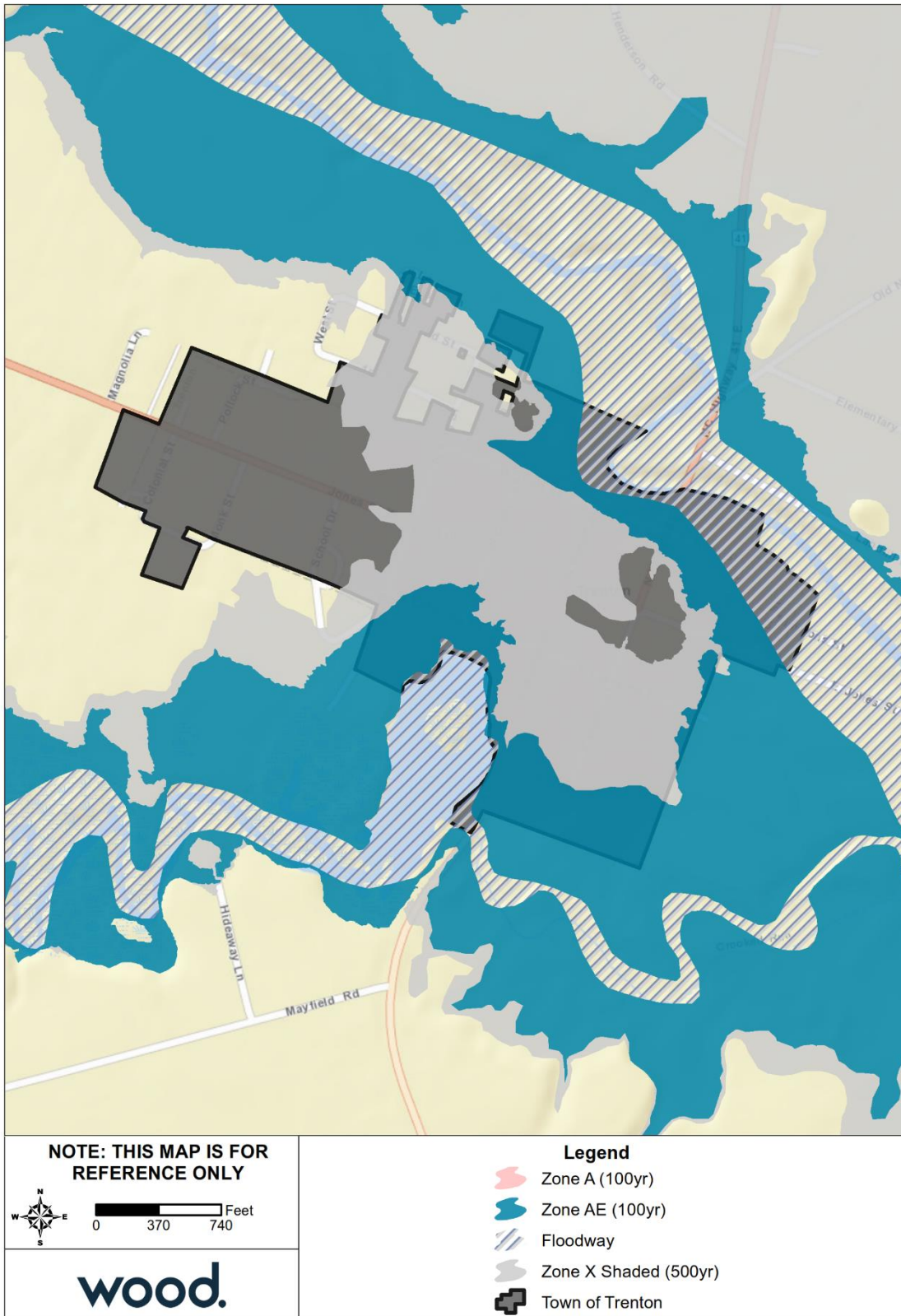
Source: FEMA Effective DFIRM

Figure B.5 – FEMA Flood Hazard Areas, Town of Pollockville



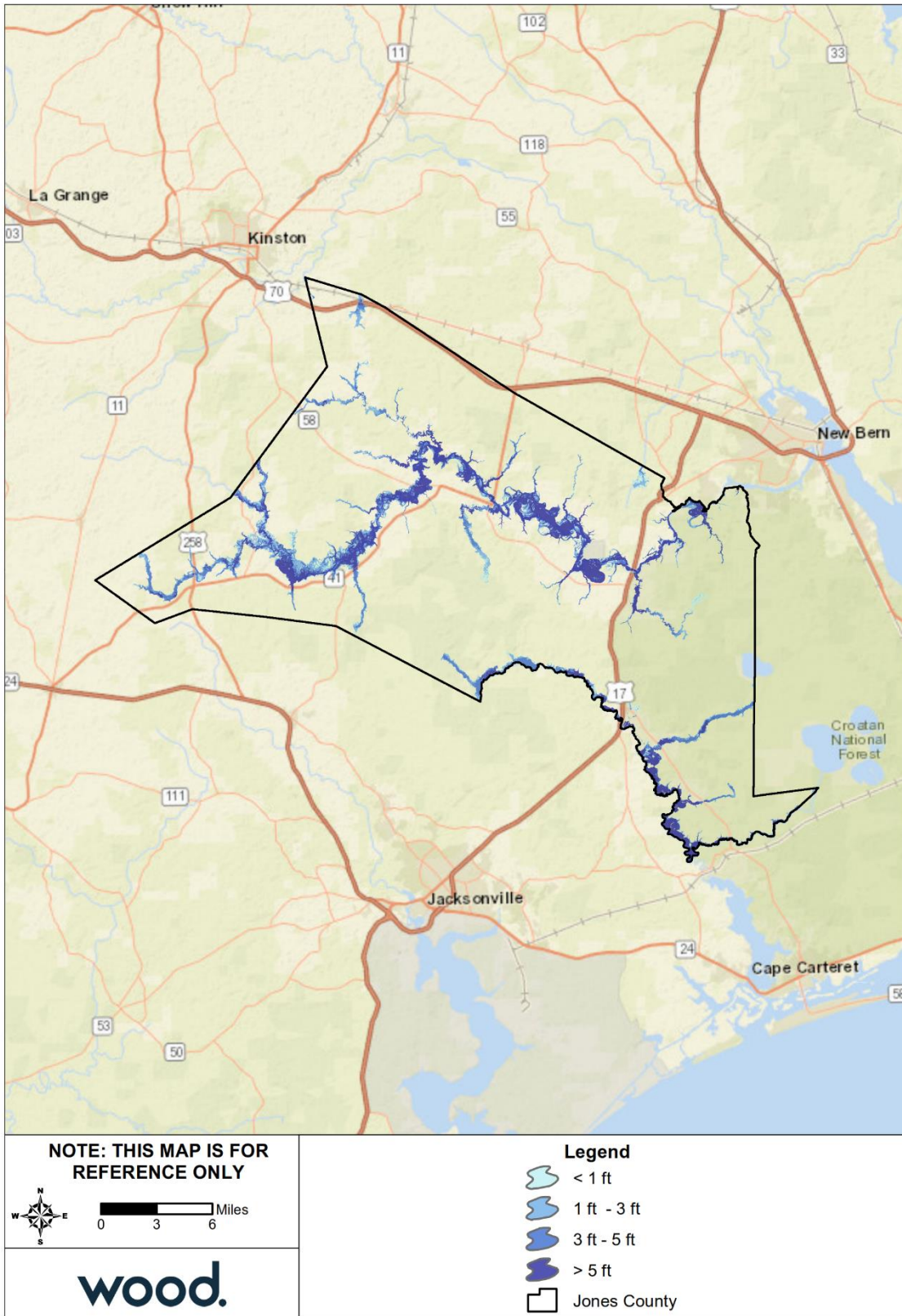
Source: FEMA Effective DFIRM

Figure B.6 – FEMA Flood Hazard Areas, Town of Trenton



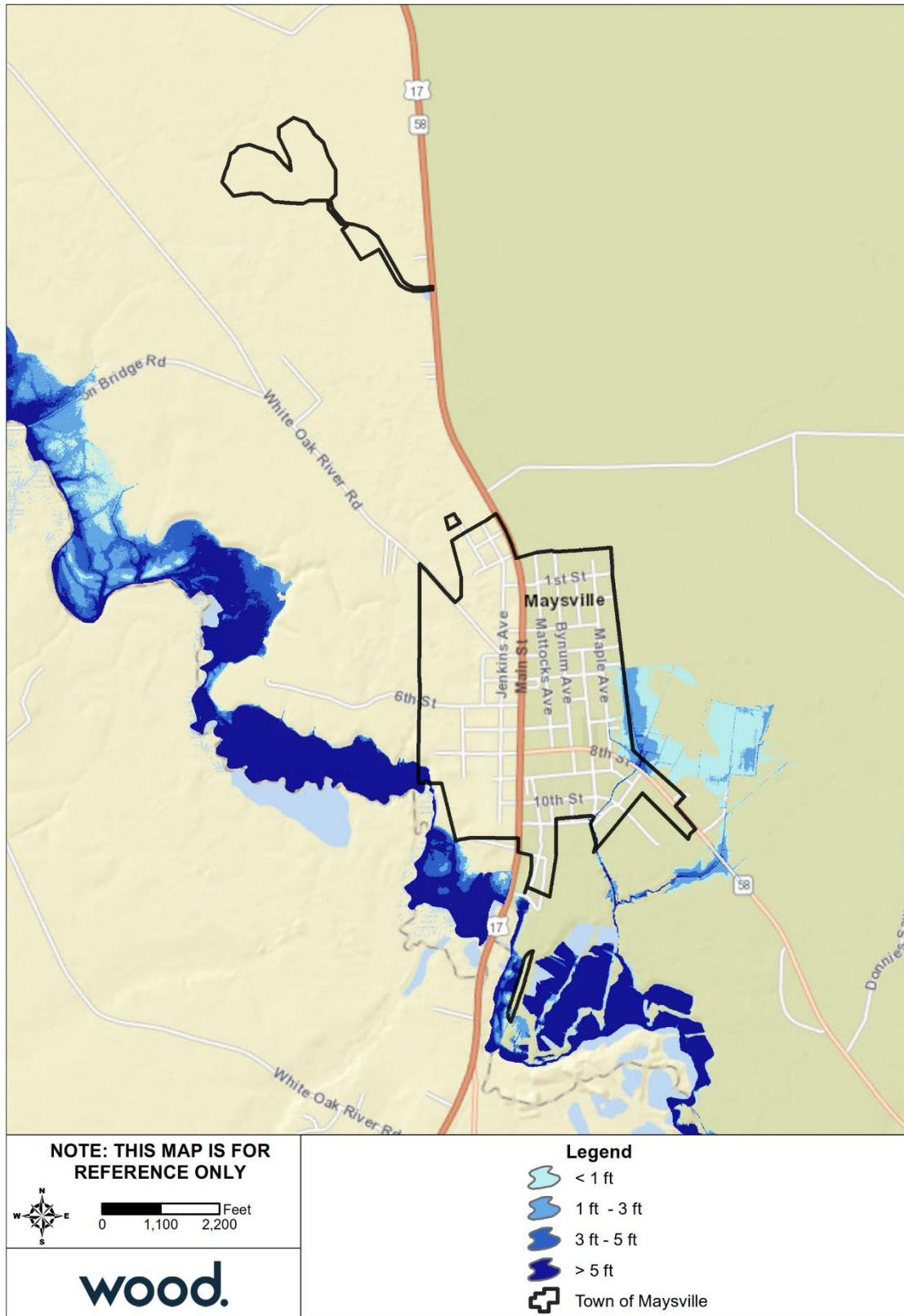
Source: FEMA Effective DFIRM

Figure B.7 – Flood Depth, 1%-Annual-Chance Floodplain, Unincorporated Jones County



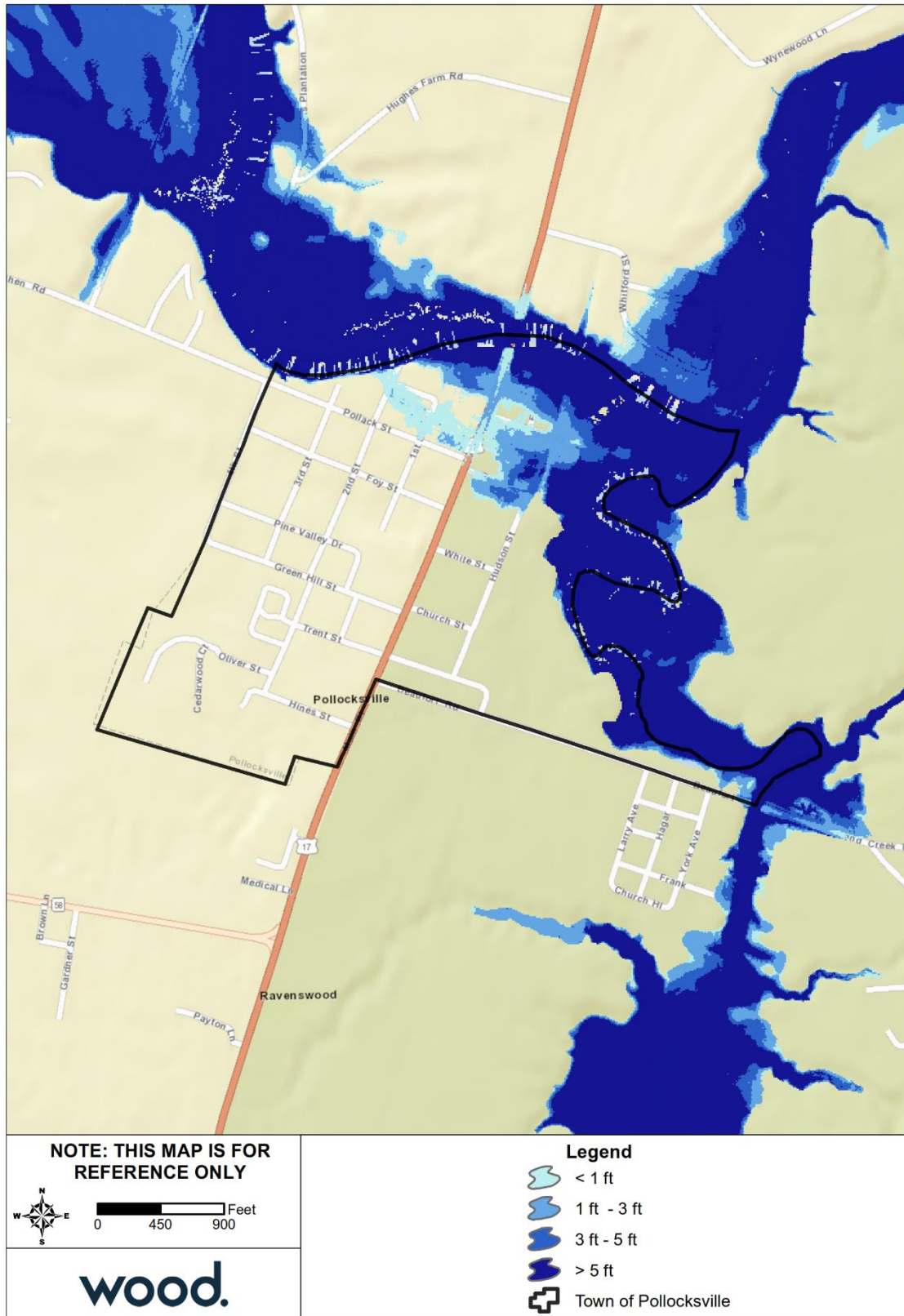
Source: FEMA Effective DFIRM

Figure B.8 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Maysville



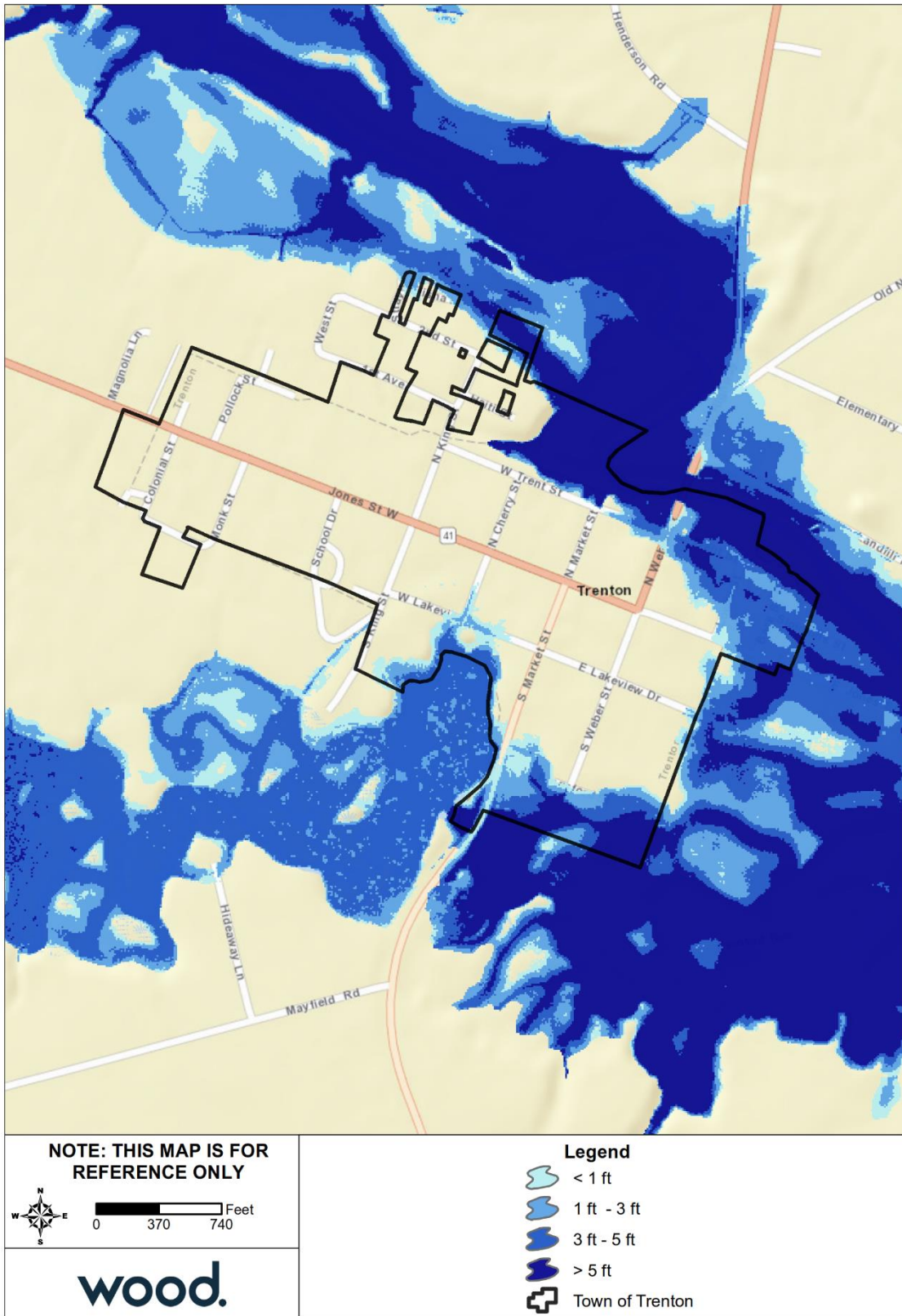
Source: FEMA Effective DFIRM

Figure B.9 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Pollockville



Source: FEMA Effective DFIRM

Figure B.10 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Trenton



Source: FEMA Effective DFIRM

B.2.2 Wildfire

Table B.11 summarizes the acreage in Jones 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 73 percent of Jones County is not included in the WUI.

Table B.11 – Wildland Urban Interface Acreage, Jones County

	Housing Density	Total Acreage	Percent of Total Acreage
	<i>Not in WUI</i>	223,068.9	73.9%
	LT 1hs/40ac	45,567.3	15.1%
	1hs/40ac to 1hs/20ac	12,903.2	4.3%
	1hs/20ac to 1hs/10ac	9,208.8	3.1%
	1hs/10ac to 1hs/5ac	5,935.2	2.0%
	1hs/5ac to 1hs/2ac	3,570.0	1.2%
	1hs/2ac to 3hs/1ac	1,399.0	0.5%
	GT 3hs/1ac	0	--
	Total	301,652.4	

Source: Southern Wildfire Risk Assessment

Figure B.11 depicts the WUI for Jones County and all participating jurisdictions. The WUI is the area where housing development is built near or among areas of vegetation that may be prone to wildfire. Figure B.12 and Figure B.13 detail the Fire Intensity Scale, which indicates the potential severity of fire based on fuel loads, topography, and other factors. Figure B.14 depicts Burn Probability based on landscape conditions, percentile weather, historical ignition patterns, and historical prevention and suppression efforts.

Potential fire intensity is moderate to high across much of Jones County, particularly the unincorporated areas, but slightly lower along the North Carolina Highway 58 corridor. The largest uninterrupted area of high potential fire intensity is in the Croatan National Forest. Burn probability is also highest in the Croatan National Forest area, as well as along the Onslow County border. These areas where high potential fire intensity and high burn probability overlap, however, are largely outside of the WUI, therefore impacts to buildings and people would be minimal.

Table B.12 provides building counts and estimated damages for Critical Infrastructure and Key Resources (CIKR) buildings by sector at risk to wildfire hazard in Jones County and participating jurisdictions. Table B.13 provides counts and estimated damages for High Potential Loss Properties in these areas.

Table B.12 – Critical Facilities Exposed to Wildfire by Jurisdiction, Jones County

Sector	Number of Buildings at Risk	Estimated Damages
Jones County Unincorporated Area		
Banking and Finance	1	\$445,418
Commercial Facilities	98	\$82,033,632
Critical Manufacturing	9	\$8,840,174
Food and Agriculture	636	\$52,769,243
Government Facilities	36	\$58,193,330
Healthcare and Public Health	4	\$16,935,976
Transportation Systems	10	\$6,213,617

ANNEX B: JONES COUNTY

Sector	Number of Buildings at Risk	Estimated Damages
All Categories	794	\$225,431,390
Town of Maysville		
Commercial Facilities	2	\$854,160
All Categories	2	\$854,160
Town of Pollockville		
Commercial Facilities	14	\$4,456,377
Government Facilities	5	\$1,967,565
All Categories	19	\$6,423,942
Town of Trenton		
Commercial Facilities	8	\$3,273,860
Government Facilities	9	\$4,582,448
Healthcare and Public Health	1	\$385,687
Transportation Systems	4	\$1,768,851
All Categories	22	\$10,010,846

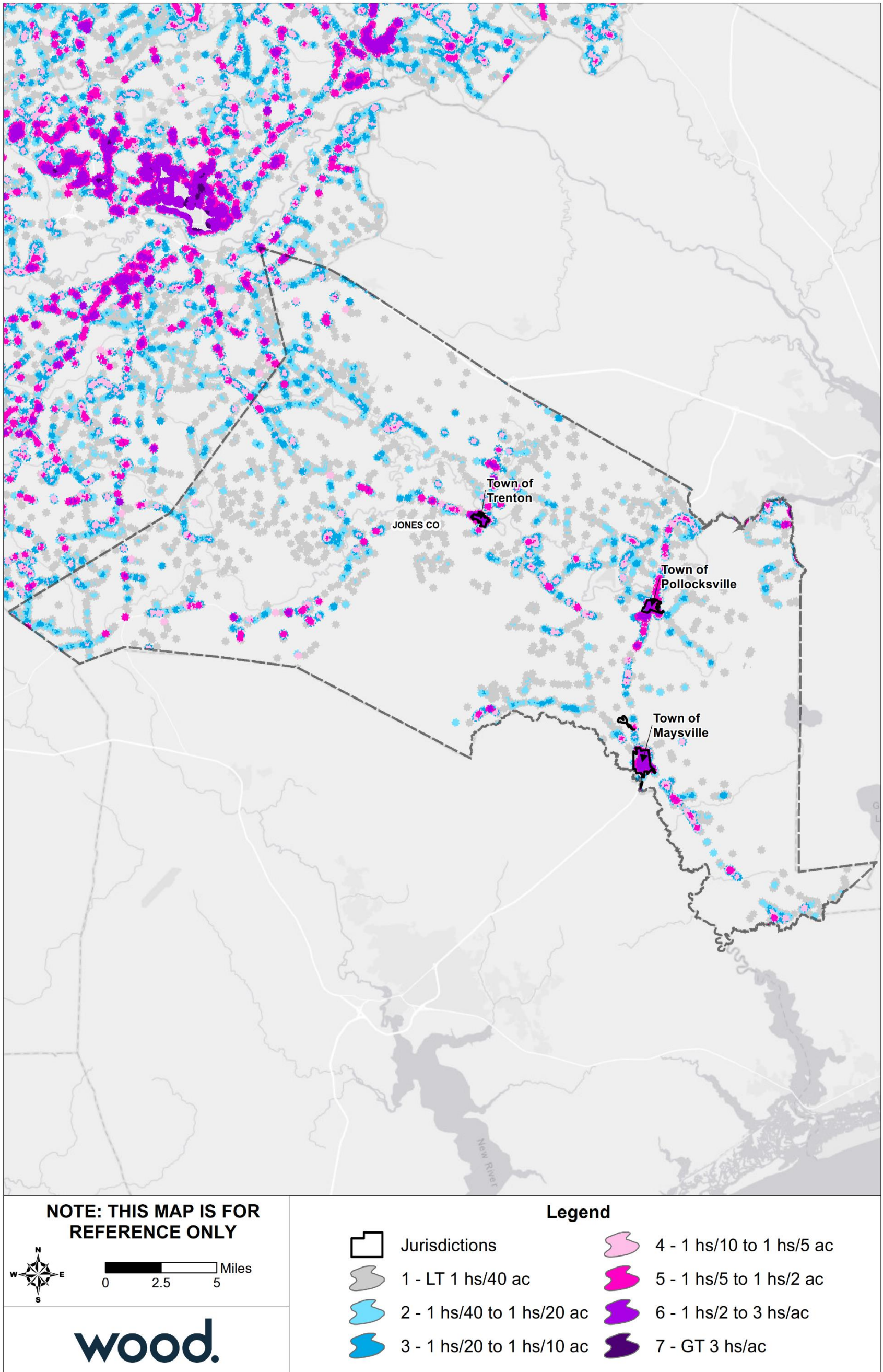
Source: NCEM Risk Management Tool

Table B.13 – High Potential Loss Properties Exposed to Wildfire by Jurisdiction, Jones County

Category	Number of Buildings at Risk	Estimated Damages
Jones County Unincorporated Area		
Agricultural	1	\$1,066,443
Commercial	2	\$16,460,768
Government	10	\$51,769,243
Religious	20	\$43,764,408
All Categories	33	\$113,060,862
Town of Pollockville		
Religious	1	\$1,266,932
All Categories	1	\$1,266,932
Town of Trenton		
Commercial	2	\$2,494,806
Religious	1	\$1,275,267
All Categories	3	\$3,770,073

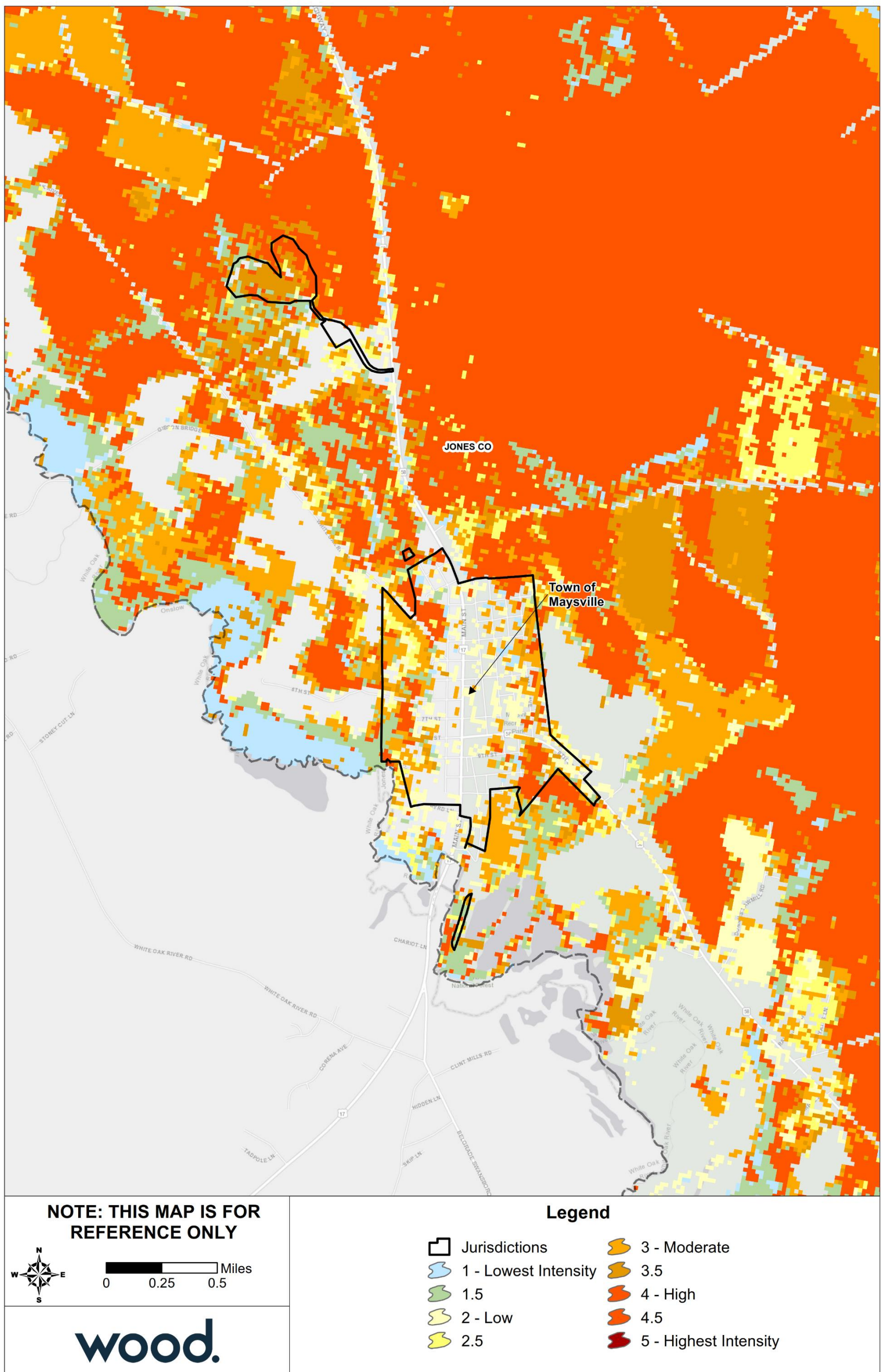
Source: NCEM Risk Management Tool

Figure B.11 – Wildland Urban Interface, Jones County



Source: Southern Wildfire Risk Assessment

Figure B.12 – Fire Intensity Scale, Jones County (Detail 1)



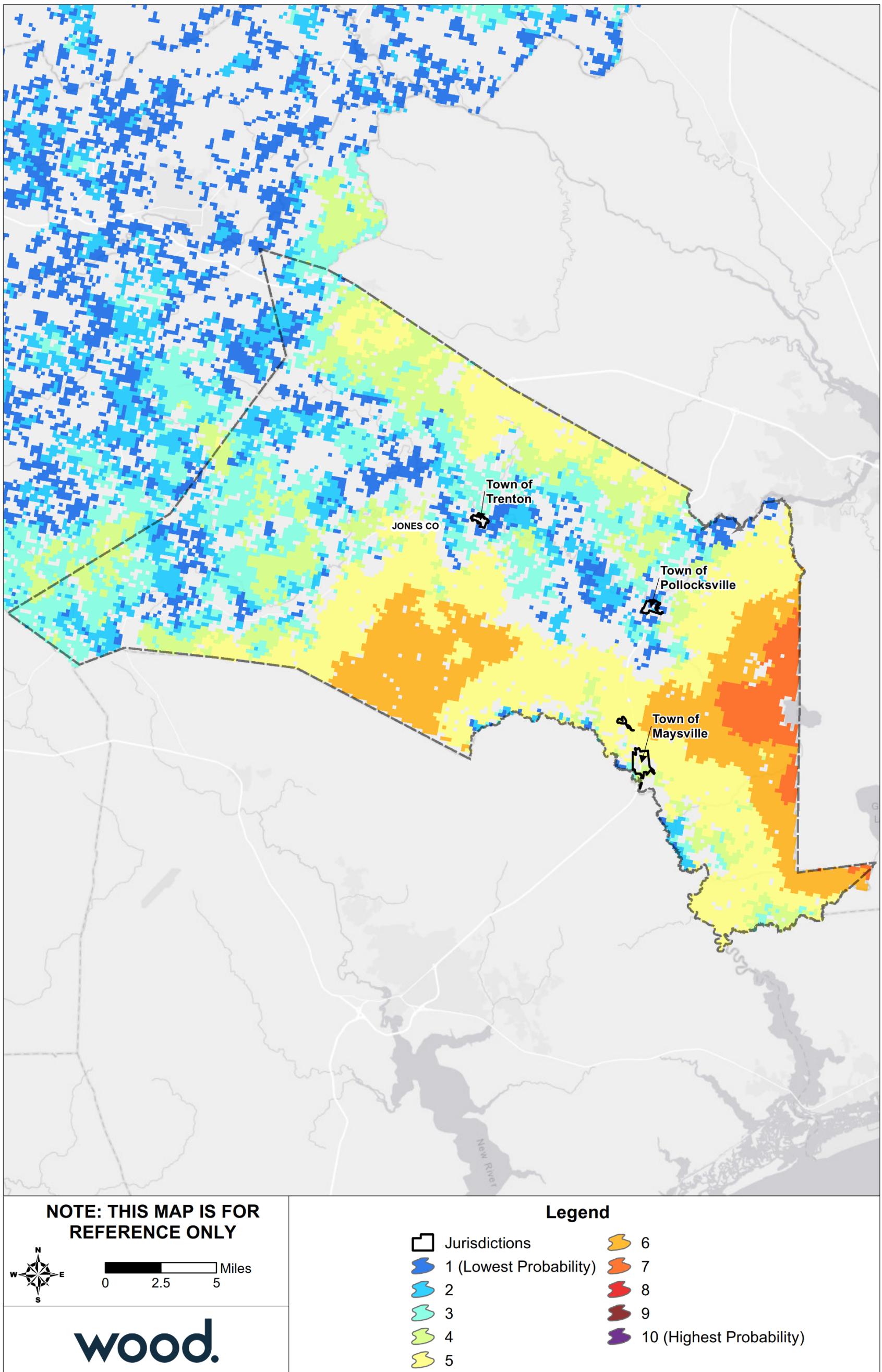
Source: Southern Wildfire Risk Assessment

Figure B.13 – Fire Intensity Scale, Jones County (Detail 2)



Source: Southern Wildfire Risk Assessment

Figure B.14 – Burn Probability, Jones County



Source: Southern Wildfire Risk Assessment

B.3 CAPABILITY ASSESSMENT

B.3.1 Overall Capability

Details on the tools and resources in place and available to Jones County were provided by the County’s HMPC representatives and are summarized in Section 5 Capability Assessment. Based on that information and using the scoring methodology detailed in that section, Jones County has an overall capability rating of Moderate, however the County self-assessed its overall capability as High. Although some of the incorporated jurisdictions have lower capability, Jones County provides many resources for its incorporated jurisdictions and many of the mitigation projects in this plan are regional in nature, with the County serving as the project lead; therefore, the County’s capability is also an indicator for its incorporated areas. The County’s Self-Assessment of key capability areas is summarized in Table B.14.

Table B.14 – Capability Self-Assessment, Jones County

Capability Area	Rating
Plans, Ordinances, Codes and Programs	High
Administrative and Technical Capability	High
Fiscal Capability	High
Education and Outreach Capability	High
Mitigation Capability	High
Political Capability	High
Overall Capability	High

B.3.2 Floodplain Management

The following tables reflect NFIP entry dates as well as policy and claims data for Jones County and incorporated areas categorized by structure type, flood zone, Pre-FIRM and Post-FIRM.

Table B.15 – NFIP Program Entry Dates

Community	Regular Program Entry
Jones County (Unincorporated Area)	August 16, 1988
Town of Maysville	August 19, 1986
Town of Pollocksville	September 4, 1986
Town of Trenton	September 1, 1987

Source: FEMA Community Information System

Table B.16 – 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
Jones County Unincorporated Area					
Single Family	202	\$94,629	\$50,504,100	129	\$12,518,418.96
Non-Residential	6	\$10,107	\$1,718,600	4	\$522,360.32
Total	208	\$104,736	\$52,222,700	133	\$13,040,779.28
Town of Maysville					
Single Family	8	\$4,016	\$1,538,800	4	\$61,586.51
All Other Residential	1	\$879	\$250,000	0	\$0.00
Total	9	\$4,895	\$1,788,800	4	\$61,586.51
Town of Pollocksville					
Single Family	31	\$12,369	\$7,796,000	21	\$2,127,296.38
Non-Residential	5	\$5,667	\$1,324,100	1	\$29,332.59
Total	36	\$18,036	\$9,120,100	22	\$2,156,628.97

ANNEX B: JONES COUNTY

Structure Type	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Town of Trenton					
Single Family	15	\$7,869	\$3,304,600	17	\$557,999.32
Non-Residential	8	\$8,380	\$1,595,600	5	\$217,367.36
Total	23	\$16,249	\$4,900,200	22	\$775,366.68

Source: FEMA Community Information System, accessed January 2020

Table B.17 – 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
Jones County Unincorporated Area					
A01-30 & AE Zones	31	\$19,798	\$7,195,600	61	\$6,684,766.63
A Zones	7	\$7,571	\$1,759,600	20	\$2,071,013.85
B, C & X Zone					
Standard	7	\$9,017	\$1,142,400	6	\$599,637.59
Preferred	147	\$58,750	\$41,113,000	45	\$3,651,361.21
Total	192	\$95,136	\$51,210,600	132	\$13,006,779.28
Town of Maysville					
A01-30 & AE Zones	3	\$2,502	\$424,000	1	\$4,439.72
B, C & X Zone					
Preferred	5	\$1,793	\$1,295,000	3	\$57,146.79
Total	8	\$4,295	\$1,719,000	4	\$61,586.51
Town of Pollockville					
A01-30 & AE Zones	6	\$6,098	\$1,510,300	13	\$1,140,594.34
B, C & X Zone					
Preferred	29	\$11,338	\$7,540,000	8	\$976,358.39
Total	35	\$17,436	\$9,050,300	22	\$2,156,628.97
Town of Trenton					
A01-30 & AE Zones	3	\$3,333	\$198,000	3	\$100,400.00
B, C & X Zone					
Standard	1	\$1,510	\$137,600	4	\$305,327.50
Preferred	17	\$10,206	\$4,425,000	8	\$223,446.41
Total	21	\$15,049	\$4,760,600	22	\$775,366.68

Source: FEMA Community Information System, accessed January 2020

Table B.18 – 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
Jones County Unincorporated Area					
A01-30 & AE Zones	5	\$5,360	\$925,600	22	\$2,465,284.67
A Zones	2	\$2,086	\$390,600	10	\$795,936.29
B, C & X Zone					
Standard	3	\$5,570	\$790,000	3	\$142,923.01
Preferred	75	\$27,513	\$19,880,000	25	\$1,373,460.43
Total	85	\$40,529	\$21,986,200	60	\$4,777,604.40

ANNEX B: JONES COUNTY

Flood Zone	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Town of Maysville					
A01-30 & AE Zones	2	\$2,157	\$348,000	0	\$0.00
B, C & X Zone	2	\$719	\$525,000	3	\$57,146.79
Preferred	2	\$719	\$525,000	3	\$57,146.79
Total	4	\$2,876	\$873,000	3	\$57,146.79
Town of Pollocksville					
A01-30 & AE Zones	3	\$2,643	\$427,400	6	\$786,334.69
B, C & X Zone	23	\$9,025	\$6,250,000	4	\$315,044.72
Preferred	23	\$9,025	\$6,250,000	4	\$315,044.72
Total	26	\$11,668	\$6,677,400	10	\$1,101,379.41
Town of Trenton					
A01-30 & AE Zones	2	\$2,752	\$190,000	2	\$93,000.00
B, C & X Zone	14	\$8,249	\$3,655,000	6	\$366,882.16
Standard	0	\$0	\$0	2	\$170,070.54
Preferred	14	\$8,249	\$3,655,000	4	\$196,811.62
Total	16	\$11,001	\$3,845,000	11	\$545,290.35

Source: FEMA Community Information System, accessed January 2020

Table B.19 – 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
Jones County Unincorporated Area					
A01-30 & AE Zones	5	\$5,360	\$925,600	22	\$2,465,284.67
A Zones	2	\$2,086	\$390,600	10	\$795,936.29
B, C & X Zone	78	\$33,083	\$20,670,000	28	\$1,516,383.44
Standard	3	\$5,570	\$790,000	3	\$142,923.01
Preferred	75	\$27,513	\$19,880,000	25	\$1,373,460.43
Total	85	\$40,529	\$21,986,200	60	\$4,777,604.40
Town of Maysville					
A01-30 & AE Zones	1	\$345	\$76,000	1	\$4,439.72
B, C & X Zone	3	\$1,074	\$770,000	0	\$0.00
Preferred	3	\$1,074	\$770,000	0	\$0.00
Total	4	\$1,419	\$846,000	1	\$4,439.72
Town of Pollocksville					
A01-30 & AE Zones	3	\$3,455	\$1,082,900	7	\$354,259.65
B, C & X Zone	3	\$1,074	\$770,000	0	\$0.00
Preferred	3	\$1,074	\$770,000	0	\$0.00
Total	4	\$1,419	\$846,000	1	\$4,439.72
Town of Trenton					
A01-30 & AE Zones	1	\$581	\$8,000	1	\$7,400.00
B, C & X Zone	4	\$3,467	\$907,600	6	\$161,891.75
Standard	1	\$1,510	\$137,600	2	\$135,256.96
Preferred	3	\$1,957	\$770,000	4	\$26,634.79
Total	5	\$4,048	\$915,600	11	\$230,076.33

Source: FEMA Community Information System, accessed January 2020

B.4 MITIGATION STRATEGY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
J1	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, and hazardous waste. The County will review and update the EOP annually to ensure that it coordinates with the most recent NCDPS and NCOEMS directives. This review will involve the conducting of an annual tabletop exercise that will incorporate a review of sheltering procedures defined within the "CRES" plan.	Jones County, Trenton, Maysville, Pollocksville	All Hazards	High	2.2	ES	<ul style="list-style-type: none"> Jones County Emergency Services Municipal Administrations 	Staff Time	General Fund, NCDPS, FEMA	Ongoing - annually	In Progress – Carry Forward	All jurisdictions will participate in the annual review and update of the Jones County Emergency Operations Plan.
J2	Consider establishing a program to establish CERT teams within the County. This effort will involve both the recruitment and training of potential team members.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	3.2	ES	<ul style="list-style-type: none"> Jones County Emergency Services 	\$2,500	General Fund, NCDPS	2 to 3 years	Not Started – Carry Forward	Jones County will continue to work with County residents to expand upon the County Community Emergency Response Team program.
J3	Continue working towards a long-term solution to maintaining emergency backup generators at all facilities deemed critical in the event of a natural disaster. At a minimum, the County will aim to establish a permanent backup generator at the following locations: County Administration Building, Town of Maysville Town Hall, Comfort Volunteer Fire Department.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	4.2	PIO	<ul style="list-style-type: none"> Jones County Emergency Services Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing - annually	Not Started – Carry Forward	The County will continue to diligently promote and enroll individuals into the Special Medical Needs Registry focused on providing emergency response resources to at-risk populations.
J4	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 EM and local government staff members. All jurisdictions will work to advertise the availability of this service within their respective communities.	Jones County, Trenton, Maysville, Pollocksville	All Hazards	High	4.2	PIO	<ul style="list-style-type: none"> Jones County Emergency Services Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing - annually	Not Started – Carry Forward	The County will continue to diligently promote and enroll individuals into the Special Medical Needs Registry focused on providing emergency response resources to at-risk populations.
J5	Continue to improve upon capabilities available through the Nixle Based Emergency Notification System. These efforts will involve educating the public, municipal partners, and elected officials about the system's capabilities and registration requirements.	Jones County, Trenton, Maysville, Pollocksville	All Hazards	High	4.1	PIO	<ul style="list-style-type: none"> Jones County Emergency Management Municipal Administrations 	\$10,000	General Fund, NCDPS	Ongoing - annually	In Progress – Carry Forward	The County will assess the effectiveness of the County's existing emergency notification system through review of the County Emergency Operations Plan and the scheduled tabletop exercise which will occur annually.
J6	Update the County's Comprehensive Land Use Plan to ensure that the Future Land Use Map adequately delineates portions of the County deemed unsuitable for development due to existing environmental conditions resulting in potential impacts from natural disasters. All municipal jurisdictions will also take this plan into consideration when amending or developing land use plans and/or land development regulations.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	1.3	PP	<ul style="list-style-type: none"> Jones County Administration Municipal Administrations 	Staff Time	General Fund, NC CAMA	2 to 3 years	Not Started – Carry Forward	The County will work to update the Jones County Land Use Plan over the five-year implementation period of this plan.
J7	Continue to maintain and enforce the County's Water Shortage Ordinance. These efforts will involve monitoring of regional drought conditions and coordination with NCDEQ	Jones County, Trenton, Maysville, Pollocksville	Drought	High	1.1	NRP	<ul style="list-style-type: none"> Jones County Public Services Municipal Administration 	Staff Time	General Fund	Ongoing – over next five years	In Progress – Carry Forward	The County will continue to carry out this effort as a function of the County-wide Emergency Operations Plan.

ANNEX B: JONES COUNTY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
J8	Continue to participate in the Beaver Control Program (BCP) offered through NCDEQ. Additionally, the County will continue to support the Town of Trenton in its efforts to conduct its own BCP.	Jones County, Trenton	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	1.3	P	<ul style="list-style-type: none"> Jones County Administration NCDEQ 	To be determined	General Fund, NCDEQ, NCDPS	2 to 3 years	In Progress – Carry Forward	The County deals with this issue annually and will make this a priority through the implementation of this plan.
J9	Through the NC Forest Service present in the County, annual meetings will be held prior to fire season to discuss preventing, mitigating and fighting wildfires.	Jones County, Trenton, Maysville, Pollocksville	Wildfire	High	3.1	P	<ul style="list-style-type: none"> Jones County Emergency Management US Forestry Service 	Staff Time	General Fund, US Forestry Service	Ongoing – over next five years	In Progress – Carry Forward	The County will continue to work closely with the US Forestry Service to carry out this strategy focused on minimizing the impacts of wildfire on the community.
J10	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. Jones County will assist all municipal jurisdictions in working through the structural mitigation grant funding process.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.2	PP	<ul style="list-style-type: none"> Jones County Administration Municipal Administrations 	Staff Time	General Fund, NCDPS, FEMA	Ongoing – as opportunities arise	In Progress – Carry Forward	All participating jurisdictions will apply for funding to carry out structural mitigation projects both following natural hazard events, as well as through annual funding programs awarded through FEMA.
J11	Review respective Flood Damage Prevention Ordinances annually 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. Through these efforts, the County will continue to enforce a two-foot freeboard requirement.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.1	P	<ul style="list-style-type: none"> Jones County Inspections (including municipalities under interlocal agreement) Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	Jones County, as well as all participating municipal jurisdictions, will continue to enforce their respective freeboard elevation standards. As flooding events occur during the planning period, each community will revisit and consider increasing this standard.
J12	Ensure that a range of materials related to flood insurance, flood protection, floodplain management, information on floodplains, and listings of qualified contractors familiar with floodproofing and elevation techniques, are available to the realtors, developers, contractors, and citizens through various means including: <ul style="list-style-type: none"> Placing materials in the local library. Maintaining documents at the County Administration Building. Disseminating information to local contractors. Maintaining information in the County inspection offices. 	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.2	PIO	<ul style="list-style-type: none"> Jones County Administration Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	The Jones County Inspections Department will continue to maintain material, as well as educate contractors, realtors, developers, and citizens regarding best management practices related to development within the defined flood hazard area.
J13	Ensure information is available on the County's website regarding hazards and development regulations within floodplains, including a link to FEMA and NFIP resources relating to emergency preparedness, flood protection, wind-proofing, and proper evacuation procedures. Additionally, the Towns will provide a link to this page through their respective municipal websites.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	PP	<ul style="list-style-type: none"> Jones County Administration Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	The County website already provides some of this information. This information will be improved through the implementation of this plan.
J14	Work closely with all electric service providers operating throughout the County, to ensure that tree trimming carried out to protect the integrity of service lines is conducted on an ongoing basis.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	1.1	P	<ul style="list-style-type: none"> Jones County Administration Municipal Administration Electric Service Providers 	To be determined	General Fund, Electric Service Providers	Ongoing – next five years	In Progress – Carry Forward	The County will continue to work with all existing electric service providers to carry out this strategy.

ANNEX B: JONES COUNTY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
J15	Due to the widespread impacts of Hurricanes Matthew and Florence, work to identify funding to assist with the acquisition of non-residential structures in need of assistance.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm	High	1.2	PP	<ul style="list-style-type: none"> Jones County Administration Municipal Administrations 	To be determined	HMGP, NCDPS	Ongoing – As need is determined	In Progress – Carry Forward	The County continue to work towards implementation of this strategy.
J16	Create a guidebook for non-governmental organizations and Faith-based organizations on emergency preparedness and their role in outreach, sheltering, and recovery.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	4.1	ES	<ul style="list-style-type: none"> Jones County Emergency Management American Red Cross Faith-Based Organizations 	Staff time	Staff Time, Non-profit funding	2 to 3 years	Not Started – Carry Forward	The County has not initiated this effort but will do so through implementation of this plan.
J17	Work closely with the Town of Trenton in identifying funding and a location for the relocation of the County water treatment plant.	Jones County, Trenton	Flood, Hurricane & Tropical Storm, Dam Failure	Medium	1.3	P	<ul style="list-style-type: none"> Jones County Board of Commissioners Town of Trenton Town Council 	To be determined	NCDEQ, NCDPS	2 to 3 years	Not Started – Carry Forward	This effort has not been initiated but will be carried out through implementation of this plan.
J18	Relocate the Jones County Courthouse Basement Magistrate's Office and Jail to a higher, safer level of the building or to an alternate site.	Jones County	Flood, Hurricane & Tropical Storm, Dam Failure	Medium	1.3	P	<ul style="list-style-type: none"> Jones County Board of Commissioners 	To be determined	General Fund, NCDEQ, NCDPS	2 to 3 years	Not Started – Carry Forward	This effort has not been initiated but will be carried out through implementation of this plan.
J19	Back wire electrical systems to accept permanent generators and provide generators for three county elementary schools. Also, establish permanent pad mount generators at these facilities.	Jones County	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	1.1	SP	<ul style="list-style-type: none"> Jones County Administration 	To be determined	General Fund, NCDPS	2 to 3 years	In Progress – Carry Forward	This effort has not been initiated but will be carried out through implementation of this plan.
J20	Obtain county-wide fiber optic communications to facilitate dependable communications connectivity.	Jones County, Trenton, Maysville, Pollocksville	All Hazards	Medium	4.2	PIO	<ul style="list-style-type: none"> Jones County Emergency Management Municipal Administrations 	To be determined	General Fund, NCDPS	2 to 3 years	New	N/A
J21	Implement all strategies outlined within the Hurricane Matthew Resilient Redevelopment Plan.	Jones County, Trenton, Maysville, Pollocksville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	1.1	SP	<ul style="list-style-type: none"> Jones County Emergency Management Municipal Administrations 	To be determined	General Fund, NCDPS	2 to 3 years	New	N/A

Annex C Lenoir County

C.1 COMMUNITY PROFILE

This section contains a summary of maps and statistics for current conditions and characteristics of County, including information on population, asset exposure, housing, and economy. Throughout the section, information will be reported at the jurisdictional level. In some cases, information will only be reported for communities participating in the Community Rating System (CRS).

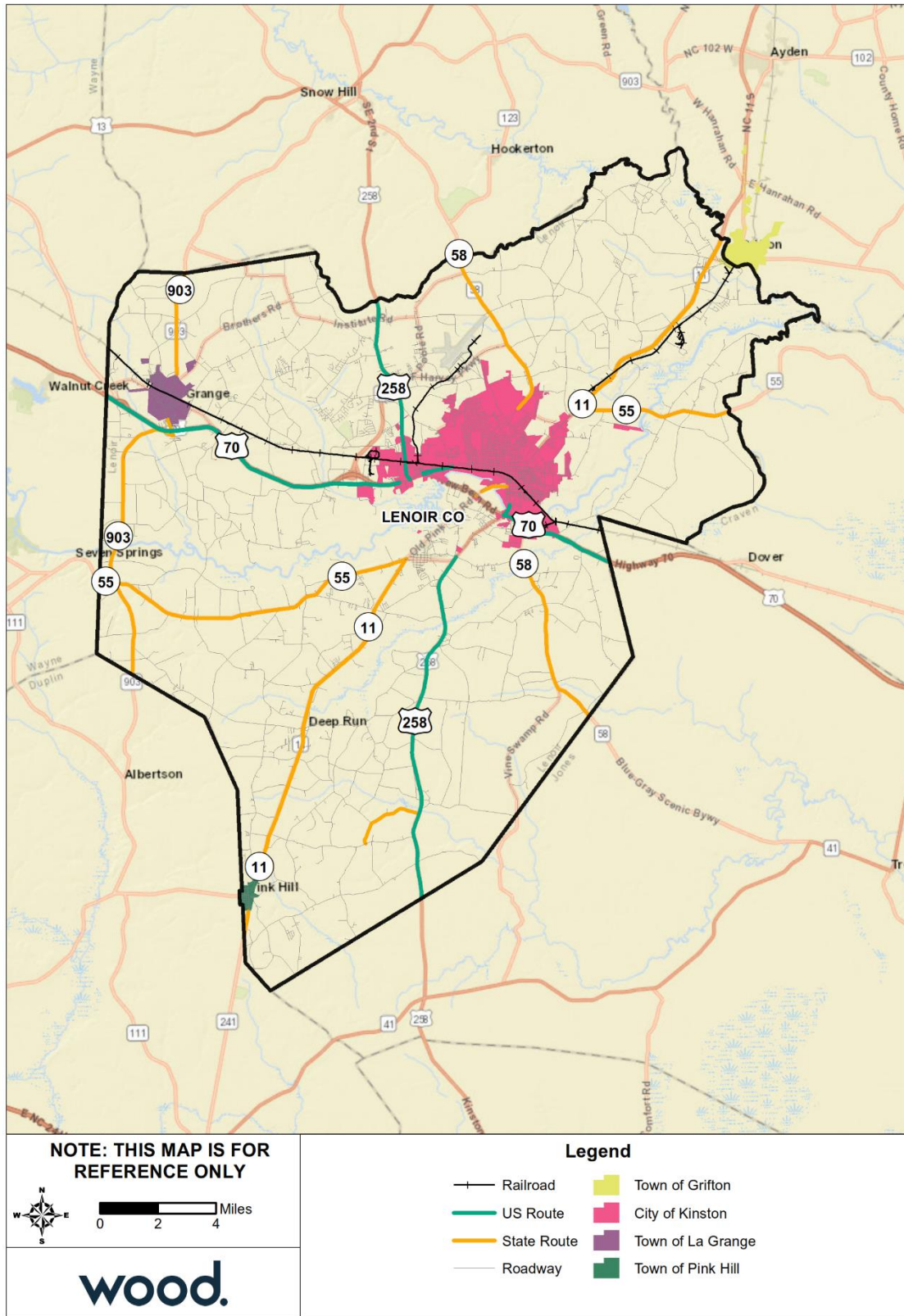
Table C.1 – CRS Participation by Jurisdiction, Lenoir County

Jurisdiction	CRS Participant
Lenoir County (Unincorporated Area)	Yes
City of Kinston	Yes
Town of La Grange	No
Town of Pink Hill	No

Geography

Figure C.1 shows a base map of Lenoir County and participating jurisdictions as well as major transportation routes in the county.

Figure C.1 – Jurisdictional Locations, Lenoir County



Population and Demographics

Table C.2 provides population counts and growth estimates for Lenoir County and participating jurisdictions as compared to the Region overall. Table C.3 provides demographic information for the County.

Table C.2 – Population Counts, Lenoir County, 2000-2017

Jurisdiction	2000	2010	2017	% Change 2000-2010	% Change 2010-2017	Overall % Change 2000-2017
Grifton	2,073	2,617	2,782	26.2%	6.3%	34.2%
Kinston	23,688	21,677	21,004	-8.5%	-3.1%	-11.3%
La Grange	2,844	2,873	2,723	1.0%	-5.2%	-4.3%
Pink Hill	521	552	433	6.0%	-21.6%	-16.9%
Municipalities	29,126	27,719	26,942	-4.8%	-2.8%	-7.5%
Unincorporated Areas	30,522	31,776	30,992	4.1%	-2.5%	1.5%
Lenoir County	59,648	59,495	57,934	-0.3%	-2.6%	-2.9%
Region Total	336,130	381,781	389,749	13.6%	2.1%	16.0%

Source: US Census Bureau American Community Survey.

Table C.3 – Racial Demographics, Lenoir County, 2017

Jurisdiction	Caucasian	African-American	Asian	Other Race*	Two or More Races	Persons of Hispanic or Latino Origin**
Grifton	44.9%	48.0%	0.0%	6.3%	0.9%	8.8%
Kinston	31.1%	64.9%	0.7%	1.1%	2.2%	2.9%
La Grange	39.0%	61.0%	0.0%	0.0%	0.0%	0.0%
Pink Hill	63.7%	24.0%	0.0%	11.8%	0.5%	15.5%
Lenoir County	55.1%	39.3%	0.6%	1.8%	3.2%	7.5%

*Other races include 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.

Future Growth and Development

This section provides an explanation of anticipated development trends for jurisdictions in Lenoir County that are participants in the CRS. Evaluating future growth and development decisions in relation to known hazard areas can lead to better growth management and more effective risk reduction strategies.

The City of Kinston is centrally located within Lenoir County and serves as the commercial and service hub of the County. Lenoir County has a rich history grounded in manufacturing and agriculture. Both the City of Kinston, as well as the County at large, saw a massive decline in development and population growth roughly thirty to forty years ago. With the burgeoning growth of the City of Greenville, as well as Pitt County at large, Lenoir County is starting to experience a renaissance. Growth and investment have become very apparent within downtown Kinston, and this is starting to spread out into more rural portions of the community.

Growth and development throughout Lenoir County appear to be influenced by the City of Kinston, as well as the County’s close proximity to the cities of Greenville and Goldsboro. Development pressures within the County are more pronounced along NC Highway 11 headed towards Greenville, as well as along US Highway 70 leading to Goldsboro. It is anticipated that these growth patterns will continue through the planning period. Southern Lenoir County is the area that is most susceptible to flooding. Development has been more limited within this portion of the County.

Lenoir County Future Land Use Plan

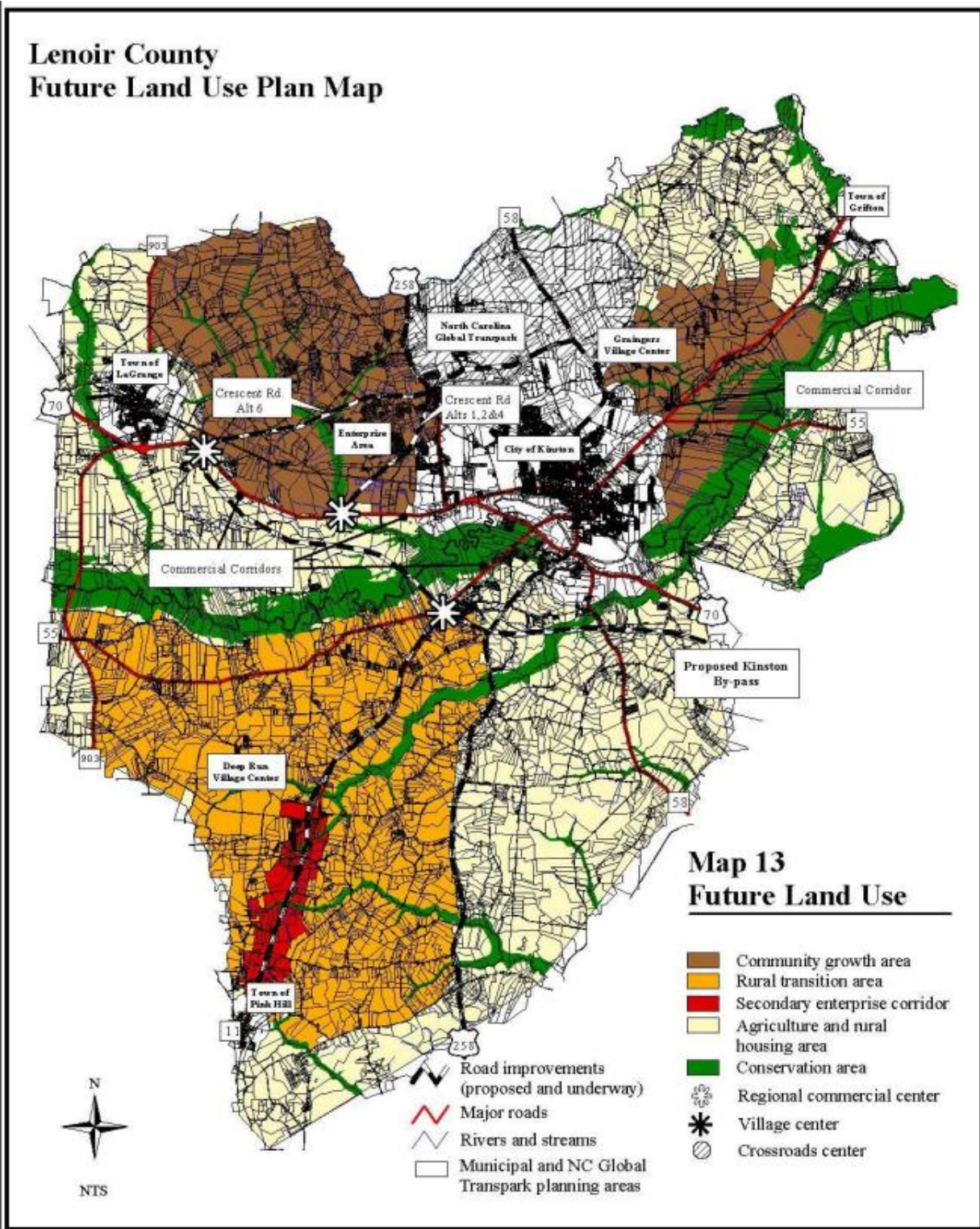
The Lenoir County Future Land Use Plan was adopted by the Lenoir County Board of Commissioners in May of 2001. The plan defines five future land use districts including:

- ▶ Community Growth Areas
- ▶ Rural Transition Areas
- ▶ Secondary Enterprise Corridor
- ▶ Agriculture and Rural Housing
- ▶ Conservation Areas

These districts are defined in detail under Section 3 on page 30 of the Lenoir County Future Land Use Plan: <http://www.co.lenoir.nc.us/pdfs/landuse/draftreport.pdf>.

Figure C.2 provides the delineation of each Future Land Use District.

Figure C.2 – Lenoir County Future Land Use



City of Kinston Comprehensive Plan

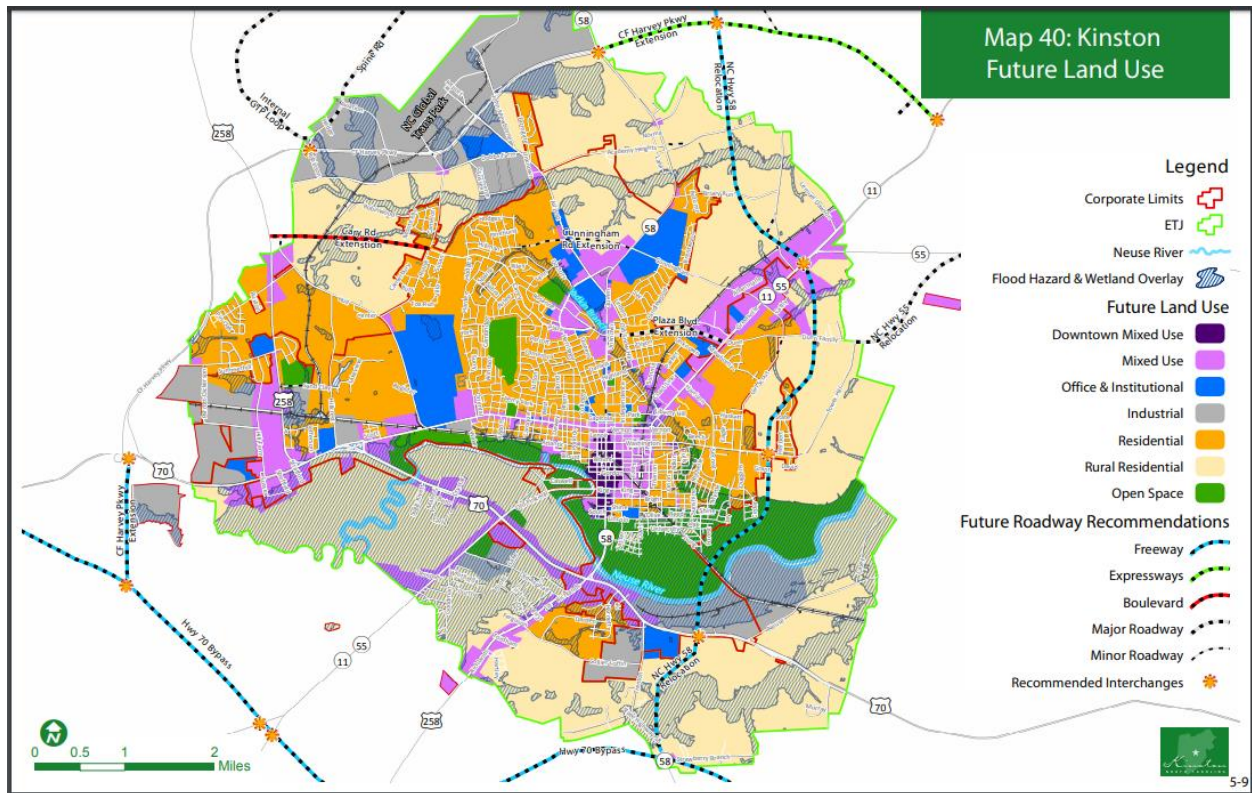
The City of Kinston Comprehensive Plan “Plan Kinston” was adopted by the Kinston City Council in October of 2015. The Land Use Plan defines seven primary Future Land Use Districts including:

- ▶ Downtown Mixed Use
- ▶ Mixed Use
- ▶ Office & Institutional
- ▶ Industrial
- ▶ Residential
- ▶ Rural Residential
- ▶ Open Space

These districts are defined in detail under Section 5 on page 5-2 of the Plan Kinston document available through the following URL: <https://www.ci.kinston.nc.us/DocumentCenter/View/777/Kinston-Comprehensive-Land-Use-Plan>.

Figure C.3 provides the delineation of each Future Land Use District.

Figure C.3 – City of Kinston Future Land Use



Asset Inventory

The following tables summarize the asset inventory for Lenoir County unincorporated and incorporated areas in order to estimate the total physical exposure to hazards in this area. The locations of critical facilities are shown in Figure C.4. Critical facilities are a subset of identified assets from the Critical Infrastructure & Key Resources dataset. Note that the counts are by building; where a critical facility comprises a cluster of buildings, each building is counted and displayed.

Neuse River

Regional Hazard Mitigation Plan
2020

Table C.4 – Critical Infrastructure & Key Resources by Type

Jurisdiction	Food and Agriculture	Banking and Finance	Chemical & Hazardous	Commercial	Communications	Critical Manufacturing	Defense Industrial Base	Government Facilities	Healthcare	Nuclear	Postal and Shipping	Transportation Systems	Energy	Emergency Services	Water	Total
Lenoir County	2,386	2	0	427	0	108	0	62	14	0	1	50	6	10	2	3,068
City of Kinston	95	33	0	900	2	128	0	168	193	1	3	129	12	4	7	1,675
Town of Grifton	93	2	1	68	0	24	0	8	7	0	0	14	5	0	0	222
Town of La Grange	39	7	0	100	0	14	0	22	4	0	0	21	0	2	6	215
Town of Pink Hill	6	1	0	61	0	9	0	18	4	0	0	10	0	1	0	110
Lenoir County Total	2,619	45	1	1,556	2	283	0	278	222	1	4	224	23	17	15	5,290

Source: NCEM Risk Management Tool

Table C.5 – High Potential Loss Facilities by Use

Jurisdiction	Residential	Commercial	Industrial	Government	Agricultural	Religious	Utilities	Total
Lenoir County	10	18	7	20	4	18	4	81
City of Kinston	10	115	12	44	0	44	10	235
Town of Grifton	6	10	2	0	0	1	5	24
Town of La Grange	0	1	0	6	0	10	0	17
Town of Pink Hill	0	0	0	3	0	1	0	4
Lenoir County Total	26	144	21	73	4	74	19	361

Source: NCEM Risk Management Tool

Housing

The table below details key housing statistics for Lenoir County. As a percent of growth from 2010 housing, Lenoir County’s housing stock has grown slightly due in part to significant increases in Kinston and Grifton and decreases in La Grange and Pink Hill.

Table C.6 – Housing Statistics, Lenoir County, 2010-2017

Jurisdiction	Housing Units (2010)	Housing Units (2017)	% Change 2010-2017	% Owner Occupied (2017)	% Vacant Units (2017)
Grifton	1,130	1,223	8.2%	88.4%	11.6%
Kinston	9,365	11,293	20.6%	80.3%	19.7%
La Grange	1,440	1,315	-8.7%	95.1%	4.9%
Pink Hill	240	231	-3.8%	86.1%	13.9%
Lenoir County	27,437	27,517	0.3%	84.5%	15.5%

Source: US Census Bureau American Community Survey.

Economy

The following tables present key economic statistics for Lenoir County.

Table C.7 – Economic Indicators, Lenoir County, 2017

Jurisdiction	Population in Labor Force	Percent Employed (%)	Percent Unemployed (%)	Percent Not in Labor Force (%)	Unemployment Rate (%)
Grifton	59.4%	50.7%	8.7%	40.6%	14.6%
Kinston	53.4%	45.6%	7.8%	46.6%	14.5%
La Grange	48.9%	44.2%	4.7%	51.1%	9.5%
Pink Hill	66.6%	57.4%	9.1%	33.4%	13.7%
Lenoir County	58.3%	51.4%	6.7%	41.7%	11.6%

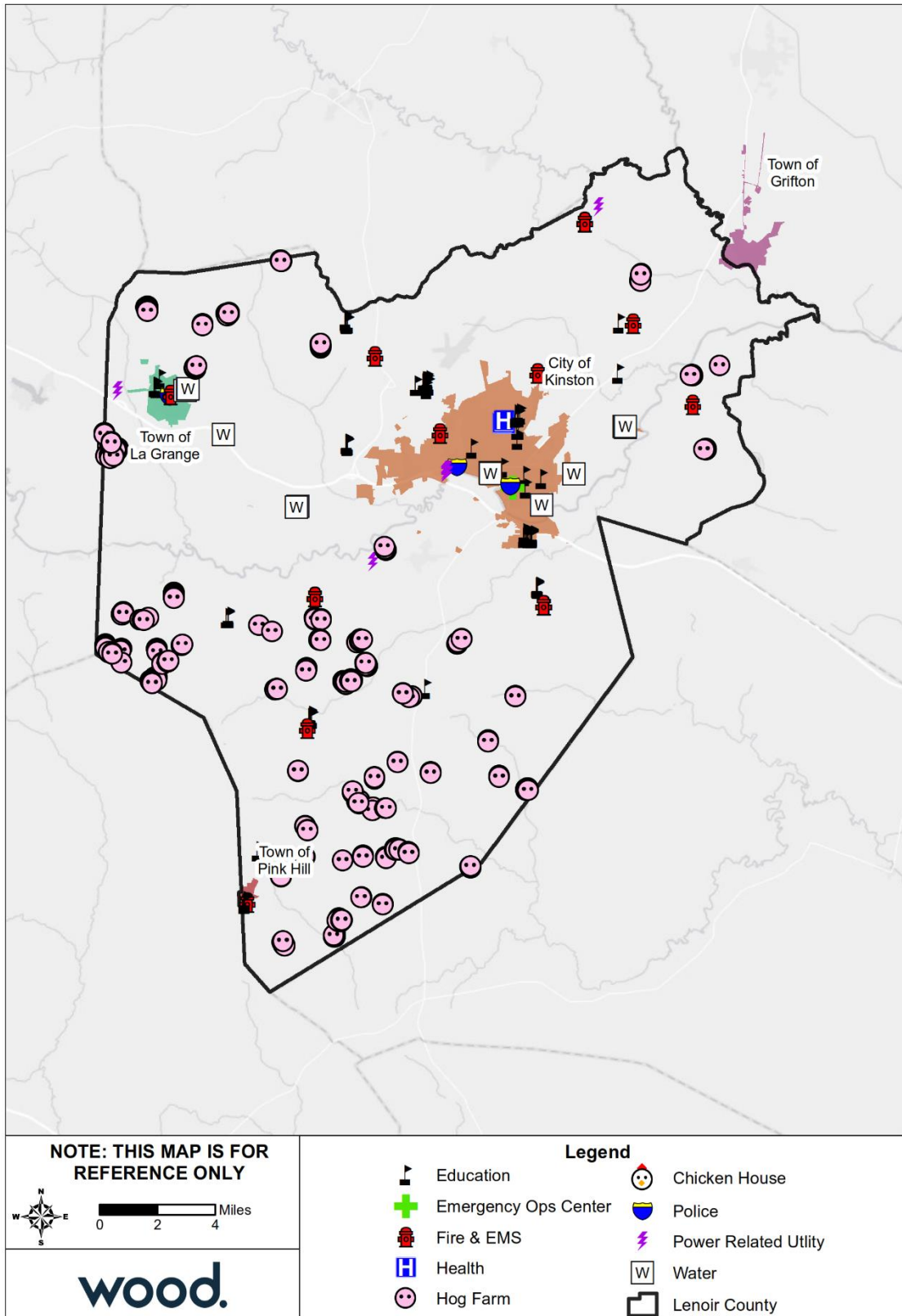
Source: US Census Bureau American Community Survey.

Table C.8 – Employment by Industry, Lenoir County, 2017

Jurisdiction	Management, Business, Science and Arts (%)	Service (%)	Sales and Office (%)	Natural Resources, Construction, and Maintenance (%)	Production, Transportation, and Material Moving (%)
Grifton	23.2%	18.7%	20.6%	16.1%	21.3%
Kinston	26.0%	26.1%	19.6%	7.0%	21.3%
La Grange	28.4%	28.3%	18.9%	6.9%	17.4%
Pink Hill	20.4%	22.9%	14.9%	27.9%	13.9%
Lenoir County	28.0%	21.8%	20.1%	11.5%	18.6%

Source: US Census Bureau American Community Survey.

Figure C.4 – Critical Facilities, Lenoir County



Source: NCEM IRISK Database, GIS Analysis

C.2 RISK ASSESSMENT

This section contains a hazard profile and vulnerability assessment for those hazards that were rated with a higher priority by jurisdiction in Lenoir County than for the Neuse River Region as a whole. Risk and vulnerability findings are also presented here for those hazards that are spatially defined and have variations in risk that could be evaluated quantitatively on a jurisdictional level. The hazards included in this section are flood and wildfire.

C.2.1 Flood

Table C.9 details the acreage of Lenoir County’s total area by jurisdiction and flood zone on the Effective DFIRM. Per this assessment, at over 20 percent, the City of Kinston has the largest portion of its land area within the mapped 1%-annual-chance floodplain. Pink Hill doesn’t have any land in the high or moderate risk flood zones, and La Grange has only 2.4 percent of its area in the SFHA. Overall, 17.1 percent of the county’s total land area falls within this floodplain.

Table C.9 – Flood Zone Acreage by Jurisdiction, Lenoir County

Flood Zone	Acreage	Percent of Total (%)
Kinston		
Zone AE	2,438.6	20.5%
Zone X (500-year)	563.5	4.7%
Zone X Unshaded	8,869.9	74.7%
Total	11,871.9	--
La Grange		
Zone AE	32.6	2.2%
Zone X (500-year)	3.4	0.2%
Zone X Unshaded	1,442.7	97.6%
Total	1,478.7	--
Pink Hill		
Zone X (unshaded)	297.2	100.0%
Total	297.2	--
Unincorporated Lenoir County		
Zone AE	43,667.9	17.0%
Zone X (500-year)	9,292.1	3.6%
Zone X (unshaded)	203,849.0	79.4%
Total	256,809.0	--
Lenoir County Total		
Zone AE	46,547.1	17.1%
Zone X (500-year)	9,928.2	3.7%
Zone X (unshaded)	215,296.7	79.2%
Total	271,772.0	--

Source: FEMA Effective DFIRM

Figure C.5 through Figure C.8 reflect the effective mapped flood hazard zones for all jurisdictions in Lenoir County, and Figure C.9 through Figure C.12 display the depth of flooding estimated to occur in these areas during the 1%-annual-chance flood.

Table C.10 provides building counts and estimated damages for CIKR buildings by sector and event in Lenoir County and incorporated jurisdictions.

ANNEX C: LENOIR COUNTY

Table C.11 provides building counts and estimated damages for High Potential Loss Structures in the 1%-annual-chance floodplain.

Table C.10 – CIKR Facilities Exposed to Flooding by Event and Jurisdiction

Sector	Event	Number of Buildings at Risk	Estimated Damages
Lenoir County Unincorporated Areas			
Commercial Facilities	10 Year	3	\$18,411
	25 Year	9	\$88,164
	50 Year	14	\$394,244
	100 Year	17	\$749,763
	Floodway	1	\$58,315
	500 Year	30	\$1,319,975
Critical Manufacturing	50 Year	1	\$1,446
	100 Year	1	\$60,565
	500 Year	3	\$317,635
Energy	10 Year	1	\$1,122
	25 Year	1	\$12,278
	50 Year	1	\$22,842
	100 Year	1	\$30,899
	500 Year	1	\$40,152
Food and Agriculture	10 Year	2	\$16,630
	25 Year	6	\$49,930
	50 Year	12	\$119,609
	100 Year	20	\$198,632
	500 Year	45	\$526,659
Government Facilities	500 Year	1	\$40,923
All Categories	10 Year	6	\$36,163
	25 Year	16	\$150,372
	50 Year	28	\$538,141
	100 Year	39	\$1,039,859
	Floodway	1	\$58,315
	500 Year	80	\$2,245,344
City of Kinston			
Banking and Finance	50 Year	1	\$851
	100 Year	1	\$8,500
	500 Year	1	\$49,984
Commercial Facilities	10 Year	65	\$3,261,912
	25 Year	100	\$6,555,572
	50 Year	145	\$12,649,280
	100 Year	188	\$19,108,870
	500 Year	227	\$32,620,101
Critical Manufacturing	10 Year	6	\$445,889
	25 Year	7	\$794,507
	50 Year	9	\$1,270,996
	100 Year	13	\$2,256,549
	500 Year	18	\$3,794,179
Energy	100 Year	1	\$65,489
	500 Year	7	\$1,092,440
Food and Agriculture	10 Year	2	\$20,585
	25 Year	2	\$33,530

ANNEX C: LENOIR COUNTY

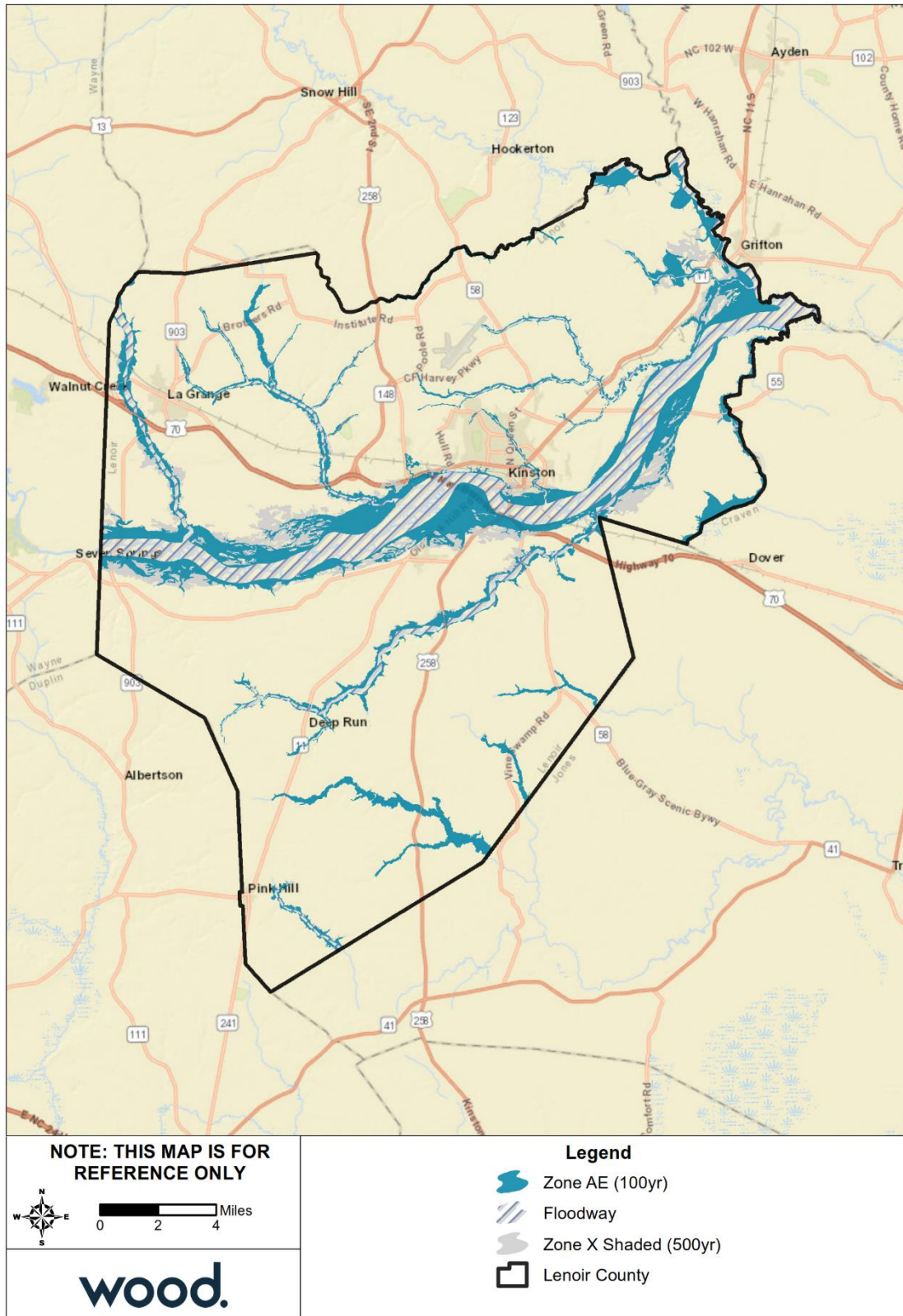
Sector	Event	Number of Buildings at Risk	Estimated Damages
	50 Year	2	\$44,406
	100 Year	2	\$54,319
	500 Year	6	\$85,461
Government Facilities	10 Year	1	\$190,552
	25 Year	2	\$202,920
	50 Year	4	\$244,759
	100 Year	8	\$364,640
	500 Year	9	\$773,239
Healthcare and Public Health	25 Year	1	\$3,221
	50 Year	1	\$142,559
	100 Year	1	\$364,317
	500 Year	2	\$528,333
Transportation Systems	10 Year	2	\$220,578
	25 Year	2	\$366,080
	50 Year	2	\$489,195
	100 Year	3	\$552,706
	500 Year	5	\$686,048
Water	10 Year	1	\$8,215
	25 Year	1	\$15,325
	50 Year	1	\$24,756
	100 Year	1	\$27,000
	500 Year	1	\$34,833
All Categories	50 Year	165	\$14,866,802
	100 Year	218	\$22,802,390
	500 Year	276	\$39,664,618
	10 Year	77	\$4,147,731
	25 Year	115	\$7,971,155

Source: NCEM Risk Management Tool

Table C.11 – High Potential Loss Properties Exposed to Flooding by Event and Jurisdiction

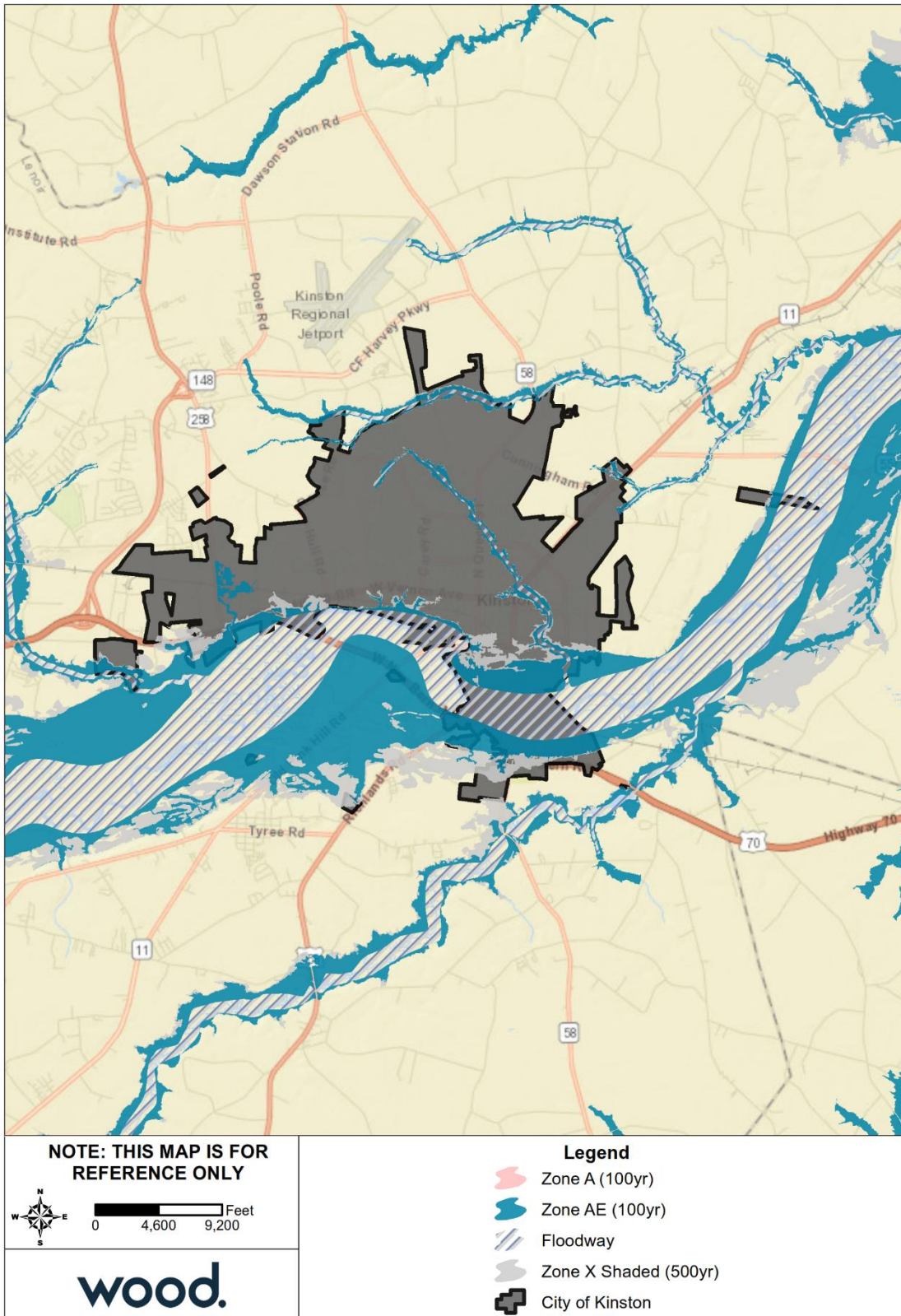
Sector	Event	Number of Buildings at Risk	Estimated Damages
Lenoir County Unincorporated Areas			
Commercial	50 Year	1	\$50,107
	100 Year	1	\$170,743
	500 Year	2	\$242,101
Industrial	500 Year	1	\$125,842
All Categories	50 Year	1	\$50,107
	100 Year	1	\$170,743
	500 Year	3	\$367,943
City of Kinston			
Commercial	10 Year	1	\$16,314
	25 Year	4	\$463,046
	50 Year	5	\$2,416,426
	100 Year	6	\$4,423,497
	500 Year	8	\$8,641,488
Government	100 Year	1	\$2,862
	500 Year	1	\$71,922
Utilities	100 Year	1	\$65,489
	500 Year	4	\$986,753
All Categories	10 Year	1	\$16,314
	25 Year	4	\$463,046
	50 Year	5	\$2,416,426
	100 Year	8	\$4,491,848
	500 Year	13	\$9,700,163

Figure C.5 – FEMA Flood Hazard Areas, Unincorporated Lenoir County



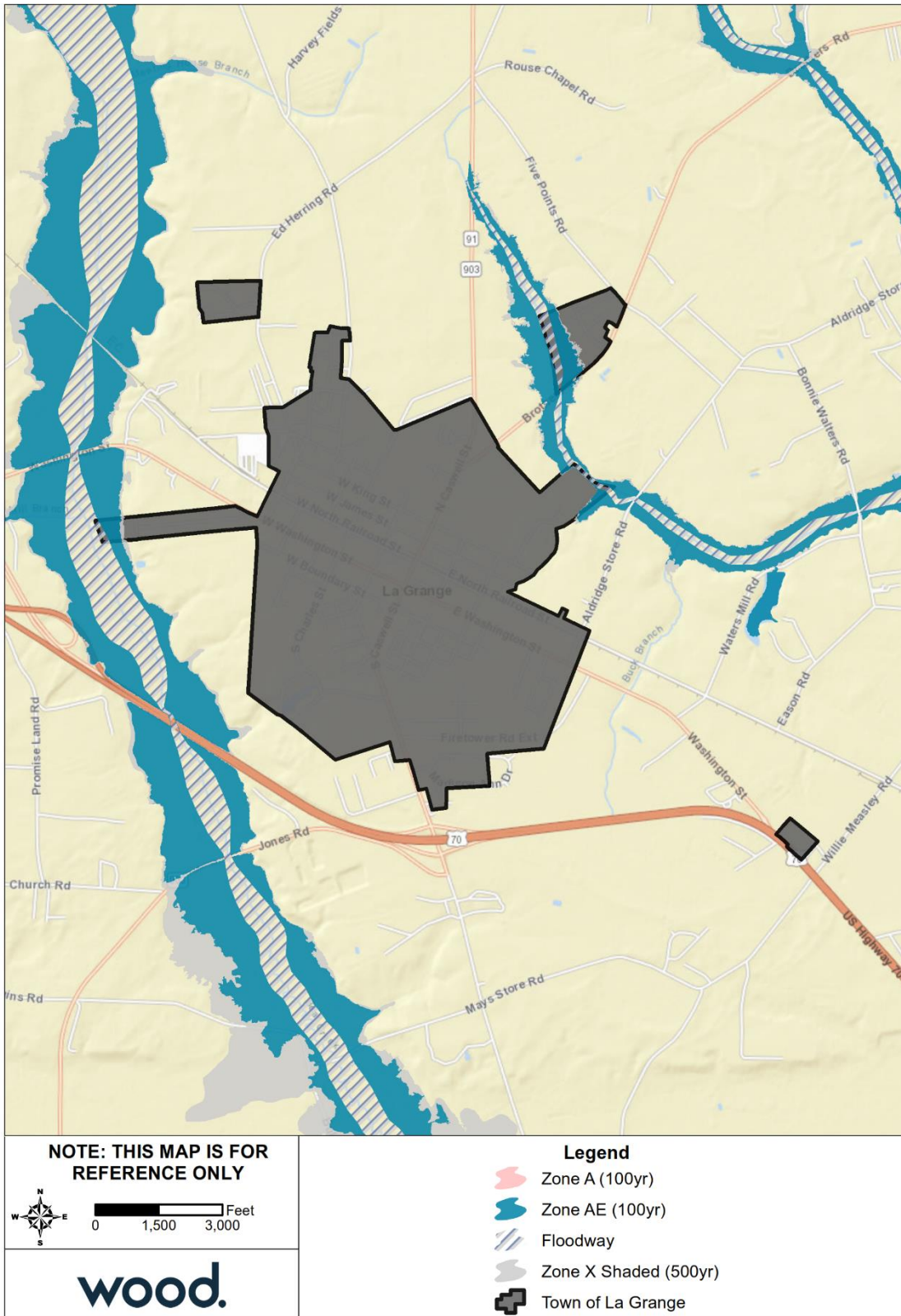
Source: FEMA Effective DFIRM

Figure C.6 – FEMA Flood Hazard Areas, City of Kinston



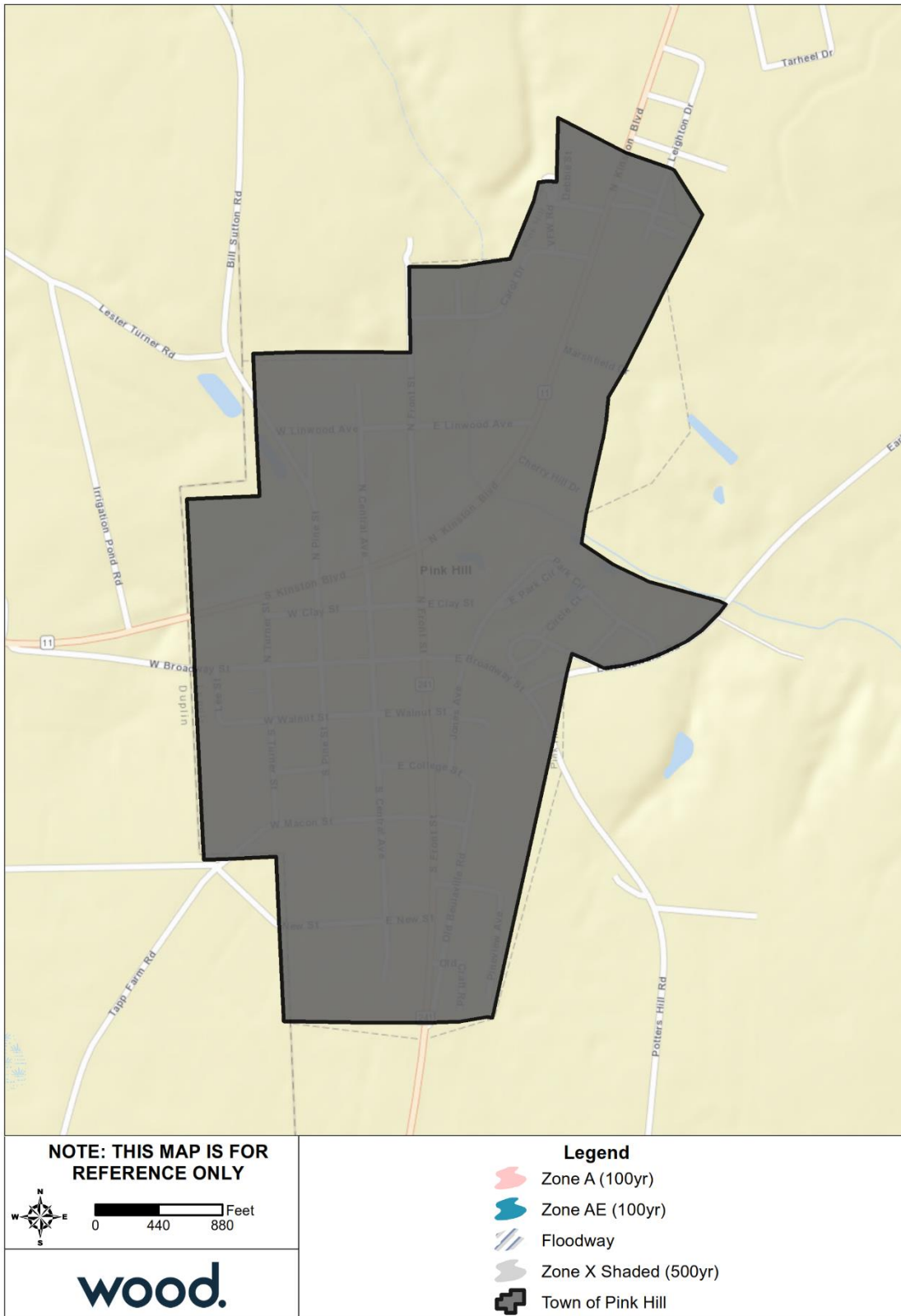
Source: FEMA Effective DFIRM

Figure C.7 – FEMA Flood Hazard Areas, Town of La Grange



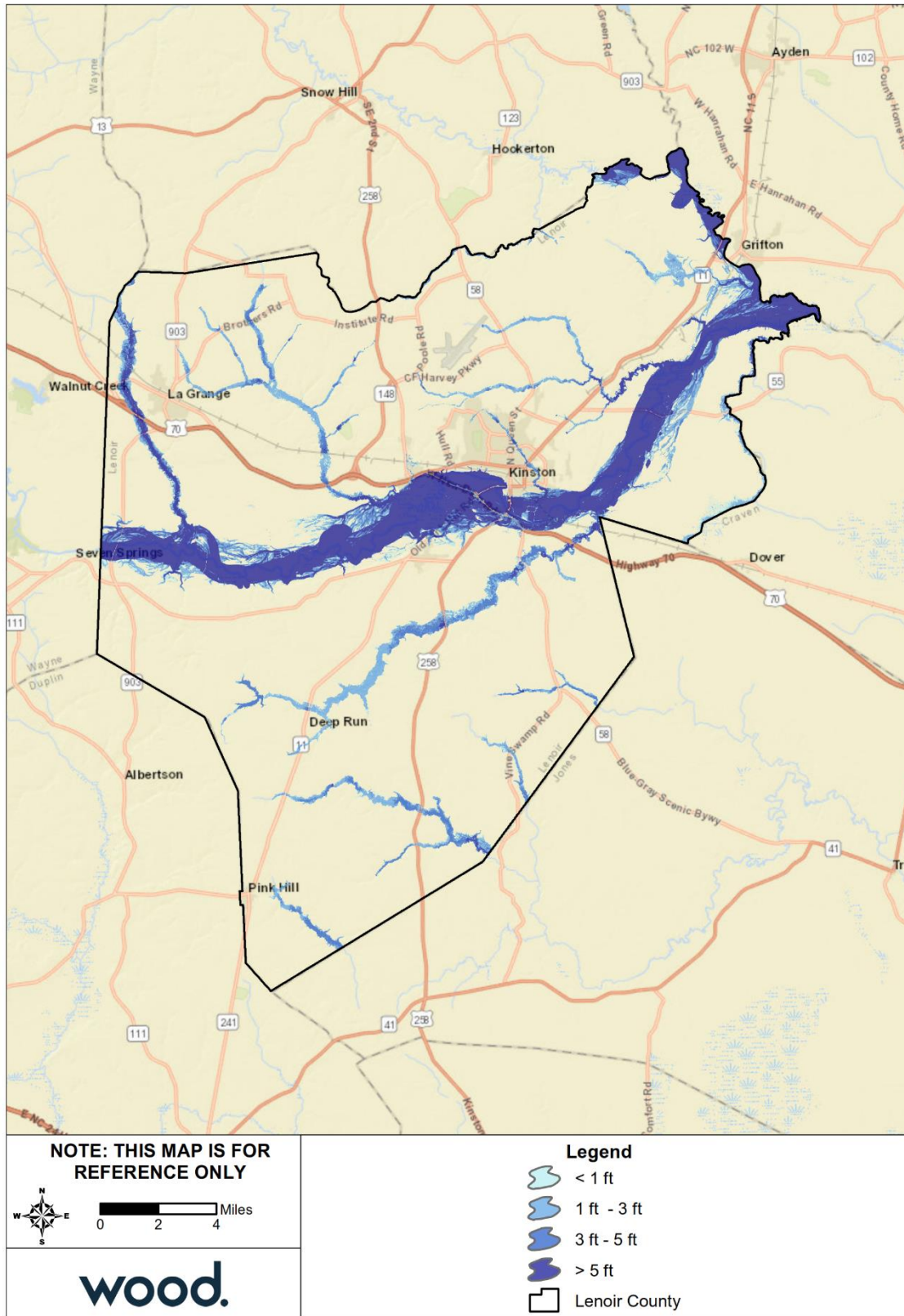
Source: FEMA Effective DFIRM

Figure C.8 – FEMA Flood Hazard Areas, Town of Pink Hill



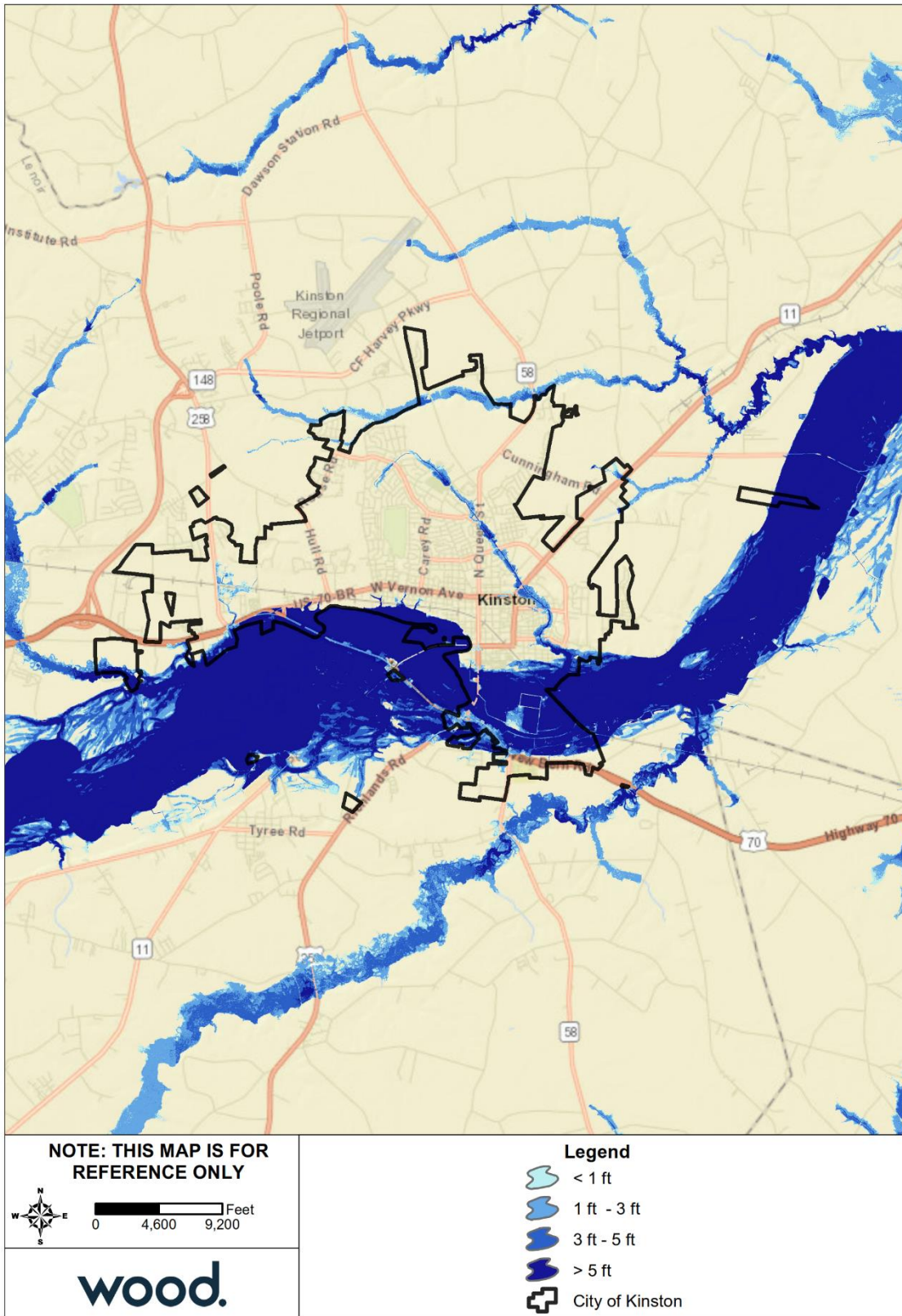
Source: FEMA Effective DFIRM

Figure C.9 – Flood Depth, 1%-Annual-Chance Floodplain, Unincorporated Lenoir County



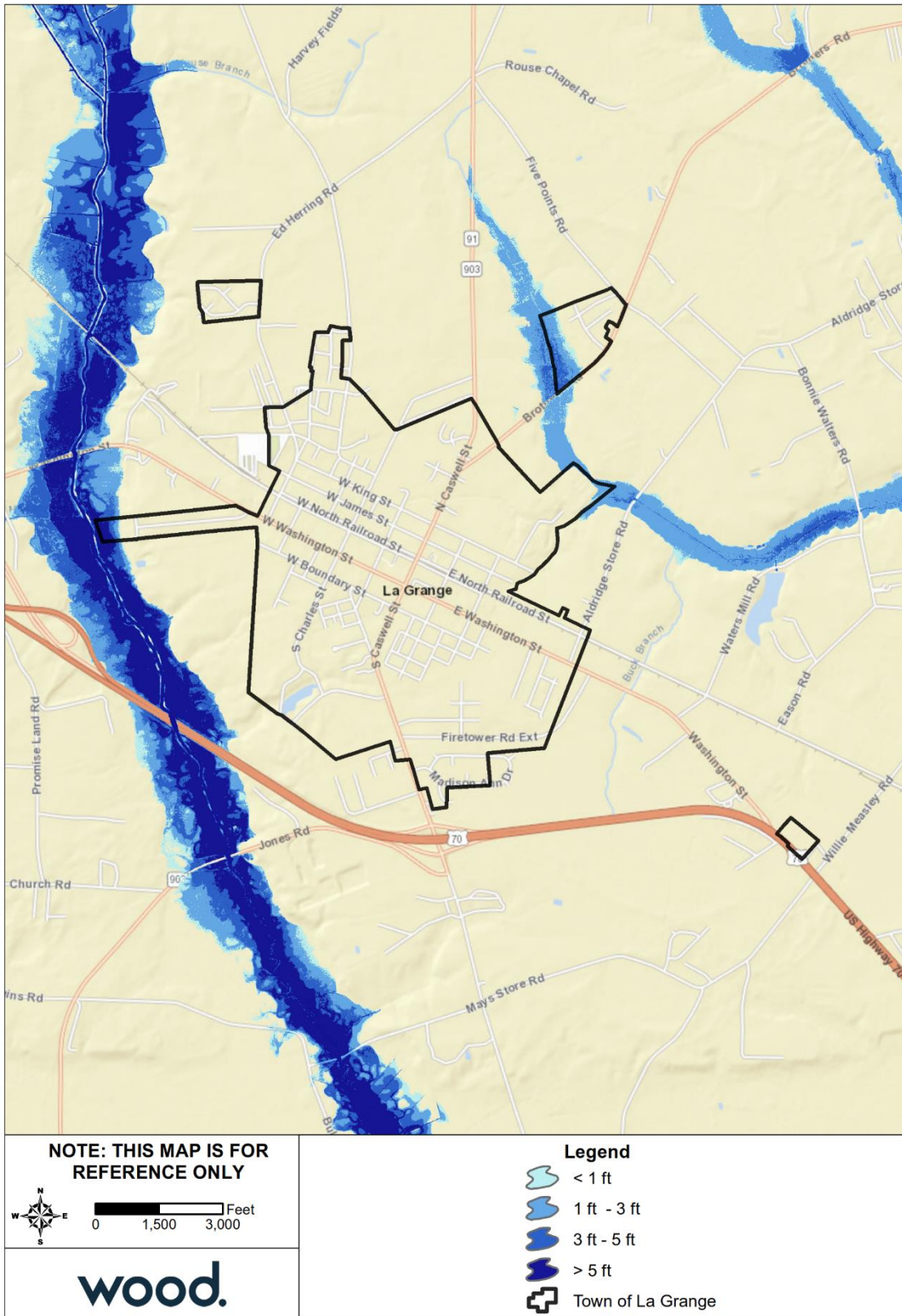
Source: FEMA Effective DFIRM

Figure C.10 – Flood Depth, 1%-Annual-Chance Floodplain, City of Kinston



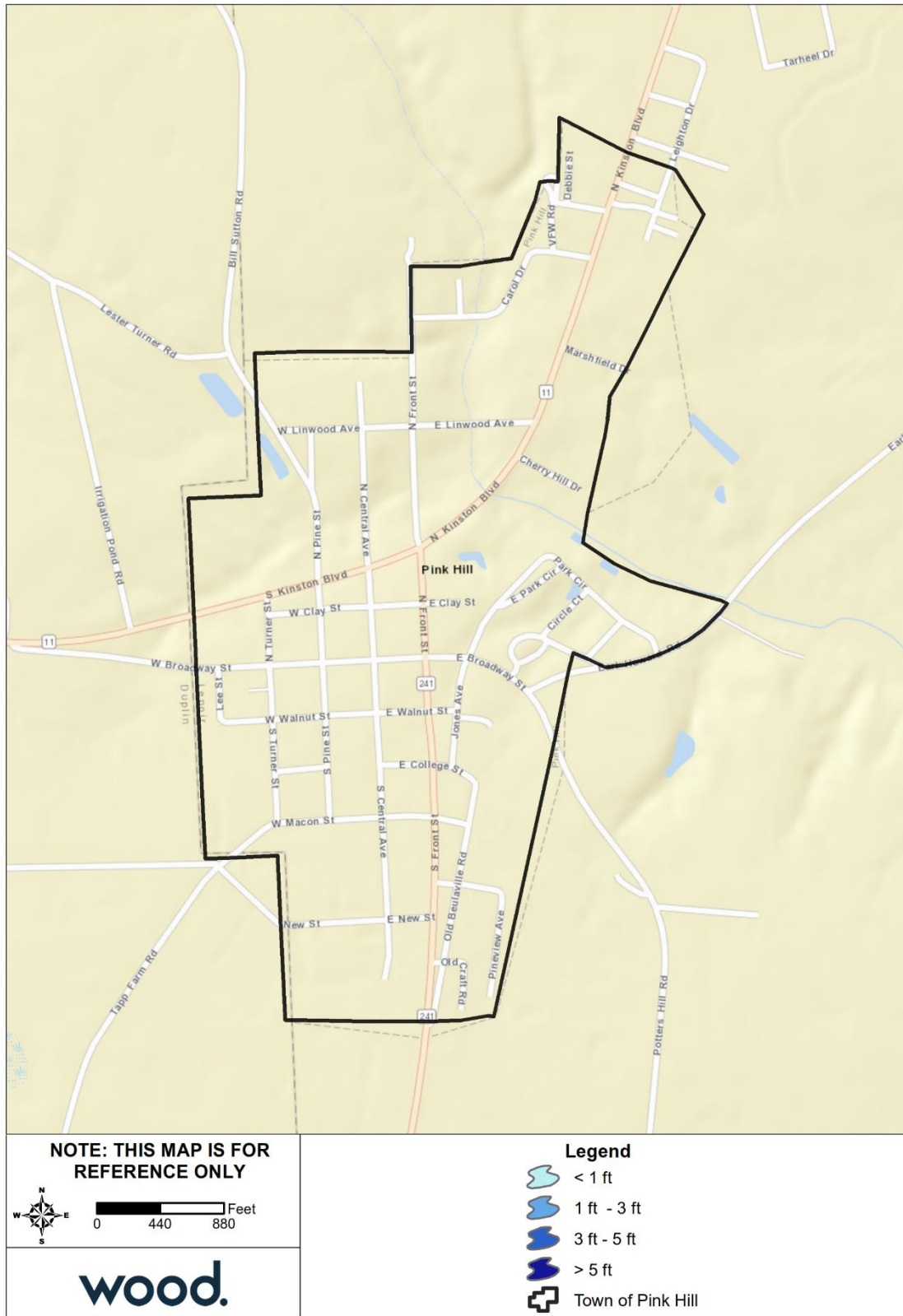
Source: FEMA Effective DFIRM

Figure C.11 – Flood Depth, 1%-Annual-Chance Floodplain, Town of La Grange



Source: FEMA Effective DFIRM

Figure C.12 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Snow Hill



Source: FEMA Effective DFIRM

C.2.2 Wildfire

Table C.12 summarizes the acreage in Lenoir 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 47 percent of Lenoir County is not included in the WUI.

Table C.12 – Wildland Urban Interface Acreage, Lenoir County

	Housing Density	Total Acreage	Percent of Total Acreage
	<i>Not in WUI</i>	121,536.62	47.3%
	LT 1hs/40ac	43,486.64	16.9%
	1hs/40ac to 1hs/20ac	21,032.51	8.2%
	1hs/20ac to 1hs/10ac	21,385.76	8.3%
	1hs/10ac to 1hs/5ac	19,633.09	7.6%
	1hs/5ac to 1hs/2ac	17,155.47	6.7%
	1hs/2ac to 3hs/1ac	12,237.71	4.8%
	GT 3hs/1ac	309.13	0.1%
	Total	256,776.93	

Source: Southern Wildfire Risk Assessment

Figure C.13 depicts the WUI for Lenoir County and all participating jurisdictions. The WUI is the area where housing development is built near or among areas of vegetation that may be prone to wildfire. Figure C.14 and Figure C.15 detail the Fire Intensity Scale, which indicates the potential severity of fire based on fuel loads, topography, and other factors. Figure C.16 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 Lenoir County, particularly along the eastern and southeastern border. Burn probability is low to moderate across the entire county, with the highest probability also along the eastern and southeastern borders. In the incorporated areas, burn probability is low. While the areas along the County’s border and in the unincorporated areas have high potential fire intensity as well as moderate burn probability, they are largely outside of the WUI, so fire here would not necessarily threaten human life or property.

Table C.13 provides building counts and estimated damages for Critical Infrastructure and Key Resources (CIKR) buildings by sector at risk to wildfire hazard in Lenoir County and participating jurisdictions. Table C.14 provides counts and estimated damages for High Potential Loss Properties in these areas.

Table C.13 – Critical Facilities Exposed to Wildfire by Jurisdiction, Lenoir County

Sector	Number of Buildings at Risk	Estimated Damages
Lenoir County Unincorporated Area		
Commercial Facilities	58	\$35,231,550
Critical Manufacturing	11	\$6,290,646
Emergency Services	1	\$2,859,485
Food and Agriculture	300	\$35,550,181
Government Facilities	10	\$44,588,456
Healthcare and Public Health	2	\$3,943,970
Transportation Systems	7	\$2,596,373
All Categories	389	\$131,060,661

ANNEX C: LENOIR COUNTY

Sector	Number of Buildings at Risk	Estimated Damages
City of Kinston		
Commercial Facilities	52	\$60,438,050
Critical Manufacturing	9	\$82,152,558
Energy	1	\$230,029
Food and Agriculture	11	\$1,722,252
Government Facilities	3	\$2,787,091
Healthcare and Public Health	1	\$1,164,306
Transportation Systems	10	\$4,771,061
All Categories	87	\$153,265,347
Town of Grifton		
Banking and Finance	1	\$249,613
Chemical	1	\$13,765,180
Commercial Facilities	27	\$13,838,742
Critical Manufacturing	8	\$24,295,891
Energy	1	\$682,629,591
Food and Agriculture	21	\$1,092,802
Government Facilities	2	\$704,425
Healthcare and Public Health	3	\$1,050,357
Transportation Systems	6	\$7,076,330
All Categories	70	\$744,702,931
Town of La Grange		
Government Facilities	1	\$6,713,460
All Categories	1	\$6,713,460
Town of Pink Hill		
Commercial Facilities	18	\$4,327,381
Critical Manufacturing	3	\$473,539
Food and Agriculture	2	\$77,371
Transportation Systems	5	\$1,145,483
All Categories	28	\$6,023,774

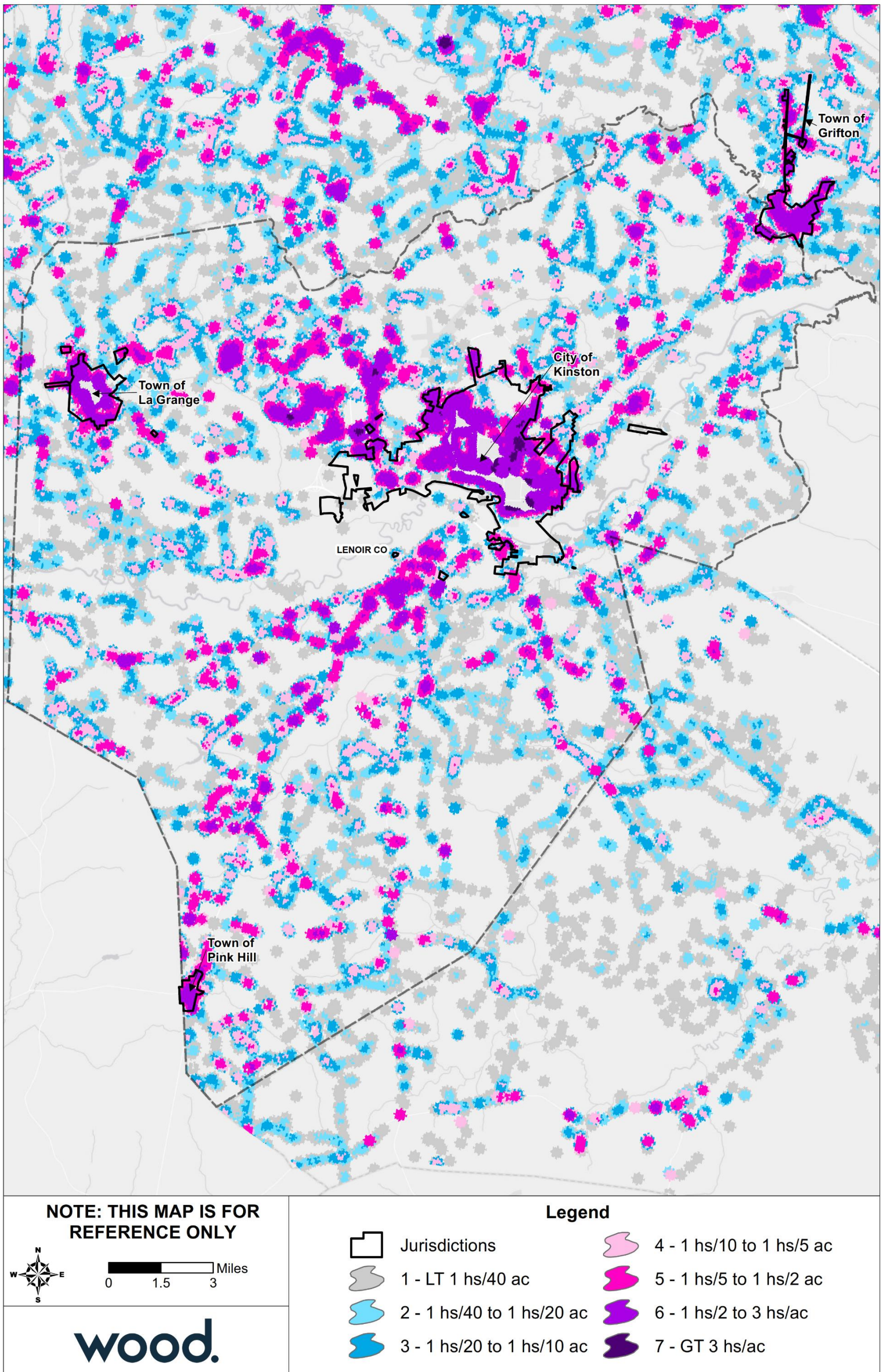
Source: NCEM Risk Management Tool

Table C.14 – High Potential Loss Properties Exposed to Wildfire by Jurisdiction, Lenoir County

Category	Number of Buildings at Risk	Estimated Damages
Lenoir County Unincorporated Area		
Commercial	3	\$5,587,186
Government	6	\$43,530,605
Industrial	1	\$1,143,871
Religious	1	\$8,781,220
Residential	1	\$1,375,718
All Categories	12	\$60,418,600
City of Kinston		
Commercial	2	\$43,860,324
Industrial	1	\$3,741,132
Religious	1	\$7,274,815
All Categories	4	\$54,876,271
Town of La Grange		
Government	1	\$6,713,460
All Categories	1	\$6,713,460

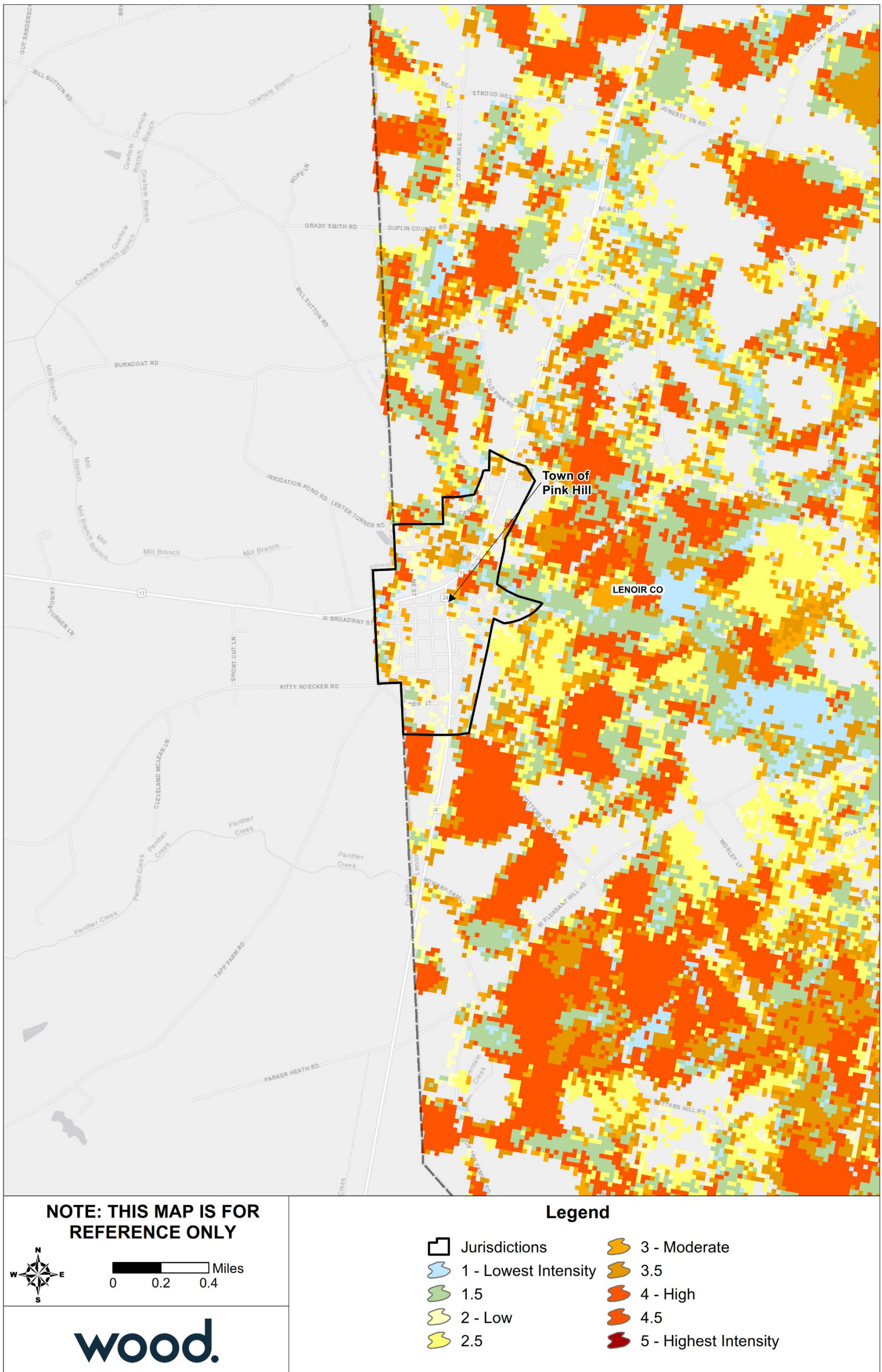
Source: NCEM Risk Management Tool

Figure C.13 – Wildland Urban Interface, Lenoir County



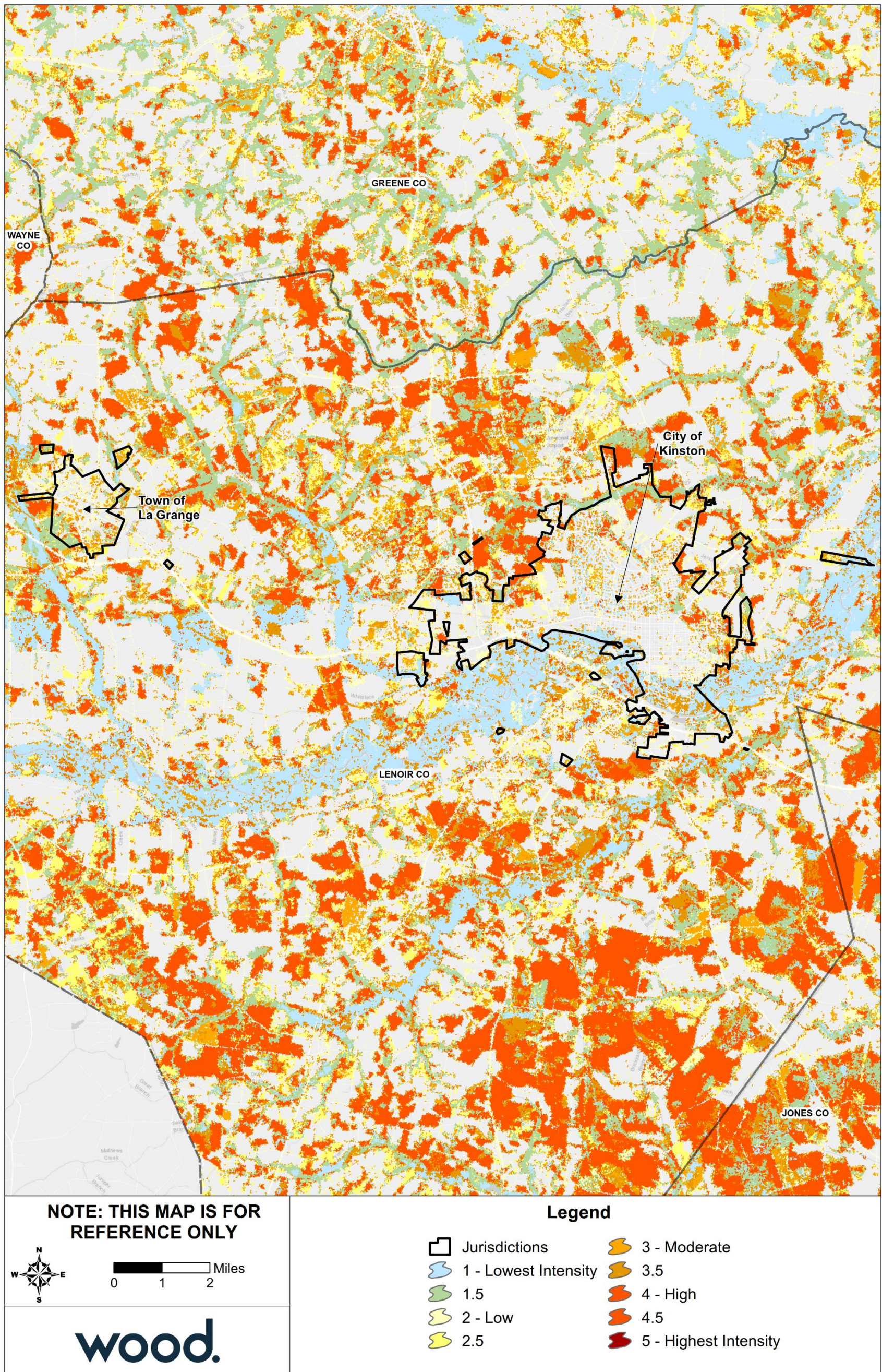
Source: Southern Wildfire Risk Assessment

Figure C.14 – Fire Intensity Scale, Lenoir County (Detail 1)



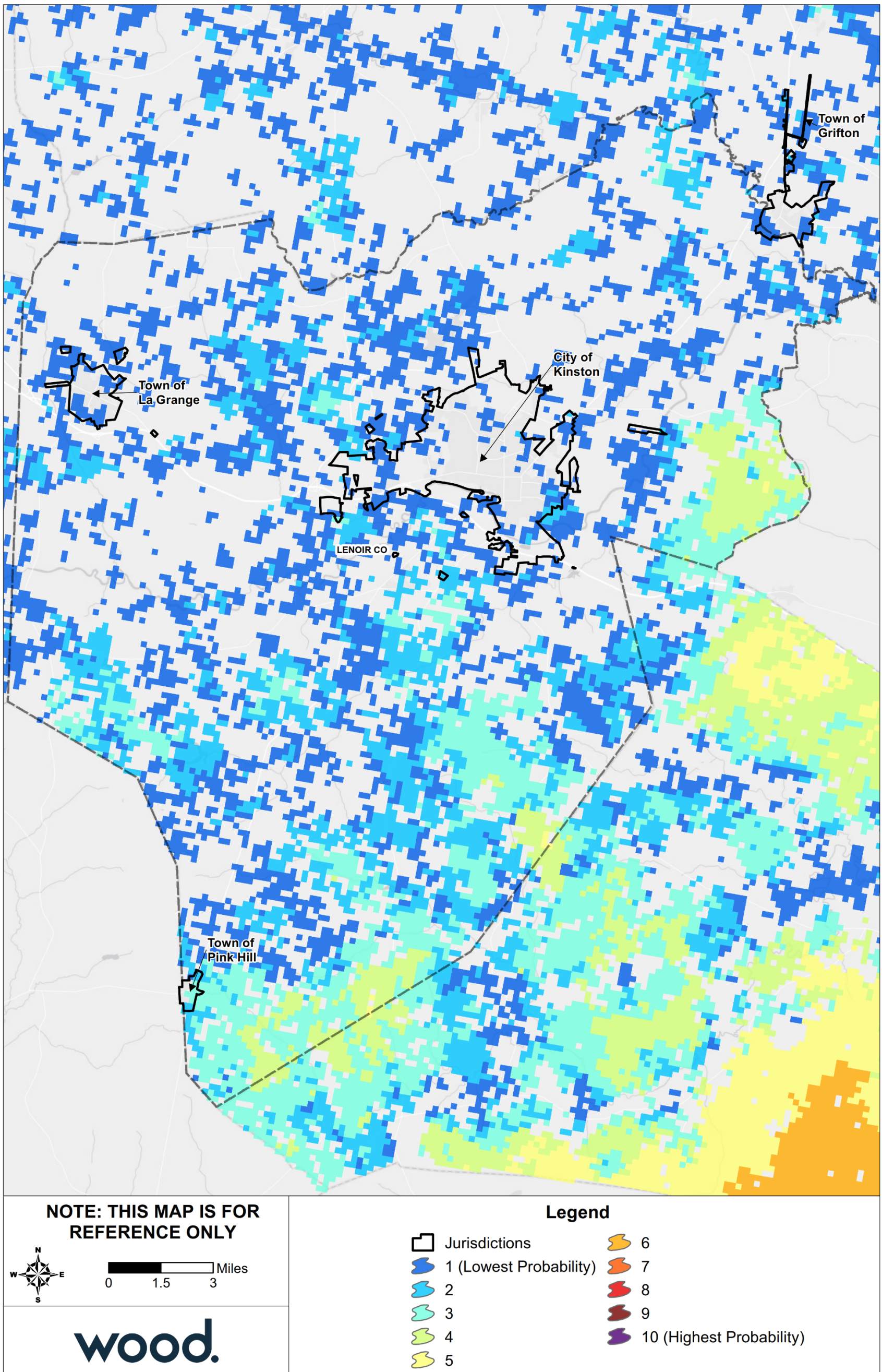
Source: Southern Wildfire Risk Assessment

Figure C.15 – Fire Intensity Scale, Lenoir County (Detail 2)



Source: Southern Wildfire Risk Assessment

Figure C.16 – Burn Probability, Lenoir County



Source: Southern Wildfire Risk Assessment

C.3 CAPABILITY ASSESSMENT

C.3.1 Overall Capability

Details on the tools and resources in place and available to Lenoir County were provided by the County’s HMPC representatives and are summarized in Section 5 Capability Assessment. Based on that information and using the scoring methodology detailed in that section, Lenoir County has an overall capability rating of Moderate, however the County self-assessed its overall capability as High. Lenoir County provides many resources for its incorporated jurisdictions and many of the mitigation projects in this plan are regional in nature, with the County serving as the project lead; therefore, the County’s capability is also an indicator for its incorporated areas. The County’s Self-Assessment of key capability areas is summarized in Table C.15 below.

Table C.15 – Capability Self-Assessment, Lenoir County

Capability Area	Rating
Plans, Ordinances, Codes and Programs	High
Administrative and Technical Capability	High
Fiscal Capability	High
Education and Outreach Capability	High
Mitigation Capability	High
Political Capability	High
Overall Capability	High

C.3.2 Floodplain Management

The following tables reflect NFIP entry dates as well as policy and claims data for Lenoir County and incorporated categorized by structure type, flood zone, Pre-FIRM and Post-FIRM.

Table C.16 – NFIP Program Entry Dates

Community	Regular Entry Date
Lenoir County (Unincorporated Area)	January 6, 1983
City of Kinston	June 15, 1982
Town of La Grange	July 2, 2004
Town of Pink Hill	January 26, 2012

Source: FEMA Community Information System

Table C.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
Lenoir County Unincorporated Area					
Single Family	226	\$138,122	\$42,193,300	178	\$6,108,203.80
All Other Residential	0	\$0	\$0	2	\$30,149.28
Non-Residential	8	\$7,379	\$1,090,400	7	\$648,710.76
Total	234	\$145,501	\$43,283,700	187	\$6,787,063.84
City of Kinston					
Single Family	234	\$153,149	\$41,529,100	313	\$7,091,298.01
2-4 Family	16	\$15,489	\$3,090,100	19	\$1,367,138.43
All Other Residential	24	\$62,764	\$6,356,700	54	\$5,851,305.00
Non-Residential	93	\$266,756	\$38,480,200	127	\$22,118,150.40
Total	367	\$498,158	\$89,456,100	513	\$36,427,891.84
Town of La Grange					

ANNEX C: LENOIR COUNTY

Structure Type	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Single Family	10	\$3,243	\$2,298,000	2	\$40,078.89
Non-Residential	1	\$2,934	\$487,600	0	\$0.00
Total	11	\$6,177	\$2,785,600	2	\$40,078.89

Source: FEMA Community Information System, accessed January 2020

Table C.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
Lenoir County Unincorporated Area					
A01-30 & AE Zones	78	\$68,232	\$14,093,800	134	\$5,185,038.73
A Zones	0	\$0	\$0	1	\$9,259.74
B, C & X Zone					
Standard	13	\$11,137	\$1,631,200	16	\$670,684.34
Preferred	95	\$37,332	\$25,709,000	27	\$741,192.69
Total	186	\$116,701	\$41,434,000	178	\$6,606,175.50
City of Kinston					
A01-30 & AE Zones	191	\$391,663	\$55,123,000	415	\$32,690,892.97
A Zones	1	\$1,680	\$72,400	18	\$324,878.61
B, C & X Zone					
Standard	21	\$30,769	\$6,026,900	35	\$2,111,027.38
Preferred	112	\$48,846	\$26,734,000	26	\$1,057,430.58
Total	325	\$472,958	\$87,956,300	494	\$36,184,229.54
Town of La Grange					
B, C & X Zone					
Standard	1	\$2,934	\$487,600	0	\$0.00
Preferred	10	\$3,243	\$2,298,000	2	\$40,078.89
Total	11	\$6,177	\$2,785,600	2	\$40,078.89

Source: FEMA Community Information System, accessed January 2020

Table C.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
Lenoir County Unincorporated Area					
A01-30 & AE Zones	38	\$38,276	\$4,896,900	74	\$2,544,577.04
A Zones	0	\$0	\$0	1	\$9,259.74
B, C & X Zone					
Standard	49	\$22,320	\$11,456,600	26	\$925,901.49
Preferred	8	\$7,151	\$1,049,600	11	\$418,118.96
Preferred	41	\$15,169	\$10,407,000	15	\$507,782.53
Total	87	\$60,596	\$16,353,500	101	\$3,479,738.27
City of Kinston					
A01-30 & AE Zones	134	\$273,260	\$29,405,700	353	\$21,555,335.26
A Zones	1	\$1,680	\$72,400	18	\$324,878.61
B, C & X Zone					
Standard	87	\$49,417	\$21,526,100	44	\$1,463,350.88
Standard	14	\$17,279	\$3,330,100	27	\$875,014.90
Preferred	73	\$32,138	\$18,196,000	17	\$588,335.98
Total	222	\$324,357	\$51,004,200	415	\$23,343,564.75
Town of La Grange					

ANNEX C: LENOIR COUNTY

Flood Zone	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
B, C & X Zone	11	\$6,177	\$2,785,600	2	\$40,078.89
Standard	1	\$2,934	\$487,600	0	\$0.00
Preferred	10	\$3,243	\$2,298,000	2	\$40,078.89
Total	11	\$6,177	\$2,785,600	2	\$40,078.89

Source: FEMA Community Information System, accessed January 2020

Table C.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
Lenoir County Unincorporated Area					
A01-30 & AE Zones	40	\$29,956	\$9,196,900	59	\$2,609,945.29
B, C & X Zone	59	\$26,149	\$15,883,600	17	\$485,975.54
Standard	5	\$3,986	\$581,600	5	\$252,565.38
Preferred	54	\$22,163	\$15,302,000	12	\$233,410.16
Total	99	\$56,105	\$25,080,500	76	\$3,095,920.83
City of Kinston					
A01-30 & AE Zones	57	\$118,403	\$25,717,300	62	\$11,135,557.71
B, C & X Zone	46	\$30,198	\$11,234,800	17	\$1,705,107.08
Standard	7	\$13,490	\$2,696,800	8	\$1,236,012.48
Preferred	39	\$16,708	\$8,538,000	9	\$469,094.60
Total	103	\$148,601	\$36,952,100	79	\$12,840,664.79

Source: FEMA Community Information System, accessed January 2020

C.4 MITIGATION STRATEGY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
L1	Continue to pro-actively educate the public about services and ways to deal with extreme heat and dehydration. This task will be carried out through the following means: <ul style="list-style-type: none"> • Education through the Social Services Department • Maintain state Crisis Intervention Program • Disseminate pamphlets • Run local print ads • Utilize other local media 	Lenoir County, Kinston, La Grange, Pink Hill	Extreme Heat	High	4.2	PIO	<ul style="list-style-type: none"> • Lenoir County Emergency Services • Lenoir County Health Department • Municipal Jurisdictions 	\$3,000	General Fund, NCDPS	Ongoing – Next Five Years	In Progress – Carry Forward	Lenoir County maintains a comprehensive campaign regarding the issue of heat exhaustion and dehydration. This will continue through implementation of this plan.
L2	Work with and assist the Neuse Regional Water and Sewer Authority in enforcing its Water Shortage Ordinance. These efforts will involve monitoring of regional drought conditions and coordination with NCDEQ.	Lenoir County, Kinston, La Grange, Pink Hill	Drought	High	1.1	P	<ul style="list-style-type: none"> • Neuse Regional Water and Sewer Authority • Lenoir County Administration • Municipal Administrations 	Staff Time	General Fund	Ongoing – As needed	In Progress – Carry Forward	Lenoir County will continue to assist the Water and Sewer Authority in their efforts to impose water use restrictions when deemed necessary.
L3	Continue to coordinate annually with the NC Forestry Division 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.	Lenoir County, Kinston, La Grange, Pink Hill	Wildfire	High	3.1	ES	<ul style="list-style-type: none"> • Lenoir County Emergency Management • NC Forestry Division • Municipal Administrations 	Staff Time	General Fund, NC Forestry Division	Ongoing – over next five years	In Progress – Carry Forward	The County will continue efforts to work closely with the NC Forestry Division educate and inform citizens about dangers associated with wildfire.
L4	Continue to maintain CRS rating through implementation of a comprehensive floodplain management program.	Lenoir County, Kinston	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	P	<ul style="list-style-type: none"> • Lenoir County Administration • Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry Forward	Lenoir County and the City of Kinston will continue to maintain and attempt to improve upon each communities existing CRS rating. The Towns of La Grange and Pink Hill will consider joining the CRS program through implementation of this plan.
L5	Work closely with all electric service providers operating throughout the County to ensure that tree trimming necessary to protect the integrity of service lines is conducted on an ongoing basis.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	3.2	P	<ul style="list-style-type: none"> • Electric Service Providers • Lenoir County Public Services 	Staff Time	Electric Service Providers, Staff Time	Ongoing – over next five years	In Progress – Carry Forward	Lenoir County continues to work closely with local electric service providers to undertake efforts to minimize the likelihood of power outages during natural hazard events.
L6	Work closely with the American Red Cross to address the sheltering needs of County residents. The County will continue to work on improving the preparedness of all existing shelter facilities, including the installation of on-site transformers at all shelter locations. Additionally, these efforts will involve support of the NC Coastal Region Evacuation and Sheltering (CRES) plan aimed at providing inland sheltering resources for coastal counties.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	4.1	ES	<ul style="list-style-type: none"> • Lenoir County Emergency Services • Municipal Administrations 	\$50,000	General Fund, NCDPS, American Red Cross	Ongoing – as funding becomes available	In Progress – Carry Forward	Lenoir County continues to work closely with the American Red Cross to improve upon shelter facilities, including the establishment of redundant power supplies at all shelters.
L7	Educate, inform, and provide educational materials to citizens, contractors, local real estate agents, and homeowners regarding the hazards associated with floodplain development. Additionally, the County will utilize this service to inform the public about the potential natural hazards impact throughout Lenoir County and services available to provide assistance if the County is impacted.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.1	PIO	<ul style="list-style-type: none"> • Lenoir County Planning • Lenoir County Administration • Municipal Administrations 	\$14,000	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry Forward	This effort is a component of the County's Community Rating System Program. The County will continue to provide this materials and information focused on improving upon the development within the defined flood hazard area.

ANNEX C: LENOIR COUNTY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
L8	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 utilize E-Plan to monitor these materials.	Lenoir County, Kinston, La Grange, Pink Hill	All Hazards	High	3.2	ES	• Lenoir County LEPC	Staff Time	General Fund	Ongoing – next five years	In Progress – Carry Forward	Lenoir County will continue to maintain the County LEPC in an effort to address issues related to hazardous materials and the risk they pose in relation to natural hazard events.
L9	Ensure that a variety of materials related to flood insurance, emergency response, flood protection, floodplain management, increased cost of compliance coverage, information on floodplains, and listings of qualified contractors familiar with floodproofing and elevation techniques, are available through various methods including: <ul style="list-style-type: none"> • Placing materials in the County library • Maintaining documents at the Building • Inspections office • Disseminating information to local contractors • On the County website 	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.1	PIO	• Lenoir County Planning • Lenoir County Administration • Municipal Administrations	\$14,000	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry Forward	This effort is a component of the County's Community Rating System Program. The County will continue to provide this materials and information focused on improving upon the development within the defined flood hazard area.
L10	Review the County's Comprehensive Land Use Plan to ensure that the Future Land Use Map adequately delineates portions of the County deemed unsuitable for development due to existing environmental conditions or the presence of natural hazard areas.	Lenoir County, Kinston, La Grange, Pink Hill	All Hazards	Medium	1.3	P	• Lenoir County Planning • Lenoir County Administration • Municipal Administrations	Staff Time	General Fund	2 to 3 years	Not Started – Carry Forward	Lenoir County will work to incorporate these factors into land use planning and policy documents during implementation of this plan.
L11	Work closely with local media outlets to disseminate timely and accurate information relating to natural hazard events. This task will involve reporting on weather, evacuations, sheltering and facility closures.	Lenoir County, Kinston, La Grange, Pink Hill	All Hazards	High	4.2	PIO	• Lenoir County Emergency Management • Municipal Administrations	Staff Time	General Fund	Ongoing – Next Five Years	In Progress – Carry Forward	Lenoir County will continue to carry out and maintain emergency notification procedures as outlined within the County's Emergency Operations Plan.
L12	Continue to monitor drainage conditions throughout the County. Additionally, the County will continue to enforce and support the following programs relating to stormwater management: <ul style="list-style-type: none"> • NCDEQ Coastal Stormwater Rules • NCDEQ Sedimentation & Erosion Control Regulations • NCDEQ Statewide Stormwater Regulations • NCDEQ CAMA Regulations • US Army Corps of Engineers Non Coastal Wetland Regulations 	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.3	NRP	• Lenoir County Administration • Municipal Administrations	Staff Time	General Fund	Ongoing – Next Five Years	In Progress – Carry Forward	Lenoir County, as well as all participating municipal jurisdictions, will work to support all state and federal agencies in their efforts to enforce land development policies and regulations.
L13	Following the impacts of Hurricanes Mathew and Florence, establish new development within sites throughout the County that were cleared for development following Hurricane Floyd in 1998. This effort will address both redevelopment, as well as affordable housing needs.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.2	SP	• Lenoir County Administration • Municipal Administrations	Staff Time	General Fund, NCDPS	Ongoing – As opportunities arise	In Progress – Carry Forward	These efforts will be carried out through implementation of this plan; however, this will not apply to buyout properties that are subject to FEMA related development restrictions.
L14	Work to develop a management/reuse plan to address property acquired through the HMGP Program.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	1.2	P	• Lenoir County Administration • Municipal Administration	\$5,500	General Fund, NCDPS	2 to 3 years	New	N/A

ANNEX C: LENOIR COUNTY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
L15	Actively work with Federal, State, local and private partners to identify mitigation measures and secure funding via grants to alleviate flooding. These efforts should focus on the following areas: <ul style="list-style-type: none"> • Arterial stream and ditch cleanup • MS4 in La Grange • MS4 in Kinston • Dam facilities at Till's Mill Pond • Stormwater improvements at Tick Bite 	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Low	1.3	SP	<ul style="list-style-type: none"> • Lenoir County Administration • Municipal Administration 	To be determined	General Fund, NCDPS, NCDEQ	5 years	New	N/A
L16	Acquire generators or other forms of redundant power supply to ensure that critical facilities and infrastructure remain operational where normal power supply is not available.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	4.1	ES	<ul style="list-style-type: none"> • Lenoir County Emergency Services • Municipal Administrations 	To be Determined	General Fund, NCDPS	2 to 3 years	New	N/A
L17	Seek grant funding for mitigation opportunities eligible under the most current version of the UHMA guidance and Public Assistance 406 Mitigation Guidance at the time of application. Projects may include but are not limited to: acquisition/elevation, mitigation/reconstruction, and wet/dry floodproofing to residential and non-residential structures. Funding may also be utilized for redundant power to critical facilities, wind retrofits to critical facilities, storm shelters and other activities that reduce the loss of life and property.	Lenoir County, Kinston, La Grange, Pink Hill	Flood, Hurricane & Tropical Storm, Dam Failure	High	1.2	SP	<ul style="list-style-type: none"> • Lenoir County Administration • Municipal Administrations 	To be determined	General Fund, NCDPS, FEMA	Ongoing – As Needed	New	N/A

Annex D Pitt County

D.1 COMMUNITY PROFILE

This section contains a summary of maps and statistics for current conditions and characteristics of Pitt County, including information on population, asset exposure, housing, and economy. Throughout the section, information will be reported at the jurisdictional level. In some cases, information will only be reported for communities participating in the Community Rating System (CRS).

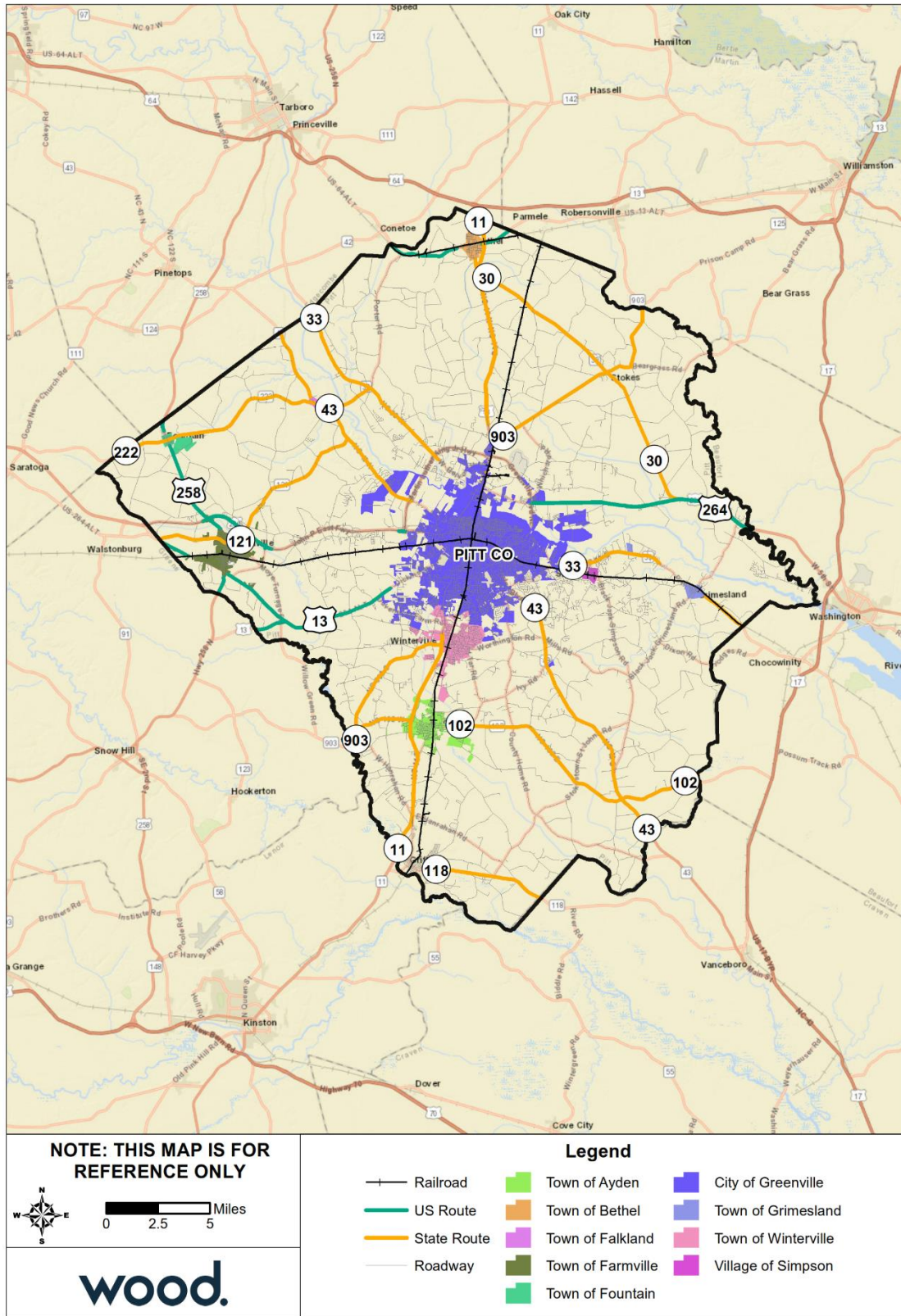
Table D.1 – CRS Participation by Jurisdiction, Pitt County

Jurisdiction	CRS Participant
Pitt County (Unincorporated Area)	Yes
Town of Ayden	No
Town of Bethel	No
Town of Falkland	No
Town of Farmville	Yes
Town of Fountain	No
City of Greenville	Yes
Town of Grifton	Yes
Town of Grimesland	No
Town of Simpson	No
Town of Winterville	No

Geography

Figure D.1 shows a base map of Pitt County and participating jurisdictions as well as major transportation routes in the county.

Figure D.1 – Jurisdictional Locations, Pitt County



ANNEX D: PITT COUNTY

Population and Demographics

Table D.2 provides population counts and growth estimates for Pitt County and participating jurisdictions as compared to the Region overall. Table D.3 provides demographic information for the County.

Table D.2 – Population Counts, Pitt County, 2000-2017

Jurisdiction	2000	2010	2017	% Change 2000-2010	% Change 2010-2017	Overall % Change 2000-2017
Ayden	4,622	4,932	5,120	6.7%	3.8%	10.8%
Bethel	1,681	1,577	1,656	-6.2%	5.0%	-1.5%
Falkland	112	96	82	-14.3%	-14.6%	-26.8%
Farmville	4,302	4,654	4,720	8.2%	1.4%	9.7%
Fountain	533	427	334	-19.9%	-21.8%	-37.3%
Greenville	60,476	84,554	90,347	39.8%	6.9%	49.4%
Grimesland	440	441	483	0.2%	9.5%	9.8%
Simpson	464	416	369	-10.3%	-11.3%	-20.5%
Winterville	4,791	9,269	9,488	93.5%	2.4%	98.0%
Municipalities	77,421	106,366	112,599	37.4%	5.9%	45.4%
Unincorporated Areas	54,304	59,165	61,103	8.9%	3.3%	12.5%
Pitt County	131,725	165,531	173,702	25.7%	4.9%	31.9%
Region Total	336,130	381,781	389,749	13.6%	2.1%	16.0%

Source: US Census Bureau American Community Survey.

Table D.3 – Racial Demographics, Pitt County, 2017

Jurisdiction	Caucasian	African-American	Asian	Other Race*	Two or More Races	Persons of Hispanic or Latino Origin**
Ayden	48.4%	46.1%	1.2%	3.9%	0.4%	4.2%
Bethel	41.7%	53.1%	0.0%	4.1%	1.1%	4.3%
Falkland	11.0%	70.7%	0.0%	18.3%	0.0%	18.3%
Farmville	51.1%	47.2%	0.0%	0.1%	1.6%	2.2%
Fountain	60.2%	34.4%	0.0%	3.6%	1.8%	3.6%
Greenville	54.0%	38.2%	2.7%	2.7%	2.4%	4.9%
Grimesland	63.8%	28.8%	1.0%	3.9%	2.5%	3.7%
Simpson	58.0%	40.7%	0.0%	1.4%	0.0%	0.8%
Winterville	61.3%	33.3%	2.45	0.9%	2.1%	2.5%
Pitt County	57.7%	34.6%	1.7%	3.6%	2.3%	6.0%

*Other races include 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.

Future Growth and Development

This section provides an explanation of anticipated development trends for jurisdictions in Pitt County that are participants in the CRS. Evaluating future growth and development decisions in relation to known hazard areas can lead to better growth management and more effective risk reduction strategies.

Development throughout Pitt County has been extremely rapid over the last twenty to thirty years. The City of Greenville has consistently been named one of the fastest growing cities in the Country, and development within and around the urbanized area reflects this fact. Pitt County is somewhat divided with regards to development pressure. Northern portions of the County generally remain more

Neuse River

Regional Hazard Mitigation Plan
2020

rural/agricultural in nature. Development within unincorporated portions of Pitt County are occurring along or south of US Highway 264 to the east and west of the City of Greenville.

The City of Greenville is starting to expand, and this growth seems to be predominantly pushing south and impacting the Town of Winterville, in particular. One project that will truly start to shape development patterns is the NC Highway 11 Bypass project. This project will provide a high-speed connector between Greenville and Kinston. This will also enable development more favorable to local access traffic in and around the Towns of Grifton, Ayden, and Winterville.

All Pitt County communities are intimately familiar with the potential impacts of natural disasters. Hurricane Floyd, in 1999, devastated the area and forced communities to confront the far-reaching impacts of severe flooding throughout the community. The City of Greenville, Towns of Farmville, Winterville and Grifton, as well as Pitt County at large, have factored the impacts of Floyd into planning and development policy decisions since the occurrences of 1999. The results regarding land use have been significant. Each community has been forced to make difficult decisions regarding appropriate development patterns within flood prone portions of the County.

Pitt County 2030 Comprehensive Land Use Plan

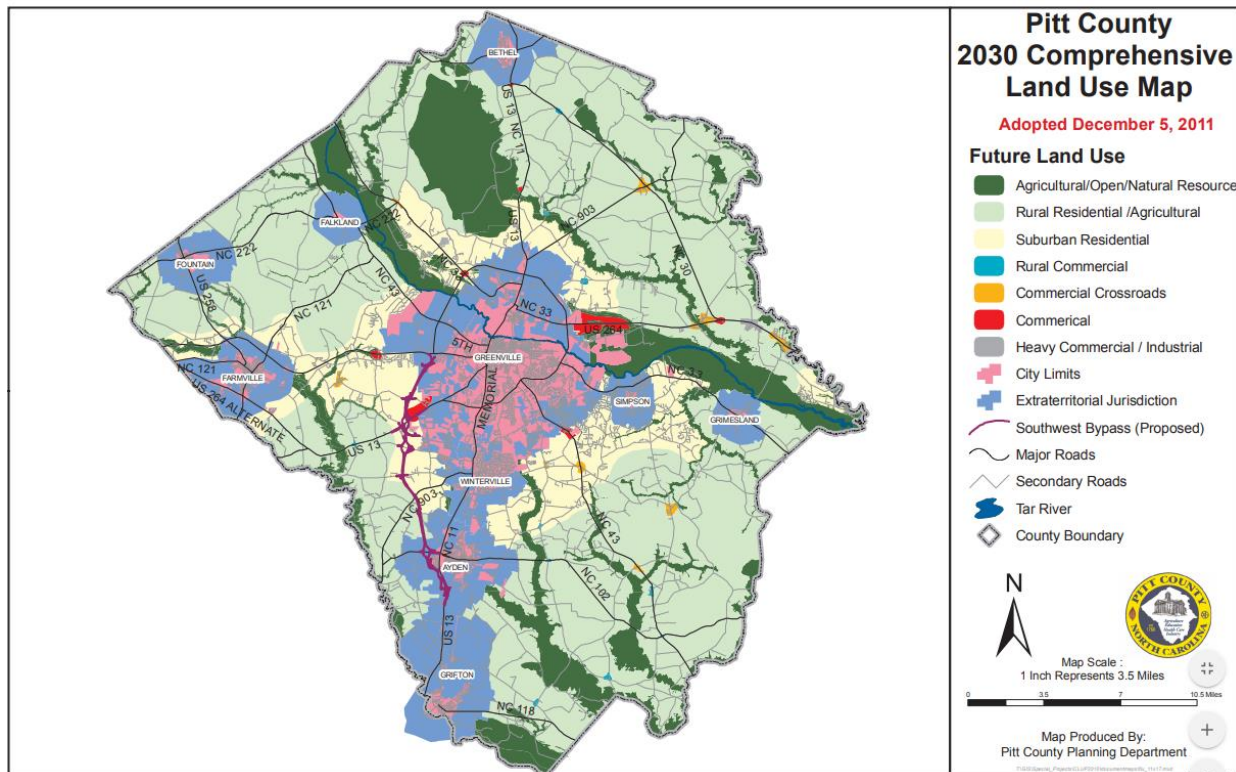
The Pitt County Future Land Use Plan was adopted by the Pitt County Board of Commissioners in December of 2011. The plan defines seven future land use districts including:

- ▶ Agriculture Open/Natural Resource
- ▶ Rural Residential/Agricultural
- ▶ Suburban Residential
- ▶ Rural Commercial
- ▶ Commercial Crossroads
- ▶ Commercial
- ▶ Heavy Commercial/Industrial

These districts are defined in detail under Section 3 on page 3-1 of the Pitt County Comprehensive Plan: <https://www.pittcountync.gov/DocumentCenter/View/617/2030-Comprehensive-Land-Use-Plan-PDF>.

Figure D.2 provides the delineation of each Future Land Use District for Pitt County.

Figure D.2 – Pitt County Future Land Use



Town of Farmville Land Use Plan

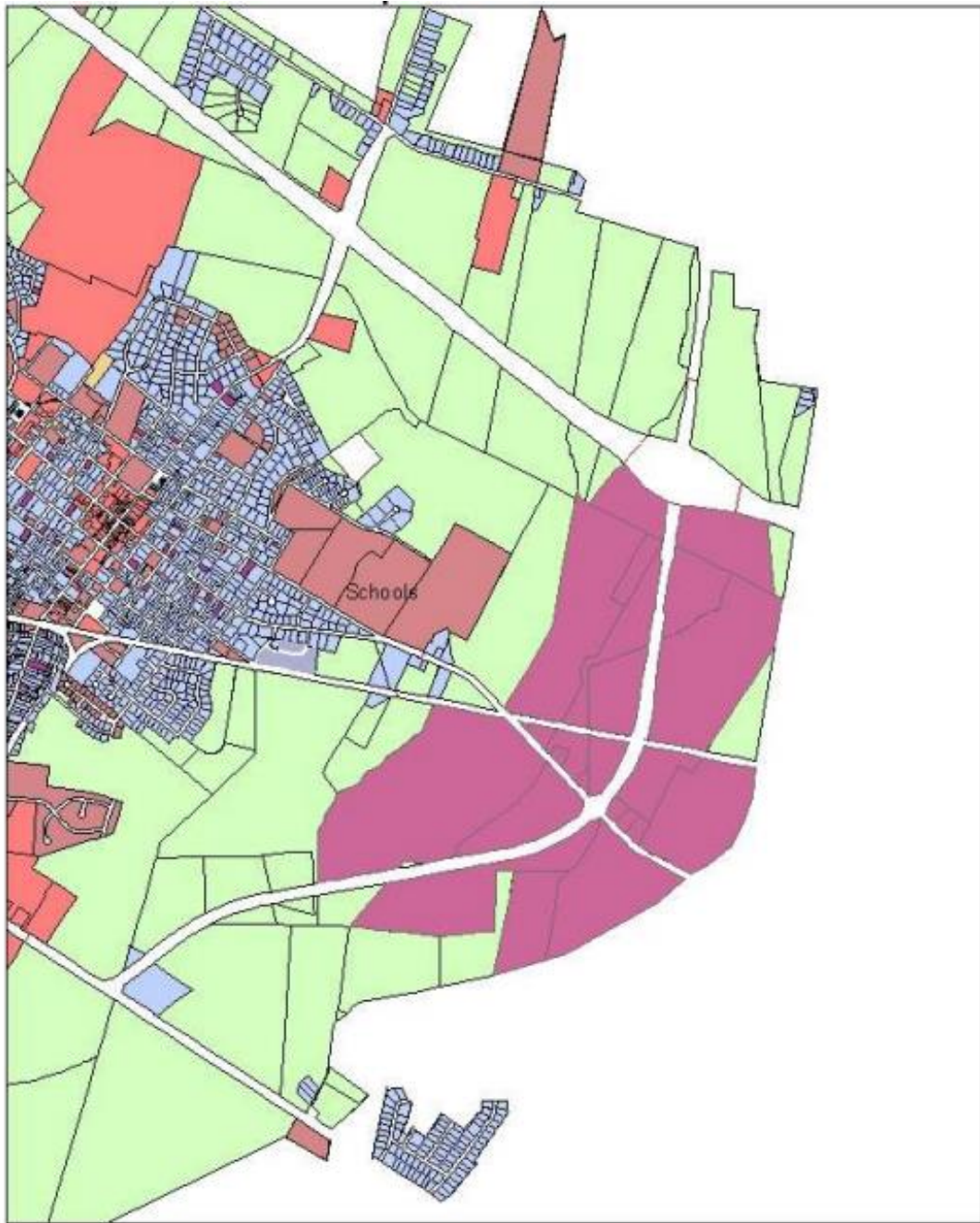
The Town of Farmville Land Use Plan was adopted by the Farmville Board of Commissioners in May of 2006. The plan defines eight future land use districts including:

- ▶ Residential
- ▶ Commercial
- ▶ Educational & Institutional
- ▶ Agricultural
- ▶ Industrial
- ▶ PUD/Mixed Use
- ▶ Vacant
- ▶ Woods

The Town of Farmville Future Land Use Plan document is available through the following URL:
<http://farmvillenc.gov/wp-content/uploads/2016/06/LandUsePlan.pdf>.

Figure D.3 and Figure D.4 provide the delineation of each Future Land Use District.

Figure D.3 – Town of Farmville Future Land Use



Legend

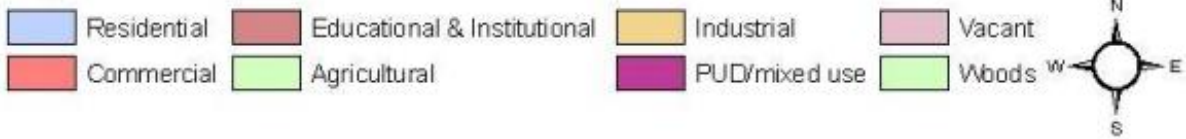
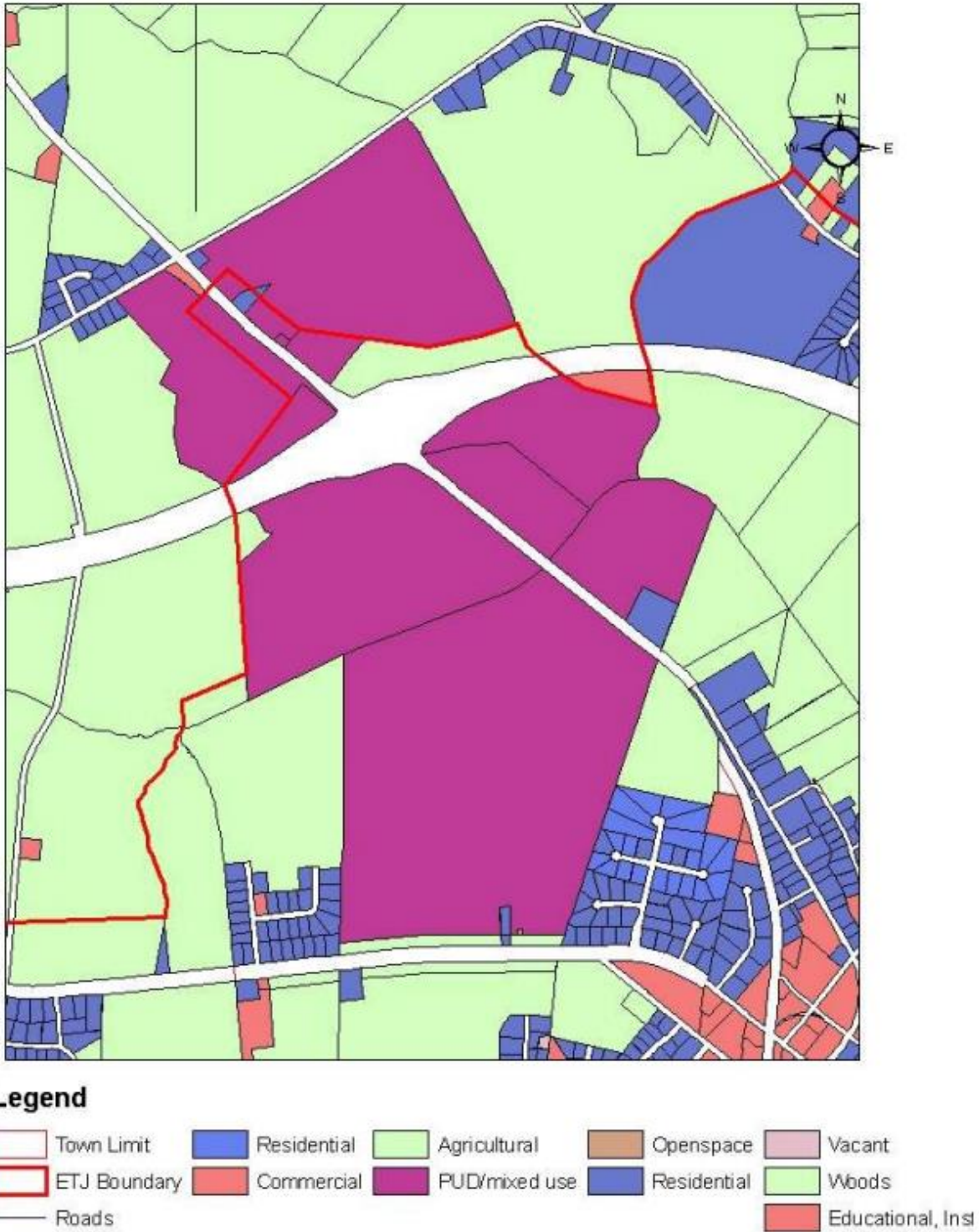


Figure D.4 – Town of Farmville Future Land Use



City of Greenville Horizons 2026 Community Plan

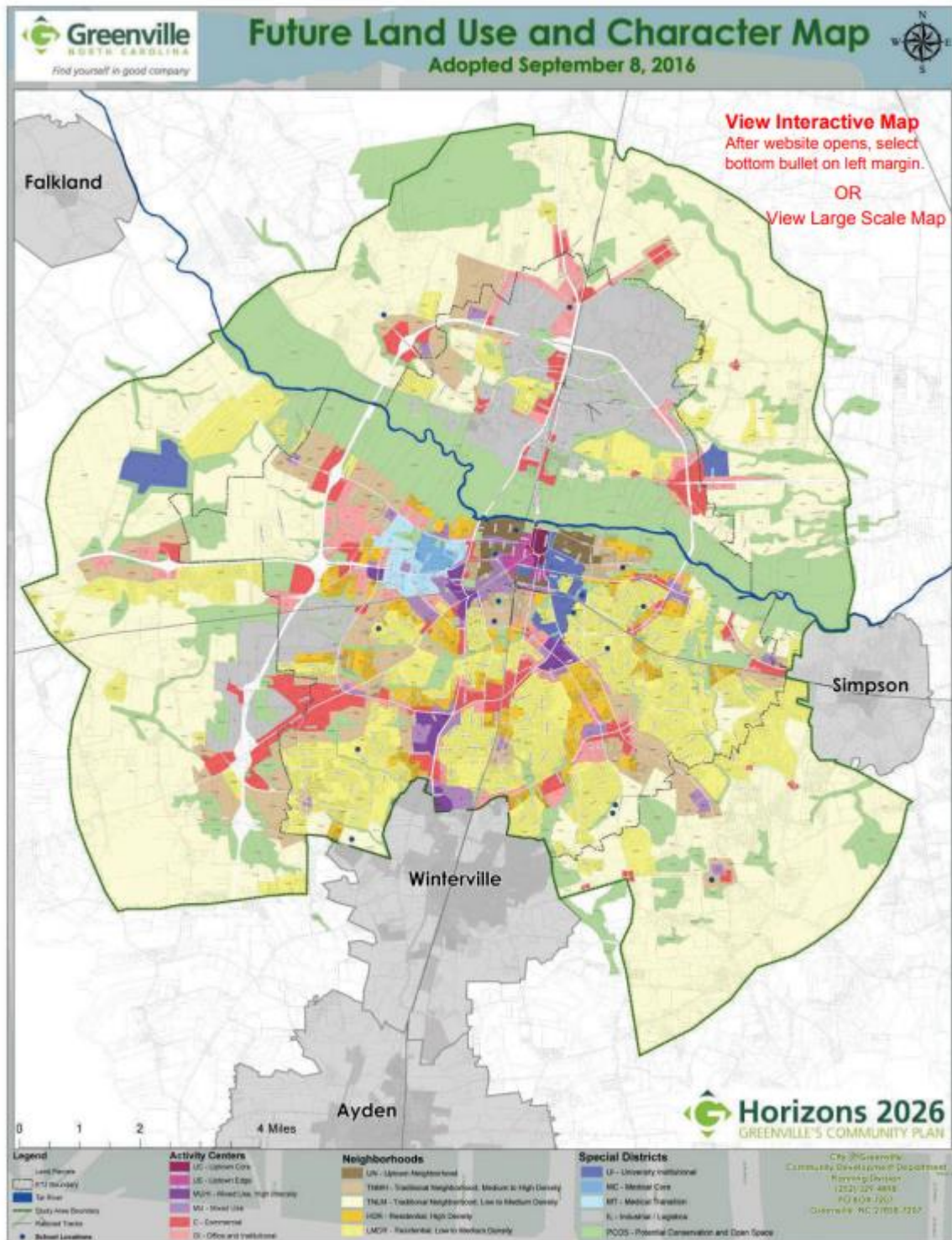
The Horizons 2026 Greenville Community Plan was adopted by the City of Greenville City Council in August 2016. The plan defines sixteen future land use districts including:

- ▶ Uptown Core
- ▶ Uptown Edge
- ▶ Mixed Use High Intensity
- ▶ Mixed Use
- ▶ Commercial
- ▶ Office and Institutional
- ▶ Uptown Neighborhood
- ▶ Traditional Neighborhood – Medium to High Density
- ▶ Traditional Neighborhood – Low to Medium Density
- ▶ Residential – High Density
- ▶ Residential – Low to Medium Density
- ▶ University institutional
- ▶ Medical Core
- ▶ Medical Transition
- ▶ Industrial/Logistics
- ▶ Potential Conservation/Open Space

These districts are defined in detail under Chapter 1 on page 40 of the Horizons Plan: <https://www.greenvillenc.gov/home/showdocument?id=12071>.

Figure D.5 provides the delineation of each Future Land Use District.

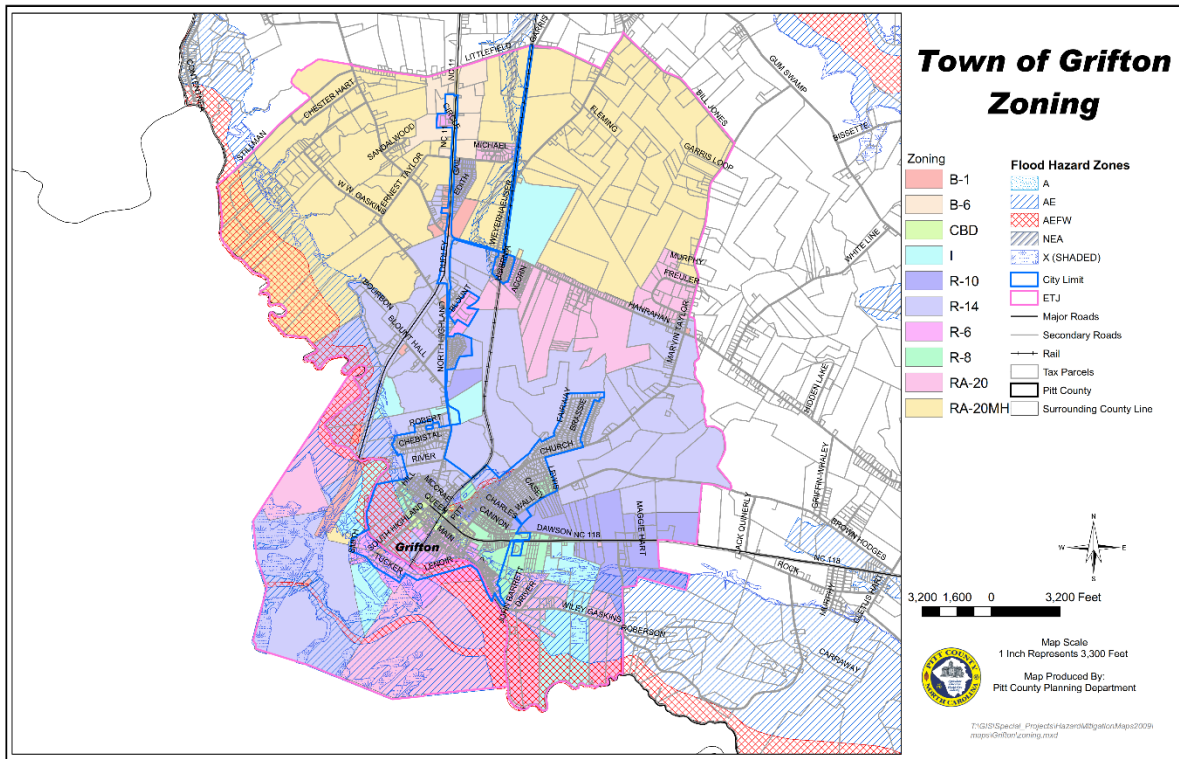
Figure D.5 – City of Greenville Future Land Use



Town of Grifton

The Town of Grifton Planning and Zoning duties are handled by the Town Manager, who is responsible for the maintenance and enforcement of the Zoning and Subdivision Ordinance. Figure D.6 provides the Zoning Map, which is used to manage future development. For planning purposes, zones are shown in relation to flood hazard areas.

Figure D.6 – Town of Grifton Zoning Map




Town of Winterville Comprehensive Land Use Plan


The Town of Winterville Comprehensive Land Use Plan was adopted by the Winterville Town Council in October 2019. The plan defines eleven future land use districts including:


- ▶ Conservation
- ▶ Rural Residential
- ▶ Suburban Residential
- ▶ Urban Neighborhood
- ▶ Commercial Overlay
- ▶ Neighborhood Center
- ▶ Mixed Use Center
- ▶ Regional Center
- ▶ Employment/Residential
- ▶ Office & Employment
- ▶ Institution or Park


These districts are defined in detail under Chapter 4 on page 44 of the Winterville Plan: https://www.wintervillenc.com/Data/Sites/1/media/departments/planning/winterville-lup_20191008_reduced.pdf.

Figure D.7 shows the delineation of each Future Land Use District, defined below, for the Town of Winterville.


 **Conservation**
The 100-year floodplain is regulated in order to prevent loss during floods. These areas are appropriate for outdoor recreation, agriculture / silviculture, and are otherwise predominantly unsuitable for development. This area also includes cemeteries.


 **Rural Residential**
Very low density, single family detached residential on very large lots in a rural setting. Generally less than 1 dwelling per acre, and almost always without sewer service. Industrial agricultural operations are still active in these locations.


 **Suburban Residential**
Primarily the large lot, single family detached residential, that many people love about the town's housing stock. Generally 2-3 dwelling units per acre, larger lots, with front- and side-loaded garages. Smaller lot sizes occasionally if minimum standards for open space and amenities are exceeded.

 **Urban Neighborhood**
Primarily medium-sized lots with single family detached residential and occasionally smaller-scale, context-sensitive patio homes and attached residential permitted if design criteria are met. Generally 3-8 dwellings per acre. Some small-scale services, restaurants, or offices encouraged at select locations with good access.

 **Commercial Overlay**
Potential for small-scale commercial that is sensitive to existing residential development if good transportation access is possible.

 **Neighborhood Center**
Context-appropriate commercial, retail, services, professional offices, and occasionally residential located at key locations and crossroads that serve the general neighborhood around them. Small-lot residential or patio homes and/or attached residential could be part of land use mix.

 **Mixed Use Center**
Mix of commercial, retail, restaurants, and service-oriented businesses, with a variety of residential options, including multi-family, townhomes, and upper-story residential. Offices also potentially on upper floors. Walkable places with a pedestrian-focused "downtown" feel.

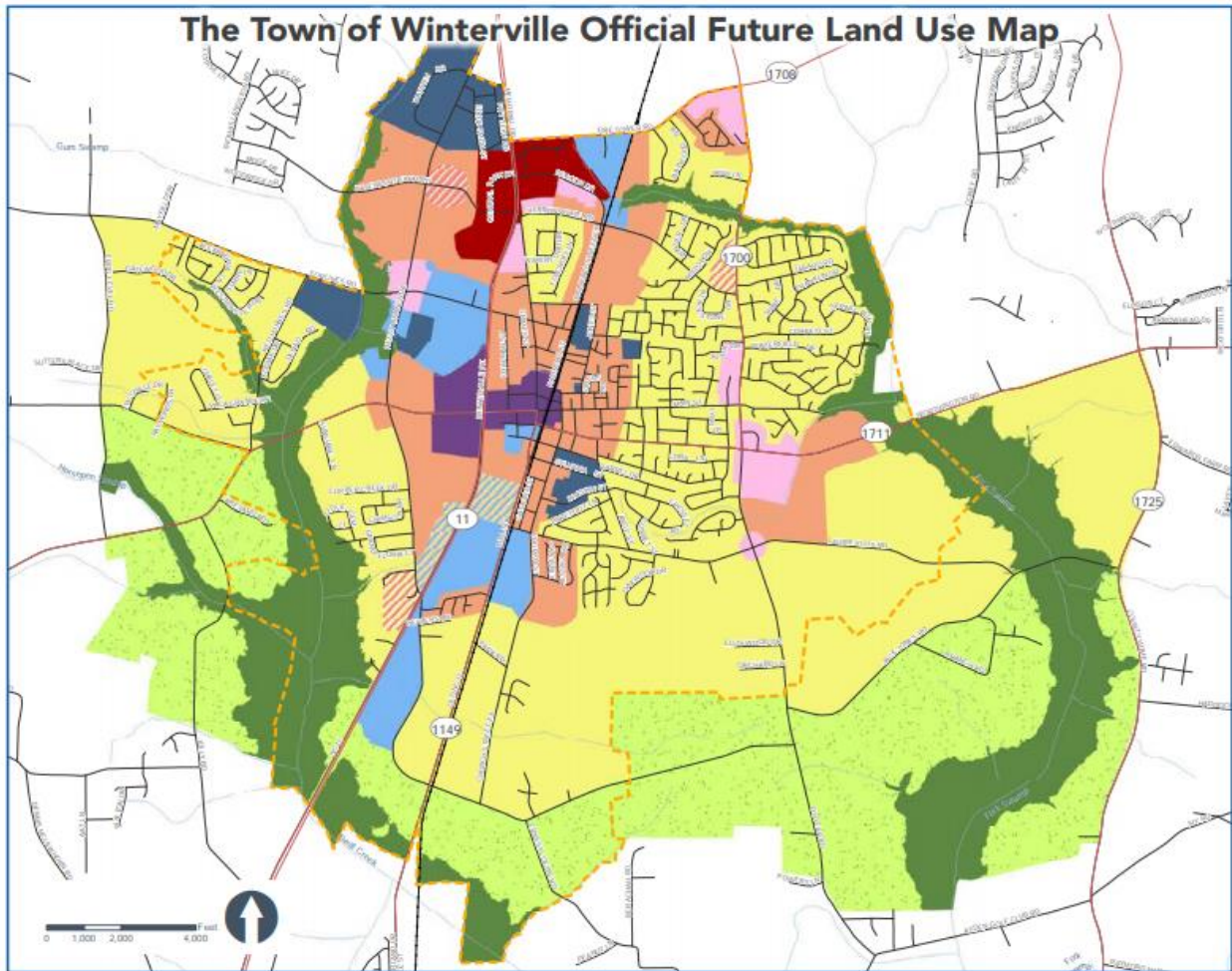
 **Regional Center**
High- to medium-intensity commercial, retail and lodging uses that act as regional activity centers, with offices and residential potentially mixed in. Primarily auto-oriented destinations with national or regional businesses.

 **Employment / Residential**
These areas could include office buildings, storage and flex uses, supporting commercial uses and/or medium to high-intensity residential uses.

 **Office & Employment**
Large office buildings, manufacturing, distribution, and light- to medium-industrial uses, storage and flex uses, along with associated offices and supporting commercial uses.

 **Institution or Park**
Community schools, the Pitt Community College campus, town parks, and open space areas form a fabric that knits the community together. New institutional, civic, and open space uses are potentially allowed in any future land use category.

Figure D.7 – Town of Winterville Future Land Use Map



Asset Inventory

The following tables summarize the asset inventory for Pitt County unincorporated and incorporated areas in order to estimate the total physical exposure to hazards in this area. The locations of critical facilities are shown in Figure D.8. Critical facilities are a subset of identified assets from the Critical Infrastructure & Key Resources dataset. Note that the counts are by building; where a critical facility comprises a cluster of buildings, each building is counted and displayed.

Table D.4 – Critical Infrastructure & Key Resources by Type

Jurisdiction	Food and Agriculture	Banking and Finance	Chemical & Hazardous	Commercial	Communications	Critical Manufacturing	Defense Industrial Base	Government Facilities	Healthcare	Nuclear Reactors, Materials and Waste	Postal and Shipping	Transportation Systems	Energy	Emergency Services	Water	Total
Pitt County	3,180	16	0	678	0	211	0	75	65	0	0	173	5	1	0	4,404
City of Greenville	122	61	0	1,517	3	460	2	216	196	3	0	450	23	4	2	3,059
Town of Ayden	144	3	0	109	0	32	0	22	11	0	0	36	0	1	0	358
Town of Bethel	40	1	0	34	0	17	0	4	3	0	0	6	0	0	0	105
Town of Falkland	38	0	0	14	0	6	0	2	1	0	0	0	0	0	0	61
Town of Farmville	65	2	0	122	0	52	1	12	4	0	0	31	2	0	0	291
Town of Fountain	51	1	0	17	0	17	0	1	0	0	0	14	0	0	0	101
Town of Grimesland	40	0	0	14	0	6	0	4	1	0	0	16	0	1	0	82
Town of Winterville	86	7	0	179	0	56	0	29	9	0	0	77	0	0	0	443
Village of Simpson	3	0	0	23	0	5	0	6	0	0	0	13	0	0	0	50
Pitt County Total	3,769	91	0	2,707	3	862	3	371	290	3	0	816	30	7	2	8,954

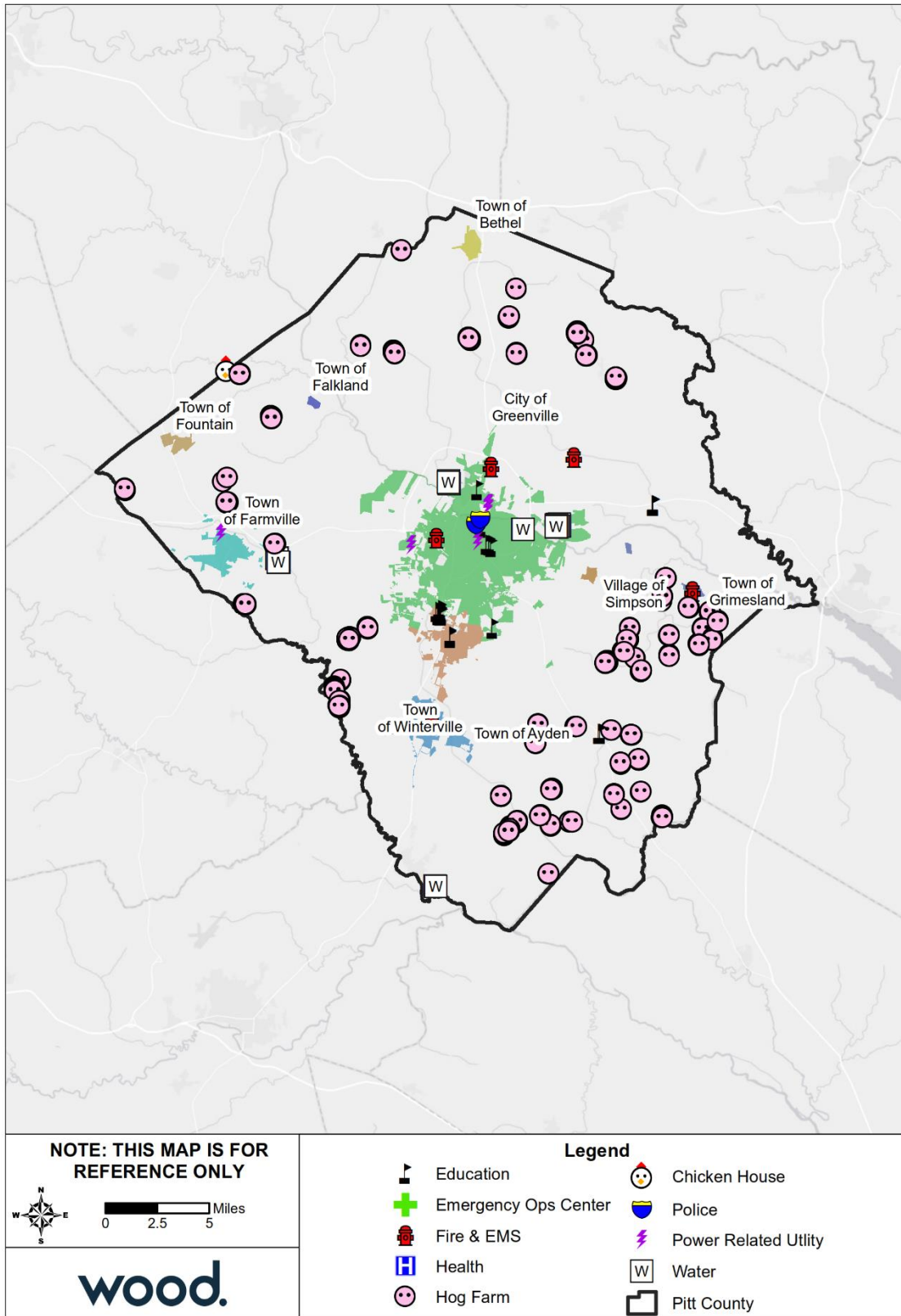
Source: NCEM Risk Management Tool

Table D.5 – High Potential Loss Facilities by Use

Jurisdiction	Residential	Commercial	Industrial	Government	Agricultural	Religious	Utilities	Total
Pitt County	25	76	5	9	3	13	5	136
City of Greenville	137	313	41	41	0	38	20	590
Town of Ayden	5	7	3	1	1	6	0	23
Town of Bethel	4	6	1	2	1	2	0	16
Town of Falkland	0	0	0	0	0	1	0	1
Town of Farmville	10	19	5	4	0	0	1	39
Town of Fountain	3	0	1	0	0	0	0	4
Town of Grimesland	0	5	0	1	0	0	0	6
Town of Winterville	10	29	2	0	0	5	0	46
Village of Simpson	1	3	0	1	0	1	0	6
Pitt County Total	195	458	58	59	5	66	26	867

Source: NCEM Risk Management Tool

Figure D.8 – Critical Facilities, Pitt County



Source: NCEM IRISK Database, GIS Analysis

ANNEX D: PITT COUNTY

Housing

The table below details key housing statistics for Pitt County. As a percent of growth from 2010 housing, Pitt County's housing stock has grown by nearly 4%.

Table D.6 – Housing Statistics, Pitt County, 2010-2017

Jurisdiction	Housing Units (2010)	Housing Units (2017)	% Change 2010-2017	% Owner Occupied (2017)	% Vacant Units (2017)
Ayden	2,373	2,314	-2.5%	87.8%	12.2%
Bethel	747	830	11.1%	83.9%	16.1%
Falkland	39	30	-23.1%	76.7%	23.3%
Farmville	2,239	2,071	-7.5%	84.3%	15.7%
Fountain	210	202	-3.8%	76.2%	23.8%
Greenville	40,564	42,041	3.6%	87.0%	13.0%
Grimesland	191	237	24.1%	83.1%	16.9%
Simpson	217	173	-20.3%	86.1%	13.9%
Winterville	3,593	3,739	4.1%	99.2%	0.8%
Pitt County	74,990	77,843	3.8%	88.4%	11.6%

Source: US Census Bureau American Community Survey.

Economy

The following tables present key economic statistics for Pitt County.

Table D.7 – Economic Indicators, Pitt County, 2017

Jurisdiction	Population in Labor Force	Percent Employed (%)	Percent Unemployed (%)	Percent Not in Labor Force (%)	Unemployment Rate (%)
Ayden	53.8%	42.7%	10.5%	46.2%	19.7%
Bethel	47.7%	40.4%	7.3%	52.3%	15.3%
Falkland	59.3%	51.9%	7.4%	40.7%	12.5%
Farmville	69.0%	62.1%	6.9%	31.0%	10.0%
Fountain	51.8%	38.8%	12.9%	48.2%	25.0%
Greenville	64.1%	57.5%	6.6%	35.9%	10.3%
Grimesland	53.9%	47.6%	6.4%	46.1%	11.8%
Simpson	65.2%	52.4%	12.9%	34.8%	19.7%
Winterville	72.4%	69.2%	3.2%	27.6%	4.4%
Pitt County	64.4%	57.8%	6.5%	35.6%	10.1%

Source: US Census Bureau American Community Survey.

Table D.8 – Employment by Industry, Pitt County, 2017

Jurisdiction	Management, Business, Science and Arts (%)	Service (%)	Sales and Office (%)	Natural Resources, Construction, and Maintenance (%)	Production, Transportation, and Material Moving (%)
Ayden	29.8%	27.6%	25.7%	7.3%	9.6%
Bethel	32.5%	6.6%	29.8%	13.7%	17.4%
Falkland	7.1%	50.0%	10.7%	0.0%	32.1%
Farmville	30.8%	25.7%	23.2%	5.0%	15.3%
Fountain	12.0%	21.3%	13.0%	30.6%	23.1%
Greenville	39.5%	23.2%	22.0%	4.0%	11.3%
Grimesland	28.3%	15.0%	18.2%	9.6%	28.9%

Jurisdiction	Management, Business, Science and Arts (%)	Service (%)	Sales and Office (%)	Natural Resources, Construction, and Maintenance (%)	Production, Transportation, and Material Moving (%)
Simpson	38.9%	29.3%	14.4%	10.8%	6.6%
Winterville	48.4%	15.8%	21.8%	8.3%	8.6%
Pitt County	37.4%	21.1%	22.7%	7.2%	11.6%

Source: US Census Bureau American Community Survey.

D.2 RISK ASSESSMENT

This section contains a hazard profile and vulnerability assessment for those hazards that were rated with a higher priority by jurisdiction in Pitt County than for the Neuse River Region as a whole. Risk and vulnerability findings are also presented here for those hazards that are spatially defined and have variations in risk that could be evaluated quantitatively on a jurisdictional level. The hazards included in this section are flood and wildfire.

D.2.1 Flood

Table D.9 details the acreage of Pitt County’s total area by jurisdiction and flood zone on the Effective DFIRM. Per this assessment, at 26.1 percent, the City of Greenville has the largest portion of its land area within the mapped 1%-annual-chance floodplain. The Towns of Bethel, Falkland, Fountain, and Grimesland have less than 1% to none of their land in the high or moderate risk flood zones. Overall, nearly 20 percent of the county’s total area falls within the SFHA.

Table D.9 – Flood Zone Acreage by Jurisdiction, Pitt County

Flood Zone	Acreage	Percent of Total (%)
Unincorporated Pitt County		
Zone AE	82,502.6	19.7%
Zone X (500-year)	9,765.6	2.3%
Zone X Unshaded	327,305.4	78.0%
Total	419,573.6	--
Ayden		
Zone AE	218.2	8.9%
Zone X (500-year)	13.8	0.6%
Zone X Unshaded	2,226.4	90.6%
Total	2,458.3	--
Bethel		
Zone X (500-year)	0.2	0.0%
Zone X Unshaded	678.5	100.0%
Total	678.6	--
Falkland		
Zone X Unshaded	157.0	100.0%
Total	157.0	--
Farmville		
Zone AE	38.8	1.8%
Zone X (500-year)	23.9	1.1%
Zone X (unshaded)	2,094.3	97.1%
Total	2,157.0	--
Fountain		
Zone AE	5.0	0.8%

Flood Zone	Acreage	Percent of Total (%)
Zone X (unshaded)	590.0	99.2%
Total	595.0	--
Greenville		
Zone AE	6,068.4	26.1%
Zone X (500-year)	645.0	2.8%
Zone X (unshaded)	16,566.2	71.2%
Total	23,279.6	--
Grifton		
Zone AE	408.1	31.0%
Zone X (500-year)	69.2	5.3%
Zone X Unshaded	838.0	63.7%
Total	1,315.3	--
Grimesland		
Zone X (unshaded)	435.2	100.0%
Total	435.2	--
Simpson		
Zone AE	4.2	1.8%
Zone X (500-year)	0.5	0.2%
Zone X (unshaded)	233.6	98.0%
Total	238.3	--
Winterville		
Zone AE	233.7	7.9%
Zone X (500-year)	44.4	1.5%
Zone X (unshaded)	2,694.7	91.0%
Total	2,962.8	
Pitt County Total		
Zone AE	89,060.7	19.7%
Zone X (500-year)	10,493.4	2.3%
Zone X Unshaded	325,981.4	72.0%
Total	452,535.5	--

Source: FEMA Effective DFIRM

Figure D.9 through Figure D.19 reflect the effective mapped flood hazard zones for all jurisdictions in Pitt County, and Figure D.20 through Figure D.30 display the depth of flooding estimated to occur in these areas during the 1%-annual-chance flood.

Table D.10 provides building counts and estimated damages for Critical Infrastructure and Key Resources (CIKR) buildings by sector and event in Pitt County and incorporated jurisdictions. Table D.11 provides building counts and estimated damages for High Potential Loss Structures in the 1%-annual-chance floodplain.

Table D.10 – CIKR Exposed to Flooding by Event and Jurisdiction

Sector	Event	Number of Buildings at Risk	Estimated Damages
Pitt County Unincorporated Area			
Commercial Facilities	10 Year	9	\$15,260
	25 Year	18	\$37,615
	50 Year	37	\$89,946
	100 Year	59	\$243,972
	Floodway	5	\$10,314

ANNEX D: PITT COUNTY

Sector	Event	Number of Buildings at Risk	Estimated Damages
	500 Year	113	\$605,041
Critical Manufacturing	50 Year	3	\$9,434
	100 Year	4	\$24,744
	500 Year	12	\$140,140
Emergency Services	500 Year	1	\$6,453
Food and Agriculture	10 Year	13	\$39,584
	25 Year	34	\$136,097
	50 Year	62	\$305,316
	100 Year	108	\$700,575
	Floodway	2	\$48,397
	500 Year	180	\$1,773,097
Government Facilities	500 Year	2	\$129,466
Transportation Systems	100 Year	1	\$1,470
	500 Year	2	\$23,676
All Categories	10 Year	22	\$54,844
	25 Year	52	\$173,712
	50 Year	102	\$404,696
	100 Year	172	\$970,761
	Floodway	7	\$58,711
	500 Year	310	\$2,677,873
City of Greenville			
Commercial Facilities	10 Year	11	\$93,917
	25 Year	31	\$408,124
	50 Year	53	\$1,509,481
	100 Year	96	\$7,128,265
	Floodway	7	\$862,570
	500 Year	188	\$14,922,412
Critical Manufacturing	10 Year	5	\$217,748
	25 Year	12	\$554,005
	50 Year	22	\$1,108,041
	100 Year	32	\$2,690,041
	Floodway	5	\$1,482,518
	500 Year	47	\$6,512,143
Energy	50 Year	1	\$1,346
	100 Year	1	\$3,365
	Floodway	1	\$3,365
	500 Year	4	\$4,680,090
Food and Agriculture	10 Year	2	\$5,318
	25 Year	4	\$12,817
	50 Year	6	\$21,957
	100 Year	8	\$33,580
	500 Year	16	\$88,695
Government Facilities	10 Year	2	\$20,567
	25 Year	4	\$48,831
	50 Year	5	\$75,202
	100 Year	7	\$107,593
	Floodway	1	\$6,687

ANNEX D: PITT COUNTY

Sector	Event	Number of Buildings at Risk	Estimated Damages
	500 Year	20	\$307,761
Healthcare and Public Health	100 Year	1	\$4,480
	500 Year	2	\$27,714
Transportation Systems	50 Year	1	\$432
	100 Year	2	\$13,122
	Floodway	1	\$11,370
	500 Year	3	\$1,102,489
All Categories	10 Year	20	\$337,550
	25 Year	51	\$1,023,777
	50 Year	88	\$2,716,459
	100 Year	147	\$9,980,446
	Floodway	15	\$2,366,510
	500 Year	280	\$27,641,304
Town of Grifton			
Commercial Facilities	10 Year	5	\$14,049
	25 Year	10	\$30,608
	50 Year	13	\$59,680
	100 Year	15	\$285,265
	500 Year	22	\$1,232,918
Critical Manufacturing	100 Year	1	\$34,497
	500 Year	2	\$446,142
Energy	500 Year	5	\$130,105,119
Food and Agriculture	10 Year	1	\$594
	25 Year	1	\$2,041
	50 Year	2	\$4,630
	100 Year	2	\$6,865
	500 Year	2	\$12,298
Government Facilities	100 Year	2	\$12,066
	500 Year	2	\$47,524
All Categories	10 Year	6	\$14,643
	25 Year	11	\$32,649
	50 Year	15	\$64,310
	100 Year	20	\$338,693
	500 Year	33	\$131,844,001

Source: NCEM Risk Management Tool

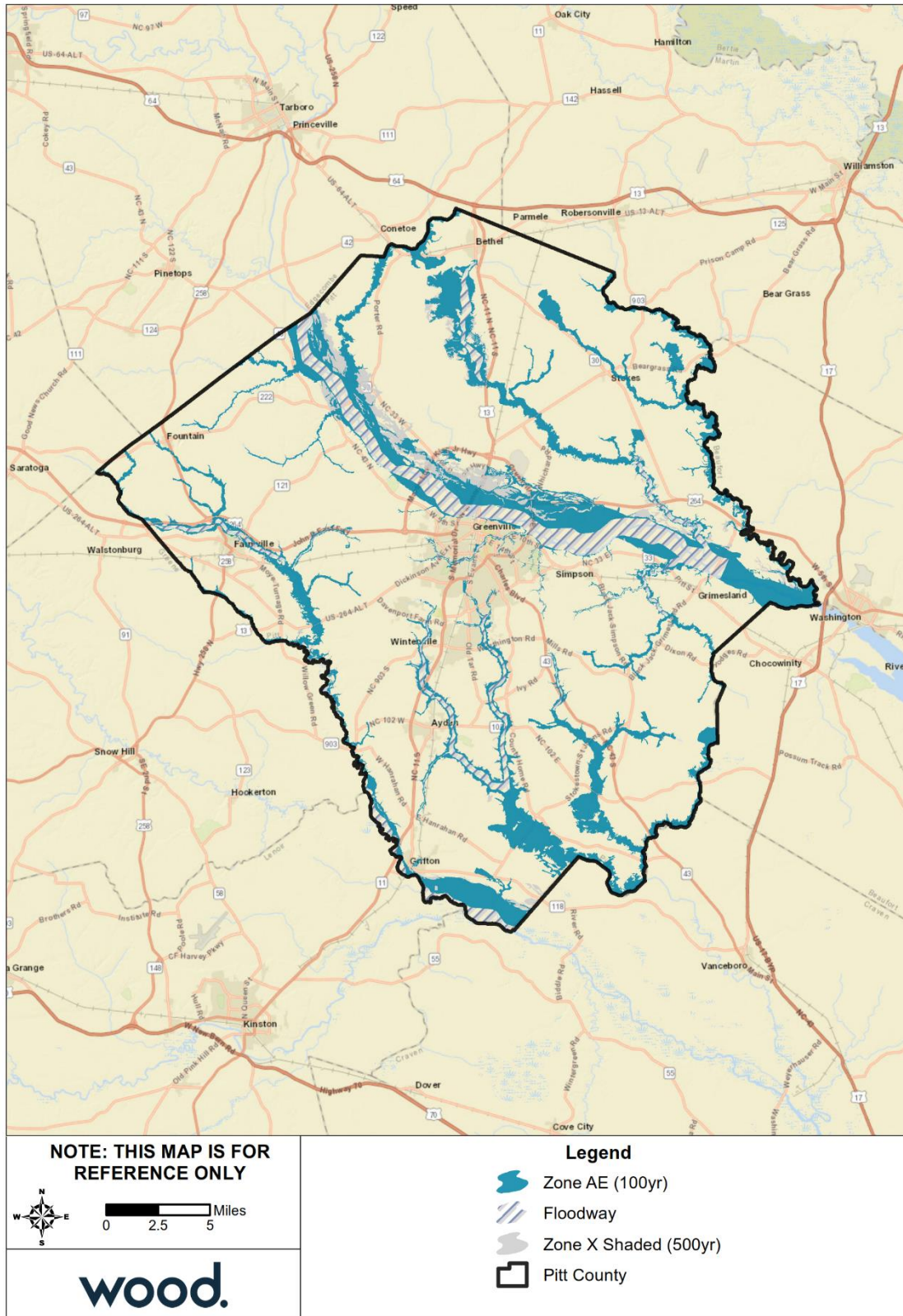
Table D.11 – High Potential Loss Properties Exposed to Flooding by Event and Jurisdiction

Sector	Event	Number of Buildings at Risk	Estimated Damages
Pitt County Unincorporated Area			
Commercial	500 Year	1	\$36,578
Residential	500 Year	2	\$90,231
All Categories	500 Year	3	\$126,809
City of Greenville			
Commercial	25 Year	1	\$40,094
	50 Year	2	\$854,737
	100 Year	3	\$5,935,825
	Floodway	1	\$728,895
	500 Year	7	\$12,970,586

ANNEX D: PITT COUNTY

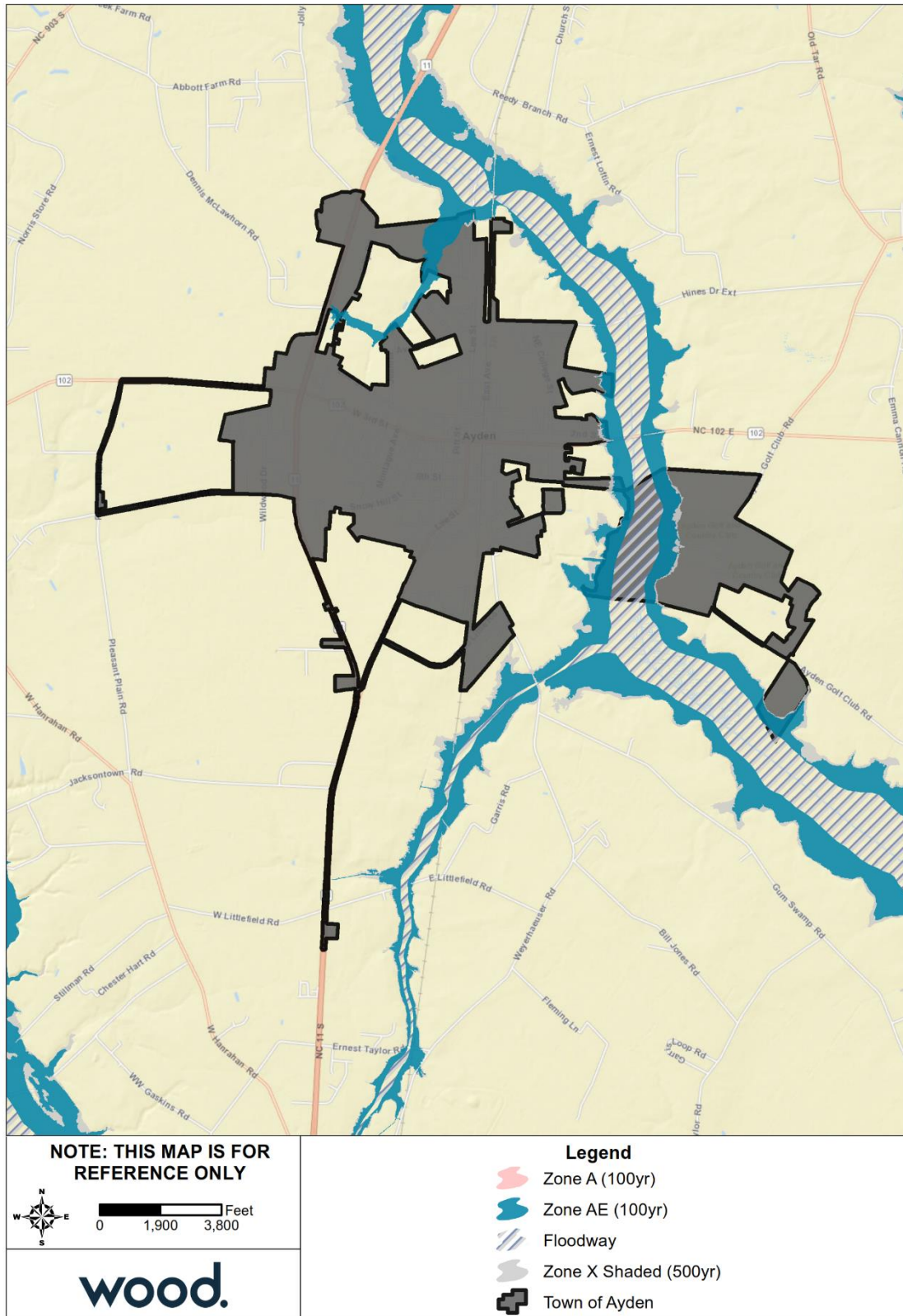
Sector	Event	Number of Buildings at Risk	Estimated Damages
Industrial	10 Year	1	\$161,695
	25 Year	1	\$330,079
	50 Year	3	\$538,850
	100 Year	5	\$1,526,887
	Floodway	2	\$1,149,672
	500 Year	7	\$3,938,416
Religious	100 Year	1	\$179,087
	500 Year	4	\$607,120
Residential	25 Year	4	\$248,811
	50 Year	12	\$553,121
	100 Year	17	\$1,022,837
	500 Year	24	\$3,398,671
Utilities	500 Year	3	\$4,674,438
All Categories	10 Year	1	\$161,695
	25 Year	6	\$618,984
	50 Year	17	\$1,946,708
	100 Year	26	\$8,664,636
	Floodway	3	\$1,878,567
	500 Year	45	\$25,589,231
Town of Grifton			
Commercial	100 Year	1	\$150,705
	500 Year	2	\$869,177
Industrial	100 Year	1	\$34,497
	500 Year	1	\$200,301
Utilities	500 Year	5	\$130,105,119
All Categories	100 Year	2	\$185,202
	500 Year	8	\$131,174,597

Figure D.9 – FEMA Flood Hazard Areas, Unincorporated Pitt County



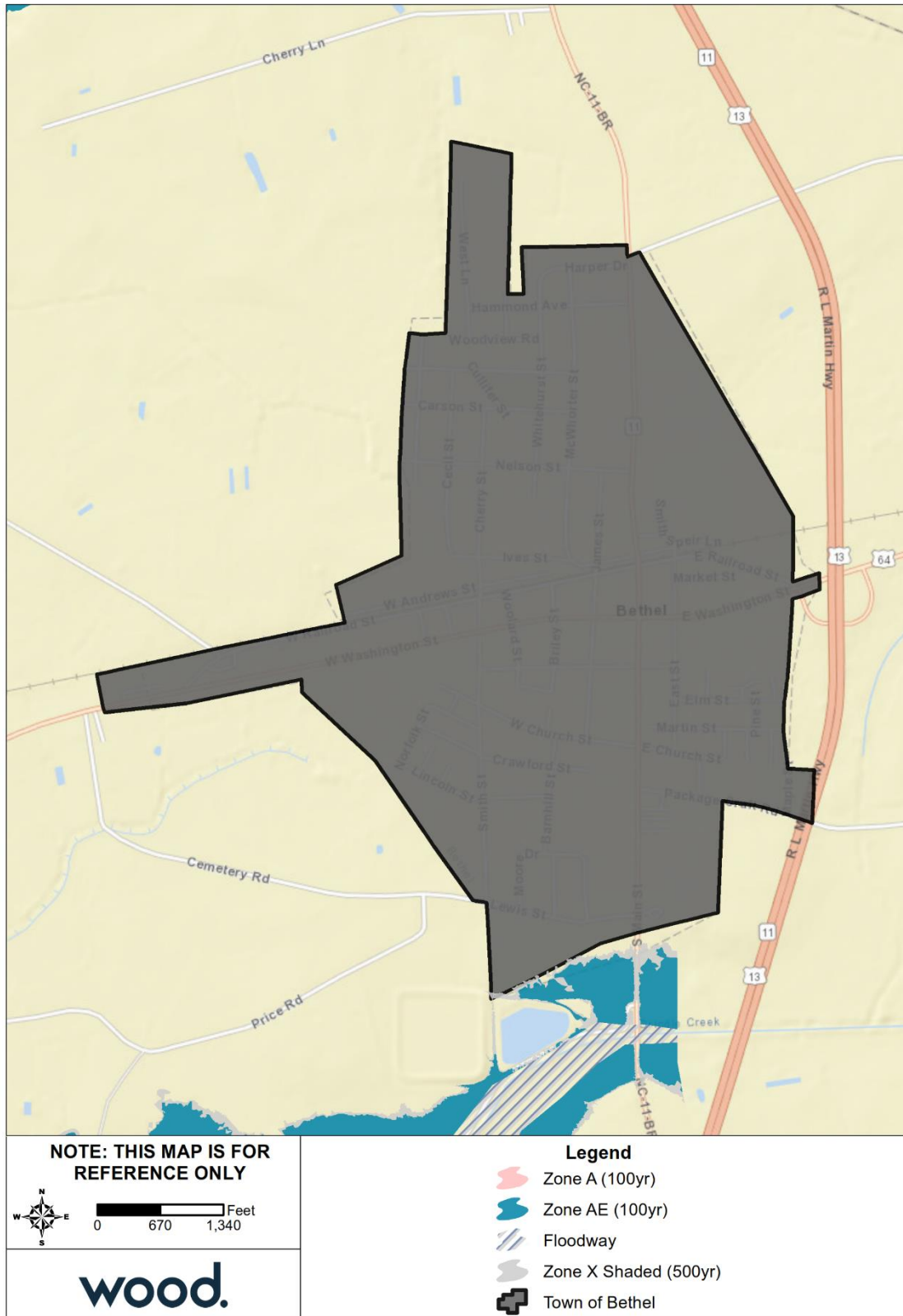
Source: FEMA Effective DFIRM

Figure D.10 – FEMA Flood Hazard Areas, Town of Ayden



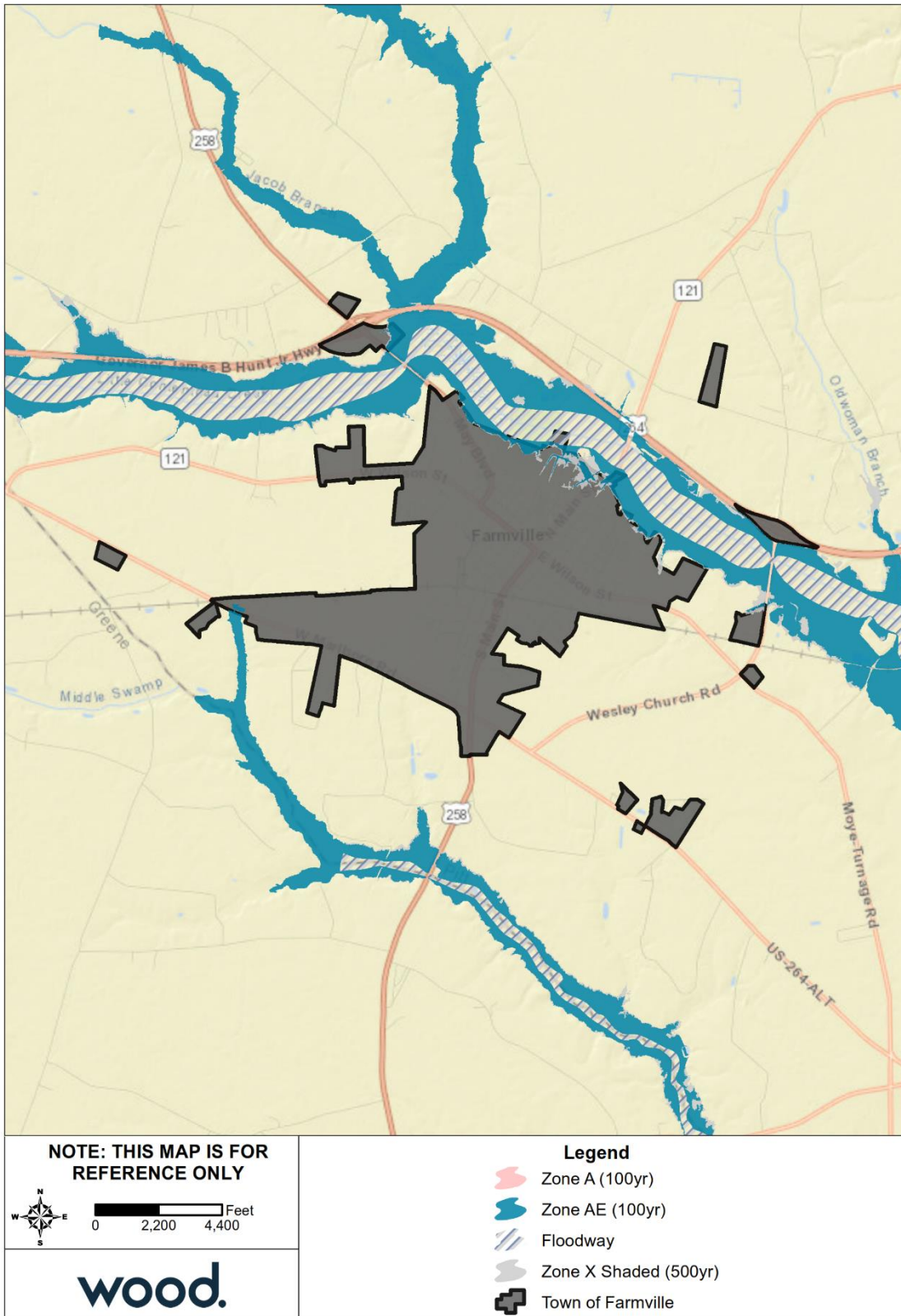
Source: FEMA Effective DFIRM

Figure D.11 – FEMA Flood Hazard Areas, Town of Bethel



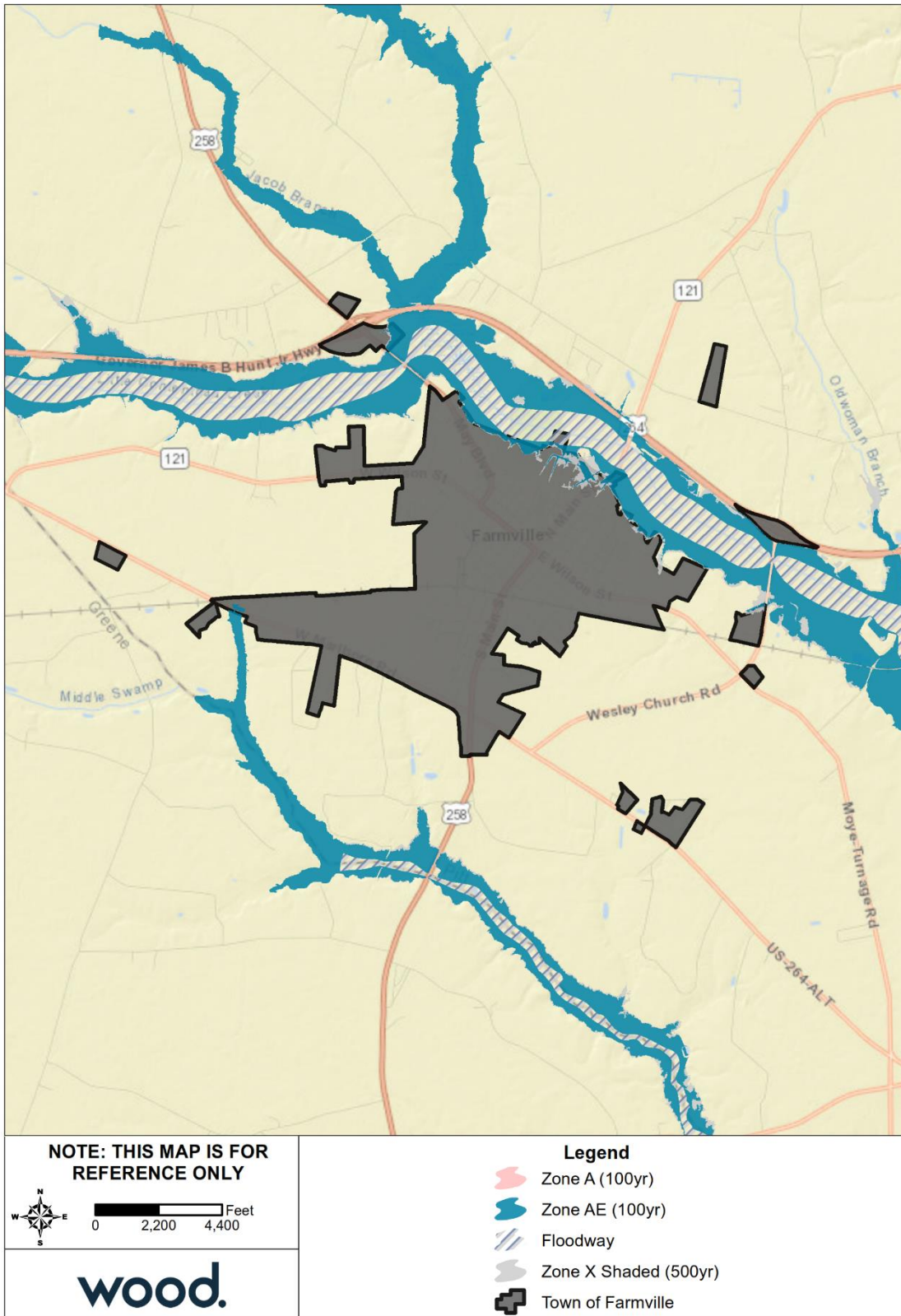
Source: FEMA Effective DFIRM

Figure D.12 – FEMA Flood Hazard Areas, Town of Falkland



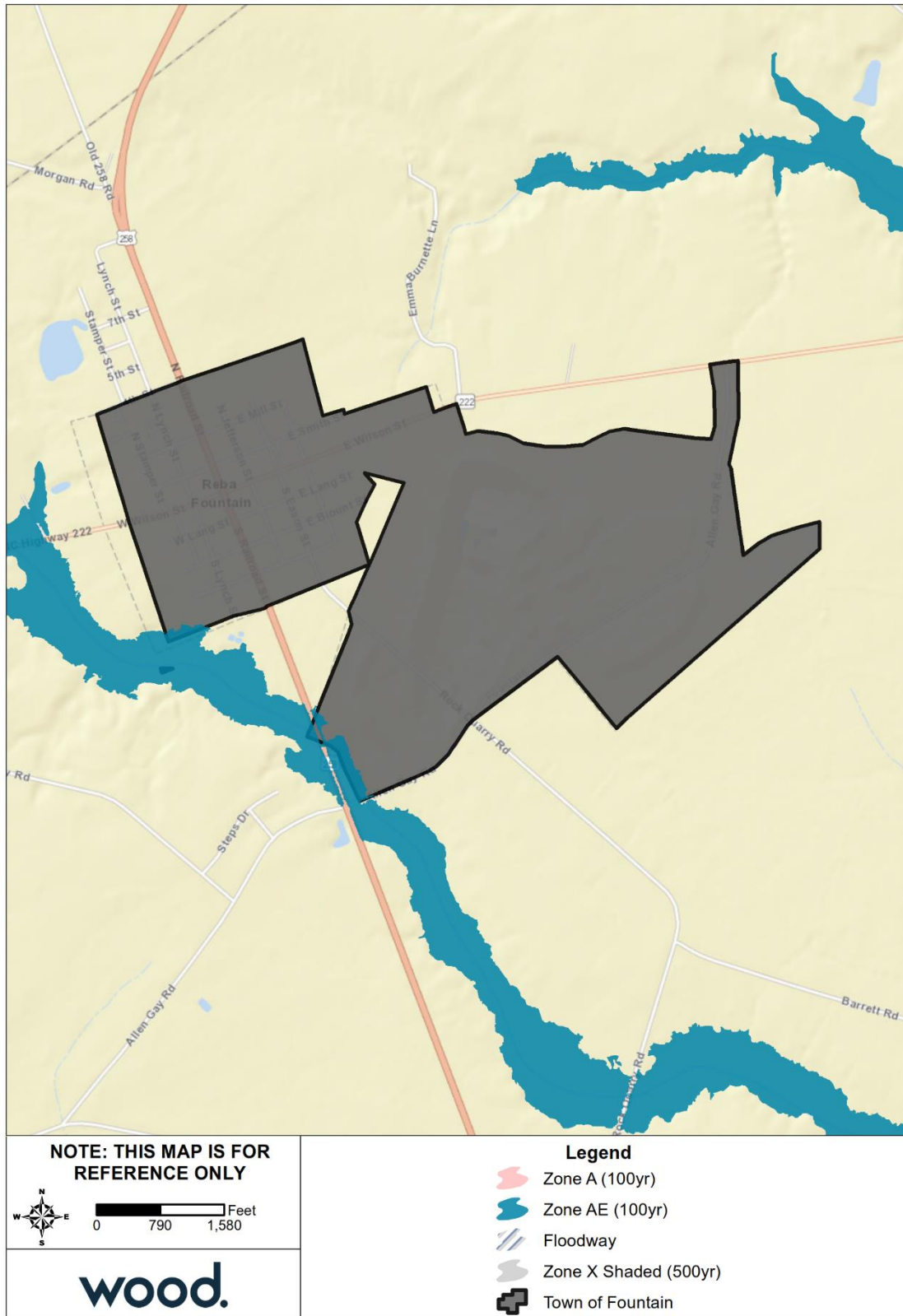
Source: FEMA Effective DFIRM

Figure D.13 – FEMA Flood Hazard Areas, Town of Farmville



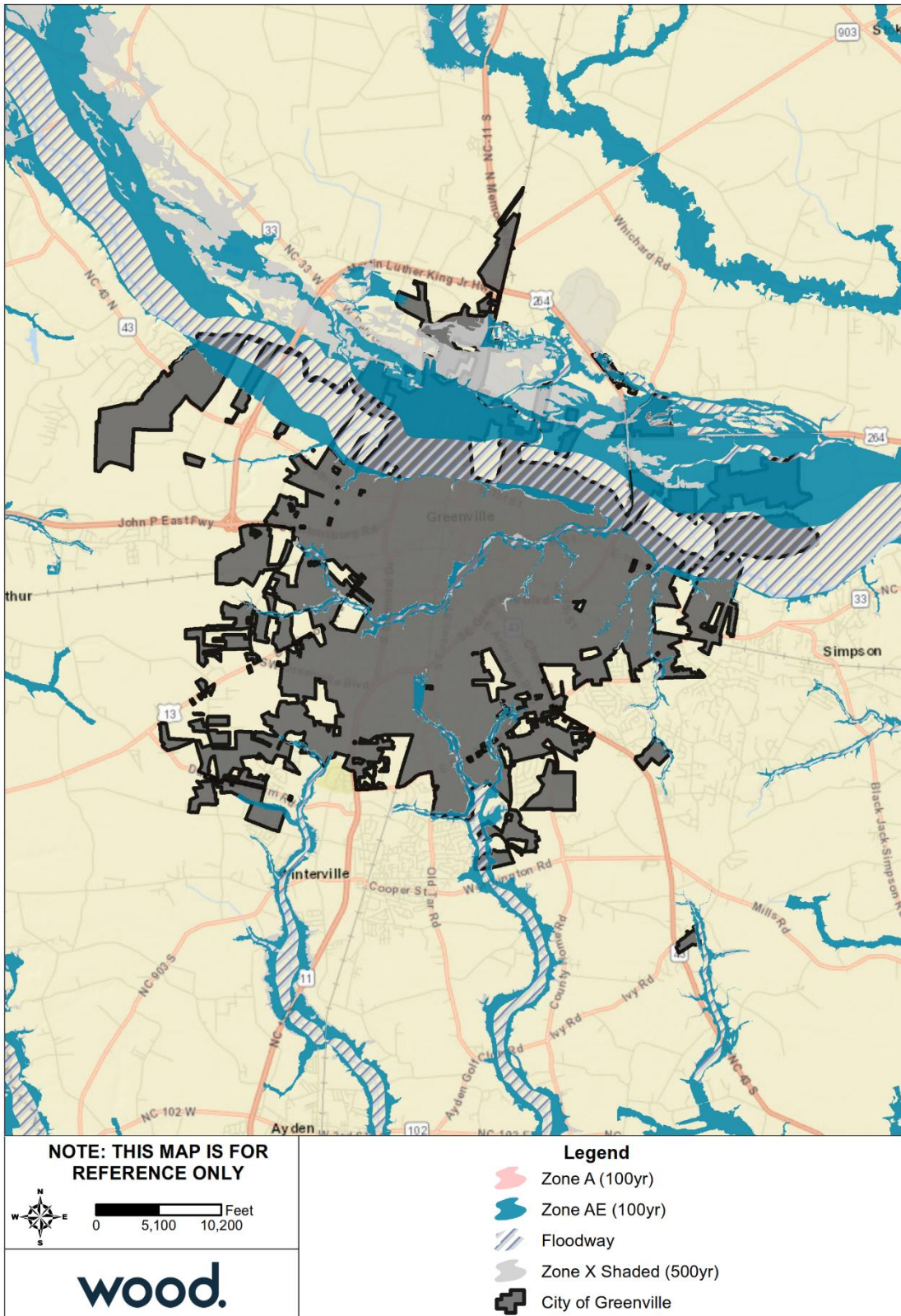
Source: FEMA Effective DFIRM

Figure D.14 – FEMA Flood Hazard Areas, Town of Fountain



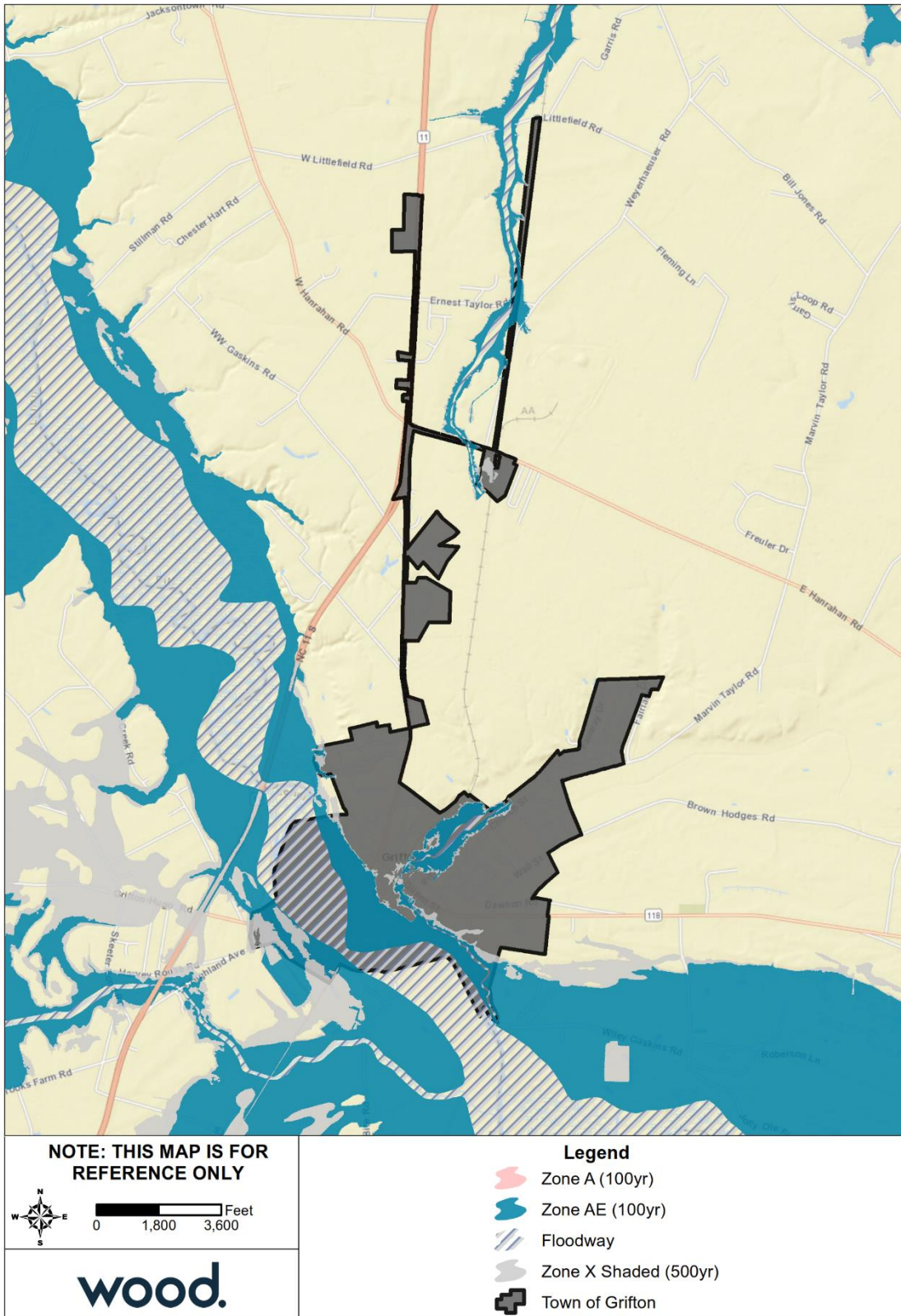
Source: FEMA Effective DFIRM

Figure D.15 – FEMA Flood Hazard Areas, City of Greenville



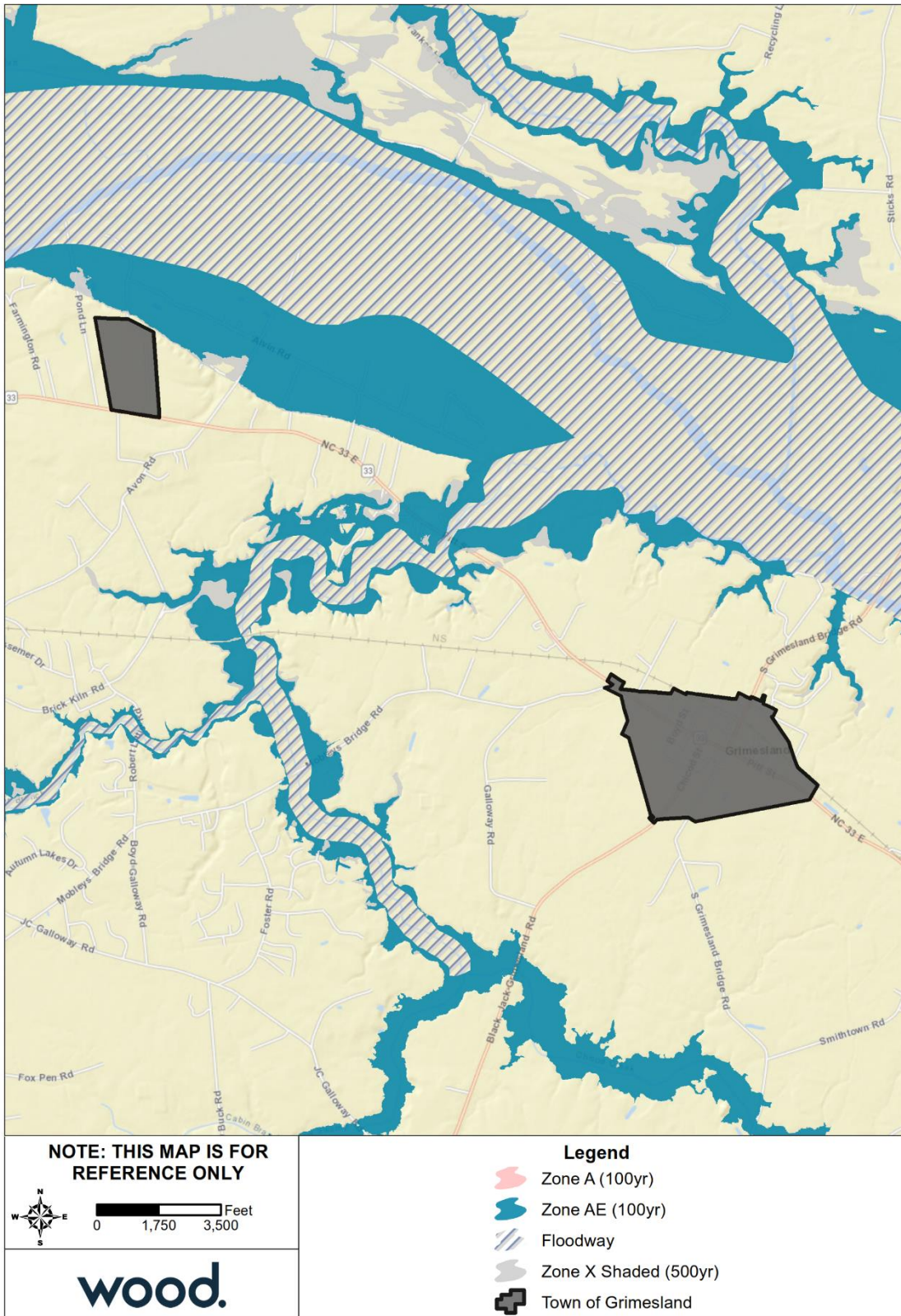
Source: FEMA Effective DFIRM

Figure D.16 – FEMA Flood Hazard Areas, Town of Grifton



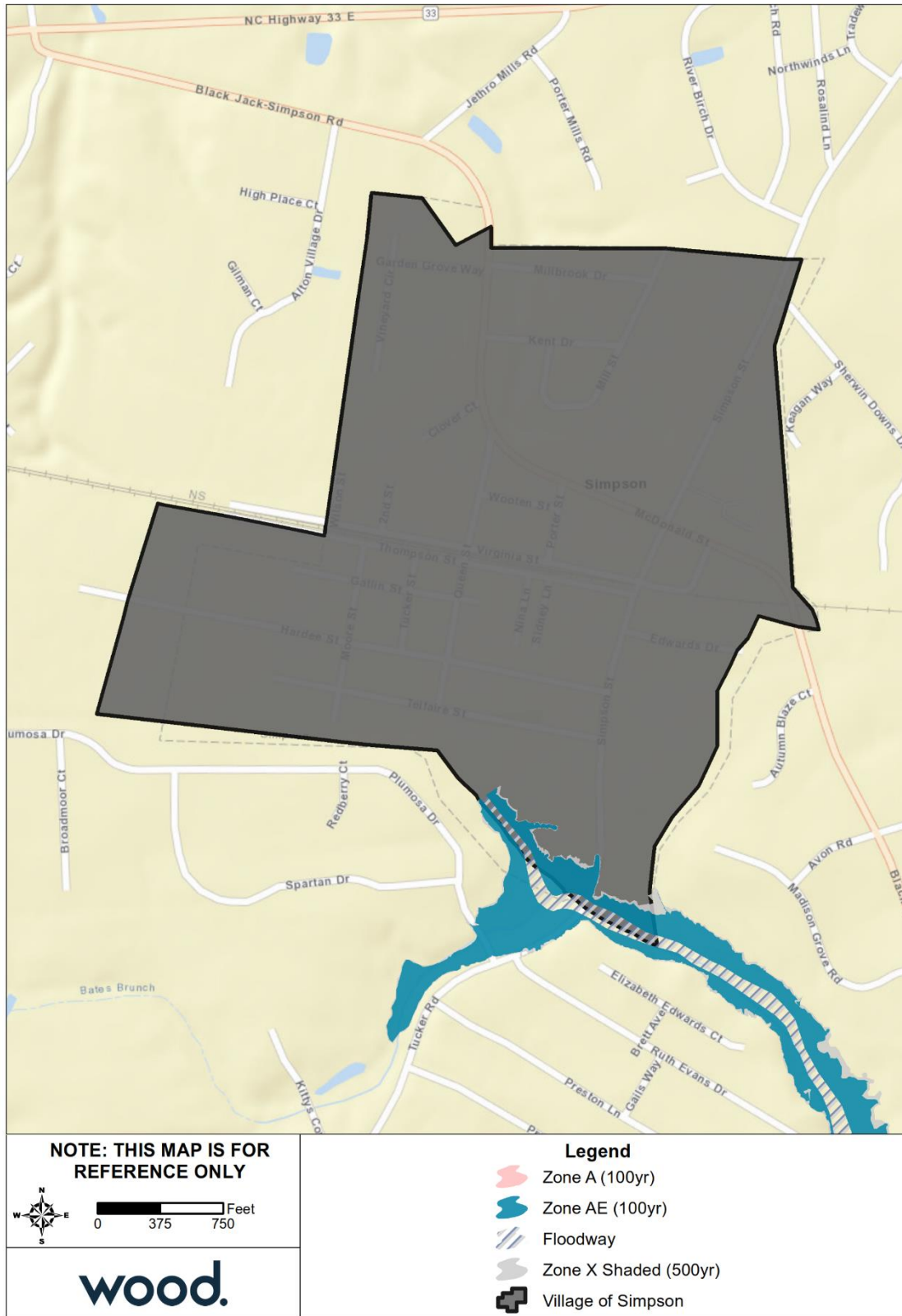
Source: FEMA Effective DFIRM

Figure D.17 – FEMA Flood Hazard Areas, Town of Grimesland



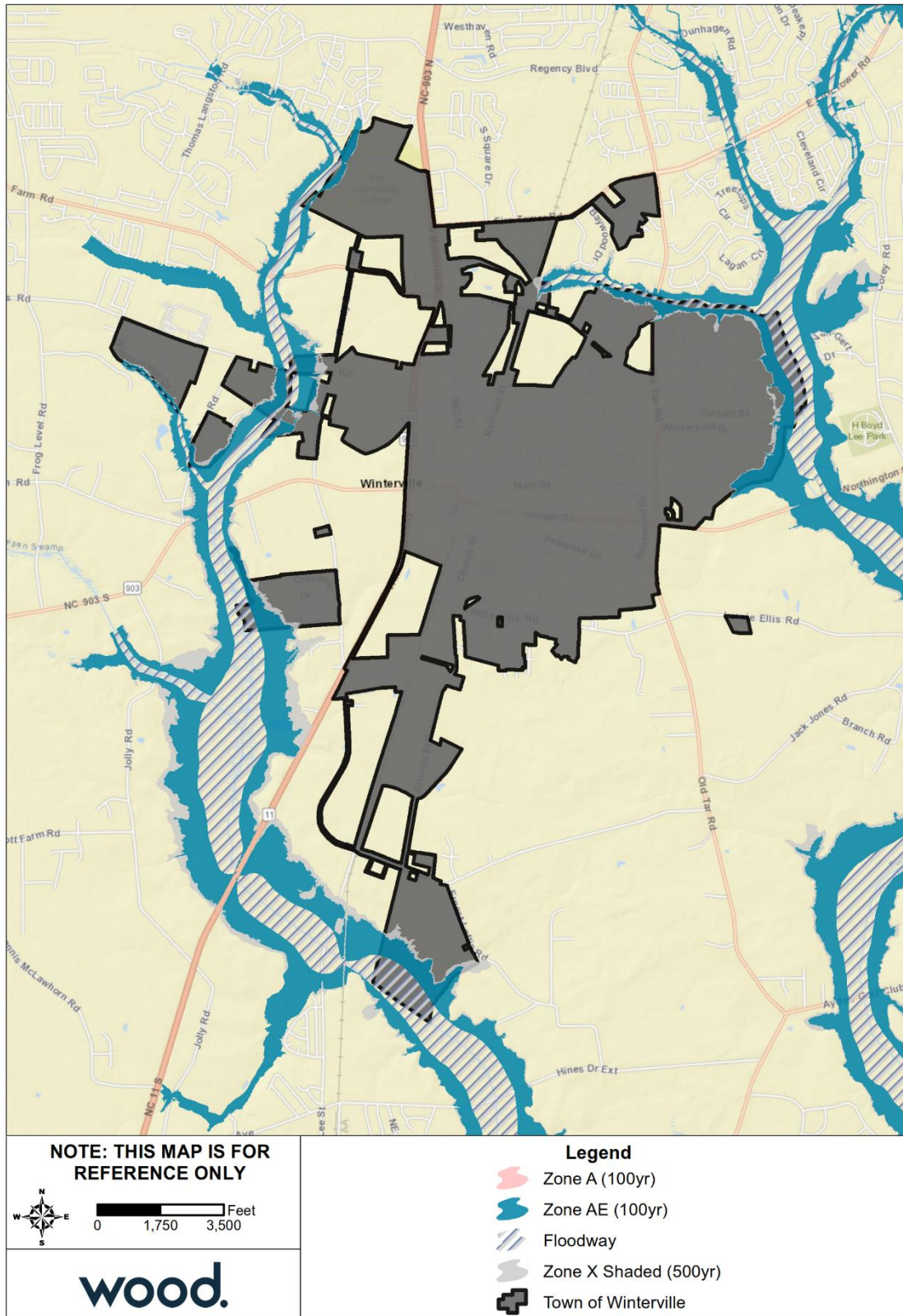
Source: FEMA Effective DFIRM

Figure D.18 – FEMA Flood Hazard Areas, Town of Simpson



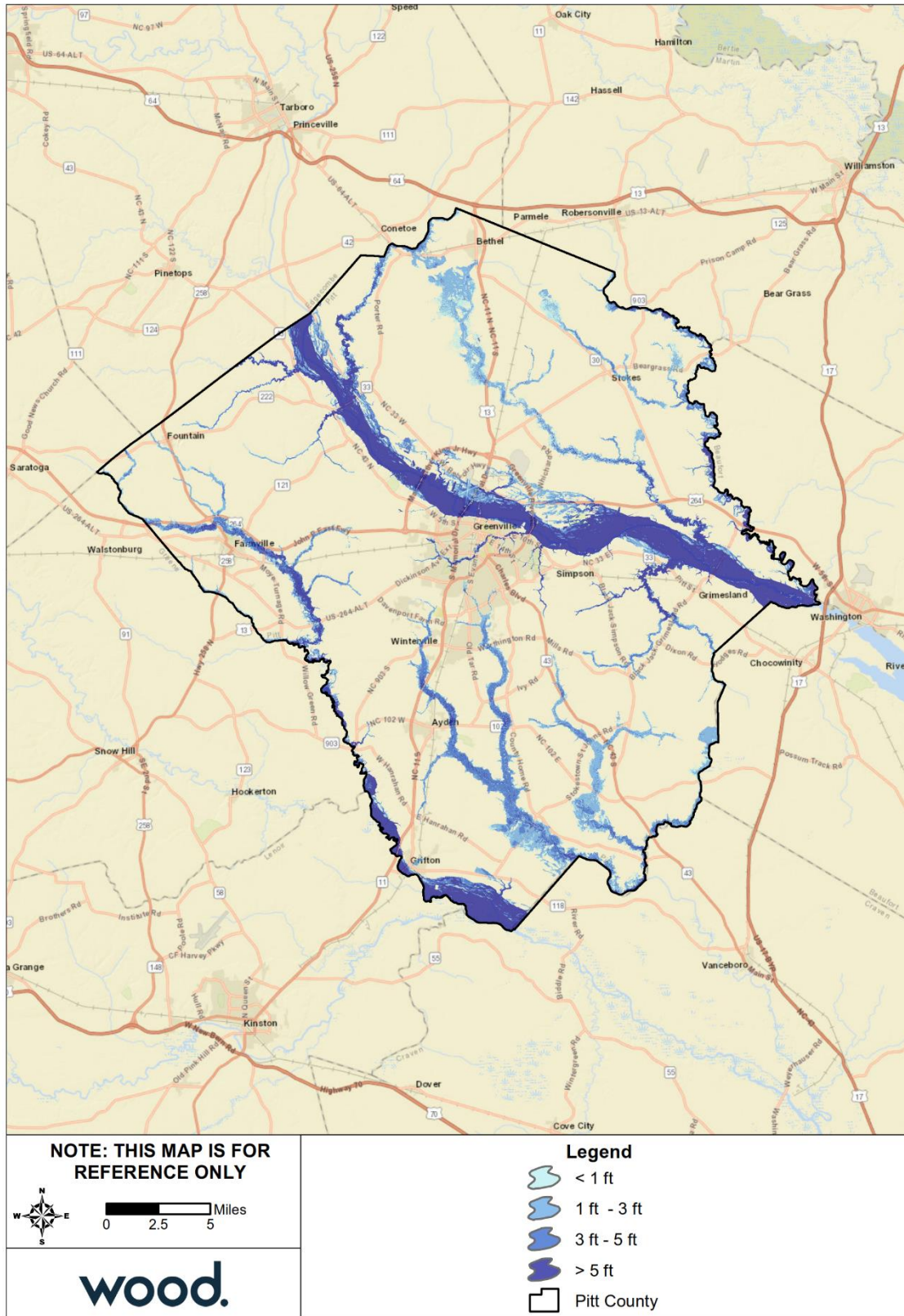
Source: FEMA Effective DFIRM

Figure D.19 – FEMA Flood Hazard Areas, Town of Winterville



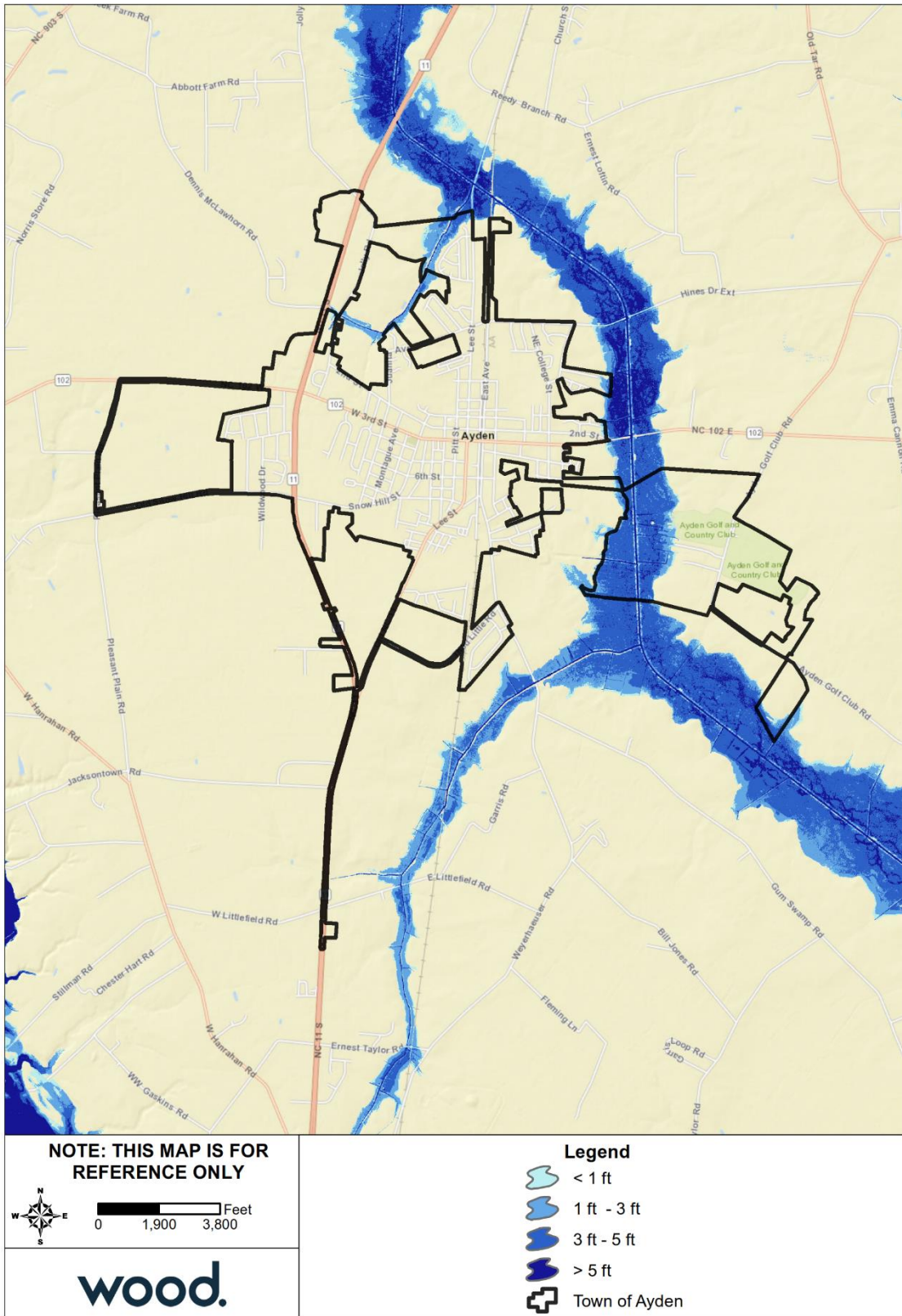
Source: FEMA Effective DFIRM

Figure D.20 – Flood Depth, 1%-Annual-Chance Floodplain, Unincorporated Pitt County



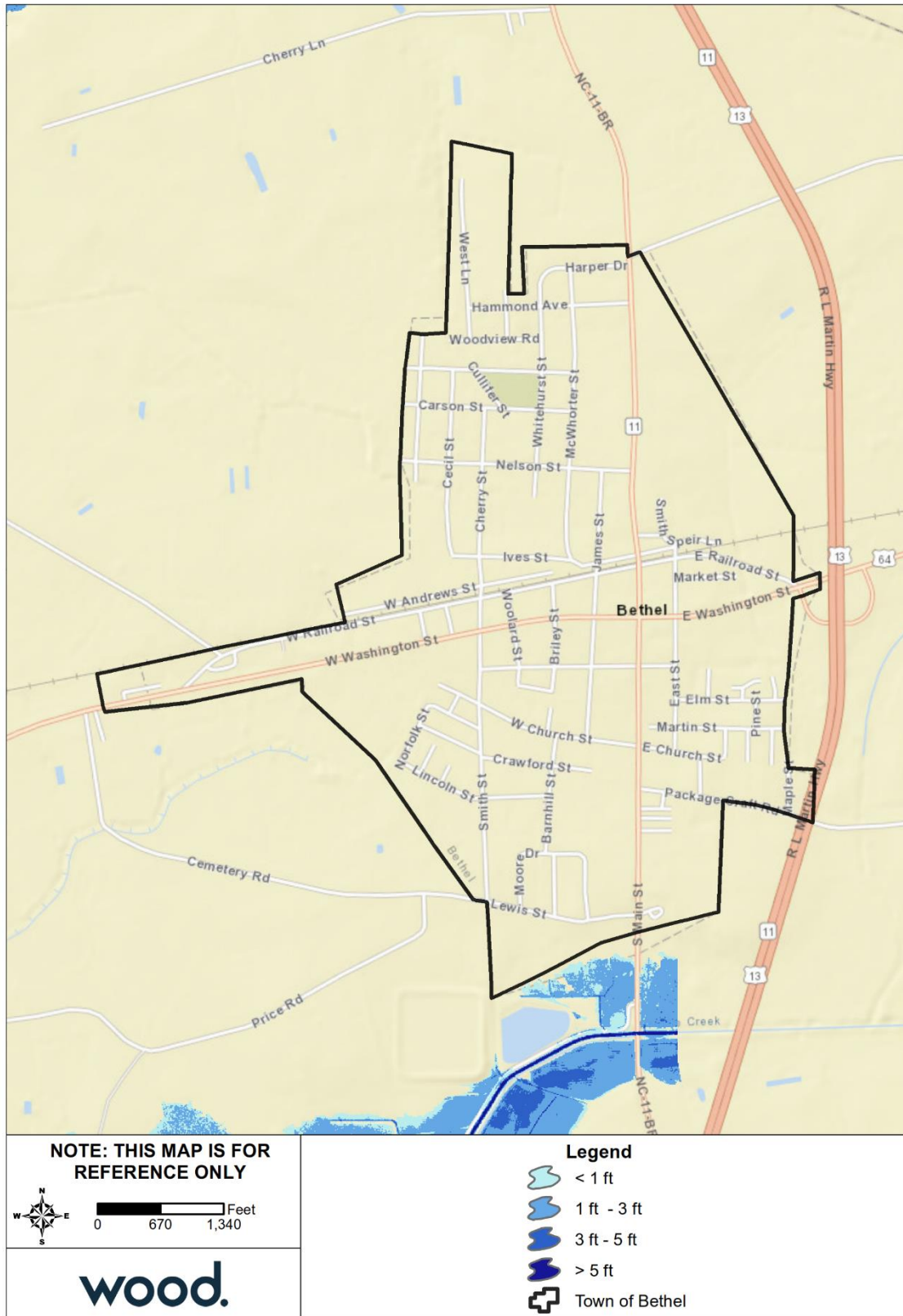
Source: FEMA Effective DFIRM

Figure D.21 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Ayden



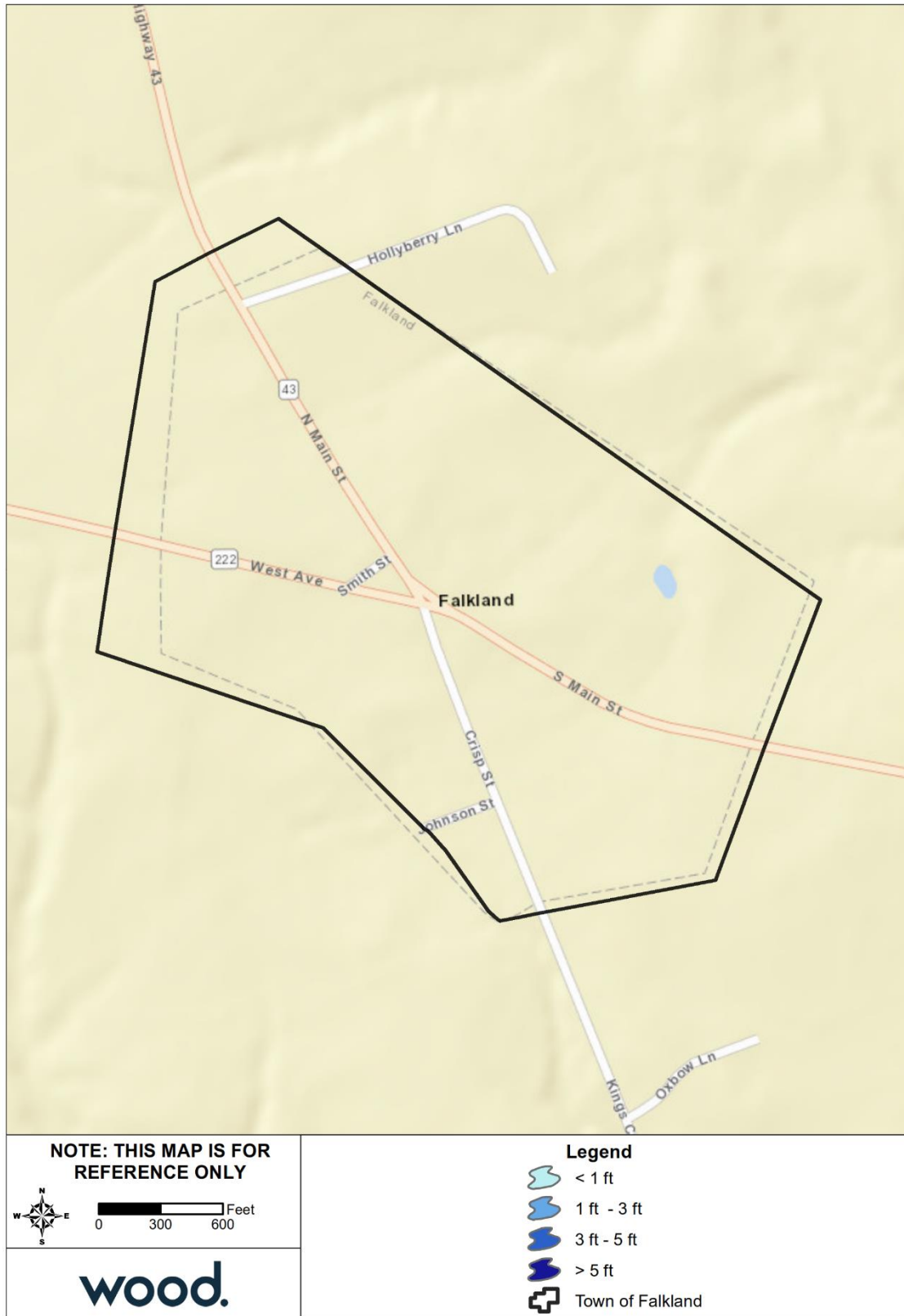
Source: FEMA Effective DFIRM

Figure D.22 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Bethel



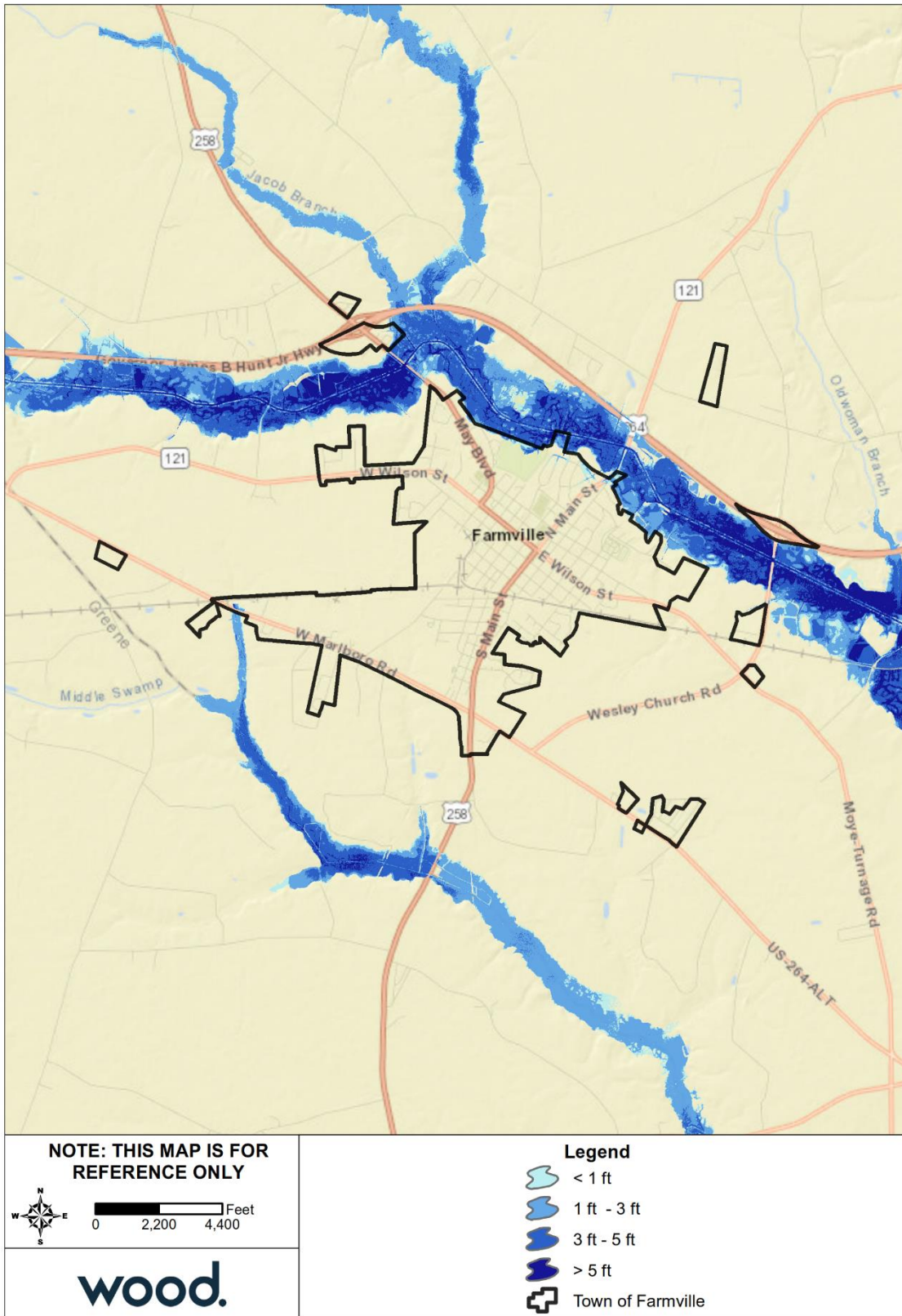
Source: FEMA Effective DFIRM

Figure D.23 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Falkland



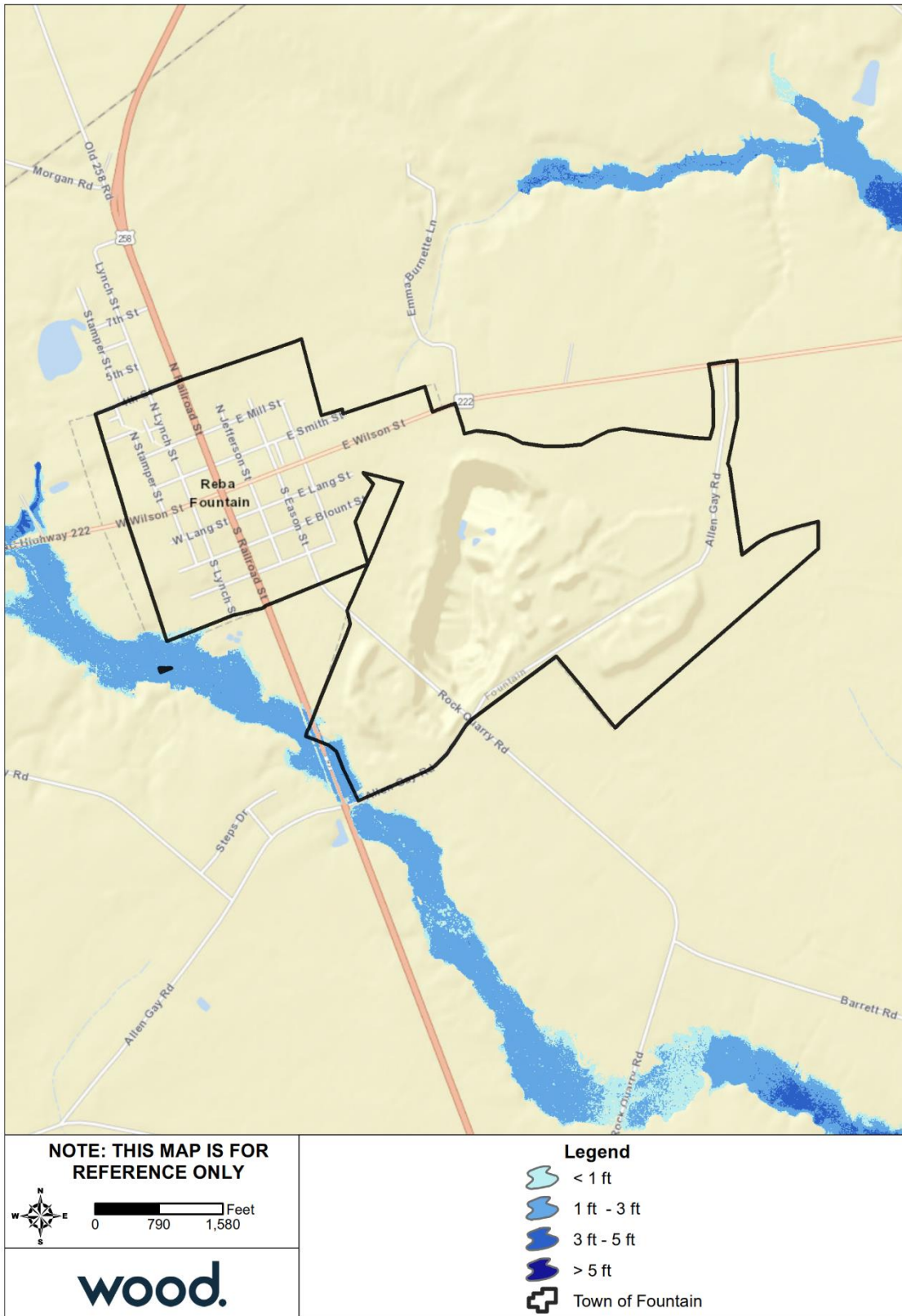
Source: FEMA Effective DFIRM

Figure D.24 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Farmville



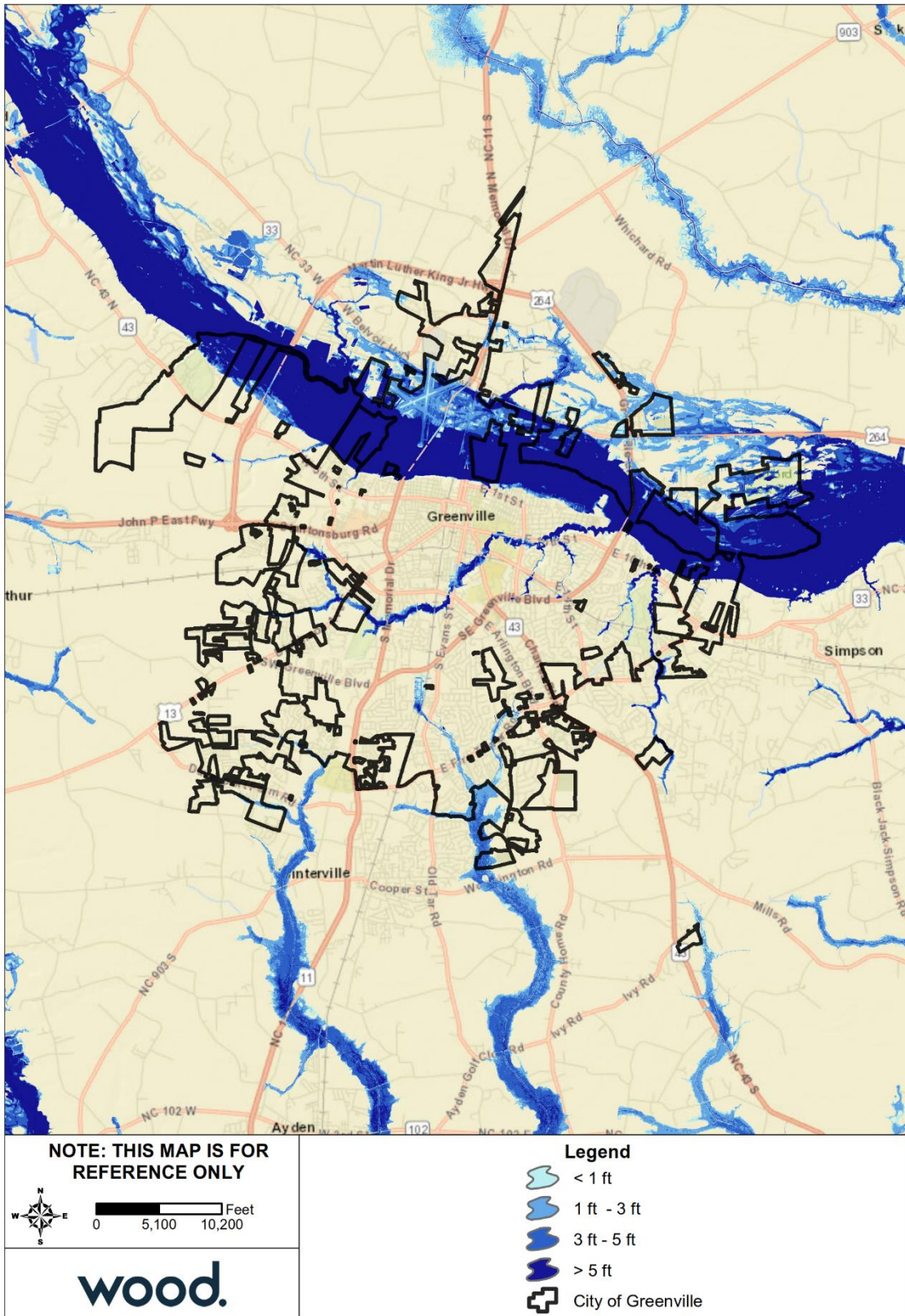
Source: FEMA Effective DFIRM

Figure D.25 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Fountain



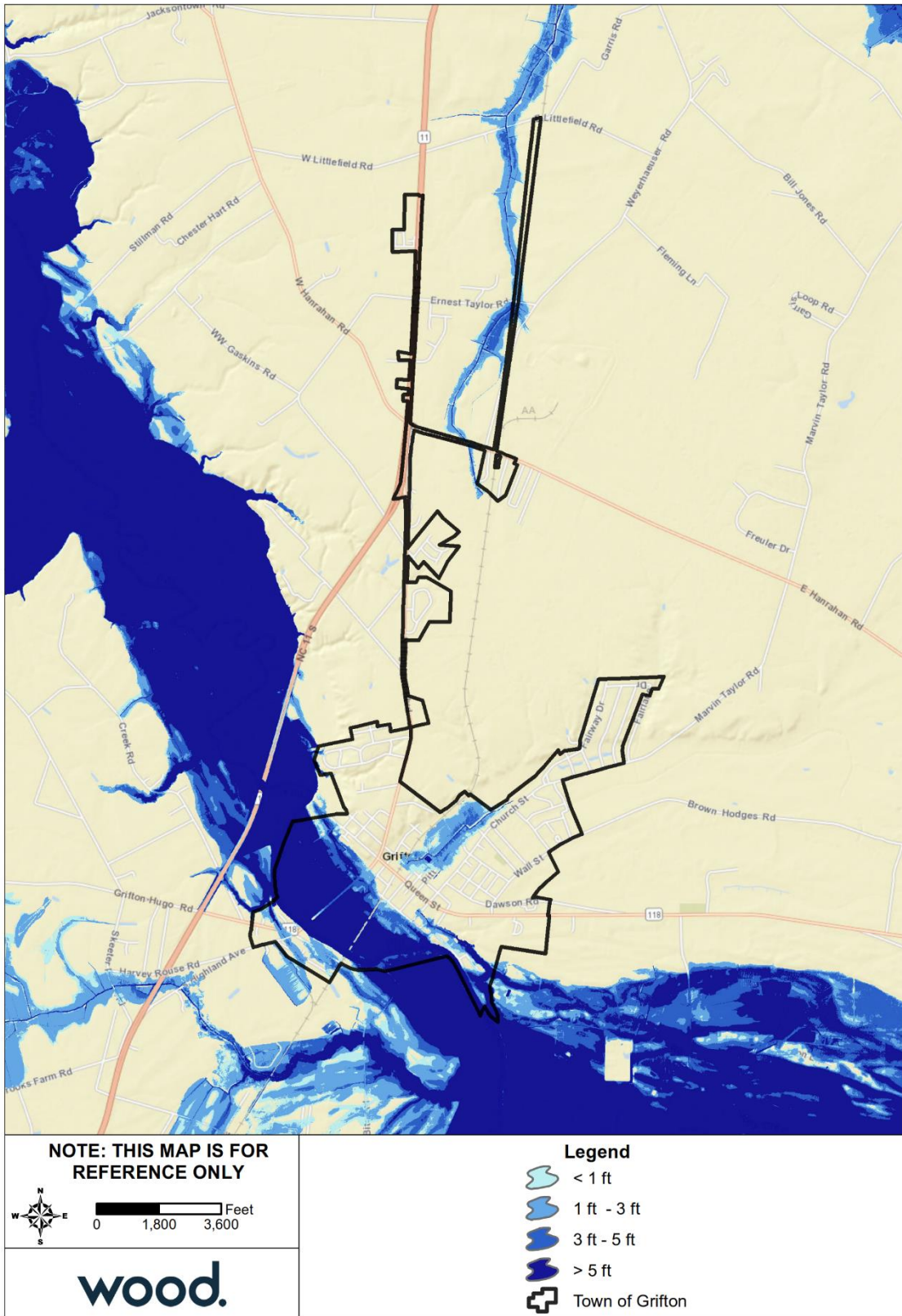
Source: FEMA Effective DFIRM

Figure D.26 – Flood Depth, 1%-Annual-Chance Floodplain, City of Greenville



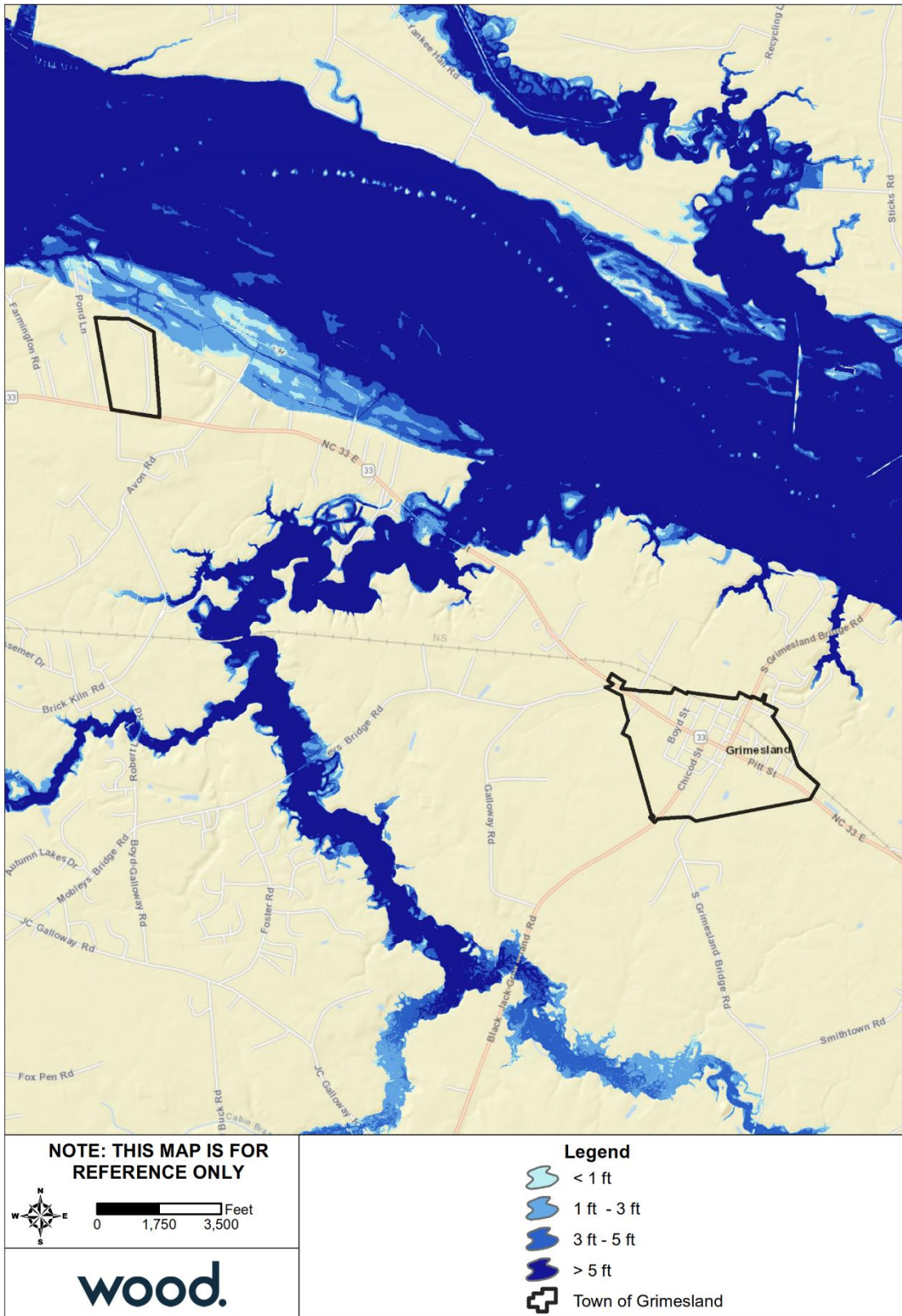
Source: FEMA Effective DFIRM

Figure D.27 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Grifton



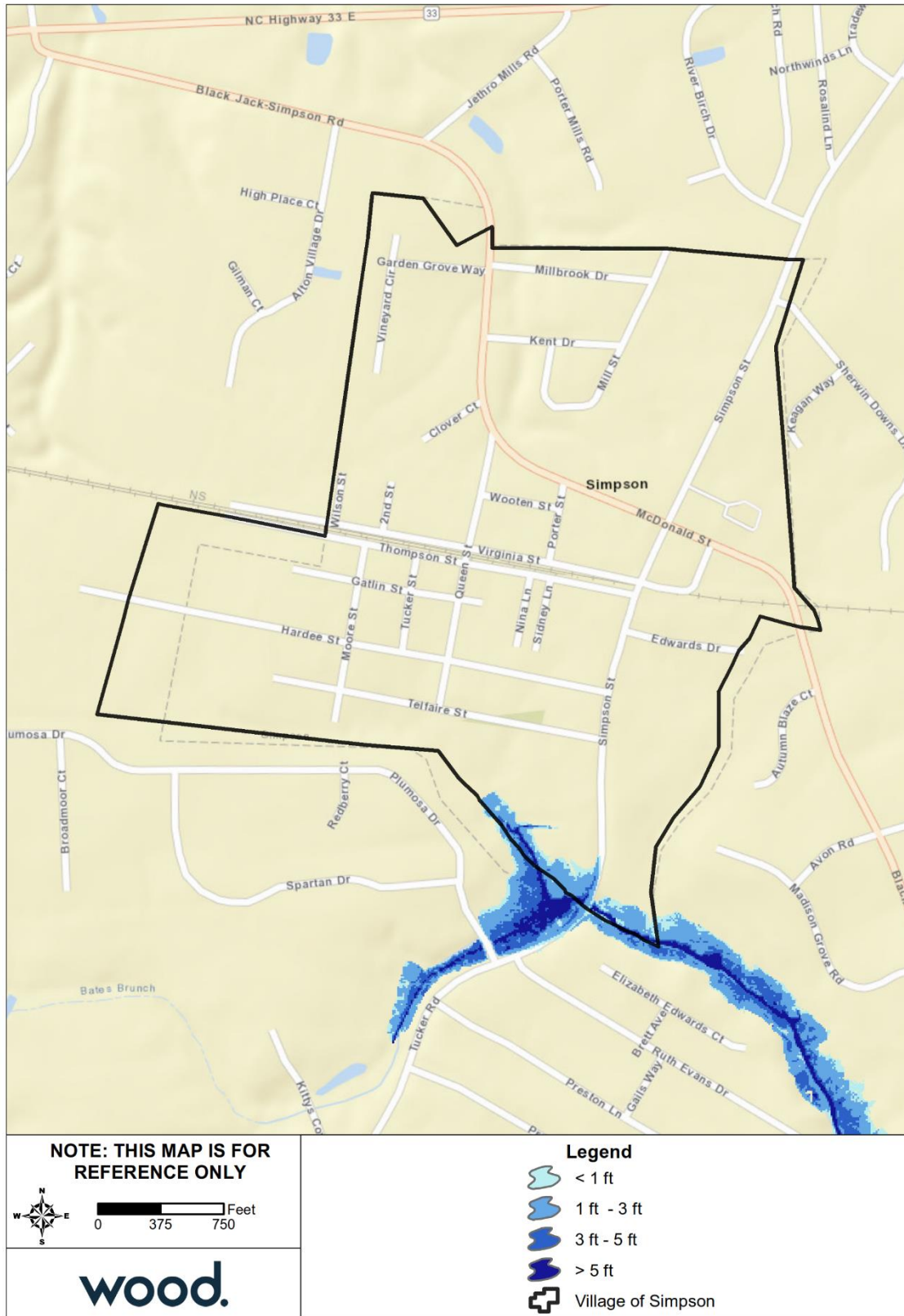
Source: FEMA Effective DFIRM

Figure D.28 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Grimesland



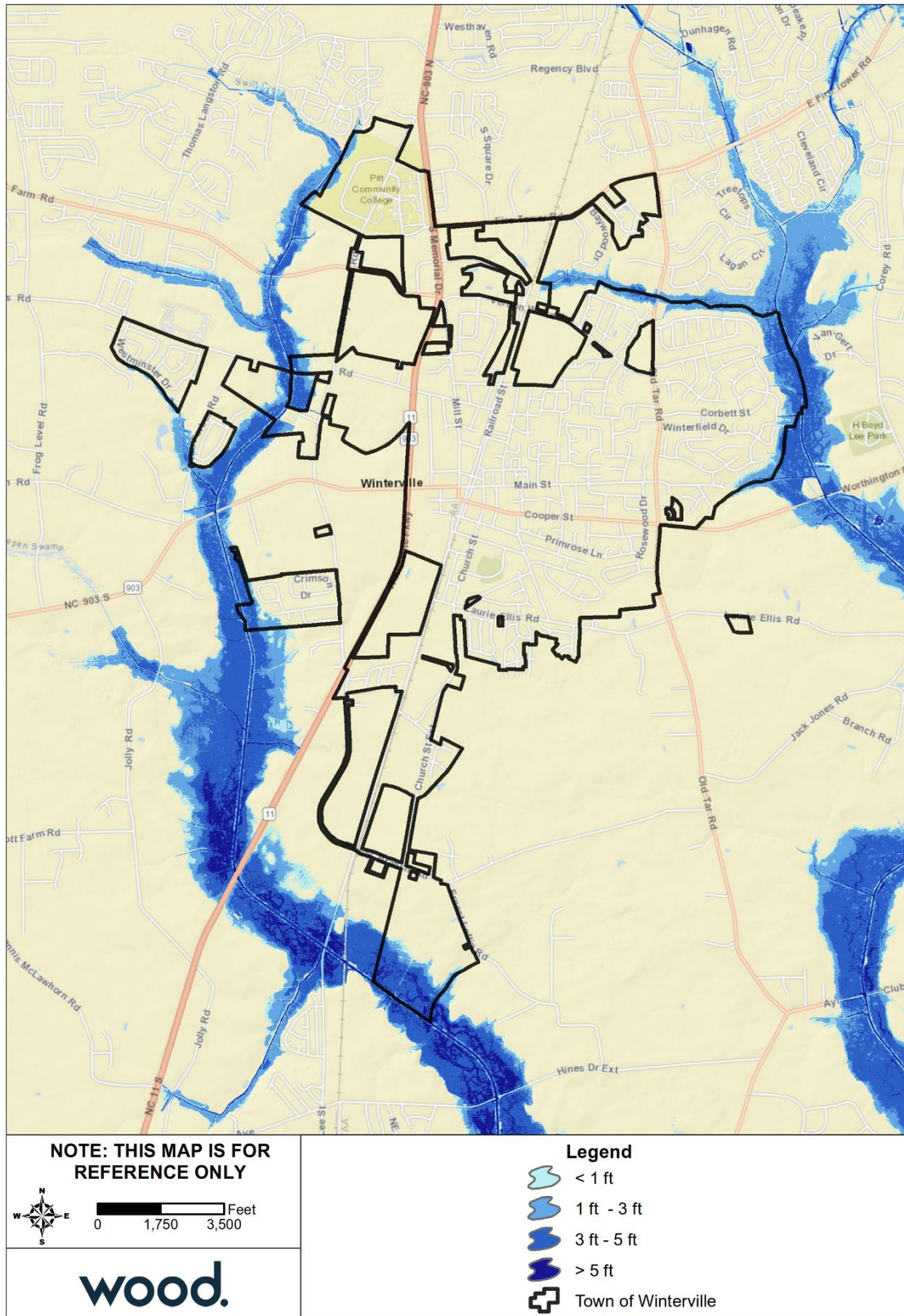
Source: FEMA Effective DFIRM

Figure D.29 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Simpson



Source: FEMA Effective DFIRM

Figure D.30 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Winterville



Source: FEMA Effective DFIRM

D.2.2 Wildfire

Table D.12 summarizes the acreage in Pitt 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. Just under 50 percent of Pitt County is not included in the WUI.

Table D.12 – Wildland Urban Interface Acreage, Pitt County

	Housing Density	Total Acreage	Percent of Total Acreage
	Not in WUI	205,564.1	49.1%
	LT 1hs/40ac	58,719.1	14.0%
	1hs/40ac to 1hs/20ac	29,654.1	7.1%
	1hs/20ac to 1hs/10ac	35,066.0	8.4%
	1hs/10ac to 1hs/5ac	29,685.7	7.1%
	1hs/5ac to 1hs/2ac	26,778.6	6.4%
	1hs/2ac to 3hs/1ac	29,667.8	7.1%
	GT 3hs/1ac	3,447.1	0.8%
	Total	418,582.5	

Source: Southern Wildfire Risk Assessment

Figure D.31 depicts the WUI for Pitt County and all participating jurisdictions. The WUI is the area where housing development is built near or among areas of vegetation that may be prone to wildfire. Figure D.32 through Figure D.34 detail the Fire Intensity Scale, which indicates the potential severity of fire based on fuel loads, topography, and other factors. Figure D.35 depicts Burn Probability based on landscape conditions, percentile weather, historical ignition patterns, and historical prevention and suppression.

Potential fire intensity is highest in the unincorporated areas of Pitt County, particularly along the northern and southeastern borders, as well as a small sliver south of the Tar River and north of Farmville. Burn probability is highest in the northern portion of the county, as well as along the southeastern border, although the burn probability is low to moderate throughout the whole county. The areas where high potential fire intensity and relatively high burn probability overlap is mostly outside of the WUI. While this does not guarantee low risk, a potential fire here might not pose as high a risk to human settlement and the built environment.

Table D.13 provides building counts and estimated damages for Critical Infrastructure and Key Resources (CIKR) buildings by sector at risk to wildfire hazard in Pitt County and participating jurisdictions. Table D.14 provides counts and estimated damages for High Potential Loss Properties in these areas.

Table D.13 – Critical Facilities Exposed to Wildfire by Jurisdiction, Pitt County

Sector	Number of Buildings at Risk	Estimated Damages
Pitt County Unincorporated Area		
Banking and Finance	2	\$2,010,262
Commercial Facilities	93	\$33,102,897
Critical Manufacturing	46	\$24,064,212
Food and Agriculture	482	\$39,234,530
Government Facilities	13	\$20,822,545
Healthcare and Public Health	12	\$9,970,312
Transportation Systems	45	\$26,527,828
All Categories	693	\$155,732,586

ANNEX D: PITT COUNTY

Sector	Number of Buildings at Risk	Estimated Damages
City of Greenville		
Banking and Finance	7	\$4,082,467
Commercial Facilities	196	\$159,723,078
Communications	1	\$218,560
Critical Manufacturing	72	\$132,088,778
Energy	1	\$67,291
Food and Agriculture	16	\$628,927
Government Facilities	11	\$8,316,498
Healthcare and Public Health	22	\$14,964,660
Transportation Systems	54	\$40,680,081
All Categories	380	\$360,770,340
Town of Ayden		
Banking and Finance	2	\$2,522,716
Commercial Facilities	14	\$3,575,267
Critical Manufacturing	2	\$307,317
Food and Agriculture	28	\$2,180,975
Government Facilities	1	\$176,389
Healthcare and Public Health	1	\$745,986
Transportation Systems	12	\$5,727,209
All Categories	60	\$15,235,859
Town of Bethel		
Food and Agriculture	2	\$1,115,742
All Categories	2	\$1,115,742
Town of Farmville		
Commercial Facilities	1	\$841,104
Food and Agriculture	7	\$318,739
All Categories	8	\$1,159,843
Town of Fountain		
Food and Agriculture	5	\$301,695
Transportation Systems	1	\$138,400
All Categories	6	\$440,095
Town of Grifton		
Banking and Finance	1	\$249,613
Chemical	1	\$13,765,180
Commercial Facilities	27	\$13,838,742
Critical Manufacturing	8	\$24,295,891
Energy	1	\$682,629,591
Food and Agriculture	21	\$1,092,802
Government Facilities	2	\$704,425
Healthcare and Public Health	3	\$1,050,357
Transportation Systems	6	\$7,076,330
All Categories	70	\$744,702,931
Town of Grimesland		
Commercial Facilities	3	\$1,143,566
Critical Manufacturing	1	\$226,314
Food and Agriculture	17	\$1,580,162
Government Facilities	1	\$849,243
Transportation Systems	7	\$1,901,489
All Categories	29	\$5,700,774

ANNEX D: PITT COUNTY

Sector	Number of Buildings at Risk	Estimated Damages
Village of Simpson		
Commercial Facilities	3	\$666,264
Food and Agriculture	3	\$77,078
All Categories	6	\$743,342
Town of Winterville		
Banking and Finance	2	\$3,097,269
Commercial Facilities	35	\$35,202,422
Critical Manufacturing	19	\$5,156,271
Food and Agriculture	8	\$325,651
Government Facilities	4	\$6,843,942
Healthcare and Public Health	2	\$311,840
Transportation Systems	12	\$7,558,261
All Categories	82	\$58,495,656

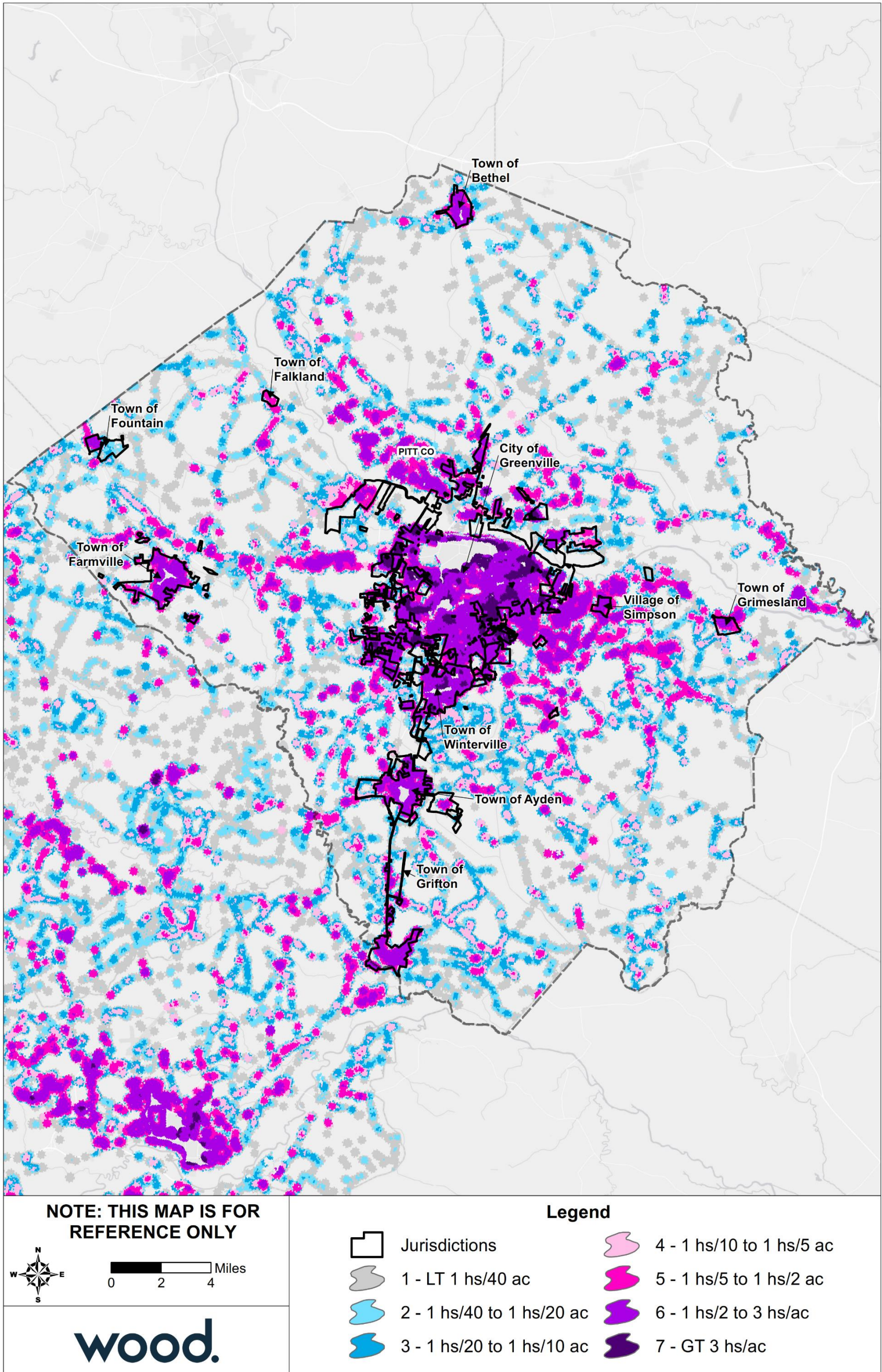
Source: NCEM Risk Management Tool

Table D.14 – High Potential Loss Properties Exposed to Wildfire by Jurisdiction, Pitt County

Sector	Number of Buildings at Risk	Estimated Damages
Pitt County Unincorporated Area		
Commercial	18	\$39,392,722
Government	1	\$1,370,257
Industrial	1	\$5,472,019
Religious	1	\$1,060,799
Residential	1	\$1,179,742
All Categories	22	\$48,475,539
City of Greenville		
Commercial	45	\$117,114,900
Government	4	\$6,628,834
Industrial	3	\$87,373,231
Religious	4	\$6,649,898
Residential	9	\$14,616,695
All Categories	65	\$232,383,558
Town of Ayden		
Commercial	2	\$3,431,410
Town of Bethel		
Agricultural	1	\$1,085,227
Town of Farmville		
Residential	1	\$1,061,032
Town of Grifton		
Commercial	3	\$11,091,581
Industrial	1	\$1,214,683
Religious	1	\$1,182,299
Residential	2	\$4,527,543
Utilities	1	\$682,629,591
All Categories	8	\$700,645,697
Town of Winterville		
Commercial	10	\$19,507,017
Religious	2	\$6,925,558
Residential	3	\$5,702,594
All Categories	15	\$32,135,169

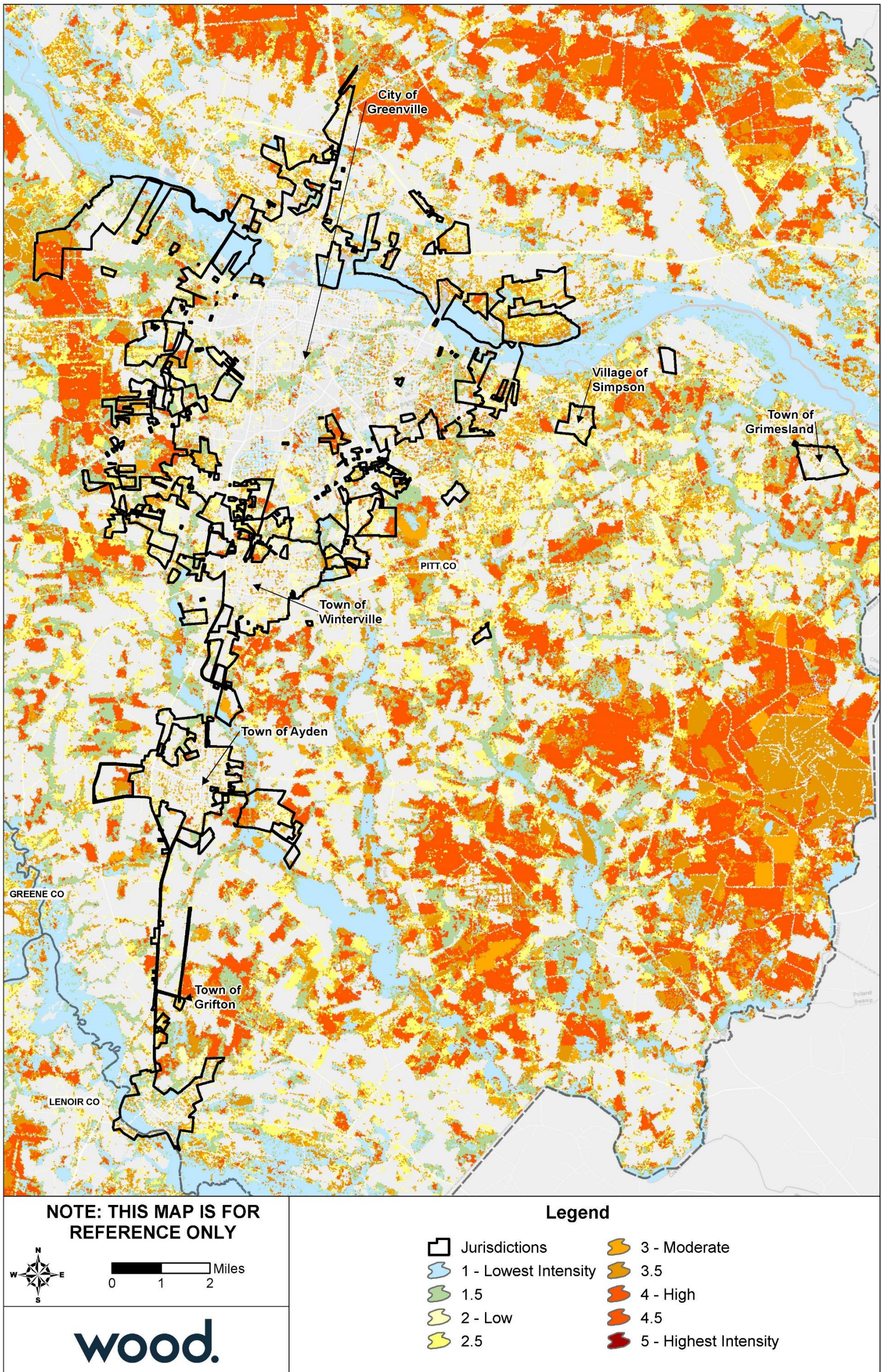
Source: NCEM Risk Management Tool

Figure D.31 – Wildland Urban Interface, Pitt County



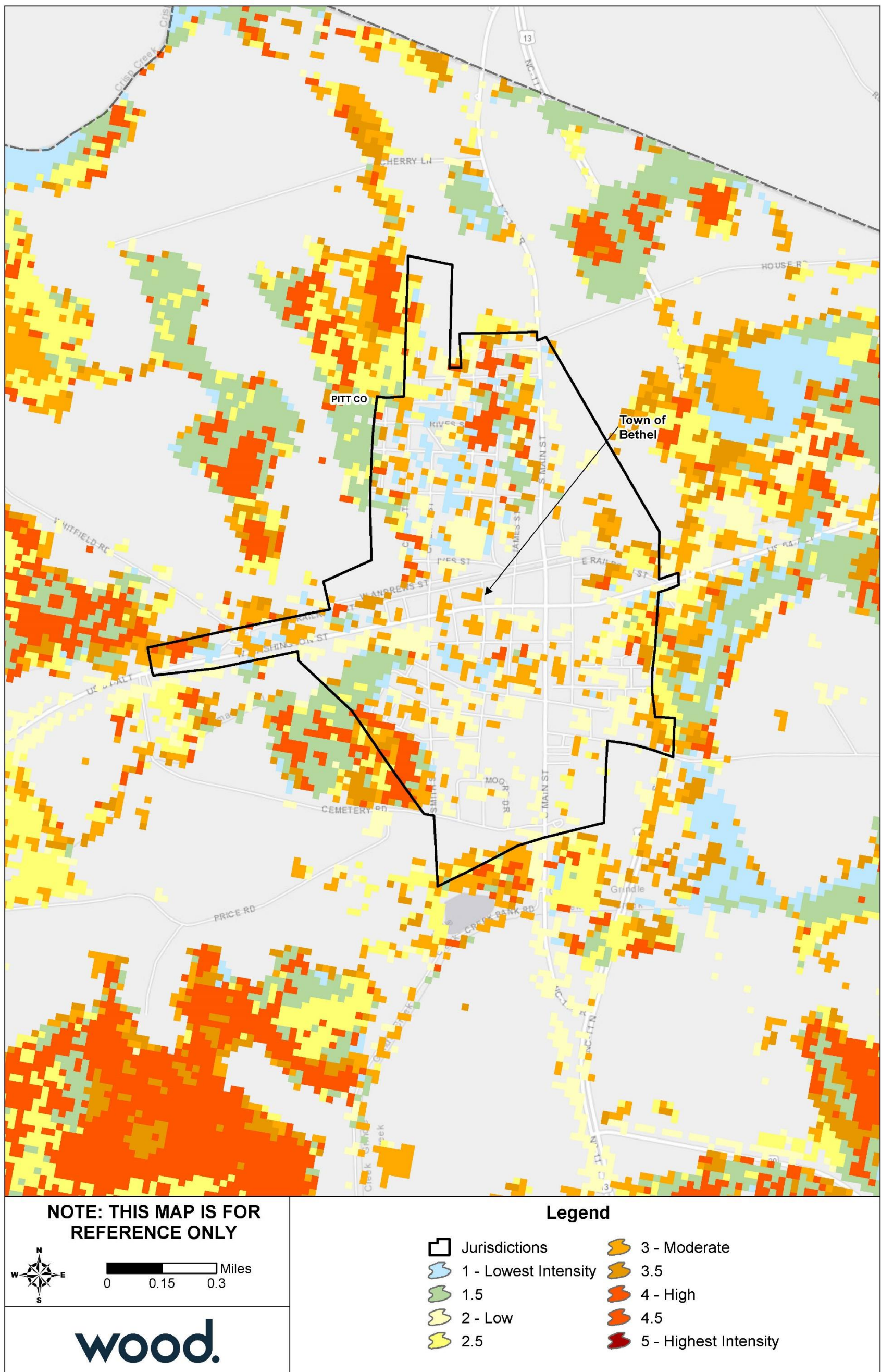
Source: Southern Wildfire Risk Assessment

Figure D.32 – Fire Intensity Scale, Pitt County (Detail 1)



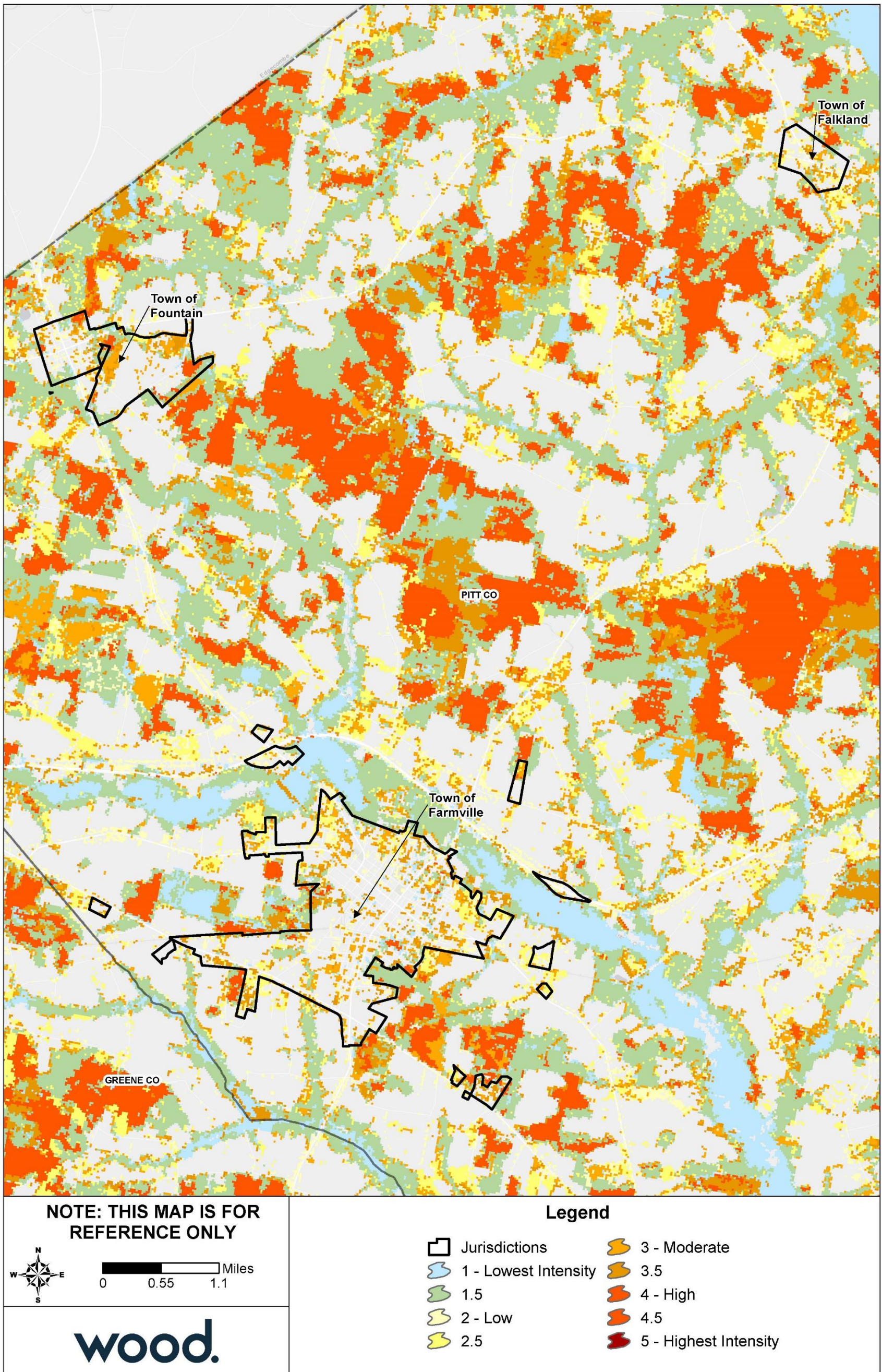
Source: Southern Wildfire Risk Assessment

Figure D.33 – Fire Intensity Scale, Pitt County (Detail 2)



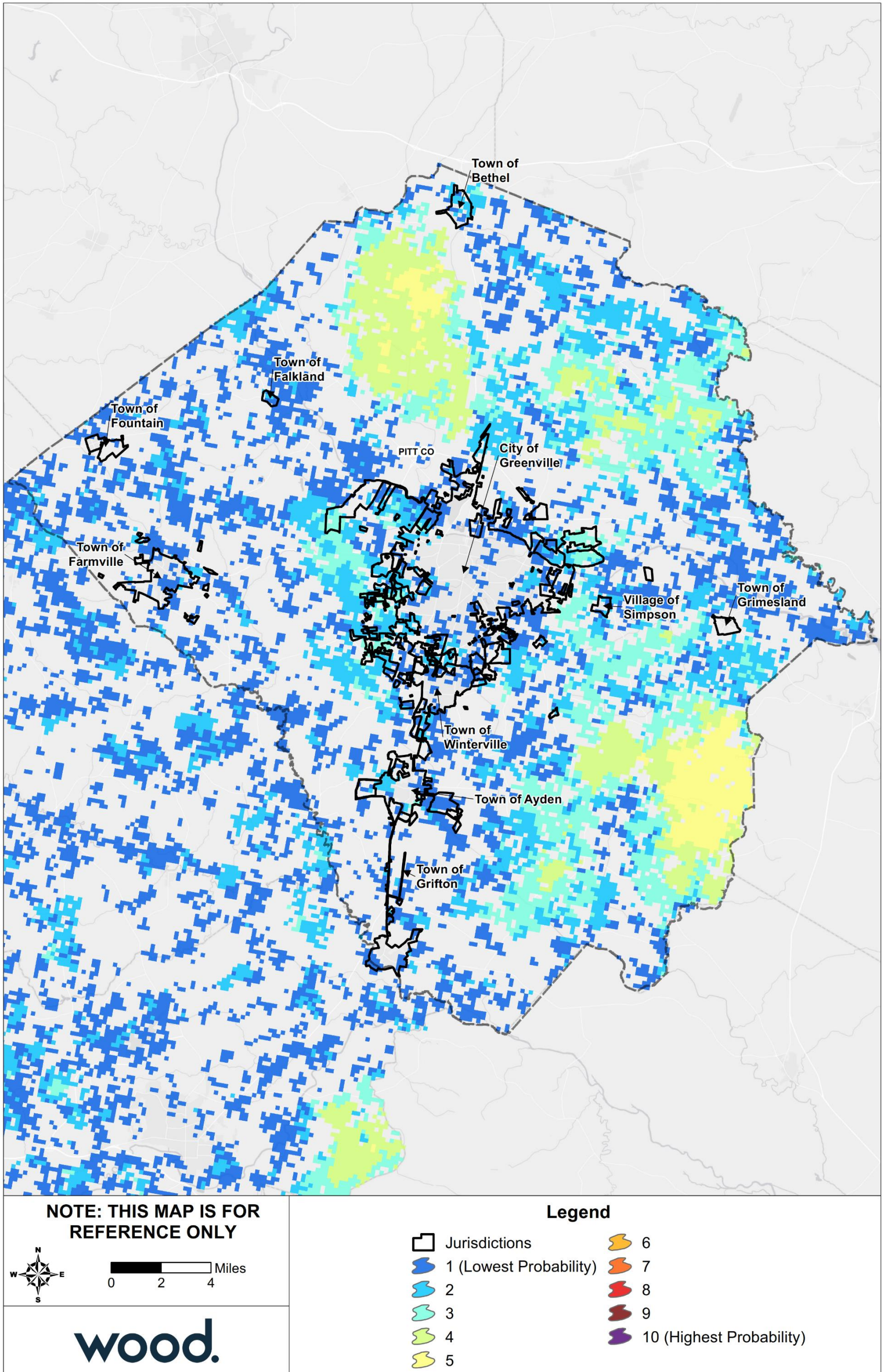
Source: Southern Wildfire Risk Assessment

Figure D.34 – Fire Intensity Scale, Pitt County (Detail 3)



Source: Southern Wildfire Risk Assessment

Figure D.35 – Burn Probability, Pitt County



Source: Southern Wildfire Risk Assessment

D.3 CAPABILITY ASSESSMENT

D.3.1 Overall Capability

Details on the tools and resources in place and available to Pitt County were provided by the County’s HMPC representatives and are summarized in Section 5 Capability Assessment. Based on that information and using the scoring methodology detailed in that section, Pitt County has an overall capability rating of High, in line with their own self-assessed overall capability. Pitt County provides many resources for its smaller incorporated jurisdictions and many of the mitigation projects in this plan are regional in nature, with the County serving as the project lead; therefore, the County’s capability is also an indicator for its smaller incorporated areas. The City of Greenville also has a capability rating of High. The County’s and City of Greenville’s Self-Assessment of key capability areas is summarized in Table D.15 below.

Table D.15 – Capability Self-Assessment Ratings, Pitt County

Capability Area	Pitt County	City of Greenville
Plans, Ordinances, Codes and Programs	High	High
Administrative and Technical Capability	High	High
Fiscal Capability	High	High
Education and Outreach Capability	High	High
Mitigation Capability	High	High
Political Capability	High	High
Overall Capability	High	High

D.3.2 Floodplain Management

The following tables reflect NFIP entry dates as well as policy and claims data for Pitt County and incorporated categorized by structure type, flood zone, Pre-FIRM and Post-FIRM.

Table D.16 – NFIP Program Entry Dates

Community	Regular Entry Date
Pitt County (Unincorporated Area)	January 6, 1983
City of Greenville	July 3, 1978
Town of Ayden	August 4, 1987
Town of Bethel	January 2, 2004
Town of Falkland	January 2, 2004
Town of Farmville	April 1, 1982
Town of Fountain	May 18, 2005
Town of Grifton	February 17, 1982
Town of Grimesland	January 2, 2004
Village of Simpson	January 2, 2004
Town of Winterville	January 24, 1978

Source: FEMA Community Information System

Table D.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
Pitt County Unincorporated Area					
Single Family	433	\$224,815	\$100,618,600	342	\$10,260,590.67
2-4 Family	6	\$2,303	\$1,036,100	5	\$177,865.20
All Other Residential	1	\$301	\$96,800	0	\$0.00
Non-Residential	18	\$21,720	\$5,475,500	7	\$160,297.48

ANNEX D: PITT COUNTY

Structure Type	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Total	458	\$249,139	\$107,227,000	354	\$10,598,753.35
City of Greenville					
Single Family	823	\$385,547	\$180,810,500	296	\$8,632,619.44
2-4 Family	160	\$69,122	\$19,965,600	93	\$3,932,602.50
All Other Residential	142	\$80,616	\$38,479,100	52	\$4,676,908.46
Non-Residential	135	\$397,612	\$62,777,100	55	\$3,893,708.42
Total	1,260	\$932,897	\$302,032,300	496	\$21,135,838.82
Town of Ayden					
Single Family	30	\$13,724	\$6,714,900	15	\$253,917.07
2-4 Family	1	\$65	\$8,000	0	\$0.00
Non-Residential	2	\$3,922	\$1,000,000	2	\$26,668.08
Total	33	\$17,711	\$7,722,900	17	\$280,585.15
Town of Bethel					
Single Family	2	\$774	\$700,000	3	\$12,469.45
Total	2	\$774	\$700,000	3	\$12,469.45
Town of Falkland					
Single Family	1	\$2,150	\$302,500	1	\$21,317.05
Total	1	\$2,150	\$302,500	1	\$21,317.05
Town of Farmville					
Single Family	81	\$33,732	\$23,683,800	26	\$752,560.62
Non-Residential	5	\$5,925	\$1,460,000	2	\$91,137.03
Total	86	\$39,657	\$25,143,800	28	\$843,697.65
Town of Grifton					
Single Family	53	\$37,047	\$8,238,200	50	\$866,559.15
All Other Residential	3	\$3,045	\$1,050,000	0	\$0.00
Non-Residential	27	\$38,036	\$8,145,400	12	\$1,793,962.97
Total	83	\$78,128	\$17,433,600	62	\$2,660,522.12
Town of Grimesland					
Single Family	4	\$1,840	\$1,365,400	2	\$59,781.22
Total	4	\$1,840	\$1,365,400	2	\$59,781.22
Village of Simpson					
Single Family	8	\$3,378	\$2,345,000	1	\$7,980.50
Total	8	\$3,378	\$2,345,000	1	\$7,980.50
Town of Winterville					
Single Family	129	\$54,522	\$35,736,200	29	\$260,210.19
2-4 Family	0	\$0	\$0	1	\$4,503.77
Non-Residential	4	\$6,454	\$2,202,500	0	\$0.00
Total	133	\$60,976	\$37,938,700	30	\$264,713.96

Source: FEMA Community Information System, accessed January 2020

Table D.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
Pitt County Unincorporated Area					
A01-30 & AE Zones	185	\$123,343	\$37,817,800	145	\$6,106,912.63
A Zones	8	\$6,575	\$1,792,900	123	\$2,888,420.05
B, C & X Zone					

ANNEX D: PITT COUNTY

Flood Zone	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Standard	19	\$24,305	\$4,695,100	30	\$909,105.95
Preferred	228	\$84,116	\$62,293,000	55	\$680,925.69
Total	440	\$238,339	\$106,598,800	353	\$10,585,364.32
City of Greenville					
A01-30 & AE Zones	640	\$645,007	\$136,876,800	393	\$18,420,257.98
A Zones	0	\$0	\$0	9	\$182,056.84
B, C & X Zone					
Standard	136	\$86,657	\$29,447,400	61	\$2,035,791.88
Preferred	475	\$195,833	\$135,394,000	33	\$497,732.12
Total	1,251	\$927,497	\$301,718,200	496	\$21,135,838.82
Town of Ayden					
A01-30 & AE Zones	3	\$2,791	\$440,000	6	\$125,615.90
B, C & X Zone					
Standard	2	\$2,108	\$515,000	2	\$30,630.28
Preferred	27	\$12,212	\$6,733,000	9	\$124,338.97
Total	32	\$17,111	\$7,688,000	17	\$280,585.15
Town of Bethel					
B, C & X Zone					
Preferred	2	\$774	\$700,000	3	\$12,469.45
Total	2	\$774	\$700,000	3	\$12,469.45
Town of Falkland					
B, C & X Zone					
Standard	1	\$2,150	\$302,500	1	\$21,317.05
Total	1	\$2,150	\$302,500	1	\$21,317.05
Town of Farmville					
A01-30 & AE Zones	7	\$6,377	\$1,531,800	20	\$637,041.86
B, C & X Zone					
Standard	2	\$2,054	\$630,000	1	\$7,434.70
Preferred	77	\$31,226	\$22,982,000	7	\$199,221.09
Total	86	\$39,657	\$25,143,800	28	\$843,697.65
Town of Grifton					
A01-30 & AE Zones	29	\$31,063	\$5,695,800	23	\$1,668,054.12
A Zones	0	\$0	\$0	4	\$201,133.39
B, C & X Zone					
Standard	10	\$14,126	\$2,078,900	14	\$436,144.18
Preferred	33	\$26,339	\$9,275,000	16	\$316,305.60
Total	72	\$71,528	\$17,049,700	57	\$2,621,637.29
Town of Grimesland					
A01-30 & AE Zones	1	\$592	\$315,400	0	\$0.00
B, C & X Zone					
Preferred	3	\$1,248	\$1,050,000	2	\$59,781.22
Total	4	\$1,840	\$1,365,400	2	\$59,781.22
Town of Simpson					
A01-30 & AE Zones	1	\$761	\$350,000	0	\$0.00
B, C & X Zone					
Preferred	7	\$2,617	\$1,995,000	1	\$7,980.50
Total	8	\$3,378	\$2,345,000	1	\$7,980.50

ANNEX D: PITT COUNTY

Flood Zone	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Town of Winterville					
A01-30 & AE Zones	39	\$21,519	\$9,690,700	21	\$176,479.32
B, C & X Zone					
Standard	3	\$3,552	\$1,250,000	1	\$4,503.77
Preferred	91	\$35,905	\$26,998,000	8	\$83,730.87
Total	133	\$60,976	\$37,938,700	30	\$264,713.96

Source: FEMA Community Information System, accessed January 2020

Table D.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
Pitt County Unincorporated Area					
A01-30 & AE Zones	50	\$42,836	\$8,925,800	45	\$1,539,378.08
A Zones	1	\$1,179	\$220,300	54	\$1,117,068.91
B, C & X Zone					
Standard	5	\$4,000	\$1,224,600	14	\$219,129.36
Preferred	63	\$21,691	\$15,018,000	33	\$318,291.59
Total	119	\$69,706	\$25,388,700	146	\$3,193,867.94
City of Greenville					
A01-30 & AE Zones	176	\$306,646	\$32,066,800	212	\$11,282,348.56
A Zones	0	\$0	\$0	9	\$182,056.84
B, C & X Zone					
Standard	24	\$19,567	\$6,805,500	25	\$718,622.33
Preferred	121	\$50,836	\$35,849,000	15	\$252,815.11
Total	321	\$377,049	\$74,721,300	261	\$12,435,842.84
Town of Ayden					
A01-30 & AE Zones	3	\$2,791	\$440,000	6	\$125,615.90
B, C & X Zone					
Standard	1	\$643	\$350,000	2	\$30,630.28
Preferred	15	\$5,253	\$3,605,000	6	\$54,742.37
Total	19	\$8,687	\$4,395,000	14	\$210,988.55
Town of Bethel					
B, C & X Zone					
Preferred	2	\$774	\$700,000	3	\$12,469.45
Preferred	2	\$774	\$700,000	3	\$12,469.45
Total	2	\$774	\$700,000	3	\$12,469.45
Town of Falkland					
B, C & X Zone					
Standard	1	\$2,150	\$302,500	1	\$21,317.05
Standard	1	\$2,150	\$302,500	1	\$21,317.05
Total	1	\$2,150	\$302,500	1	\$21,317.05
Town of Farmville					
A01-30 & AE Zones	4	\$4,348	\$581,800	14	\$470,910.69
B, C & X Zone					
Standard	1	\$1,508	\$350,000	0	\$0.00
Preferred	45	\$17,678	\$12,775,000	6	\$181,381.20
Total	50	\$23,534	\$13,706,800	20	\$652,291.89
Town of Grifton					
A01-30 & AE Zones	18	\$21,724	\$2,263,000	17	\$332,739.28

ANNEX D: PITT COUNTY

Flood Zone	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
A Zones	0	\$0	\$0	4	\$201,133.39
B, C & X Zone	28	\$19,320	\$5,849,900	24	\$423,036.12
Standard	7	\$7,706	\$1,134,900	10	\$163,910.05
Preferred	21	\$11,614	\$4,715,000	14	\$259,126.07
Total	46	\$41,044	\$8,112,900	45	\$956,908.79
Town of Grimesland					
A01-30 & AE Zones	1	\$592	\$315,400	0	\$0.00
B, C & X Zone	1	\$401	\$350,000	2	\$59,781.22
Preferred	1	\$401	\$350,000	2	\$59,781.22
Total	2	\$993	\$665,400	2	\$59,781.22
Town of Simpson					
A01-30 & AE Zones	1	\$761	\$350,000	0	\$0.00
B, C & X Zone	5	\$1,921	\$1,505,000	1	\$7,980.50
Preferred	5	\$1,921	\$1,505,000	1	\$7,980.50
Total	6	\$2,682	\$1,855,000	1	\$7,980.50
Town of Winterville					
A01-30 & AE Zones	2	\$2,709	\$444,000	1	\$19,728.61
B, C & X Zone	10	\$3,579	\$2,598,000	3	\$37,462.71
Standard	1	\$580	\$350,000	0	\$0.00
Preferred	9	\$2,999	\$2,248,000	3	\$37,462.71
Total	12	\$6,288	\$3,042,000	4	\$57,191.32

Source: FEMA Community Information System, accessed January 2020

Table D.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
Pitt County Unincorporated Area					
A01-30 & AE Zones	135	\$80,507	\$28,892,000	99	\$4,515,734.55
A Zones	7	\$5,396	\$1,572,600	69	\$1,771,351.14
B, C & X Zone	179	\$82,730	\$50,745,500	38	\$1,052,610.69
Standard	14	\$20,305	\$3,470,500	16	\$689,976.59
Preferred	165	\$62,425	\$47,275,000	22	\$362,634.10
Total	321	\$168,633	\$81,210,100	206	\$7,339,696.38
City of Greenville					
A01-30 & AE Zones	464	\$338,361	\$104,810,000	180	\$7,070,145.64
B, C & X Zone	466	\$212,087	\$122,186,900	54	\$1,562,086.56
Standard	112	\$67,090	\$22,641,900	36	\$1,317,169.55
Preferred	354	\$144,997	\$99,545,000	18	\$244,917.01
Total	930	\$550,448	\$226,996,900	234	\$8,632,232.20
Town of Ayden					
B, C & X Zone	13	\$8,424	\$3,293,000	3	\$69,596.60
Standard	1	\$1,465	\$165,000	0	\$0.00
Preferred	12	\$6,959	\$3,128,000	3	\$69,596.60
Total	13	\$8,424	\$3,293,000	3	\$69,596.60
Town of Farmville					
A01-30 & AE Zones	3	\$2,029	\$950,000	6	\$166,131.17
B, C & X Zone	33	\$14,094	\$10,487,000	2	\$25,274.59

ANNEX D: PITT COUNTY

Flood Zone	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Standard	1	\$546	\$280,000	1	\$7,434.70
Preferred	32	\$13,548	\$10,207,000	1	\$17,839.89
Total	36	\$16,123	\$11,437,000	8	\$191,405.76
Town of Grifton					
A01-30 & AE Zones	11	\$9,339	\$3,432,800	6	\$1,335,314.84
B, C & X Zone	15	\$21,145	\$5,504,000	6	\$329,413.66
Standard	3	\$6,420	\$944,000	4	\$272,234.13
Preferred	12	\$14,725	\$4,560,000	2	\$57,179.53
Total	26	\$30,484	\$8,936,800	12	\$1,664,728.50
Town of Grimesland					
B, C & X Zone	2	\$847	\$700,000	0	\$0.00
Preferred	2	\$847	\$700,000	0	\$0.00
Total	2	\$847	\$700,000	0	\$0.00
Town of Simpson					
B, C & X Zone	2	\$696	\$490,000	0	\$0.00
Preferred	2	\$696	\$490,000	0	\$0.00
Total	2	\$696	\$490,000	0	\$0.00
Town of Winterville					
A01-30 & AE Zones	37	\$18,810	\$9,246,700	20	\$156,750.71
B, C & X Zone	84	\$35,878	\$25,650,000	6	\$50,771.93
Standard	2	\$2,972	\$900,000	1	\$4,503.77
Preferred	82	\$32,906	\$24,750,000	5	\$46,268.16
Total	121	\$54,688	\$34,896,700	26	\$207,522.64

Source: FEMA Community Information System, accessed January 2020

D.4 MITIGATION STRATEGY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
P1	Review the County's Comprehensive Land Use Plan (adopted December 5, 2011) annually to ensure that the Future Land Use Map adequately delineates portions of the County deemed unsuitable for development due to existing environmental conditions.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	1.3	P	<ul style="list-style-type: none"> Pitt County Planning Department Pitt County Board of Commissioners Municipal Administrations 	Staff Time	General Fund	Ongoing – review annually	In Progress – Carry Forward	The Comprehensive Plan has been amended to address recommendations outlined in the Southwest Bypass LUP. An NC 43 S corridor land use plan is scheduled for FY19/20
P2	Continue to coordinate and collaborate with East Carolina University and Pitt Community College through the development of their respective hazard mitigation plans. Through implementation of this update, Pitt County Planning will incorporate Vidant, GUC, and Duke Energy into the County's Mitigation Planning efforts.	Pitt County	All Hazards	High	3.2	ES	<ul style="list-style-type: none"> Pitt County Administration Municipal Administrations East Carolina University Pitt Community College 	Staff Time	General Fund, NCDPS, UNC University System	Ongoing – over the next five years	In Progress – Carry Forward	Planning staff works closely with ECU & PCC on annual mitigation planning efforts.
P3	Continue to impose a two-foot freeboard requirement for all development located within a defined flood hazard area. Through this plan update, Pitt County will consider amending its Flood Damage Prevention Ordinance to require two feet finished floor elevation above the lowest adjacent grade within the FEMA defined shaded X zone.	Pitt County	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.3	P	<ul style="list-style-type: none"> Pitt County Board of Commissioners Pitt County Planning Board 	Staff Time	General Fund	Ongoing – Review Annually	In Progress – Carry Forward	Pitt County continues to impose a two-foot freeboard requirement for development in the SFHA.
P4	Maintain all FEMA Elevation Certificates and FEMA Floodproofing Certificates for residential and non-residential structures for all structures built or floodproofed since application to the CRS. Non-CRS communities will also carry out this strategy in an effort to prepare for a potential application to the CRS Program.	Pitt County, Farmville, Greenville, Grifton, Winterville, Ayden, Bethel, Falkland, Fountain, Grimesland, Simpson	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	P	<ul style="list-style-type: none"> Pitt County Planning Department Municipal Administration 	Staff Time	General Fund	Ongoing – over next five years	In Progress – Carry Forward	Pitt County keeps all elevation certificates submitted for SFHA development in Pitt County's jurisdiction.
P5	Consider the data and recommendations outlined within this plan when preparing updates to the County's Capital Improvements Plan. All recommendations regarding capital expenditures will focus on siting all infrastructure and critical facilities outside of the Flood Hazard Area.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.3	P	<ul style="list-style-type: none"> Pitt County Planning Department Pitt County Board of Commissioners Municipal Administrations 	Staff Time	General Fund, Grant Funds	Ongoing – Annually	In Progress – Carry Forward	Pitt County will continue to seek funding for Special Medical Needs Shelter and may include this project in the County's Capital Improvements Plan.
P6	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 will apply for funding for all structures that meet cost-benefit thresholds as defined by FEMA. Pitt County will assist all municipal jurisdictions in working through the structural mitigation grant funding process.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.2	SP	<ul style="list-style-type: none"> Pitt County Board of Commissioners Municipal Administrations 	To be Determined	General Fund, NCPS, FEMA	Ongoing – as opportunities arise	In Progress – Carry Forward	This effort was carried out following the effects of Hurricanes Irene, Matthew, and Florence. Five properties were acquired after Hurricane Irene through 2 HMGP grant cycles. The County is in the process of acquiring units funded after Matthew, while applications for acquisition following Florence are still under review.
P7	Coordinate with NCDEQ to enforce all NC State Erosion and Sedimentation and Erosion Control Regulations.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	P	<ul style="list-style-type: none"> Pitt County Planning Department Municipal Administrations 	Staff Time	General Fund, NCDEQ	Ongoing – over next five years	In Progress – Carry Forward	This is an ongoing activity.

ANNEX D: PITT COUNTY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
P8	Continue to expand upon the Alert Emergency Notification System available to all residents. Pitt County Emergency Management will coordinate with all municipal jurisdictions regarding registration through the Pitt County Emergency Notification Registration Portal (https://pittcountync.onthealert.com). The County will work with NCDPS to incorporate the "Know Your Zone" program into this process. Efforts will be made to educate the public about the location and published resources defining evacuation zones and procedures.	Pitt County	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	4.2	PIO	<ul style="list-style-type: none"> Pitt County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – Review Annually	In Progress – Carry Forward	Ongoing activity for Pitt County Emergency Management.
P9	Pitt County Emergency Management, in conjunction with the County Planning Department, will evaluate and assess the availability and effectiveness of all critical facilities outlined within this plan. Pitt County will coordinate with NCEM, Red Cross, local animal shelters, local care homes etc. in making determinations relating to need and capacity.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	High	4.1	ES	<ul style="list-style-type: none"> Pitt County Emergency Management American Red Cross Municipal Administrations 	Staff Time	General Fund, American Red Cross	Ongoing – Review Annually	Not Started – Carry Forward	The County is currently investigating the need and location for a Special Medical Needs Shelter. Refer to updated strategy P12 and the top priority.
P10	Pitt County Emergency Management, in conjunction with annual EOP updates, will 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, Pitt County will establish a plan for alternative transportation.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	3.2	ES	<ul style="list-style-type: none"> Pitt County Emergency Management American Red Cross Municipal Administrations 	Staff Time	General Fund, American Red Cross	Ongoing – Review Annually	Not Started – Carry Forward	The County is currently investigating the need and location for a Special Medical Needs Shelter.
P11	Continue to maintain the County's Continuity of Operations Plan (COOP). This effort will include an annual update addressing risk management, service retention, alternative staffing procedures and recovery checklist for each County department.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	All Hazards	High	2.2	ES	<ul style="list-style-type: none"> Pitt County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – Review annually	In Progress – Carry Forward	The County COOP is reviewed annually by each department and updated by Pitt County Emergency Management.
P12	Pitt County Emergency Management will 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.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	All Hazards	High	2.2	ES	<ul style="list-style-type: none"> Pitt County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – Review annually	In Progress – Carry Forward	The County EOP is reviewed annually and utilized during the County's annual tabletop exercise whereby EOP and COOP effectiveness are evaluated. The results of this effort are outlined in a detailed after-action report.
P13	Pitt County in coordination with all municipalities, will maintain the County's Special Medical Needs Registry (SMNR). The SMNR is available to all County residents. Effective participation will require close cooperation between County EM and local government staff members. All jurisdictions will work to advertise the availability of this service within their respective communities.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	All Hazards	High	4.2	PIO	<ul style="list-style-type: none"> Pitt County Social Services Pitt County Emergency Management Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry forward	Pitt County Emergency Management maintains the list and it is utilized by Social Services.
P14	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 utilize E-Plan to monitor these materials. Pitt County will support efforts of the State of NC to develop an alternative to the Federal E-Plan system.	Pitt County	All Hazards	High	3.2	P	<ul style="list-style-type: none"> Pitt County LEPC 	Staff Time	General Fund	Ongoing – over next five years	In Progress – Carry forward	The LEPC meets quarterly and monitors hazardous materials in Pitt County.

ANNEX D: PITT COUNTY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
P15	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 on these issues to work with prospective builders.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.2	PIO	<ul style="list-style-type: none"> Pitt County Planning Department Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry forward	Pitt County continues to provide this information to interested parties and employs a certified floodplain manager to assist citizens with construction in the SFHA.
P16	Continue to work closely with real estate agents to ensure that prospective buyers are educated about development within a flood hazard area. The County will prepare materials for dissemination to local real estate agents to assist in this education process.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.2	PIO	<ul style="list-style-type: none"> Pitt County Planning Department Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – over next five years	In Progress – Carry forward	Pitt County regularly supplies floodplain certifications and other SFHA information to real estate agents.
P17	Work closely with the Greenville Utilities Commission and the Neuse Regional Water & Sewer Authority to establish a memorandum of understanding regarding supplemental resource and capacity availability in the event of an emergency.	Pitt County, Greenville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	3.2	ES	<ul style="list-style-type: none"> Pitt County Board of Commissioners Municipal Administrations 	Staff Time	General Fund	2 TO 3 YEARS	Not Started - Carry Forward	Greenville Utilities Commission and the Neuse Regional Water & Sewer Authority have the ability to share water resources.
P18	Utilize recently upgraded storm surge inundation data provided through NCEM. This data will be utilized when making changes to land use policy and regulatory documents. This data will also be utilized as a component of the NCDPS “Know Your Zone” program.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	4.2	PIO	<ul style="list-style-type: none"> Pitt County Emergency Management Municipal Administrations 	Staff Time	General Fund	2 to 3 years	New	N/A
P19	Work closely with the American Red Cross, NCDPS, and local care homes to identify a location for and ultimately establish a special medical needs shelter for County residents.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Low	4.2	ES	<ul style="list-style-type: none"> Pitt County Board of Commissioners Municipal Administrations 	\$6 to \$7 million dollars	General Fund, NCDPS, FEMA	3 to 5 years	New	N/A
P20	Work to proactively implement the recommendations of the Hurricane Matthew Resilient Redevelopment Plan developed in coordination with the NCDPS.	Pitt County, Ayden, Bethel, Falkland, Farmville, Fountain, Greenville, Grifton, Grimesland, Simpson, Winterville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Low	1.3	SP	<ul style="list-style-type: none"> Pitt County Board of Commissioners Municipal Administrations 	To be determined	General Fund, NCDPS, FEMA, NCDEQ	3 to 5 years	New	N/A
P21	The City of Greenville will strengthen the City’s existing stormwater control ordinances to require new residential development to provide 10-year flood ponds, instead of 1-year flood ponds. The City will ensure that development complies with all stormwater regulations.	Greenville	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Low	1.3	PP	<ul style="list-style-type: none"> Greenville City Council Greenville Community Development Department 	Staff Time	General Fund	2 to 3 years	Not Started – Carry Forward	Final determination has not been made regarding this standard; the City will continue to consider operations relating to local stormwater management policy during implementation of this plan.
P22	The Town of Farmville will build a new 500,000 gallon above ground storage tank to enhance/increase the town’s storage capacity to 1.8 million gallons of water, which exceeds current average daily consumption.	Farmville	All Hazards	Low	1.1	ES	<ul style="list-style-type: none"> Farmville Town Council Farmville Staff 	To be determined	General Fund; Grant Funding	5 years	Not Started – Carry Forward	The town will continue to research options regarding logistics and funding to carry out this capital improvement project.

Annex E Wayne County

E.1 COMMUNITY PROFILE

This section contains a summary of maps and statistics for current conditions and characteristics of Wayne County, including information on population, asset exposure, housing, and economy. Throughout the section, information will be reported at the jurisdictional level. In some cases, information will only be reported for communities participating in the Community Rating System (CRS).

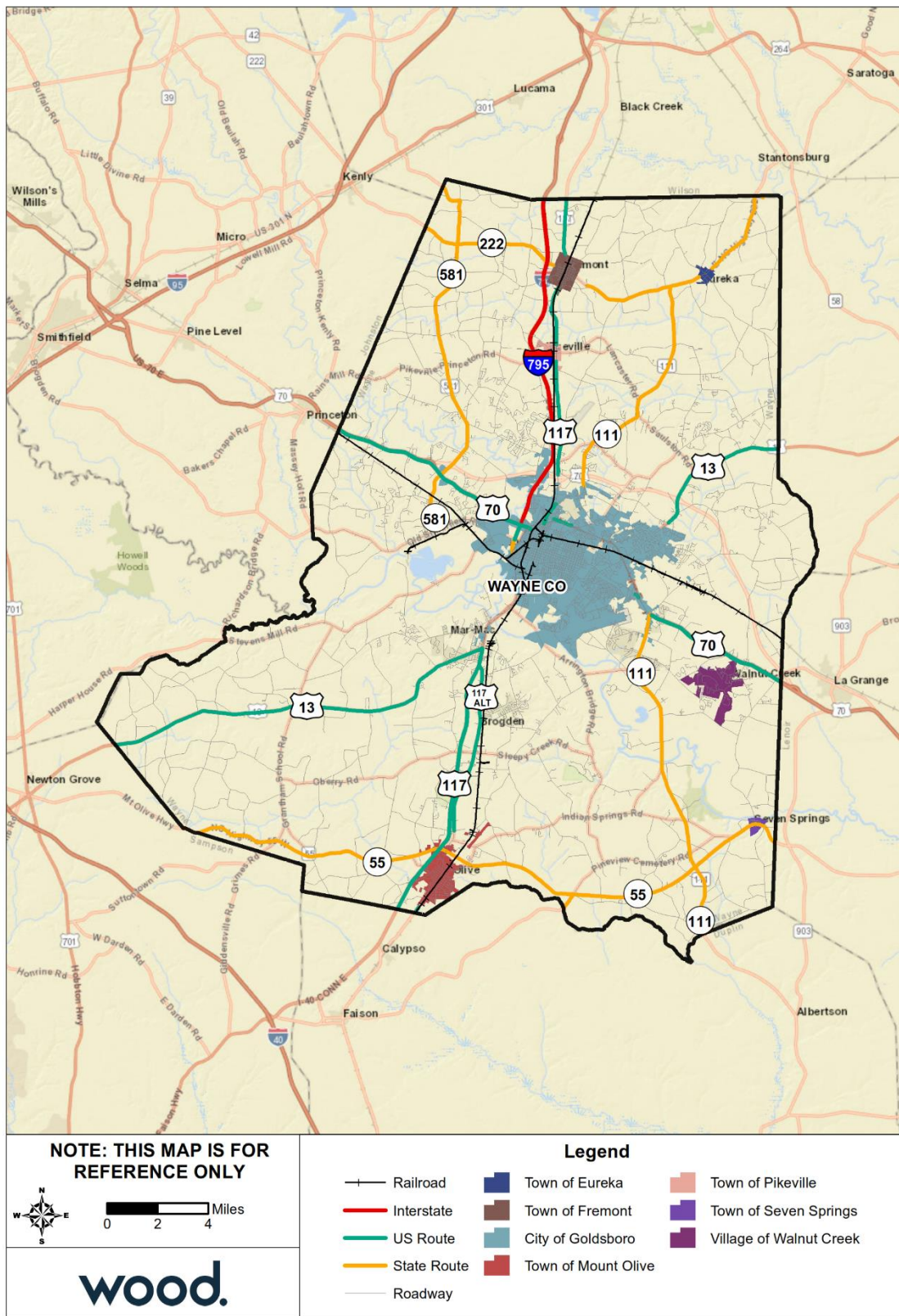
Table E.1 – CRS Participation by Jurisdiction, Wayne County

Jurisdiction	CRS Participant
Wayne County (Unincorporated Area)	Yes
Town of Eureka	No
Town of Fremont	No
City of Goldsboro	Yes
Town of Mount Olive	No
Town of Pikeville	No
Town of Seven Springs	No
Village of Walnut Creek	Yes

Geography

Figure E.1 shows a base map of Wayne County and participating jurisdictions as well as major transportation routes in the county.

Figure E.1 – Jurisdictional Locations, Wayne County



Population and Demographics

Table E.2 provides population counts and growth estimates for Wayne County and participating jurisdictions as compared to the Region overall. Table E.3 provides demographic information for the County.

Table E.2 – Population Counts, Wayne County, 2000-2017

Jurisdiction	2000	2010	2017	% Change 2000-2010	% Change 2010-2017	Overall % Change 2000-2017
Eureka	244	197	193	-19.3%	-2.0%	-20.9%
Fremont	1,463	1,255	1,258	-14.2%	0.2%	-14.0%
Goldsboro	39,043	36,437	35,432	-6.7%	-2.8%	-9.2%
Mount Olive	4,567	4,589	4,675	0.5%	1.9%	2.4%
Pikeville	719	678	771	-5.7%	13.7%	7.2%
Seven Springs	86	110	79	27.9%	-28.2%	8.1%
Walnut Creek	859	835	1,062	-2.8%	27.2%	23.6%
Municipalities	46,981	44,101	43,470	6.1%	-1.4%	-7.5%
Unincorporated Areas	66,348	78,522	81,026	18.3%	3.2%	22.1%
Wayne County	113,329	122,623	124,496	0.6%	1.5%	9.9%
Region Total	336,130	381,781	389,749	13.6%	2.1%	16.0%

Source: US Census Bureau American Community Survey.

Table E.3 – Racial Demographics, Wayne County, 2017

Jurisdiction	Caucasian	African-American	Asian	Other Race*	Two or More Races	Persons of Hispanic or Latino Origin**
Eureka	68.4%	31.1%	0.0%	0.0%	0.5%	2.6%
Fremont	56.8%	36.8%	0.0%	2.9%	3.5%	8.7%
Goldsboro	40.8%	50.2%	2.1%	2.0%	4.9%	6.7%
Mount Olive	36.7%	53.6%	0.2%	5.6%	3.9%	7.5%
Pikeville	88.2%	8.8%	0.4%	0.0%	2.6%	2.1%
Seven Springs	92.4%	7.6%	0.0%	0.0%	0.0%	0.0%
Walnut Creek	92.4%	2.7%	0.6%	0.0%	4.3%	4.9%
Wayne County	61.0%	30.4%	1.2%	3.8%	3.6%	11.3%

*Other races include 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.

Future Growth and Development

This section provides an explanation of anticipated development trends for jurisdictions in Wayne County that are participants in the CRS. Evaluating future growth and development decisions in relation to known hazard areas can lead to better growth management and more effective risk reduction strategies.

Much like Pitt and Lenoir Counties, Wayne County has dealt with the far-reaching impacts of Hurricane Floyd over the last twenty years. Much like the other two counties, Wayne County has incorporated the experiences of Floyd into decisions regarding growth and development. Beyond this fact, development pressure within unincorporated Wayne County is generally occurring as an outgrowth of the City of Goldsboro. This growth is predominantly occurring along the US Highway 70 corridor running east and west from the City of Goldsboro, as well as along US Highway 117 toward Mount Olive.

ANNEX E: WAYNE COUNTY

Although infill and redevelopment is occurring with the City of Goldsboro, the city's predominant growth pattern has been towards its periphery. The City, in recent years, has experienced a rapid expansion of growth within the City's extraterritorial jurisdiction. This trend is expected to continue; however, redevelopment of the City's downtown core has started to increase. The Village of Walnut Creek is growing slightly, although this development is limited to single-family residential homes.

Wayne County Comprehensive Plan

The Wayne County Comprehensive Plan was adopted by the Wayne County Board of Commissioners in August 2009. The plan defines six future land use districts including:

- ▶ Urban Areas
- ▶ Urban Transition Areas
- ▶ Community Growth Areas
- ▶ Rural Enclaves
- ▶ Rural Areas
- ▶ Conservation Areas

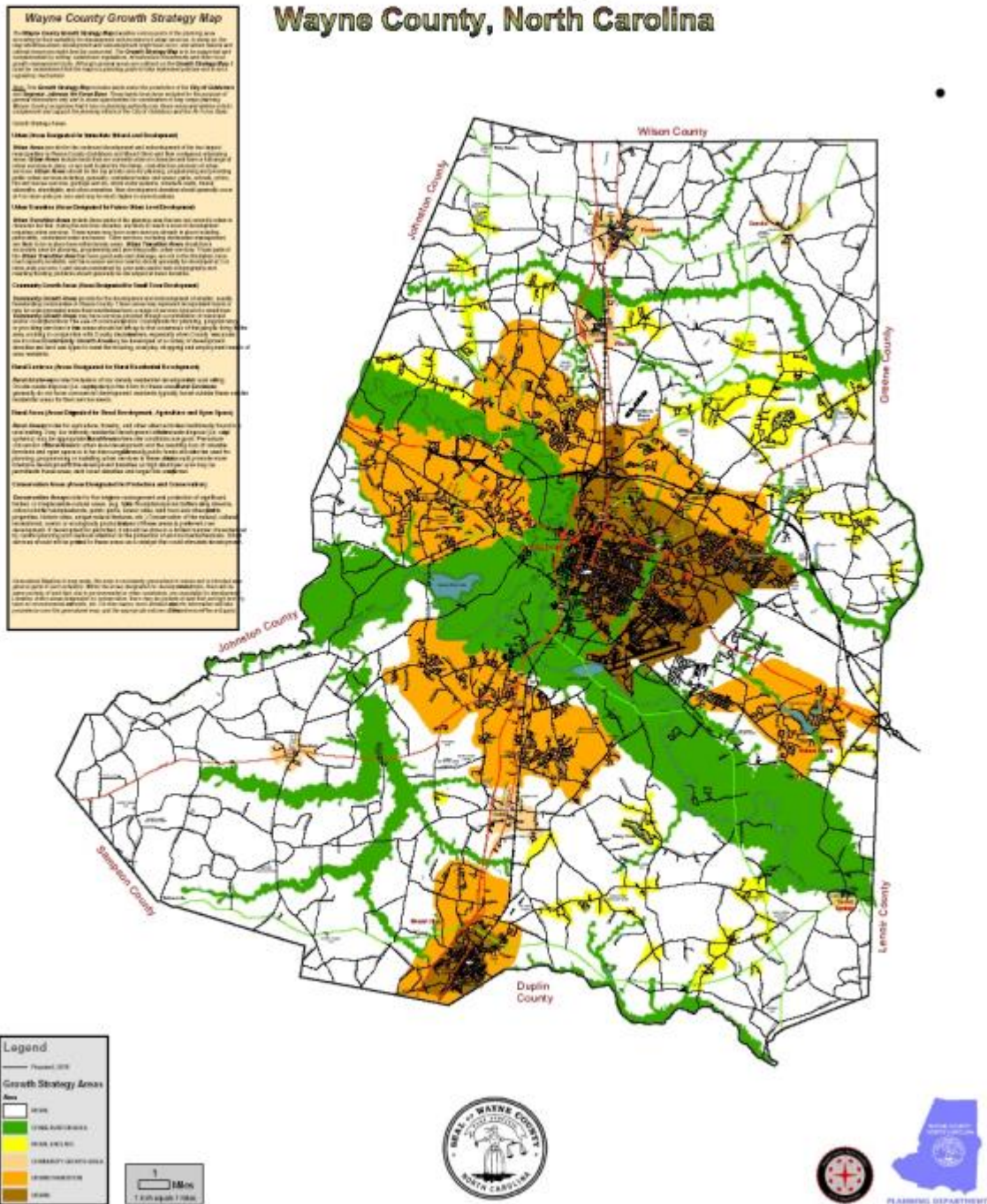
These districts are defined in detail starting on page 34 of the Wayne County Comprehensive Plan: <https://www.waynegov.com/DocumentCenter/View/510/Wayne-County-Comprehensive-Plan-PDF>.

Figure E.2 provide the delineation of Wayne County's growth strategy.

Figure E.2 – Wayne County Growth Strategy Areas

Growth Strategy Areas

Wayne County, North Carolina



Village of Walnut Creek

The Village of Walnut Creek falls under the Wayne County Comprehensive Plan. The Village relies on the planning guidance provided through that document. Refer to the Wayne County plan narrative outlined above.

City of Goldsboro: Envision 35 – Urbanized Area Comprehensive Plan

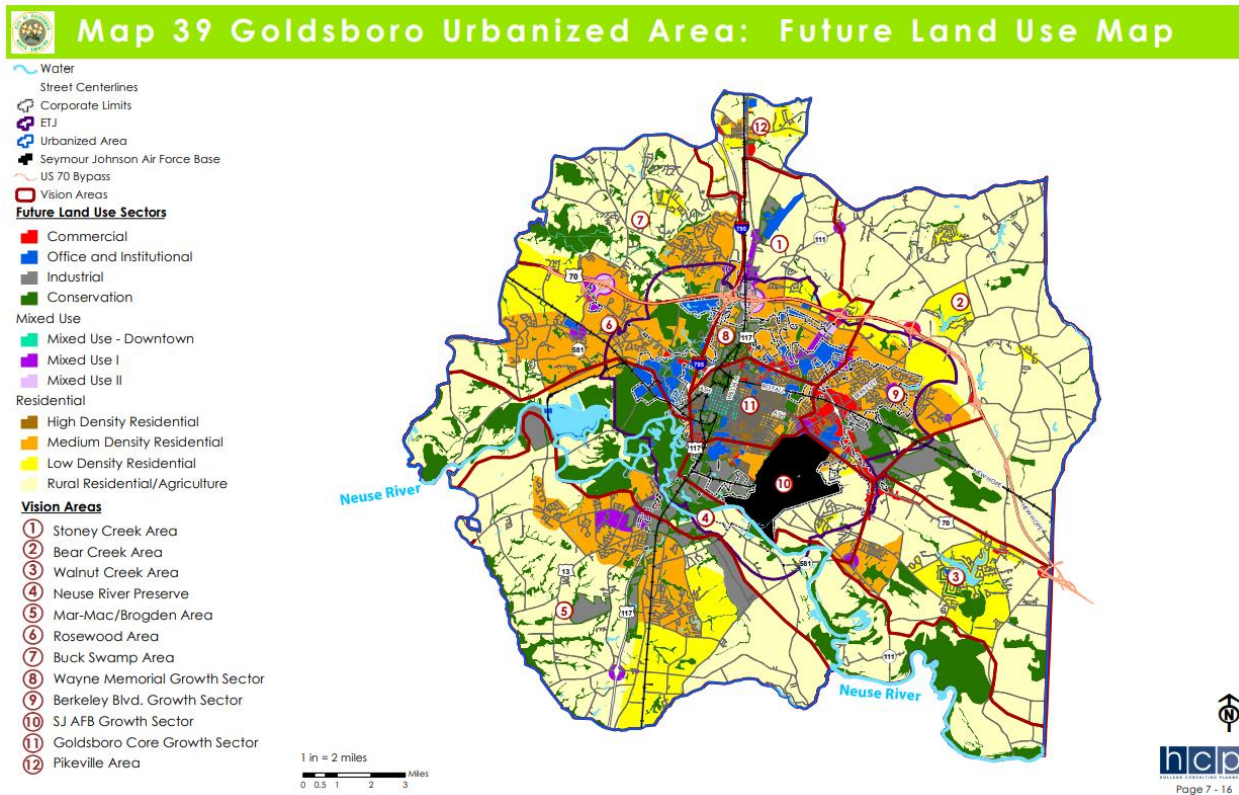
The Envision 35 Plan was adopted by the City of Goldsboro City Council in May 2013. The plan defines thirteen future land use districts including:

- ▶ Commercial
- ▶ Office and Institutional
- ▶ Industry
- ▶ Military
- ▶ Mixed Use – Downtown
- ▶ Mixed Use I
- ▶ Mixed Use II
- ▶ High Density Residential
- ▶ Medium Density Residential
- ▶ Low Density Residential
- ▶ Rural Residential/Agriculture
- ▶ Conservation
- ▶ Right-of-Way

These districts are defined in detail in Chapter 7, Section B, page 7-3 of the Envision 35 plan: http://www.goldsboronc.gov/wp-content/uploads/Final_Adopted_Comp_Plan_5-6-2013.pdf

Figure E.3 provides the delineation of each Future Land Use District.

Figure E.3 – City of Goldsboro Future Land Use



ANNEX E: WAYNE COUNTY

Asset Inventory

The following tables summarize the asset inventory for Wayne County unincorporated and incorporated areas in order to estimate the total physical exposure to hazards in this area. There is no critical facility map for Wayne County because none of the Critical Infrastructure & Key Resources facilities were specifically designated as critical assets; however, all CIKR facilities are summarized below. Note that the counts are by building.

Table E.4 – Critical Infrastructure & Key Resources by Type

Jurisdiction	Food and Agriculture	Banking and Finance	Chemical & Hazardous	Commercial	Communications	Critical Manufacturing	Defense Industrial Base	Government Facilities	Healthcare	Nuclear Reactors, Materials and Waste	Transportation Systems	Energy	Emergency Services	Water	Total	
Wayne County	4,074	348	0	1,170	1	441	0	159	64	0	0	16	46	0	6,319	
City of Goldsboro	147	272	0	1,366	16	242	0	146	169	0	0	0	1,119	17	3,494	
Town of Eureka	41	11	0	33	0	8	0	5	1	0	0	0	1	0	100	
Town of Fremont	46	7	0	54	0	11	0	13	14	0	0	0	1	0	146	
Town of Mount Olive	32	52	0	224	1	48	0	36	8	0	0	1	2	6	410	
Town of Pikeville	6	11	0	45	0	14	0	2	1	0	0	0	0	0	79	
Town of Seven Springs	0	2	0	17	0	2	0	1	0	0	0	0	0	0	22	
Village of Walnut Creek	0	5	0	20	0	7	0	0	5	0	0	0	0	0	37	
Wayne County Total	4,346	708	0	2,929	18	773	0	362	262	0	0	1	16	1,169	23	10,607

Source: NCEM Risk Management Tool

Table E.5 – High Potential Loss Facilities by Use

Jurisdiction	Residential	Commercial	Industrial	Government	Agricultural	Religious	Utilities	Total
Wayne County	10	73	14	20	4	18	9	148
City of Goldsboro	67	147	8	282	0	30	15	549
Town of Eureka	0	1	0	0	0	1	0	2
Town of Fremont	0	3	0	2	0	1	0	6
Town of Mount Olive	2	12	2	14	0	3	6	39
Town of Pikeville	0	1	0	0	0	0	0	1
Town of Seven Springs	-	-	-	-	-	-	-	-
Village of Walnut Creek	0	1	0	0	0	0	0	1
Wayne County Total	79	238	24	318	4	53	30	746

Source: NCEM Risk Management Tool

Note: A dash (-) indicates that no high potential loss facilities were reported in RMT.

ANNEX E: WAYNE COUNTY

Housing

The table below details key housing statistics for Wayne County. As a percent of growth from 2010 housing, Wayne County's housing stock has increased slightly despite decreases in many incorporated areas.

Table E.6 – Housing Statistics, Wayne County, 2010-2017

Jurisdiction	Housing Units (2010)	Housing Units (2017)	% Change 2010-2017	% Owner Occupied (2017)	% Vacant Units (2017)
Eureka	115	93	-19.1%	87	6
Fremont	681	596	-12.5%	483	113
Goldsboro	16,824	16,046	-4.6%	13,961	2,085
Mount Olive	2,119	2,015	-4.9%	1,574	441
Pikeville	334	363	8.7%	311	52
Seven Springs	61	54	-11.5%	43	11
Walnut Creek	363	462	27.3%	444	18
Wayne County	52,949	53,092	0.3%	47,587	6,315

Source: US Census Bureau American Community Survey.

Economy

The following tables present key economic statistics for Wayne County.

Table E.7 – Economic Indicators, Wayne County, 2017

Jurisdiction	Population in Labor Force	Percent Employed (%)	Percent Unemployed (%)	Percent Not in Labor Force (%)	Unemployment Rate (%)
Eureka	49.4%	48.1%	0.6%	50.6%	1.3%
Fremont	52.0%	45.3%	5.4%	48.0%	10.7%
Goldsboro	55.5%	41.7%	7.6%	44.5%	15.4%
Mount Olive	54.4%	44.2%	10.2%	45.6%	18.8%
Pikeville	59.7%	54.3%	5.4%	40.3%	9.1%
Seven Springs	52.5%	45.8%	6.8%	47.5%	12.9%
Walnut Creek	59.8%	53.3%	3.0%	40.2%	5.3%
Wayne County	60.9%	52.3%	5.6%	39.1%	9.7%

Source: US Census Bureau American Community Survey.

Table E.8 – Employment by Industry, Wayne County, 2017

Jurisdiction	Management, Business, Science and Arts (%)	Service (%)	Sales and Office (%)	Natural Resources, Construction, and Maintenance (%)	Production, Transportation, and Material Moving (%)
Eureka	33.8%	21.6%	20.3%	14.9%	9.5%
Fremont	22.6%	21.2%	15.2%	22.6%	18.4%
Goldsboro	30.1%	21.7%	23.3%	7.0%	17.9%
Mount Olive	27.2%	17.5%	9.9%	11.6%	33.7%
Pikeville	26.8%	17.6%	24.1%	18.2%	13.2%
Seven Springs	85.2%	3.7%	3.7%	7.4%	0.0%
Walnut Creek	48.9%	7.4%	32.2%	3.7%	7.8%
Wayne County	29.1%	17.9%	22.8%	12.1%	18.1%

Source: US Census Bureau American Community Survey.

E.2 RISK ASSESSMENT

This section contains a hazard profile and vulnerability assessment for those hazards that were rated with a higher priority by jurisdiction in Wayne County than for the Neuse River Region as a whole. Risk and vulnerability findings are also presented here for those hazards that are spatially defined and have variations in risk that could be evaluated quantitatively on a jurisdictional level. The hazards included in this section are flood and wildfire.

E.2.1 Flood

Table E.9 details the acreage of Wayne County's total area by jurisdiction and flood zone on the Effective DFIRM. Per this assessment, at 50 percent, the Town of Seven Springs has the largest portion of its land area within the mapped 1%-annual-chance floodplain. The Towns of Eureka and Fremont fall entirely outside the SFHA and the moderate risk flood zone. Overall, nearly 17 percent of the county's total area falls within the SFHA.

Table E.9 – Flood Zone Acreage by Jurisdiction, Wayne County

Flood Zone	Acreage	Percent of Total (%)
Unincorporated Wayne County		
Zone AE	58,779.4	16.5%
Zone X (500-year)	5,162.2	1.4%
Zone X Unshaded	292,913.7	82.1%
Total	356,855.4	--
Eureka		
Zone X Unshaded	218.7	100.0%
Total	218.7	--
Fremont		
Zone X Unshaded	867.8	100.0%
Total	867.8	--
Goldsboro		
Zone AE	4,942.4	26.9%
Zone X (500-year)	804.3	4.4%
Zone X (unshaded)	12,616.2	68.7%
Total	18,363.0	--
Mount Olive		
Zone AE	6.1	0.3%
Zone X (500-year)	0.5	0.0%
Zone X (unshaded)	1,788.6	99.6%
Total	1,795.2	--
Pikeville		
Zone AE	16.8	3.5%
Zone X (500-year)	19.6	4.1%
Zone X (unshaded)	444.9	92.4%
Total	481.4	--
Seven Springs		
Zone AE	108.9	50.3%
Zone X (500-year)	4.5	2.1%
Zone X (unshaded)	103.0	47.6%
Total	216.5	--
Walnut Creek		
Zone AE	342.1	22.0%

ANNEX E: WAYNE COUNTY

Flood Zone	Acreage	Percent of Total (%)
Zone X (500-year)	22.2	1.4%
Zone X (unshaded)	1,193.1	76.6%
Total	1,557.4	--
Wayne County Total		
Zone AE	64,195.7	16.9%
Zone X (500-year)	6,013.4	1.6%
Zone X (unshaded)	310,146.2	81.5%
Total	380,355.2	--

Source: FEMA Effective DFIRM

Figure E.4 through Figure E.11 reflect the effective mapped flood hazard zones for all jurisdictions in Wayne County, and Figure E.12 through Figure E.19 display the depth of flooding estimated to occur in these areas during the 1%-annual-chance flood.

Table E.10 provides building counts and estimated damages for Critical Infrastructure and Key Resources (CIKR) buildings by sector and event in Wayne County and incorporated jurisdictions.

ANNEX E: WAYNE COUNTY

Table E.11 provides building counts and estimated damages for High Potential Loss Structures in the 1%-annual-chance floodplain.

Table E.10 – CIKR Exposed to Flooding by Event and Jurisdiction

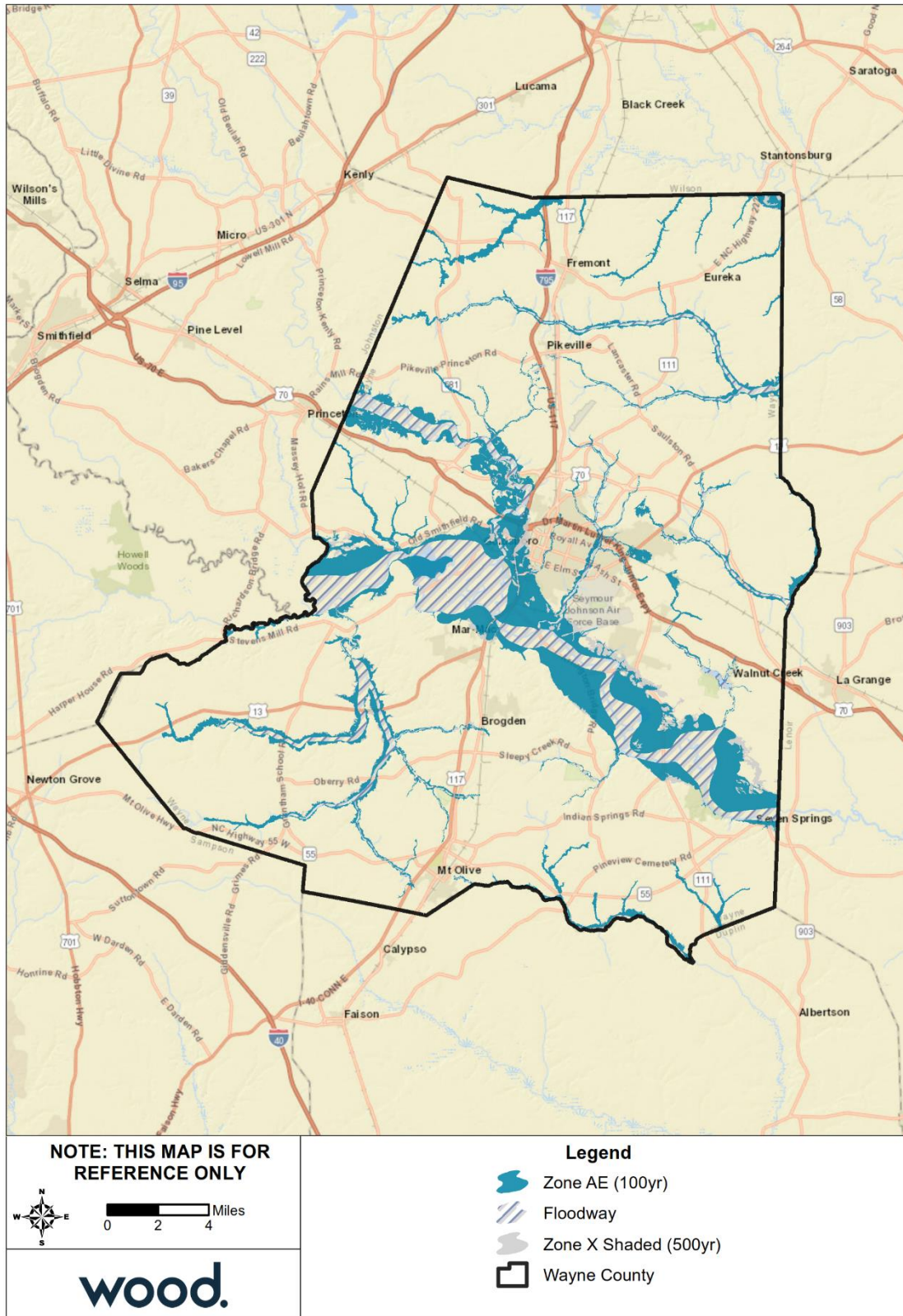
Sector	Event	Number of Buildings at Risk	Estimated Damages
Wayne County Unincorporated Areas			
Banking and Finance	100 Year	4	\$422,288
Commercial Facilities	100 Year	32	\$528,721
Critical Manufacturing	100 Year	14	\$51,917
Food and Agriculture	100 Year	34	\$252,195
Government Facilities	100 Year	3	\$155,764
All Categories	100 Year	87	\$1,410,885
City of Goldsboro			
Commercial Facilities	100 Year	202	\$5,395,634
Critical Manufacturing	100 Year	18	\$943,149
Emergency Services	100 Year	5	\$320,364
Food and Agriculture	100 Year	7	\$18,925
Government Facilities	100 Year	1	\$21,258
Healthcare and Public Health	100 Year	4	\$162,012
Water	100 Year	9	\$15,739,897
All Categories	100 Year	246	\$22,601,239
Town of Seven Springs			
Banking and Finance	100 Year	2	\$50,821
Commercial Facilities	100 Year	17	\$394,521
Critical Manufacturing	100 Year	2	\$67,749
All Categories	100 Year	21	\$513,091

Source: NCEM Risk Management Tool

Table E.11 – High Potential Loss Properties Exposed to Flooding by Event and Jurisdiction

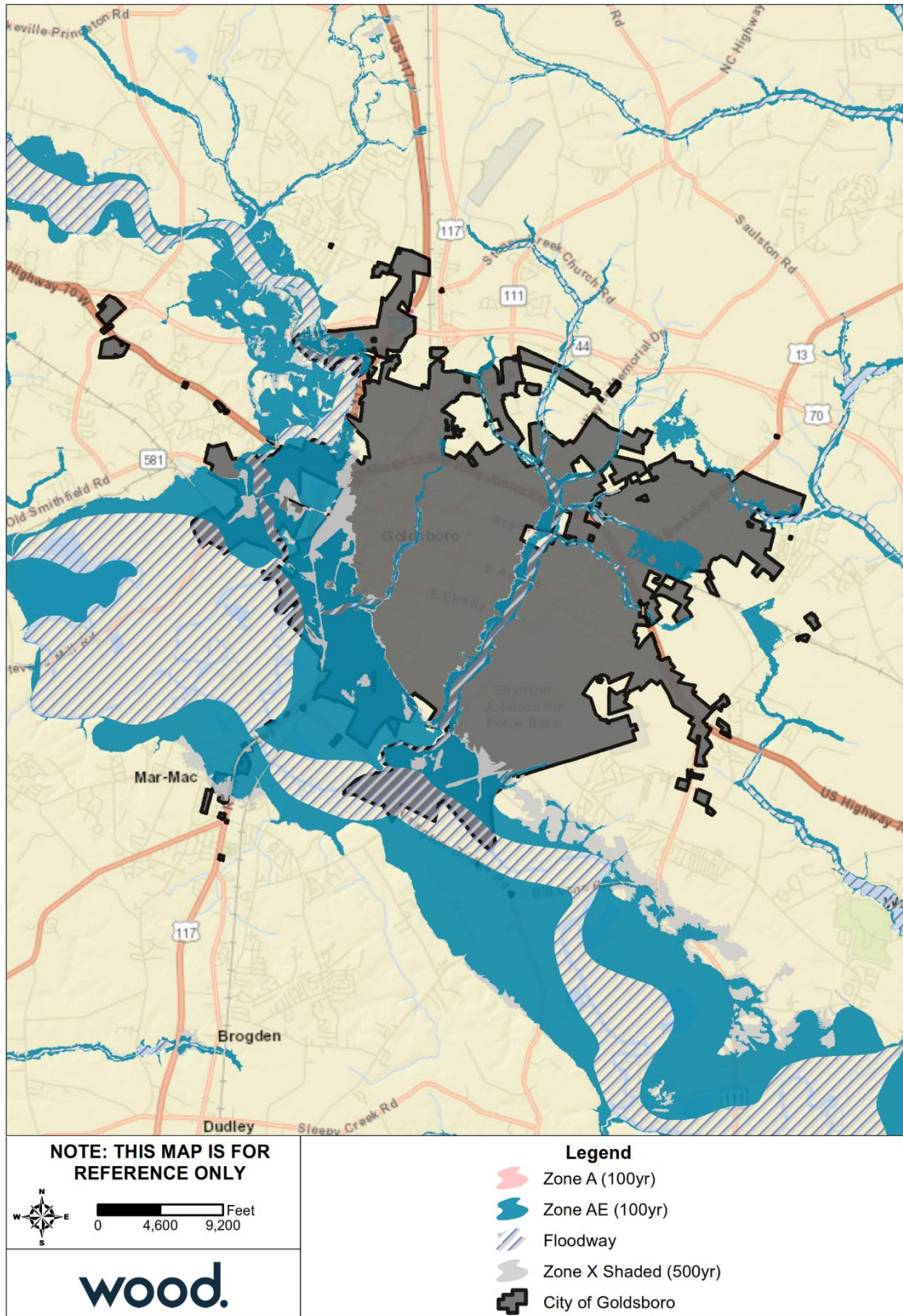
Sector	Event	Number of Buildings at Risk	Estimated Damages
Wayne County Unincorporated Areas			
Industrial	100 Year	1	\$11,409
Residential	100 Year	1	\$3,149,423
All Categories	100 Year	2	\$3,160,832
City of Goldsboro			
Commercial	100 Year	6	\$679,934
Industrial	100 Year	1	\$144,701
Residential	100 Year	4	\$157,232
Utilities	100 Year	9	\$15,739,897
All Categories	100 Year	20	\$16,721,764

Figure E.4 – FEMA Flood Hazard Areas, Unincorporated Wayne County



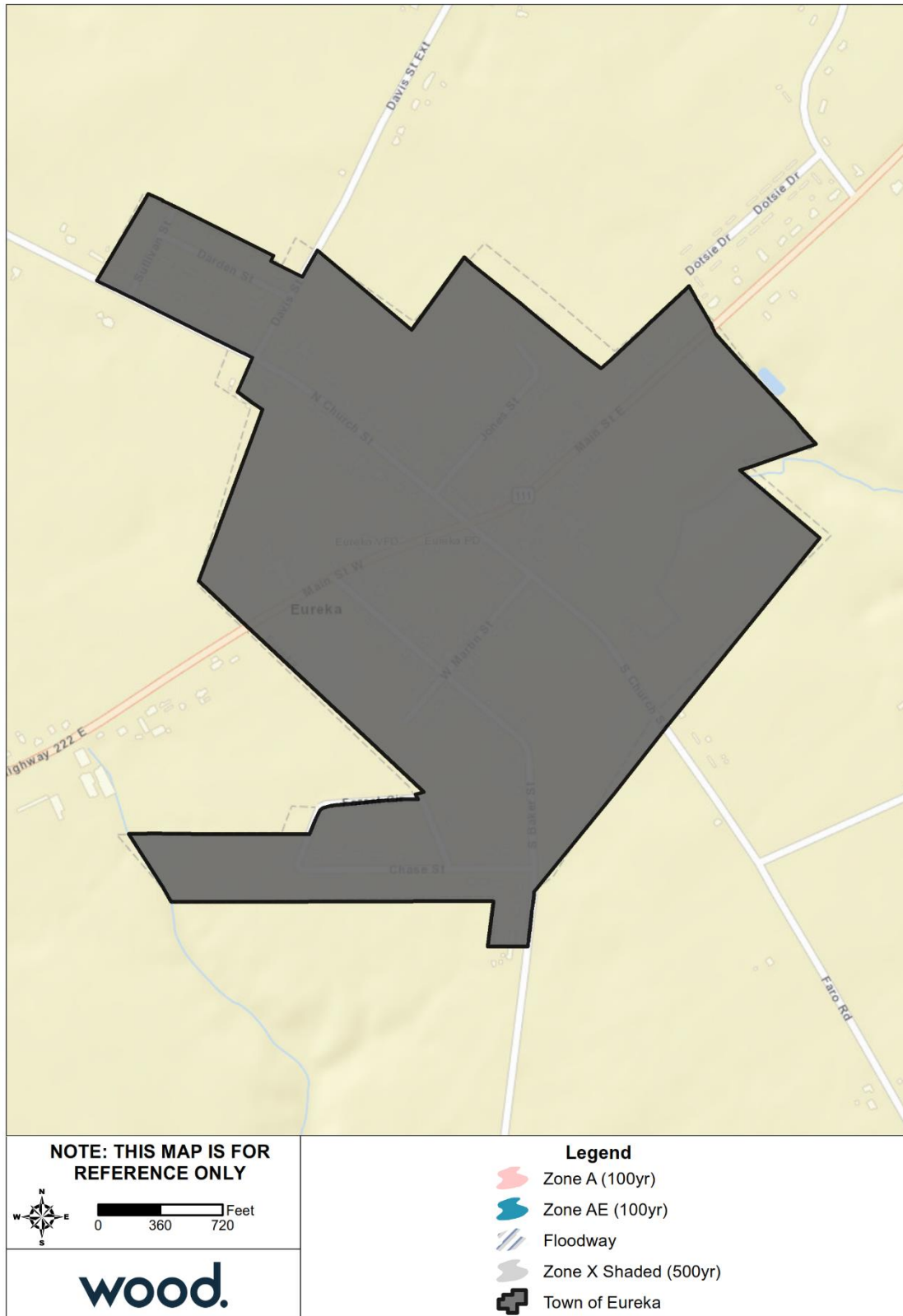
Source: FEMA Effective DFIRM

Figure E.5 – FEMA Flood Hazard Areas, City of Goldsboro



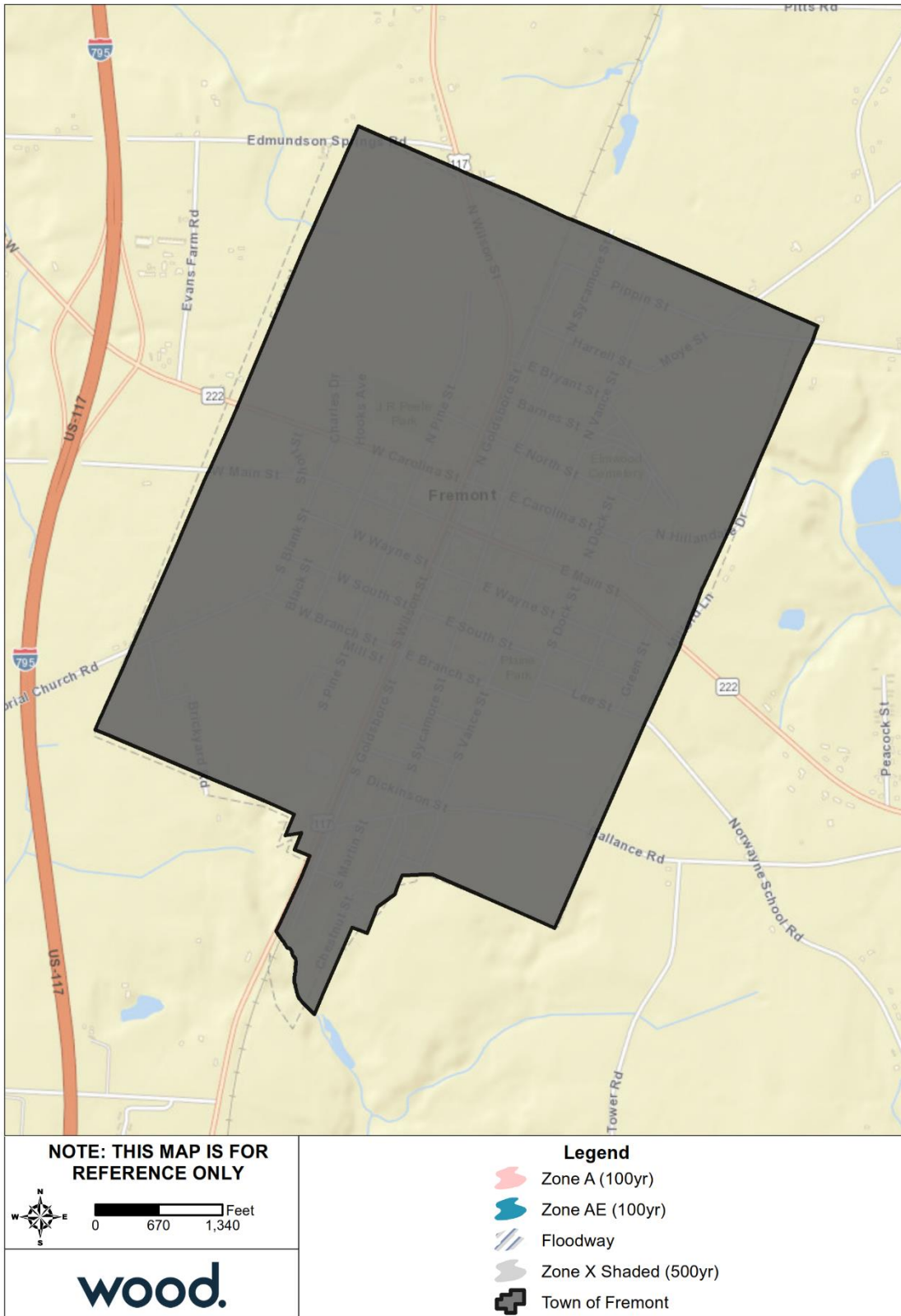
Source: FEMA Effective DFIRM

Figure E.6 – FEMA Flood Hazard Areas, Town of Eureka



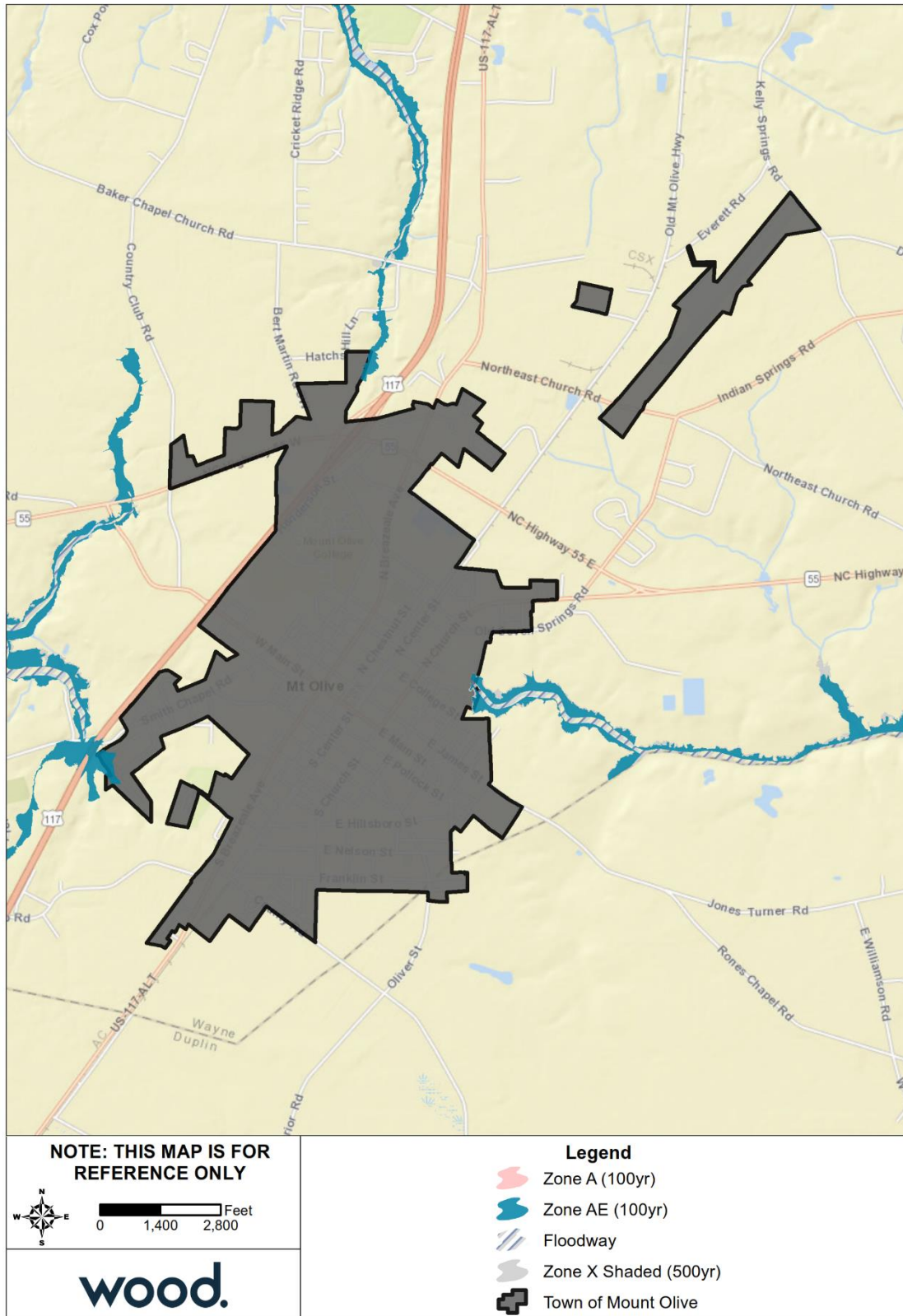
Source: FEMA Effective DFIRM

Figure E.7 – FEMA Flood Hazard Areas, Town of Fremont



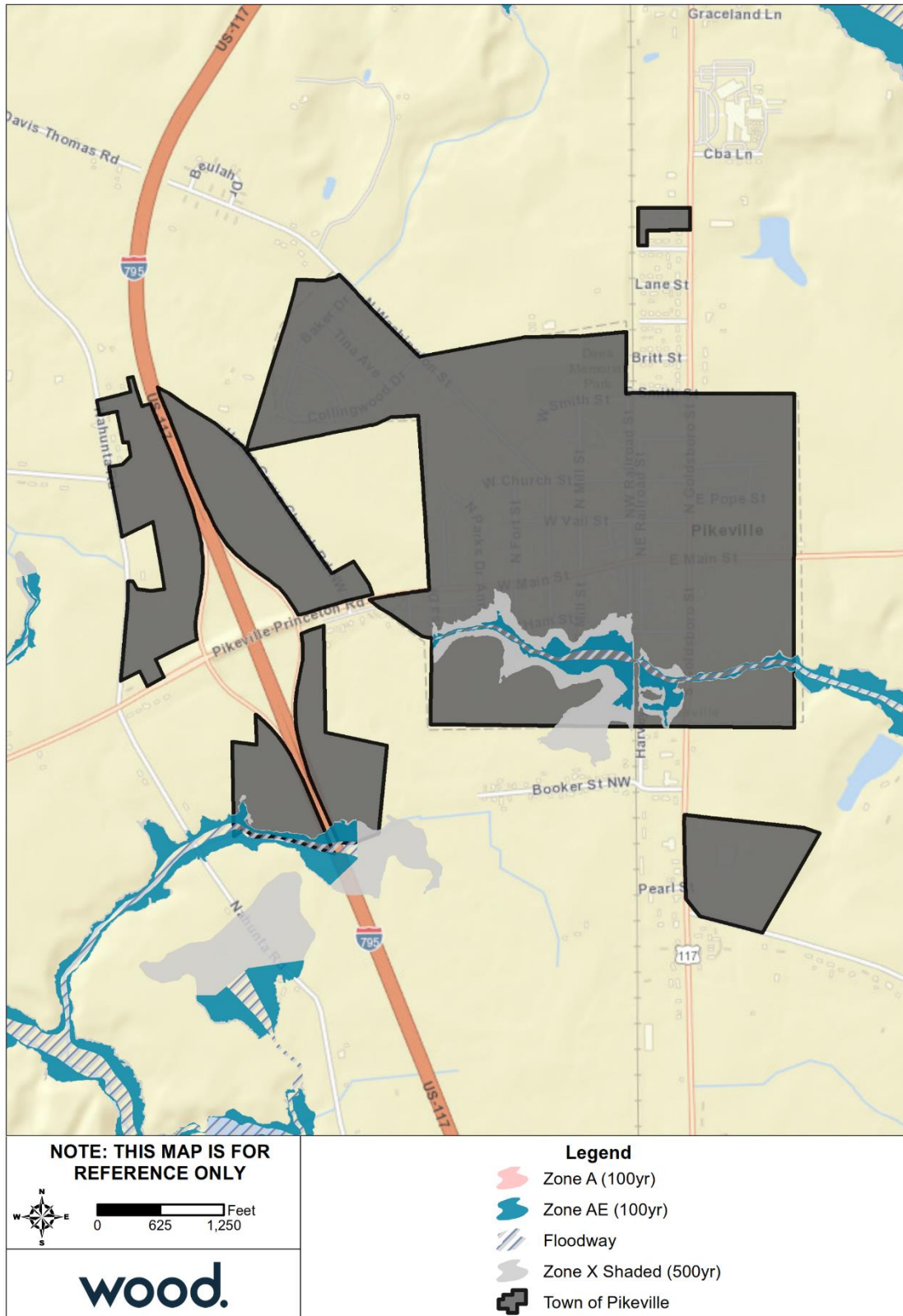
Source: FEMA Effective DFIRM

Figure E.8 – FEMA Flood Hazard Areas, Town of Mount Olive



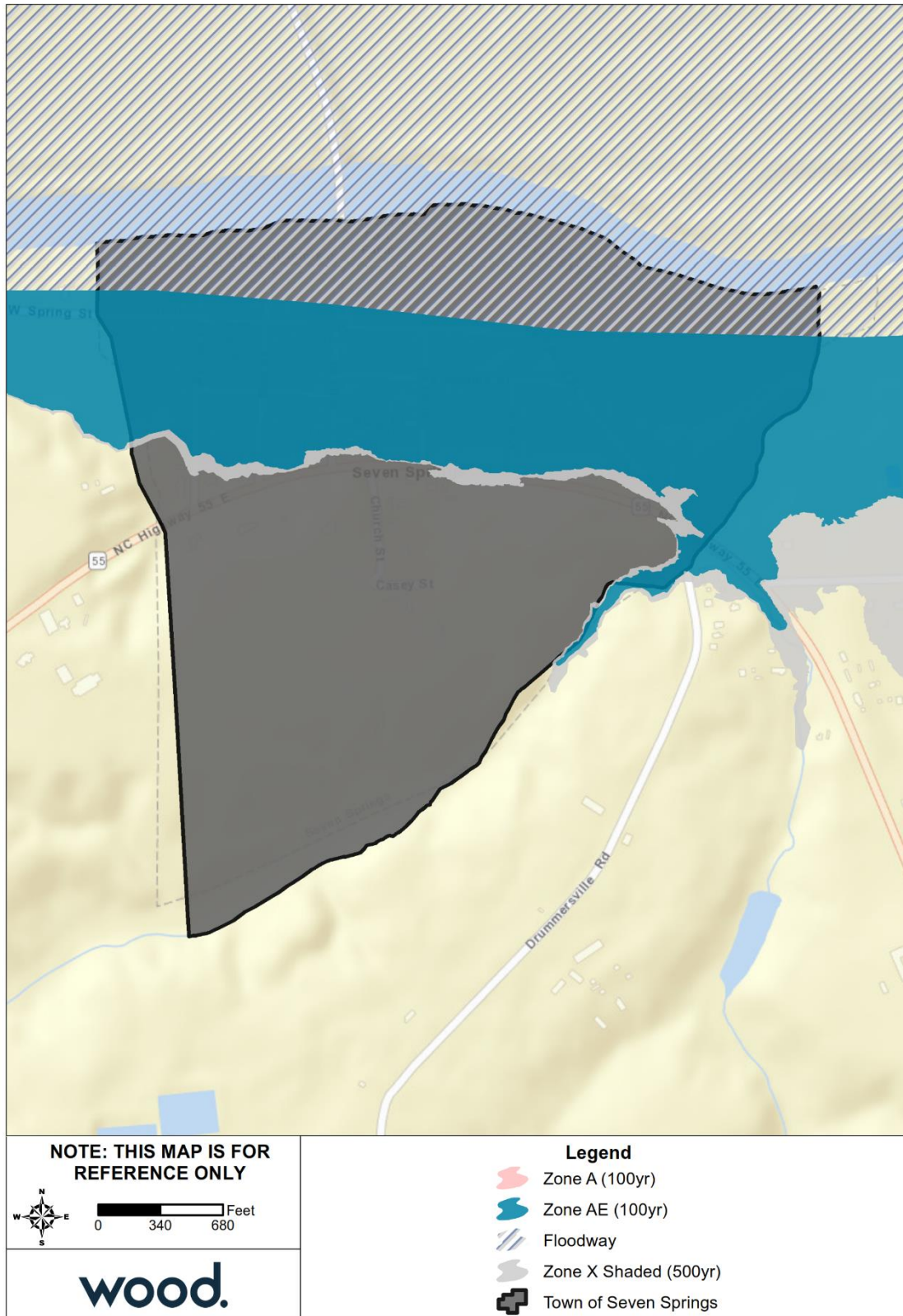
Source: FEMA Effective DFIRM

Figure E.9 – FEMA Flood Hazard Areas, Town of Pikeville



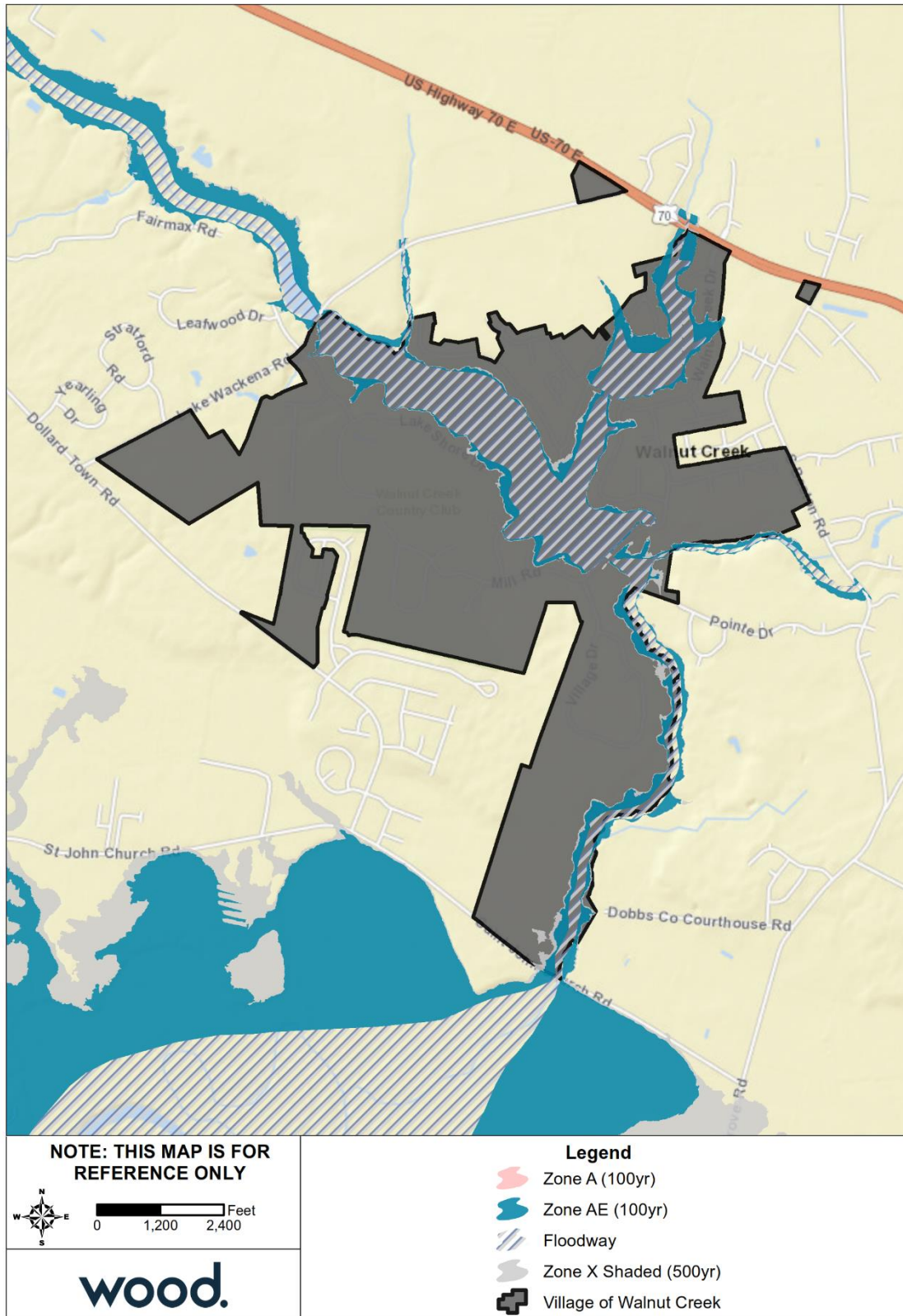
Source: FEMA Effective DFIRM

Figure E.10 – FEMA Flood Hazard Areas, Town of Seven Springs



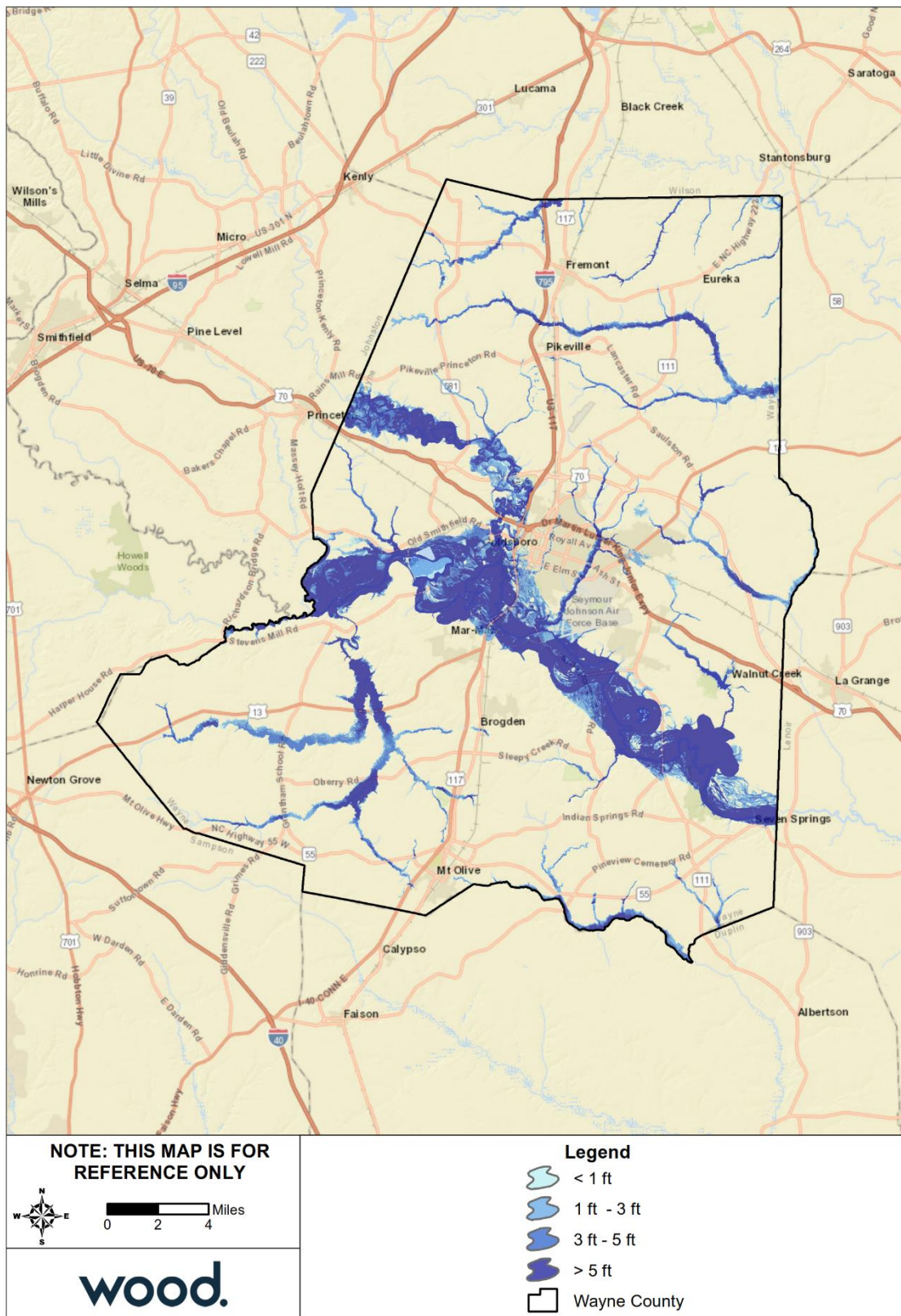
Source: FEMA Effective DFIRM

Figure E.11 – FEMA Flood Hazard Areas, Village of Walnut Creek



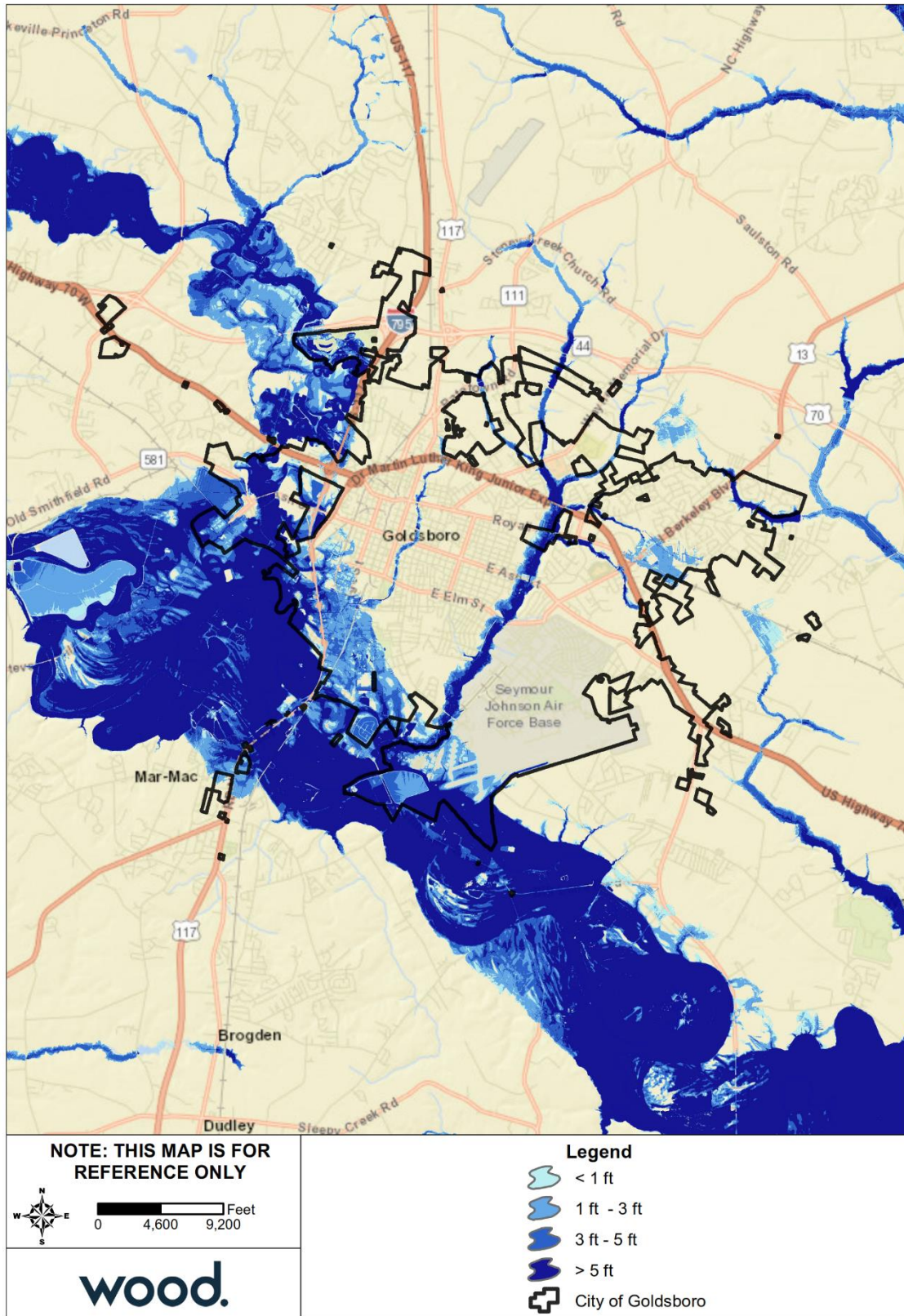
Source: FEMA Effective DFIRM

Figure E.12 – Flood Depth, 1%-Annual-Chance Floodplain, Unincorporated Wayne County



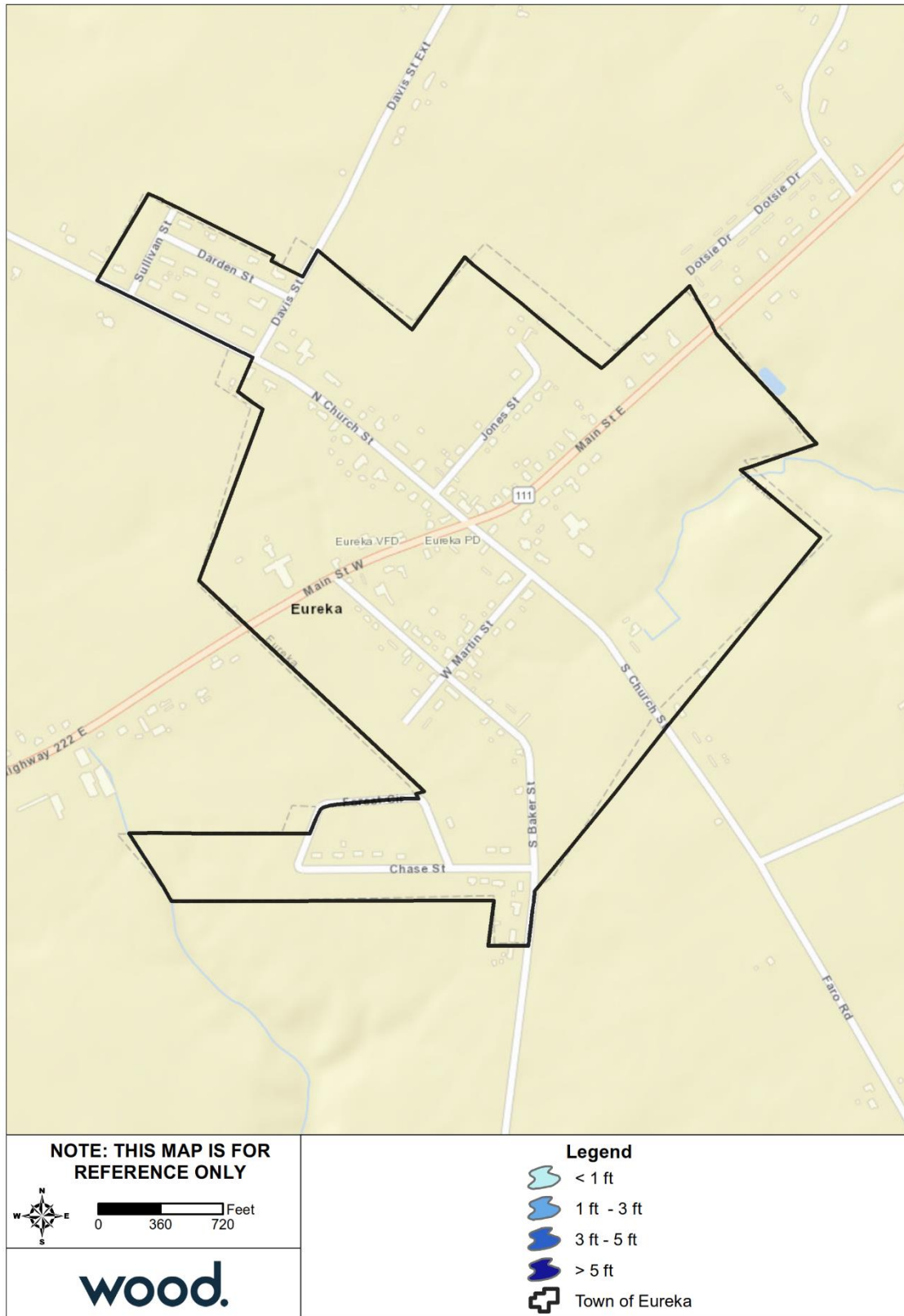
Source: FEMA Effective DFIRM

Figure E.13 – Flood Depth, 1%-Annual-Chance Floodplain, City of Goldsboro



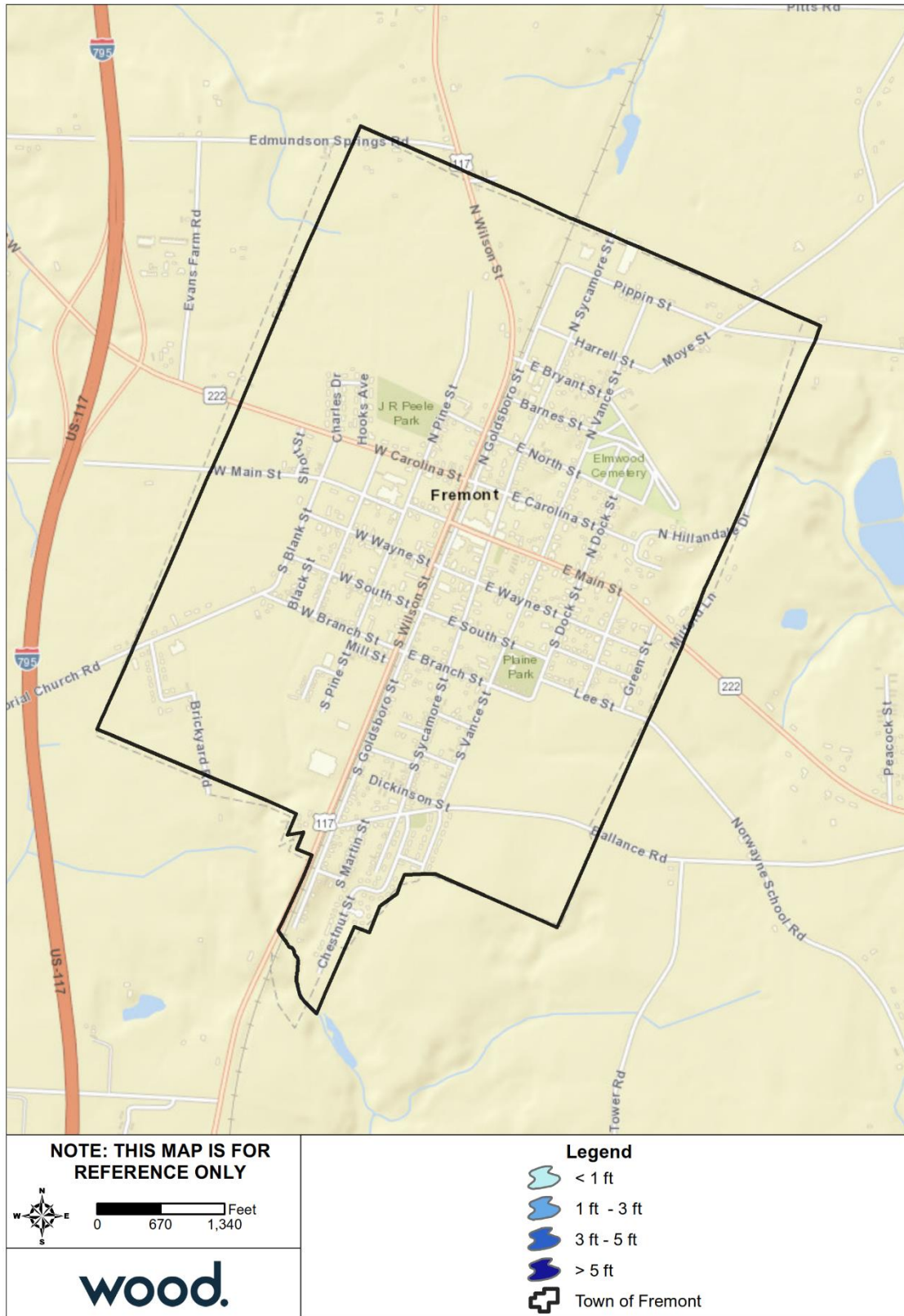
Source: FEMA Effective DFIRM

Figure E.14 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Eureka



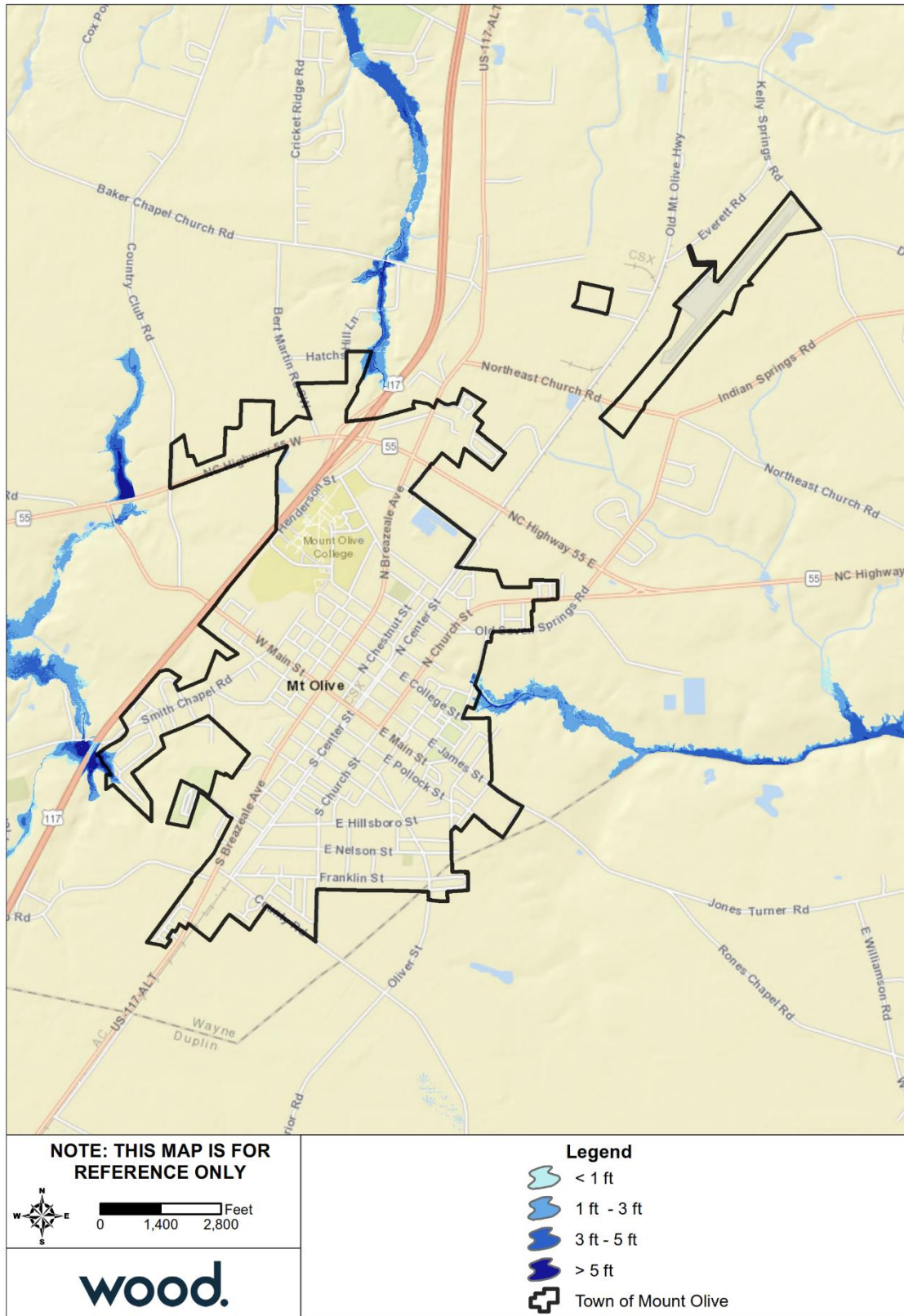
Source: FEMA Effective DFIRM

Figure E.15 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Fremont



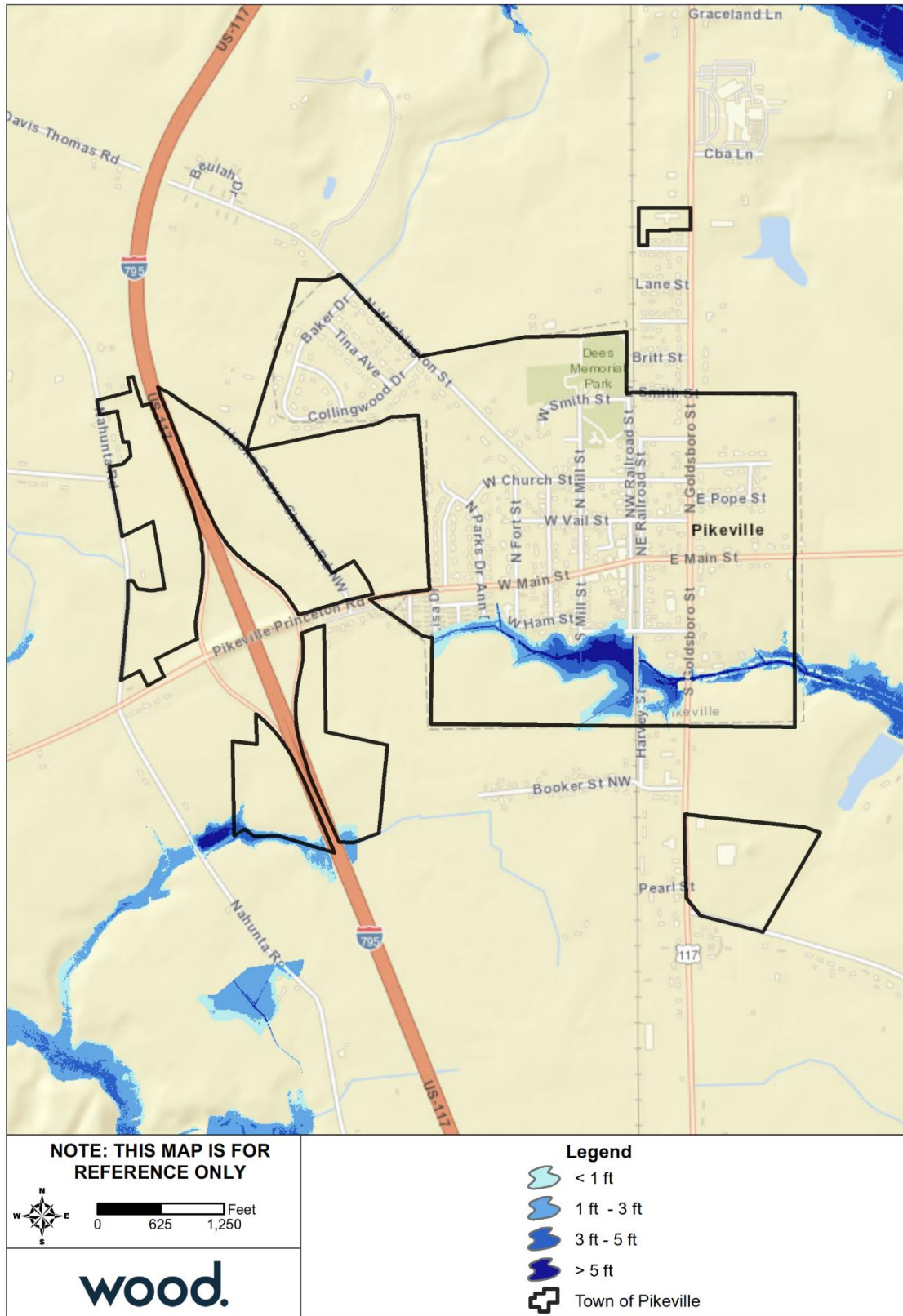
Source: FEMA Effective DFIRM

Figure E.16 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Mount Olive



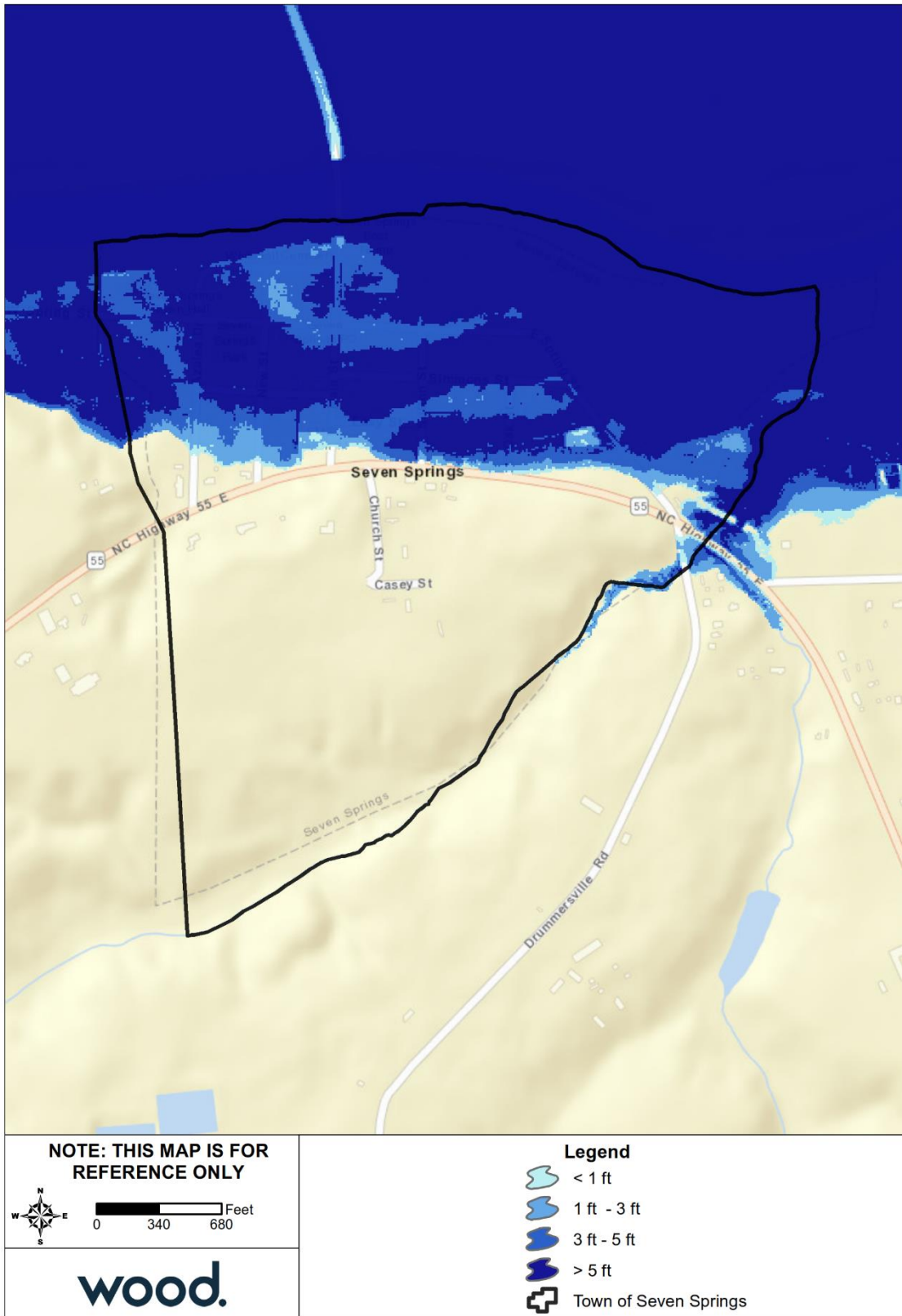
Source: FEMA Effective DFIRM

Figure E.17 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Pikeville



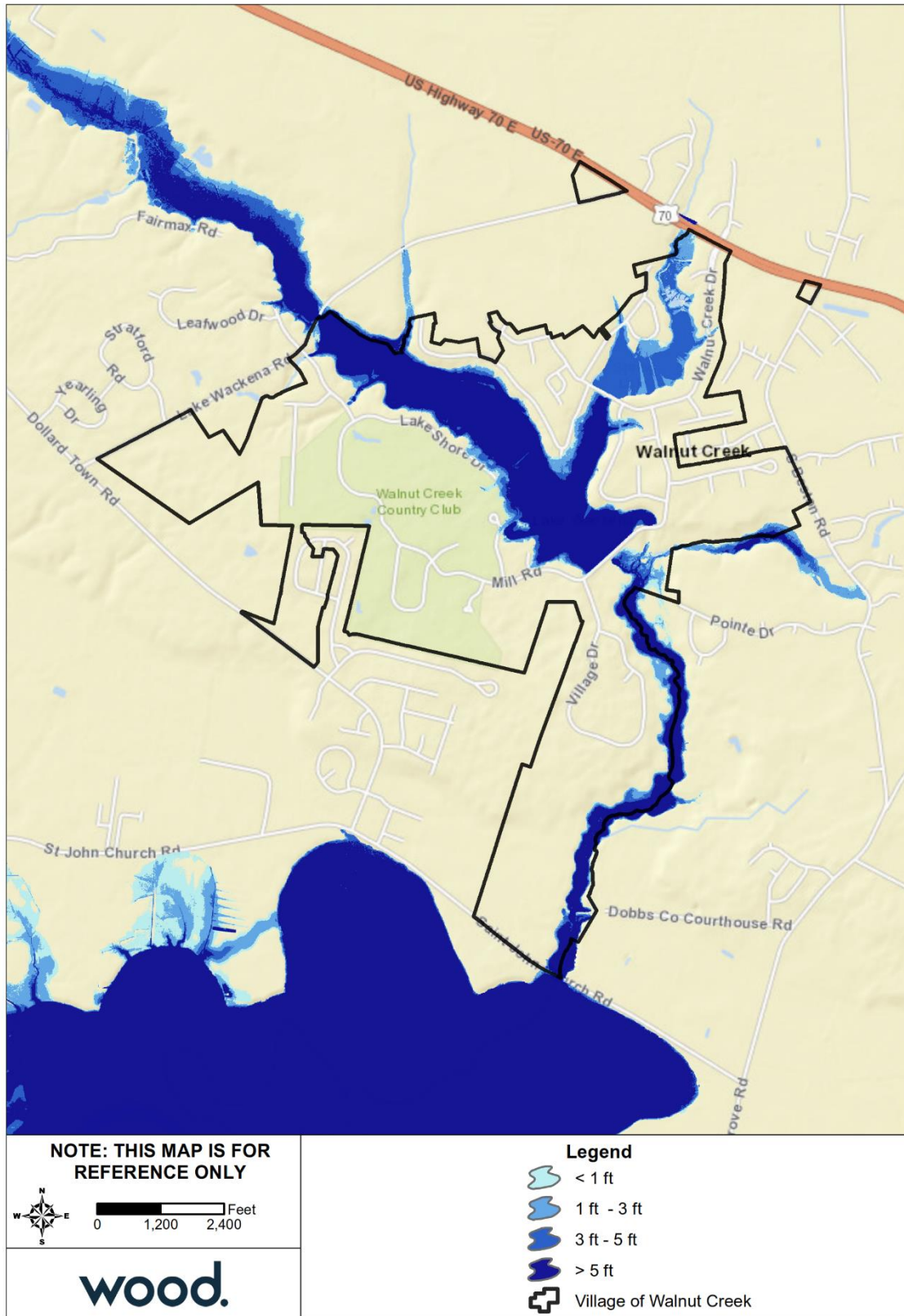
Source: FEMA Effective DFIRM

Figure E.18 – Flood Depth, 1%-Annual-Chance Floodplain, Town of Seven Springs



Source: FEMA Effective DFIRM

Figure E.19 – Flood Depth, 1%-Annual-Chance Floodplain, Village of Walnut Creek



Source: FEMA Effective DFIRM

E.2.2 Wildfire

Table E.12 summarizes the acreage in Wayne 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 44 percent of Wayne County is not included in the WUI.

Table E.12 – Wildland Urban Interface Acreage, Wayne County

	Housing Density	Total Acreage	Percent of Total Acreage
	Not in WUI	158,920.2	44.61%
	LT 1hs/40ac	43,741.3	12.28%
	1hs/40ac to 1hs/20ac	27,911.4	7.83%
	1hs/20ac to 1hs/10ac	36,193.8	10.16%
	1hs/10ac to 1hs/5ac	29,520.3	8.29%
	1hs/5ac to 1hs/2ac	31,679.5	8.89%
	1hs/2ac to 3hs/1ac	27,642.0	7.76%
	GT 3hs/1ac	654.3	0.18%
	Total	356,262.80	

Source: Southern Wildfire Risk Assessment

Figure E.20 depicts the WUI for Wayne County and all participating jurisdictions. The WUI is the area where housing development is built near or among areas of vegetation that may be prone to wildfire. Figure E.21 through Figure E.24 detail the Fire Intensity Scale, which indicates the potential severity of fire based on fuel loads, topography, and other factors. Figure E.25 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 southern areas of Wayne County, including unincorporated areas as well as around Seven Springs and Walnut Creek. Burn probability, however, is relatively low around the incorporated areas, and only reaches a moderate level in unincorporated areas. Areas where high potential fire intensity and relatively higher burn probability intersect are largely, although not fully, outside of the WUI. As such, a fire here might not pose as high a risk to human settlement and the built environment.

Table E.13 provides building counts and estimated damages for Critical Infrastructure and Key Resources (CIKR) buildings by sector at risk to wildfire hazard in Wayne County and participating jurisdictions. Table E.14 provides counts and estimated damages for High Potential Loss Properties in these areas.

Table E.13 – Critical Facilities Exposed to Wildfire by Jurisdiction, Wayne County

Sector	Number of Buildings at Risk	Estimated Damages
Wayne County Unincorporated Area		
Banking and Finance	184	\$260,087,038
Commercial Facilities	630	\$683,911,146
Communications	1	\$1,308,550
Critical Manufacturing	209	\$134,388,659
Emergency Services	14	\$20,164,137
Food and Agriculture	1,730	\$214,386,999
Government Facilities	54	\$161,483,999

ANNEX E: WAYNE COUNTY

Sector	Number of Buildings at Risk	Estimated Damages
Healthcare and Public Health	36	\$50,175,387
All Categories	2,858	\$1,525,905,915
City of Goldsboro		
Banking and Finance	38	\$145,721,270
Commercial Facilities	226	\$267,773,768
Communications	4	\$1,954,162
Critical Manufacturing	58	\$81,334,591
Emergency Services	140	\$138,733,483
Food and Agriculture	93	\$7,687,558
Government Facilities	31	\$106,146,384
Healthcare and Public Health	33	\$80,537,646
All Categories	623	\$829,888,862
Town of Eureka		
Banking and Finance	1	\$238,419
Commercial Facilities	3	\$1,237,839
Critical Manufacturing	2	\$1,052,503
Food and Agriculture	20	\$3,184,689
Government Facilities	1	\$1,550,498
All Categories	27	\$7,263,948
Town of Fremont		
Banking and Finance	5	\$3,942,614
Commercial Facilities	28	\$21,994,944
Critical Manufacturing	6	\$2,398,809
Food and Agriculture	15	\$1,892,690
Government Facilities	8	\$10,096,599
Healthcare and Public Health	5	\$5,545,002
All Categories	67	\$45,870,658
Town of Mount Olive		
Banking and Finance	1	\$19,426,903
Commercial Facilities	1	\$2,897,390
Critical Manufacturing	1	\$142,618
All Categories	3	\$22,466,911
Town of Pikeville		
Banking and Finance	1	\$878,972
Commercial Facilities	3	\$3,645,589
Critical Manufacturing	2	\$1,914,193
Food and Agriculture	5	\$83,288
All Categories	11	\$6,522,042
Town of Seven Springs		
Commercial Facilities	1	\$107,304
Government Facilities	1	\$228,087
All Categories	2	\$335,391
Village of Walnut Creek		
Banking and Finance	5	\$7,166,368
Commercial Facilities	19	\$19,676,435
Critical Manufacturing	7	\$3,476,166
Healthcare and Public Health	5	\$4,090,769
All Categories	36	\$34,409,738

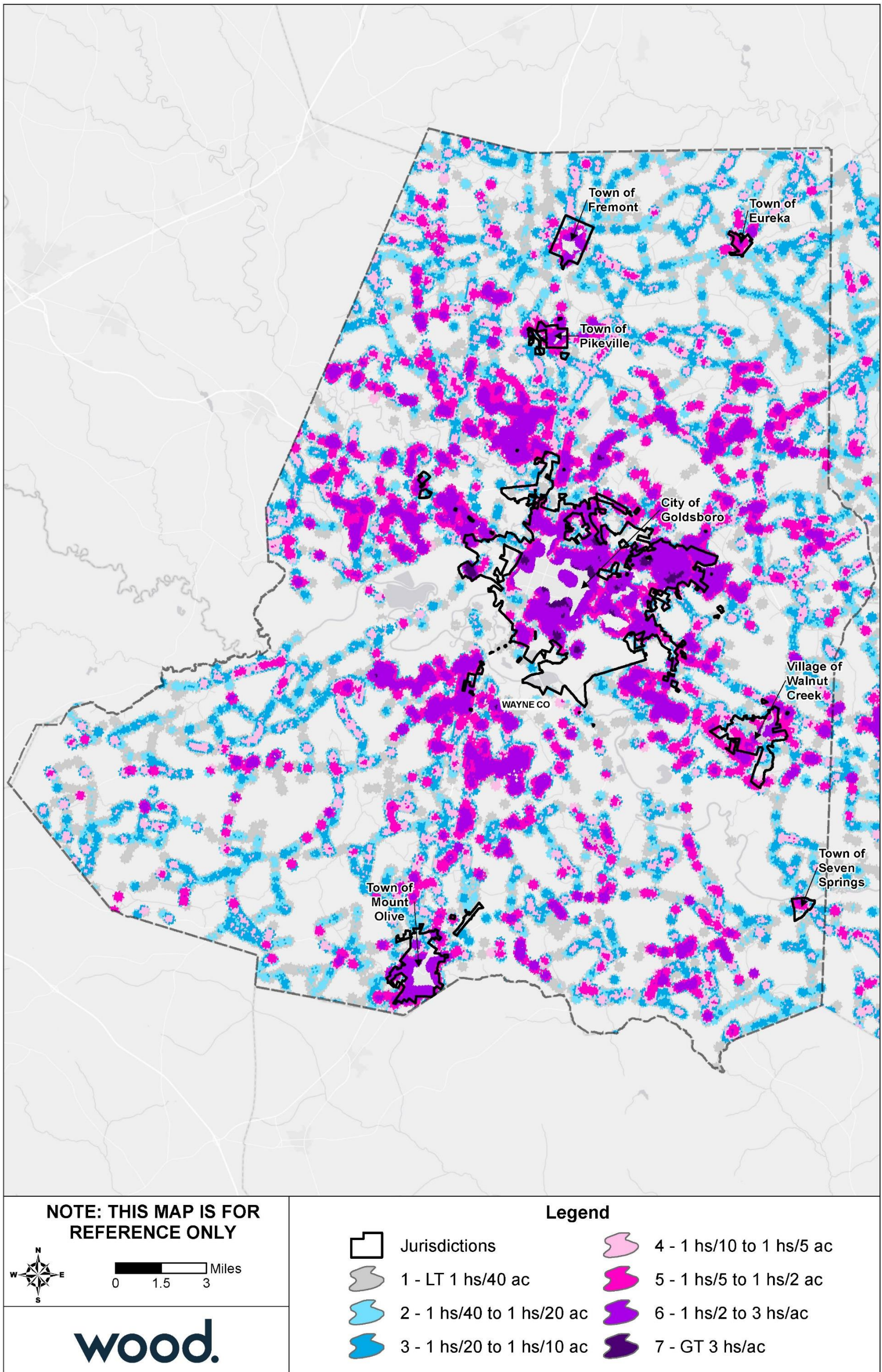
Source: NCEM Risk Management Tool

Table E.14 – High Potential Loss Properties Exposed to Wildfire by Jurisdiction, Wayne County

Sector	Number of Buildings at Risk	Estimated Damages
Wayne County Unincorporated Area		
Agricultural	3	\$3,685,107
Commercial	42	\$106,793,893
Government	7	\$127,100,241
Industrial	8	\$16,206,734
Religious	9	\$29,876,668
Residential	5	\$32,057,199
All Categories	74	\$315,719,842
City of Goldsboro		
Commercial	29	\$216,637,202
Government	54	\$176,789,813
Industrial	2	\$33,534,980
Religious	10	\$30,799,937
Residential	22	\$151,273,814
All Categories	117	\$609,035,746
Town of Fremont		
Commercial	2	\$3,633,779
Government	1	\$6,454,436
All Categories	3	\$10,088,215
Village of Walnut Creek		
Commercial	1	\$4,057,124

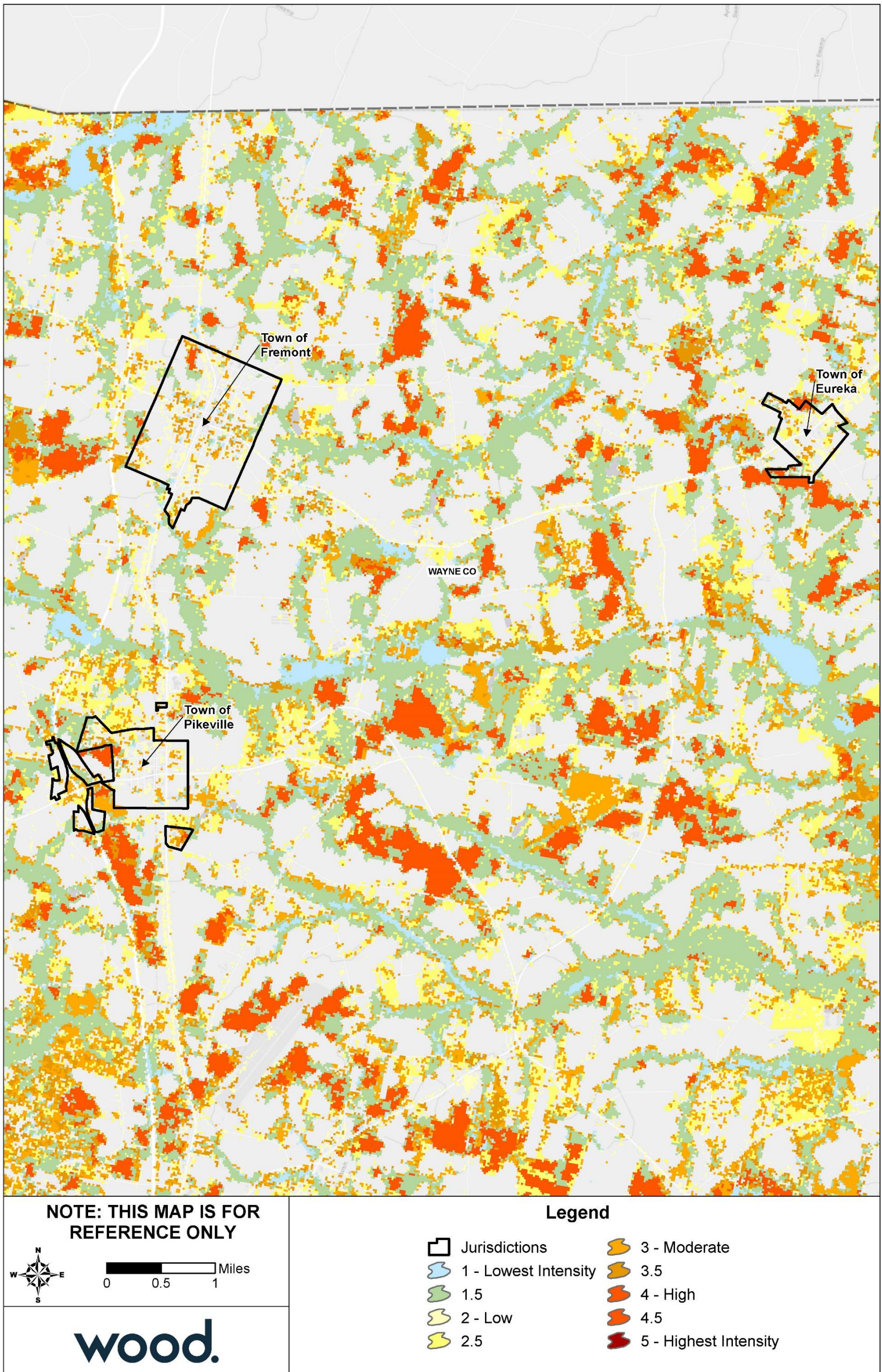
Source: NCEM Risk Management Tool

Figure E.20 – Wildland Urban Interface, Wayne County



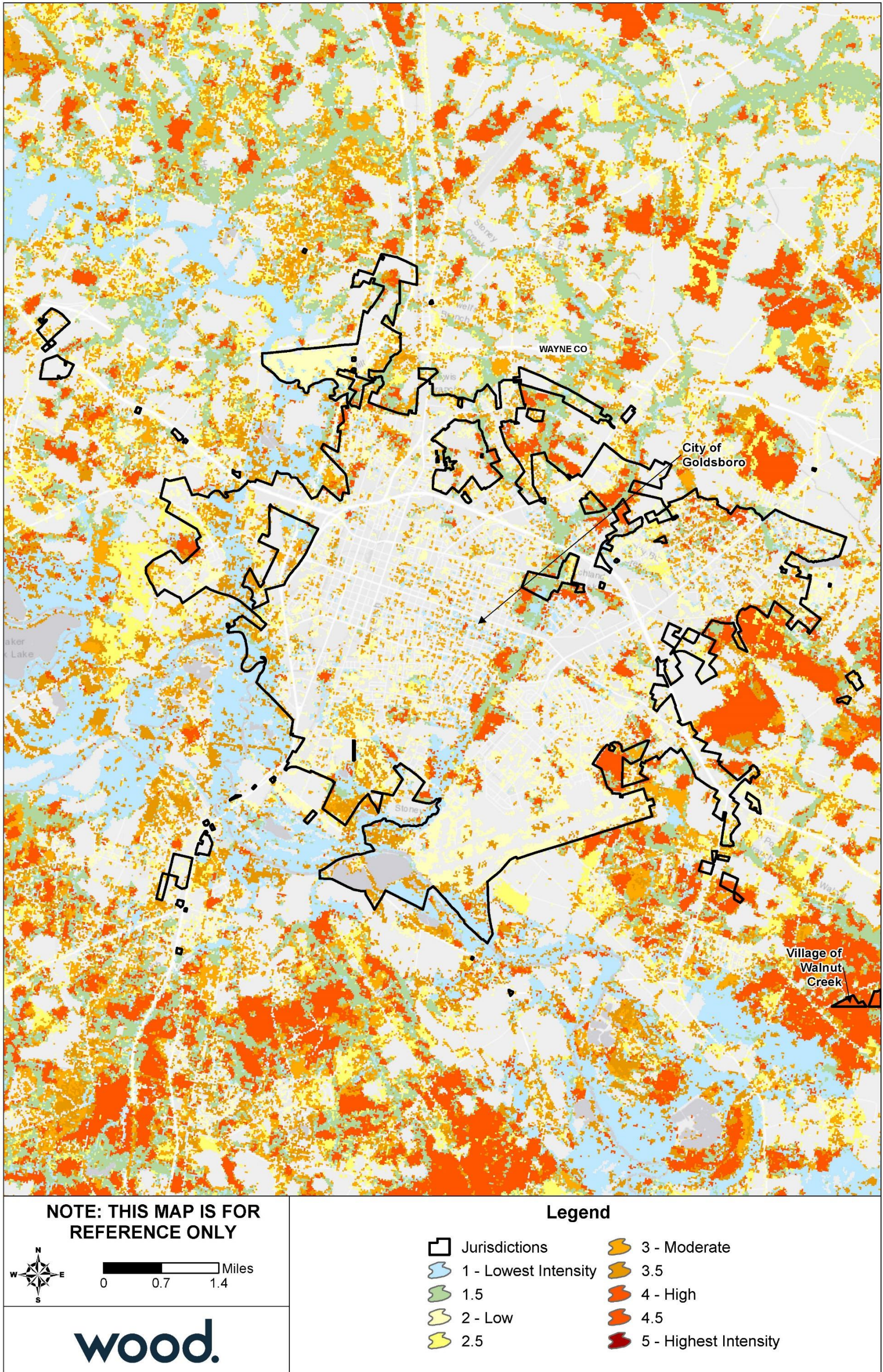
Source: Southern Wildfire Risk Assessment

Figure E.21 – Fire Intensity Scale, Wayne County (Detail 1)



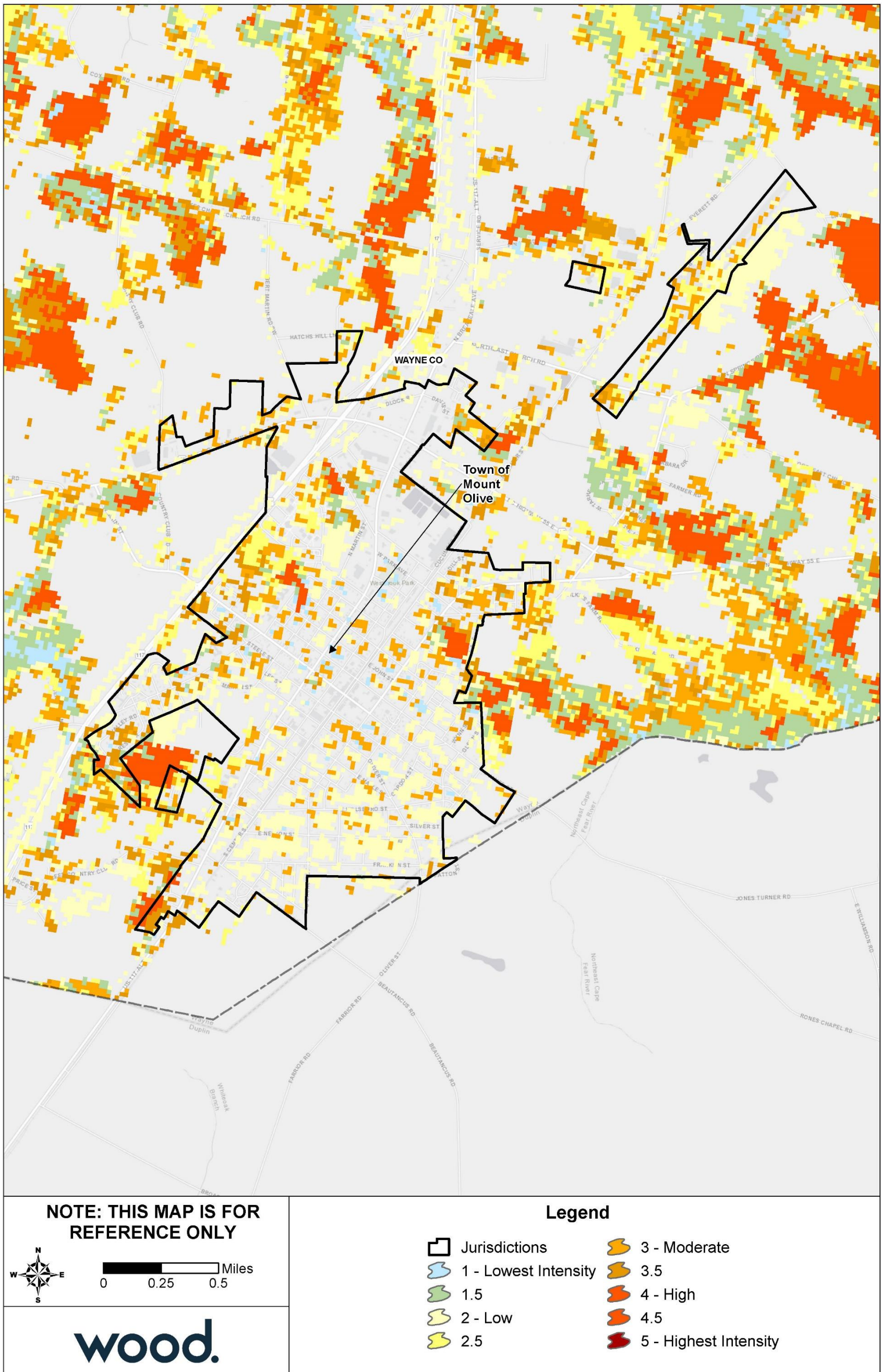
Source: Southern Wildfire Risk Assessment

Figure E.22 – Fire Intensity Scale, Wayne County (Detail 2)



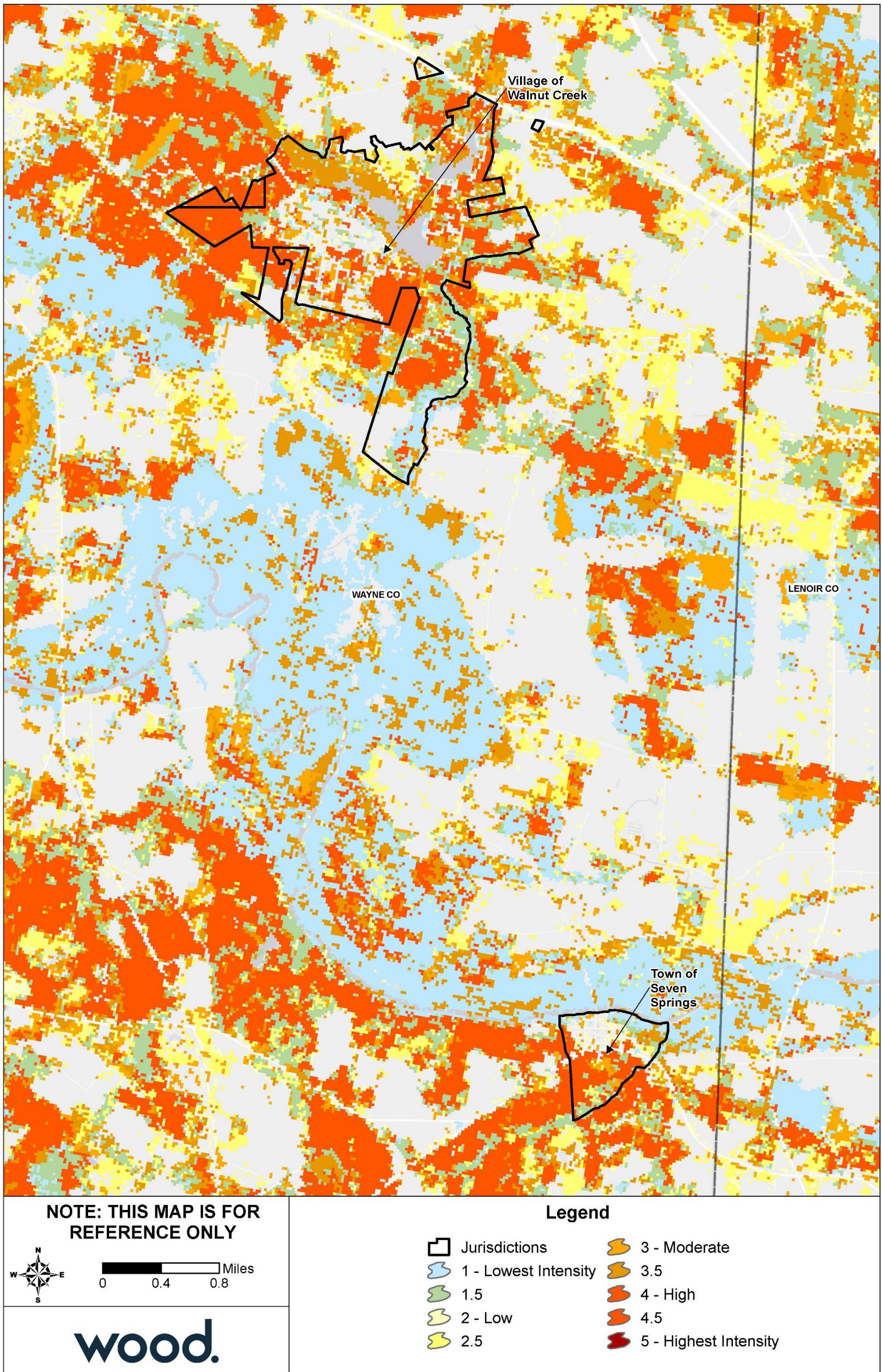
Source: Southern Wildfire Risk Assessment

Figure E.23 – Fire Intensity Scale, Wayne County (Detail 3)



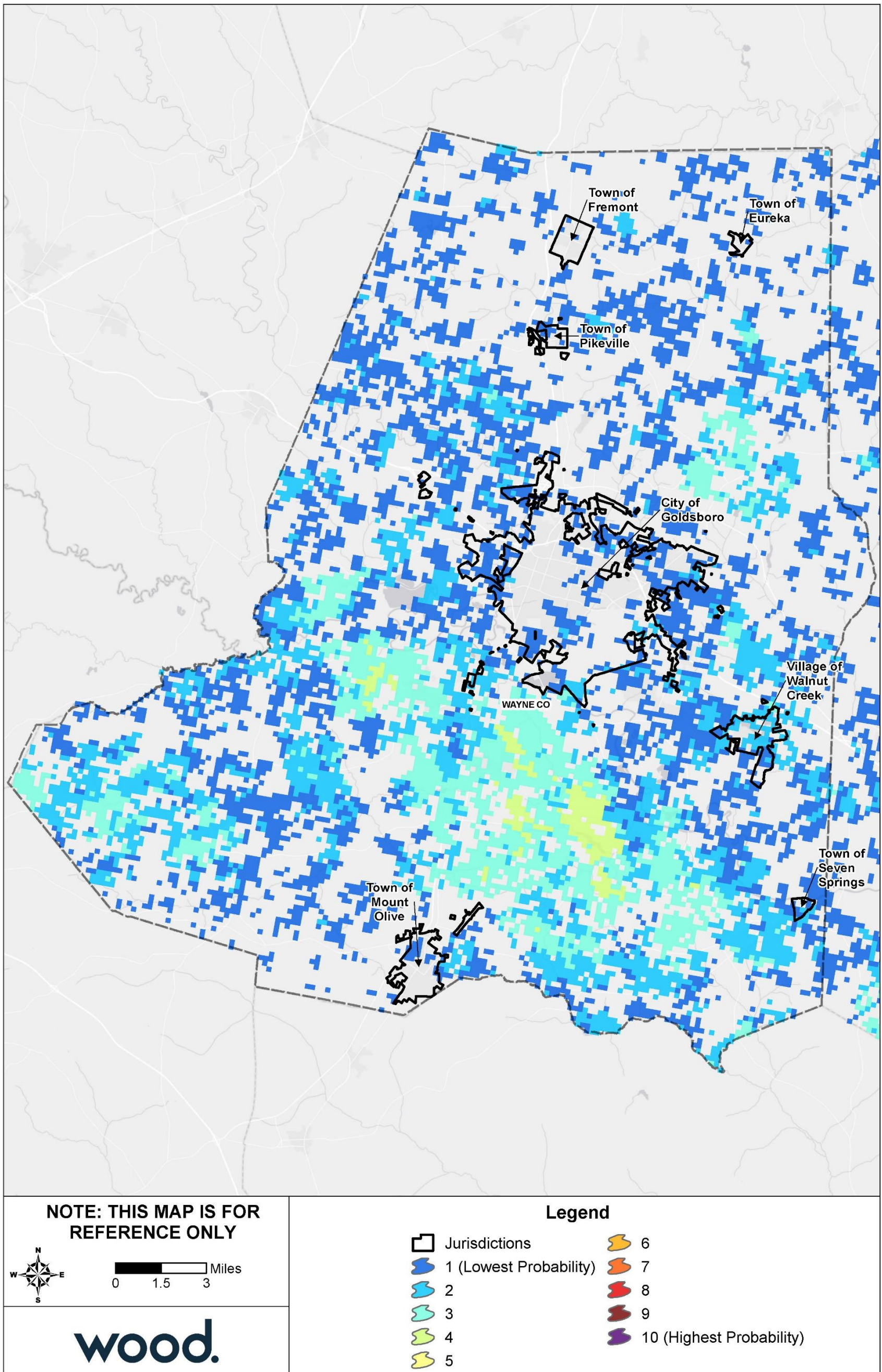
Source: Southern Wildfire Risk Assessment

Figure E.24 – Fire Intensity Scale, Wayne County (Detail 4)



Source: Southern Wildfire Risk Assessment

Figure E.25 – Burn Probability, Wayne County



Source: Southern Wildfire Risk Assessment

E.3 CAPABILITY ASSESSMENT

E.3.1 Overall Capability

Details on the tools and resources in place and available to Wayne County were provided by the County’s HMPC representatives and are summarized in Section 5 Capability Assessment. Based on that information and using the scoring methodology detailed in that section, Wayne County has an overall capability rating of Low, however the County self-assessed its overall capability as High. The incorporated City of Goldsboro has an assessed overall capability of High. Otherwise, Wayne County provides many resources for its incorporated jurisdictions and many of the mitigation projects in this plan are regional in nature, with the County serving as the project lead; therefore, the County’s capability is also an indicator for its incorporated areas. The County’s Self-Assessment of key capability areas, along with that of the City of Goldsboro, is summarized in Table E.15 below.

Table E.15 – Capability Self-Assessment Ratings, Wayne County

Capability Area	Wayne County	City of Goldsboro
Plans, Ordinances, Codes and Programs	High	High
Administrative and Technical Capability	High	High
Fiscal Capability	High	High
Education and Outreach Capability	High	High
Mitigation Capability	High	High
Political Capability	High	High
Overall Capability	High	High

E.3.2 Floodplain Management

The following tables reflect NFIP entry dates as well as policy and claims data for Wayne County and incorporated categorized by structure type, flood zone, Pre-FIRM and Post-FIRM.

Table E.16 – NFIP Program Entry Dates

Community	Regular Entry Date
Wayne County (Unincorporated Area)	September 16, 1991
Town of Eureka	<i>Not Participating</i>
Town of Fremont	May 27, 1997
City of Goldsboro	June 1, 1982
Town of Mount Olive	February 17, 1982
Town of Pikeville	February 14, 1997
Town of Seven Springs	February 17, 1982
Village of Walnut Creek	October 19, 1989

*The Town of Eureka is Not Participating in the NFIP. The Town has no land area in the SFHA.

Table E.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
Wayne County Unincorporated Area					
Single Family	423	\$221,049	\$92,331,300	266	\$12,645,812.60
2-4 Family	6	\$3,570	\$1,270,000	2	\$21,842.49
All Other Residential	1	\$473	\$600,000	1	\$4,522.68
Non-Residential	15	\$44,183	\$4,914,900	25	\$2,077,270.91
Total	445	\$269,275	\$99,116,200	294	\$14,749,448.68

ANNEX E: WAYNE COUNTY

Structure Type	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
City of Goldsboro					
Single Family	606	\$372,141	\$101,735,700	430	\$9,766,900.94
2-4 Family	34	\$23,995	\$4,907,200	35	\$1,632,981.51
All Other Residential	38	\$59,285	\$11,553,200	30	\$2,883,973.84
Non-Residential	139	\$411,055	\$52,791,900	107	\$12,638,954.98
Total	817	\$866,476	\$170,988,000	602	\$26,922,811.27
Town of Fremont					
Single Family	4	\$1,066	\$448,000	1	\$18,025.15
Total	4	\$1,066	\$448,000	1	\$18,025.15
Town of Mount Olive					
Single Family	16	\$7,462	\$3,705,400	13	\$422,732.24
Non-Residential	3	\$4,311	\$1,250,000	9	\$72,522.39
Total	24	\$17,383	\$5,955,400	22	\$495,254.63
Town of Pikeville					
Single Family	9	\$3,142	\$2,095,000	2	\$28,682.74
Non-Residential	0	\$0	\$0	2	\$42,848.05
Total	9	\$3,142	\$2,095,000	4	\$71,530.79
Town of Seven Springs					
Single Family	12	\$8,354	\$983,300	32	\$1,832,071.14
Non-Residential	0	\$0	\$0	3	\$455,480.77
Total	12	\$8,354	\$983,300	35	\$2,287,551.91
Village of Walnut Creek					
Single Family	48	\$30,091	\$14,300,700	19	\$1,049,211.72
Non-Residential	1	\$370	\$100,000	0	\$0.00
Total	49	\$30,461	\$14,400,700	19	\$1,049,211.72

Source: FEMA Community Information System, accessed January 2020

Table E.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
Wayne County Unincorporated Area					
A01-30 & AE Zones	101	\$116,429	\$19,153,000	165	\$9,394,832.70
A Zones	1	\$483	\$250,000	28	\$1,004,409.19
B, C & X Zone					
Standard	25	\$24,015	\$6,257,900	27	\$729,012.22
Preferred	272	\$100,748	\$71,815,000	62	\$3,507,135.20
Total	399	\$241,675	\$97,475,900	282	\$14,635,389.31
City of Goldsboro					
A01-30 & AE Zones	401	\$627,890	\$77,493,200	414	\$20,823,609.77
A Zones	0	\$0	\$0	13	\$178,757.24
B, C & X Zone					
Standard	90	\$85,751	\$17,647,500	47	\$2,117,555.05
Preferred	271	\$119,835	\$73,858,000	103	\$3,583,905.87
Total	762	\$833,476	\$168,998,700	577	\$26,703,827.93
Town of Fremont					
B, C & X Zone					
Preferred	4	\$1,066	\$448,000	1	\$18,025.15

ANNEX E: WAYNE COUNTY

Flood Zone	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Total	4	\$1,066	\$448,000	1	\$18,025.15
Town of Mount Olive					
A Zones	0	\$0	\$0	2	\$13,455.35
B, C & X Zone					
Standard	7	\$8,107	\$1,380,400	7	\$110,869.59
Preferred	17	\$9,276	\$4,575,000	10	\$368,337.02
Total	24	\$17,383	\$5,955,400	19	\$492,661.96
Town of Pikeville					
B, C & X Zone					
Standard	0	\$0	\$0	2	\$42,848.05
Preferred	9	\$3,142	\$2,095,000	2	\$28,682.74
Total	9	\$3,142	\$2,095,000	4	\$71,530.79
Town of Seven Springs					
A01-30 & AE Zones	5	\$4,154	\$739,000	35	\$2,287,551.91
Village of Walnut Creek					
A01-30 & AE Zones	20	\$16,801	\$4,876,500	14	\$927,639.16
B, C & X Zone					
Standard	6	\$4,127	\$1,724,200	2	\$78,728.95
Preferred	23	\$9,533	\$7,800,000	3	\$42,843.61
Total	49	\$30,461	\$14,400,700	19	\$1,049,211.72

Source: FEMA Community Information System, accessed January 2020

Table E.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
Wayne County Unincorporated Area					
A01-30 & AE Zones	47	\$65,753	\$7,421,000	100	\$5,281,535.71
A Zones	0	\$0	\$0	27	\$988,209.19
B, C & X Zone					
Standard	8	\$8,046	\$1,367,100	19	\$548,307.45
Preferred	93	\$33,510	\$22,251,000	43	\$2,535,105.61
Total	148	\$107,309	\$31,039,100	189	\$9,353,157.96
City of Goldsboro					
A01-30 & AE Zones	288	\$526,565	\$47,083,900	352	\$16,666,123.88
A Zones	0	\$0	\$0	13	\$178,757.24
B, C & X Zone					
Standard	33	\$48,699	\$7,080,100	36	\$1,412,196.16
Preferred	160	\$62,507	\$40,653,000	69	\$2,259,572.14
Total	481	\$637,771	\$94,817,000	470	\$20,516,649.42
Town of Fremont					
B, C & X Zone					
Preferred	3	\$708	\$273,000	1	\$18,025.15
Standard	3	\$708	\$273,000	1	\$18,025.15
Total	3	\$708	\$273,000	1	\$18,025.15
Town of Mount Olive					
A Zones	0	\$0	\$0	2	\$13,455.35
B, C & X Zone					
Standard	1	\$442	\$30,400	5	\$59,542.08

ANNEX E: WAYNE COUNTY

Flood Zone	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Preferred	15	\$8,497	\$3,945,000	7	\$170,122.14
Total	16	\$8,939	\$3,975,400	14	\$243,119.57
Town of Pikeville					
B, C & X Zone	7	\$2,404	\$1,570,000	1	\$16,571.44
Preferred	7	\$2,404	\$1,570,000	1	\$16,571.44
Total	7	\$2,404	\$1,570,000	1	\$16,571.44
Town of Seven Springs					
A01-30 & AE Zones	2	\$1,184	\$413,200	29	\$1,892,948.08
Village of Walnut Creek					
A01-30 & AE Zones	12	\$12,414	\$2,776,500	8	\$601,505.29
B, C & X Zone	9	\$5,183	\$2,774,200	3	\$120,428.07
Standard	2	\$2,316	\$324,200	2	\$78,728.95
Preferred	7	\$2,867	\$2,450,000	1	\$41,699.12
Total	21	\$17,597	\$5,550,700	11	\$721,933.36

Source: FEMA Community Information System, accessed January 2020

Table E.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
Wayne County Unincorporated Area					
A01-30 & AE Zones	54	\$50,676	\$11,732,000	65	\$4,113,296.99
A Zones	1	\$483	\$250,000	1	\$16,200.00
B, C & X Zone	196	\$83,207	\$54,454,800	27	\$1,152,734.36
Standard	17	\$15,969	\$4,890,800	8	\$180,704.77
Preferred	179	\$67,238	\$49,564,000	19	\$972,029.59
Total	251	\$134,366	\$66,436,800	93	\$5,282,231.35
City of Goldsboro					
A01-30 & AE Zones	113	\$101,325	\$30,409,300	61	\$4,122,485.89
B, C & X Zone	168	\$94,380	\$43,772,400	45	\$2,029,692.62
Standard	57	\$37,052	\$10,567,400	11	\$705,358.89
Preferred	111	\$57,328	\$33,205,000	34	\$1,324,333.73
Total	281	\$195,705	\$74,181,700	106	\$6,152,178.51
Town of Fremont					
B, C & X Zone	1	\$358	\$175,000	0	\$0.00
Preferred	1	\$358	\$175,000	0	\$0.00
Total	1	\$358	\$175,000	0	\$0.00
Town of Mount Olive					
B, C & X Zone	8	\$8,444	\$1,980,000	5	\$249,542.39
Standard	6	\$7,665	\$1,350,000	2	\$51,327.51
Preferred	2	\$779	\$630,000	3	\$198,214.88
Total	8	\$8,444	\$1,980,000	5	\$249,542.39
Town of Pikeville					
B, C & X Zone	2	\$738	\$525,000	3	\$54,959.35
Standard	0	\$0	\$0	2	\$42,848.05
Preferred	2	\$738	\$525,000	1	\$12,111.30
Total	2	\$738	\$525,000	3	\$54,959.35

ANNEX E: WAYNE COUNTY

Flood Zone	Policies in Force	Total Premium	Insurance in Force	Number of Closed Paid Losses	Total of Closed Paid Losses
Town of Seven Springs					
A01-30 & AE Zones	3	\$2,970	\$325,800	6	\$394,603.83
Village of Walnut Creek					
A01-30 & AE Zones	8	\$4,387	\$2,100,000	6	\$326,133.87
B, C & X Zone	20	\$8,477	\$6,750,000	2	\$1,144.49
Standard	4	\$1,811	\$1,400,000	0	\$0.00
Preferred	16	\$6,666	\$5,350,000	2	\$1,144.49
Total	28	\$12,864	\$8,850,000	8	\$327,278.36

Source: FEMA Community Information System, accessed January 2020

E.4 MITIGATION STRATEGY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
W1	Continue to impose a freeboard requirement through enforcement of their respective Flood Damage Prevention Ordinances. The freeboard requirement for Wayne County (including communities under interlocal agreement) and Goldsboro is two feet; Mount Olive is one foot.	Wayne County, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.1	P	<ul style="list-style-type: none"> Wayne County Inspections (including municipalities under interlocal agreement) Goldsboro Inspections Mount Olive Inspections 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	Wayne County, as well as all participating municipal jurisdictions, will continue to enforce their respective freeboard elevation standards. As flooding events occur during the planning period, each community will revisit and consider increasing this standard.
W2	Maintain a comprehensive Floodplain Management Program through the Community Rating System Program aimed at maintaining the lowest rating available to Wayne County flood insurance policyholders.	Wayne County, Goldsboro, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	PP	<ul style="list-style-type: none"> Wayne County Planning Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	Wayne County, Goldsboro, and Walnut Creek will continue to participate in the CRS program. Those communities not currently part of the program will consider participating through implementation of this plan.
W3	Review the vulnerability of all critical facilities identified in this plan as a component of annual County Emergency Operations Plan updates. This effort will involve an assessment of whether facilities are readily accessible before, during, or after a natural hazard event has transpired. The County will also consider all information and data outlined in this plan when making determinations on the location of all future critical facilities to ensure that they are not located within the Flood Hazard Area.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	All Hazards	High	4.1	ES	<ul style="list-style-type: none"> Wayne County Emergency Services Wayne County Administration Municipal Jurisdictions 	Staff Time	General Fund, NCDPS, FEMA	Ongoing - annually	In Progress – Carry Forward	In conjunction with the annual review and update of the County EOP, all jurisdictions will assess their respective critical facilities. This review will address each facilities effectiveness based on use during past events, as well as the outcomes of annual scheduled tabletop exercises.
W4	Continue to support and participate in the directives of the County Emergency Operations Plan (EOP). This plan 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 this document annually to ensure that it coordinates with the most recent NCEM and NCOEMS directives.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	All Hazards	High	2.2	ES	<ul style="list-style-type: none"> Wayne County Emergency Services Municipal Administrations 	Staff Time	General Fund, NCDPS, FEMA	Ongoing - annually	In Progress – Carry Forward	All jurisdictions will participate in the annual review and update of the Wayne County Emergency Operations Plan.
W5	Educate, inform, and provide educational materials to citizens, contractors, local real estate agents and homeowners regarding information that will advise individuals about the hazards associated with floodplain development. Additionally, the County will utilize this service to inform a range of interest groups about the natural hazards present throughout Wayne County and services available to provide assistance, if and when the County is impacted.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	4.2	PIO	<ul style="list-style-type: none"> Wayne County Emergency Services Wayne County Administration 	\$4,000	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	Wayne County will maintain and distribute information regarding the promotion of proper development techniques within the defined flood hazard area.
W6	Post flood level signs at prominent locations throughout the County displaying past flood levels to remind citizens of the past and potential flood dangers that exist within their community.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	4.2	PIO	<ul style="list-style-type: none"> Wayne County Emergency Services Wayne County Administration 	\$5,000	General Fund, NCDPS	2 to 3 years	Not Started – Carry Forward	To date, the County has not undertaken this effort, but will aim to move forward with the project through implementation of this plan.

ANNEX E: WAYNE COUNTY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
W7	Continue to promote the availability of flood insurance available through the National Flood Insurance Program (NFIP) using the following means: <ul style="list-style-type: none"> • Post on County website • Provide information on building permit applications • Make available at the County library • Display information in the Inspections Department 	Wayne County, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	2.2	PP	<ul style="list-style-type: none"> • Wayne County Inspections • Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing – next five years	In Progress – Carry Forward	Wayne County, as well as each participating municipal jurisdiction, will work to educate property owners about the availability of NFIP flood insurance through the various mechanisms outlined within this strategy.
W8	Continue to proactively seek out grant funding through NCEM and FEMA for mitigation of repetitive loss properties (RLP) 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. The priority will be for the elevation of structures in Seven Springs and acquisition of structures in all other jurisdictions. The County will assist municipal jurisdictions in facilitating the grant submittal process.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.2	PP	<ul style="list-style-type: none"> • Wayne County Administration • Municipal Administrations 	Staff Time	General Fund, NCDPS, FEMA	Ongoing – as opportunities arise	In Progress – Carry Forward	All participating jurisdictions will apply for funding to carry out structural mitigation projects both following natural hazard events, as well as through annual funding programs awarded through FEMA.
W9	Continue to monitor drainage conditions throughout the County. Additionally, the County will continue to enforce and support the following programs relating to stormwater management: <ul style="list-style-type: none"> • NCDEQ Coastal Stormwater Rules • NCDEQ Sedimentation & Erosion Control Regulations • NCDEQ Statewide Stormwater Regulations • NCDEQ CAMA Regulations • US Army Corps of Engineers Non-Coastal Wetland Regulations 	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	High	1.3		<ul style="list-style-type: none"> • Wayne County Public Works • Municipal Public Works Departments 	Staff Time	General Fund	Ongoing – next five years	In Progress – Carry Forward	All jurisdictions will continue to coordinate with and support State and Federal efforts to manage non-point source stormwater runoff through all relevant land development regulations.
W10	Continue to maintain and enforce respective Water Shortage Ordinance. These efforts will involve monitoring of regional drought conditions and coordination with NCDENR.	Wayne County, Fremont, Goldsboro, Mount Olive, Pikeville, Walnut Creek	Drought	High	4.2	NRP	<ul style="list-style-type: none"> • Wayne Water Districts • Municipal Administrations 	Staff Time	General Fund	Ongoing – as necessary	In Progress – Carry Forward	Wayne County will continue to work in concert with NCDEQ to establish, and when necessary, impose water use restrictions to minimize issues associated with drought conditions.
W11	Continue to support and recruit for participants for Community Emergency Response Teams (CERT). This effort will be coordinated with NCEM.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	All Hazards	Medium	3.2	ES	<ul style="list-style-type: none"> • Wayne County Emergency Services 	\$2,500	General Fund, NCDPS	2 to 3 years	Not Started – carry forward	Wayne County will continue to work with County residents to expand upon the County Community Emergency Response Team program.
W12	Continue to expand upon the County's Code Red Emergency Notification System available to all residents. The Wayne County Office of Emergency Services will coordinate with all municipal jurisdictions regarding registration through the Wayne County Emergency Notification Registration Portal.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	All Hazards	High	4.2	PIO	<ul style="list-style-type: none"> • Wayne County Emergency Services 	\$10,000	General Fund, NCDPS	1 year	Not Started – Carry Forward	The County will review emergency notification protocols on an annual basis and where feasible improve upon the effectiveness of the overall system.

ANNEX E: WAYNE COUNTY

Action #	Description	Applicable Jurisdictions	Hazards Addressed	Priority	Goal & Objective	Category	Lead/Participating Agencies (Lead Agency is in bold)	Estimated Cost	Potential Funding Sources	Implementation Schedule	2019 Status	Status Comments/Explanation
W13	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 OES and local government staff members. All jurisdictions will work to advertise the availability of this service within their respective communities.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	All Hazards	High	4.2	PIO	<ul style="list-style-type: none"> Wayne County Emergency Services Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing - annually	Not Started – Carry Forward	The County will continue to diligently promote and enroll individuals into the Special Medical Needs Registry focused on providing emergency response resources to at-risk populations.
W14	Ensure that there is adequate capacity for snow and ice removal in the event of a major snowstorm. Wayne 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.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Severe Winter Storm	High	1.1	P	<ul style="list-style-type: none"> Wayne County Administration Wayne County Emergency Services 	To be determined	General Fund, NCDPS	Ongoing – as opportunities arise	Not Started – Carry Forward	The County will work with NCDOT and municipal administrations to improve upon capacity associated with snow and ice removal during severe winter weather events.
W15	Continue to pro-actively educate the public about services and means to deal with extreme heat and dehydration. This effort will be carried out through the following means: <ul style="list-style-type: none"> Education through DSS Maintain Crisis Prevention Program Disseminate pamphlets Run local print ads Utilize other local media 	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Extreme Heat	High	4.2	PIO	<ul style="list-style-type: none"> Wayne County Health Department Wayne County Social Services Municipal Administrations 	Staff Time	General Fund, NCDPS	Ongoing - annually	In Progress – Carry Forward	In response to periods of extreme heat, the County Emergency Management Department will work with the Wayne County Public Health Department to educate citizens about the dangers of dehydration and heat exhaustion during peak summer months.
W16	Actively work with Federal, State, local and private partners to identify mitigation measures and secure funding via grants to alleviate flooding. These efforts should focus on the following areas: <ul style="list-style-type: none"> Stormwater Assessment/Repair – Fremont Stormwater Assessment/Repair – Pikeville Dixie Trail and John St (Flooding/Stormwater) – Goldsboro Engineering study of existing stormwater utility/drainage – County 	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather	Medium	1.3	P	<ul style="list-style-type: none"> Wayne County Public Works Municipal Administrations 	To be determined	General Fund, NCDPS, NCDEQ	3 to 5 years	New	N/A
W17	Work to establish pad mount backup generators at all county/critical facilities to facilitate the efficient utilization of designated shelter facilities and facilitate post disaster response.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Earthquake, Tornado	Medium	1.1	ES	<ul style="list-style-type: none"> Wayne County Emergency Services Wayne County Board of Commissioners Municipal Administrations 	To be determined	General Fund, NCDPS, FEMA	2 to 3 years	New	N/A
W18	Work to proactively implement the recommendations of the Hurricane Matthew Resilient Redevelopment Plan developed in coordination with the NCDPS.	Wayne County, Eureka, Fremont, Goldsboro, Mount Olive, Pikeville, Seven Springs, Walnut Creek	Flood, Hurricane & Tropical Storm, Dam Failure, Severe Weather, Tornado	Low	1.3	P	<ul style="list-style-type: none"> Wayne County Emergency Services Municipal Administrations 	To be determined	General Fund, NCDPS, FEMA, NCDEQ	5 years	New	N/A

Appendix A Plan Review Tool

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LOCAL MITIGATION PLAN REVIEW TOOL

The *Local Mitigation Plan Review Tool* 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 community.

- The Regulation Checklist provides a summary of FEMA’s evaluation of whether the Plan has addressed all requirements.
- The Plan Assessment identifies the plan’s strengths as well as documents areas for future improvement.
- The Multi-jurisdiction Summary Sheet is an optional worksheet that can be used to document how each jurisdiction met the requirements of the each Element of the Plan (Planning Process; Hazard Identification and Risk Assessment; Mitigation Strategy; Plan Review, Evaluation, and Implementation; and Plan Adoption).

The FEMA Mitigation Planner must reference this *Local Mitigation Plan Review Guide* when completing the *Local Mitigation Plan Review Tool*.

Jurisdiction: Neuse River Region (Greene County, Jones County, Lenoir County, Pitt County, Wayne County, and incorporated jurisdictions)	Title of Plan: Neuse River Regional Hazard Mitigation Plan	Date of Plan: March 2020
Local Point of Contact: David Stroud	Address: 4021 Stirrup Creek Drive, Suite 100 Durham, NC 27703	
Title: Emergency & Hazard Mitigation Lead		
Agency: Wood Environment & Infrastructure Solutions, Inc.		
Phone Number: 919-856-6485	E-Mail: David.stroud@woodplc.com	

State Reviewer: Carl Baker Carl Baker	Title: Hazard Mitigation Planner Hazard Mitigation Planner	Date: March 30, 2020 May 1, 2020
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FEMA Reviewer: Edwardine S. Marrone (Revisions Reviewed) Carl Mickalonis	Title: NC-FIT-Mitigation Planner HM Planning Lead	Date: July 1, 2020, 9/18/20 9/4/2020
Date Received in FEMA Region IV	May 5, 2020	
Plan Not Approved	9/8/2020	
Plan Approvable Pending Adoption		
Plan Approved	9/18/20	

✓ Denotes FEMA Reviewer concurs with State Reviewers notations.

**SECTION 1:
REGULATION CHECKLIST**

INSTRUCTIONS: The Regulation Checklist must be completed by FEMA. 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.’ The ‘Required Revisions’ summary at the bottom of each Element must be completed by FEMA to provide a clear explanation of the revisions that are required for plan approval. Required revisions must be explained for each plan sub-element that is ‘Not Met.’ Sub-elements should be referenced in each summary by using the appropriate numbers (A1, B3, etc.), where applicable. Requirements for each Element and sub-element are described in detail in this *Plan Review Guide* in Section 4, Regulation Checklist.

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
ELEMENT A. PLANNING PROCESS				
A1. Does the Plan document the planning process, including how it was prepared and who was involved in the process for each jurisdiction? (Requirement §201.6(c)(1)) QC concurs with assessment	Section 2 (p. 5-22)e. ✓ a. p 6-22 b. p. 2 c. p. 11-12 d. p. 10-13, Appendix B	X		
A2. Does the Plan document an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, agencies that have the authority to regulate development as well as other interests to be involved in the planning process? (Requirement §201.6(b)(2)) QC concurs with assessment	Section 2 (p. 8-9, 15); ✓ Appendix B (p.B.54-B.56)	X		
A3. Does the Plan document how the public was involved in the planning process during the drafting stage? (Requirement §201.6(b)(1)) QC concurs with assessment	Section 2 (p. 13-15); Appendix B (p.B.24-B.53) a. & b. ✓	X		
A4. Does the Plan describe the review and incorporation of existing plans, studies, reports, and technical information? (Requirement §201.6(b)(3)) QC concurs with assessment	Section 2 (p. 8-9) a. & b. ✓ a. p. 215-217	X		
A5. Is there discussion of how the community(ies) will continue public participation in the plan maintenance process? (Requirement §201.6(c)(4)(iii)) QC concurs with assessment	Section 8 (p. 259-260) ✓	X		

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
A6. Is there a description of the method and schedule for keeping the plan current (monitoring, evaluating and updating the mitigation plan within a 5-year cycle)? (Requirement §201.6(c)(4)(i)) QC concurs with assessment	Section 8 (p. 257-259) a.-c. p.254-259	X		
ELEMENT A: REQUIRED REVISIONS				
NCEM 1 st Review: A1 – Appendix B includes letters of regret by smaller towns designating county officials as their proxy. A2 – Coordination effort to neighboring communities and stakeholders page B.54 A3 – No revisions required. A4 – No revisions required. A5 – No revisions required. A6 – No revisions required. NCEM 2 nd Review: No revisions required.				
ELEMENT B. HAZARD IDENTIFICATION AND RISK ASSESSMENT				
B1. Does the Plan include a description of the type, location, and extent of all natural hazards that can affect each jurisdiction(s)? (Requirement §201.6(c)(2)(i)) QC concurs with assessment	Section 4.5 (p. 87-213; Hazard Description, Location, Extent, Hazard Summary by Jurisdiction), Annex A-E ✓ (a-d) P 89-95, 100-104, 109-110, 113, 123-124, 129, 131-136, 138-143, 154-156, 157-161, 170-176, 190-191, 183-184, 201, 203, 269-274, 286, 218. 271, 412.	X		
B2. Does the Plan include information on previous occurrences of hazard events and on the probability of future hazard events for each jurisdiction? (Requirement §201.6(c)(2)(i)) QC concurs with assessment	Section 4.5 (p. 87-213; Past Occurrences, Probability of Future Occurrence, Hazard Summary by Jurisdiction), ✓ (a-c) P 95, 104-105, 113-117, 124-125, 144-145, 156-162, 173-176, 184-186, 191-194, 204-206, 210-211, 265, 289, 321, 375, 417.	X		

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
B3. Is there a description of each identified hazard's impact on the community as well as an overall summary of the community's vulnerability for each jurisdiction? (Requirement §201.6(c)(2)(ii)) QC concurs with assessment	Section 4.5 (p. 87-213; Vulnerability Assessment, Hazard Summary by Jurisdiction), Annex A-E Population, property & crops at risk for non-spatial hazards P. 77 – 86, 96-97, 105-108, 120-121, 124-127, 144-147, 152-153, 173-177, 180-182, 185-186, 188, 192-194, 197-198, 204, 210.	X		
B4. Does the Plan address NFIP insured structures within the jurisdiction that have been repetitively damaged by floods? (Requirement §201.6(c)(2)(ii)) QC concurs with assessment	Section 4.5.5 (p. 150-151)✓	X		
<u>ELEMENT B: REQUIRED REVISIONS</u>				
NCEM 1 st Review:				
B1 – In the flood hazard extent is out of order compared to the other hazards. Reordered to match format of other hazards.				
B2 - No revision required.				
B3 – No revision required.				
B4 – No revision required.				
NCEM 2 nd Review: No revisions required.				
<u>FEMA REQUIRED REVISIONS:</u>				
B4.a. The plan documents the number of repetitive loss properties, however, there is not a description of the <u>types of property</u> for each jurisdiction. An assumption is not sufficient to meet this requirement. Suggest contacting the SHMO or State NFIP Coordinator for this information. Could not report exact numbers of properties by types because FEMA did not release this data. Statement added to page 150 describing the proportion of residential and non-residential repetitive loss properties in 2015 as reported in the previous hazard mitigation plan and inferring current proportions based on that data.				
<ul style="list-style-type: none"> The plan must describe the types (residential, commercial, institutional, etc.) and estimate the numbers of repetitive loss properties located in identified flood hazard areas. 				
9/18/20 Revision Reviewed. The revision brings the requirement into compliance. Requirement is met.				
For additional information, please see Element B, Hazard Identification and Risk Assessment, in the "Local Mitigation Plan Review Guide", October 1, 2011, Pages 18-21 and Task 5 of the Local Mitigation Planning Handbook, March 2013, Pages 5-2 to 5-17.				

1. REGULATION CHECKLIST		Location in Plan (section and/or page number)	Met	Not Met
Regulation (44 CFR 201.6 Local Mitigation Plans)				
ELEMENT C. MITIGATION STRATEGY				
C1. Does the plan document each jurisdiction's existing authorities, policies, programs and resources and its ability to expand on and improve these existing policies and programs? (Requirement §201.6(c)(3))	Section 5 (p. 214-233)✓	X		
C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? (Requirement §201.6(c)(3)(ii)) QC concurs with assessment	Section 5 (p. 221-223) Participation P 146, 262, 290, 322, 376, 418. Continued Compliance P 239, 243, 246, 248, 249-250-251, 265-267, 293-294, 325-327, 382-384, 423-425.	X		
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? (Requirement §201.6(c)(3)(i)) QC concurs with assessment	Section 6 (p. 234-237) a.-b.✓	X		
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 §201.6(c)(3)(ii)) QC concurs with assessment	Section 6 (p. 234-237), Section 7 (p. 238-253) P 237-253, 265-267, 293-295, 325-327, 382-384, 423-425.	X		

<p>C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? (Requirement §201.6(c)(3)(iv)); (Requirement §201.6(c)(3)(iii))</p> <p>QC concurs with assessment</p>	<p>Section 6 (p. 234-237), Section 7 (p. 238-253) P237</p>	<p>X</p>	
<p>C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? (Requirement §201.6(c)(4)(ii))</p> <p>QC concurs with assessment</p>	<p>Section 8 (p.254-257) ✓ a.-e. d. Section 7 (P 233-253)</p>	<p>X</p>	

ELEMENT C: REQUIRED REVISIONS

NCEM 1st Review:

C1 – No revisions required.

C2 – Table 5-3 notes 18 of 31 jurisdictions have a floodplain manager. Please provide a statement describing where counties are assuming the floodplain administration duties for the smaller jurisdictions. **Explanation added to page 224.**

C3 – No revisions required.

C4 – Page 2 lists Grifton as a participating jurisdiction within Lenoir County, yet the town is not listed in the mitigation actions on pages 245-247. Grifton is included in the Pitt County listing instead. **Fixed Section 1 and 3; Grifton is now listed under Pitt County throughout the plan.**

C5 – No revisions required.

C6 – No revisions required.

NCEM 2nd Review: No revisions required.

FEMA REQUIRED REVISIONS:

C2.a. The table on page 146 indicates all participating jurisdictions as participants in the NFIP. The NFIP Community Status Book does not indicate the Town of Eureka as a participant. Correctly state the non-participation and describe the reason for non-participation. It is documented that Eureka does not have land in the SFHA on page 145. This may be provided as the reason for non-participation and must be added as such to meet the requirement. Incorrect NFIP participation statements and documentation within various tables throughout the plan, including annexes, need to be corrected. **Table 4.38 lists Initial FIRM dates. A note was added that Eureka does not participate in the NFIP on page 146 and page 223.**

- The plan **must** describe each jurisdiction's participation in the NFIP.

Jurisdictions that are currently not participating in the NFIP and where an FHBM or FIRM has been issued may meet this requirement by describing the reasons why the community does not participate.

***I did find the NFIP participation correctly stated in the Wayne County Annex Table E.16 on page 418 (pdf 444). However, that does not negate the incorrect statements elsewhere in the document. Those will need to be corrected. (emailed to Chris on 8-20-20)

9/18/20 Revision Reviewed. The revision brings the requirement into compliance. Requirement is met.

For additional information, please see Element C, Mitigation Strategy, in the "Local Mitigation Plan Review Guide", October 1, 2011, Pages 22-25 and Task 4 of the Local Mitigation Planning Handbook, March 2013, Pages 4-4 to 4-5.

ELEMENT D. PLAN REVIEW, EVALUATION, AND IMPLEMENTATION (applicable to plan updates only)

<p>D1. Was the plan revised to reflect changes in development? (Requirement §201.6(d)(3))</p> <p>QC concurs with assessment</p>	<p>Section 3 (p. 23-67), Section 4 (p. 68-213; Asset Inventory, Vulnerability Assessment), Annex A-E ✓ (Future Growth and Development Section P 298, 330-339)</p>	<p>X</p>	
<p>D2. Was the plan revised to reflect progress in local mitigation efforts? (Requirement §201.6(d)(3))</p> <p>QC concurs with assessment</p>	<p>Section 2 (p. 15-22)(completed actions), Section 5 (p. 214-233) ✓</p>	<p>X</p>	
<p>D3. Was the plan revised to reflect changes in priorities? (Requirement §201.6(d)(3))</p> <p>QC concurs with assessment</p>	<p>Section 6 (p. 234-237), Section 7 (p. 238-253) ✓</p>	<p>X</p>	
<p>ELEMENT D: REQUIRED REVISIONS</p> <p>NCEM 1st Review: D1 – No revisions required. D2 – No revisions required. D3 – No revisions required.</p> <p>NCEM 2nd Review: No revisions required.</p>			
<p>ELEMENT E. PLAN ADOPTION</p>			
<p>E1. Does the Plan include documentation that the plan has been formally adopted by the governing body of the jurisdiction requesting approval? (Requirement §201.6(c)(5))</p> <p>QC concurs with assessment</p>	<p>Plan will be adopted pending APA letter from FEMA; Adoption resolutions will be added to Section 9</p>	<p>X</p>	
<p>E2. For multi-jurisdictional plans, has each jurisdiction requesting approval of the plan documented formal plan adoption? (Requirement §201.6(c)(5))</p> <p>QC concurs with assessment</p>	<p>Plan will be adopted pending APA letter from FEMA; Adoption resolutions will be added to Section 9</p>		<p>X</p>

ELEMENT E: REQUIRED REVISIONS

NCEM 1st Review: No action at this time.

09-18-20 Prior to review completion adoption documentation was provided by:

Counties: Greene, Jones, Lenoir, Pitt, Wayne.

Cities: Goldsboro, Greenville, Kinston.

Towns: Ayden, Bethel, Farmville, Fountain, Fremont, Grifton, Grimesland, Hookerton, La Grange, Pikeville, Pink Hill, Pollocksville, Snow Hill, Walstonburg, Winterville.

Villages: Simpson, Walnut Creek.

10-08-20 Town of Falkland provided adoption documentation.

11-03-20 Town of Seven Springs provided adoption documentation.

11-12-20 The Towns of Mount Olive and Maysville provided adoption documentation.

11-16-20 Town of Trenton provided adoption documentation.

ELEMENT F. ADDITIONAL STATE REQUIREMENTS (OPTIONAL FOR STATE REVIEWERS ONLY; NOT TO BE COMPLETED BY FEMA)

F1.			
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ELEMENT F: REQUIRED REVISIONS

- Page 2 lists Grifton within Lenoir County, yet throughout mitigation actions in Section 7 of the plan Grifton is discussed as a member of Pitt County. Tables throughout Section 3 also lists Grifton within Lenoir County.

Fixed Section 1 and 3; Grifton is now listed under Pitt County throughout the plan.

- From page 2: "...this plan will be monitored and updated on a routine basis in compliance with the above legislation..." IN compliance should read FOR compliance? Reworded "to comply"

-Page 240, remove 1) from G12 action description. Fixed

NCEM 2nd Review: No revisions required.

SECTION 2: PLAN ASSESSMENT

INSTRUCTIONS: The purpose of the Plan Assessment is to offer the local community more comprehensive feedback to the community on the quality and utility of the plan in a narrative format. The audience for the Plan Assessment is not only the plan developer/local community planner, but also elected officials, local departments and agencies, and others involved in implementing the Local Mitigation Plan. The Plan Assessment must be completed by FEMA. The Assessment is an opportunity for FEMA to provide feedback and information to the community on: 1) suggested improvements to the Plan; 2) specific sections in the Plan where the community has gone above and beyond minimum requirements; 3) recommendations for plan implementation; and 4) ongoing partnership(s) and information on other FEMA programs, specifically RiskMAP and Hazard Mitigation Assistance programs. The Plan Assessment is divided into two sections:

1. Plan Strengths and Opportunities for Improvement
2. Resources for Implementing Your Approved Plan

Plan Strengths and Opportunities for Improvement is organized according to the plan Elements listed in the Regulation Checklist. Each Element includes a series of italicized bulleted items that are suggested topics for consideration while evaluating plans, but it is not intended to be a comprehensive list. FEMA Mitigation Planners are not required to answer each bullet item, and should use them as a guide to paraphrase their own written assessment (2-3 sentences) of each Element.

The Plan Assessment must not reiterate the required revisions from the Regulation Checklist or be regulatory in nature, and should be open-ended and to provide the community with suggestions for improvements or recommended revisions. The recommended revisions are suggestions for improvement and are not required to be made for the Plan to meet Federal regulatory requirements. The italicized text should be deleted once FEMA has added comments regarding strengths of the plan and potential improvements for future plan revisions. It is recommended that the Plan Assessment be a short synopsis of the overall strengths and weaknesses of the Plan (no longer than two pages), rather than a complete recap section by section.

Resources for Implementing Your Approved Plan provides a place for FEMA to offer information, data sources and general suggestions on the overall plan implementation and maintenance process. Information on other possible sources of assistance including, but not limited to, existing publications, grant funding or training opportunities, can be provided. States may add state and local resources, if available.

A. Plan Strengths and Opportunities for Improvement

This section provides a discussion of the strengths of the plan document and identifies areas where these could be improved beyond minimum requirements.

Element A: Planning Process

Plan Strengths

The

- Planning committee members included citizen/stakeholder from several participating jurisdictions.
- The planning process is the cornerstone for the development of the hazard mitigation plan. Each section, from beginning to end, is built upon to provide a cohesive and substantial plan.
- The plan draws from each of the community's plans to document the community's sustained efforts to incorporate hazard mitigation principles and practices into routine government activities and functions.

Element B: Hazard Identification and Risk Assessment

Plan Strengths

- The risk assessment is the groundwork for the development of mitigation measures. The plan draws from each of the community's capabilities to document the community's sustained efforts to incorporate hazard mitigation principles and practices into routine government activities and functions thus establishing a successful and sustainable local hazard mitigation program.
- A capability assessment is conducting using a survey to identify potential areas to improve capabilities. It may also reveal gaps, weaknesses, or conflicts as opportunities for specific actions to be developed as a mitigation strategy.

Opportunities for Improvement

The HMP Committee needs to review the document for correctness and completeness prior to submission for formal review by AEMA and FEMA.

Annex A the page numbers are off, page 276 is followed by page 262, this makes it difficult to note the page location for information found to meet an Element.

Page 210 states: *"The following table summarizes flood hazard risk by jurisdiction."* However, the table is in the wildfire section and the description is wildfire.

In many cases the location and in some instances the extent is provided in county-wide maps which do not always identify all the participating jurisdictions. The participating jurisdictions are either missing or not legible. The maps should consistently display all participating jurisdictions.

Documenting previous occurrences at the county level, allows for more detailed information that can be brought down to the community level, rather than at the regional level.

Element C: Mitigation Strategy

Plan Strengths

- A capability assessment was conducted for each participating jurisdiction which documented the perceived ability of the participating jurisdictions to successfully implement mitigation actions. Areas of concentration reviewed include plans, ordinances, codes and programs, administrative and technical, fiscal, education and outreach, mitigation, and political. Knowing the local capabilities assist with determining the likelihood of mitigation success and/or limitations and potential hinderances.

- The proposed mitigation strategies are specific, and actionable. It is evident that mitigation actions; including those carried over from the previous plan, were evaluated and re-prioritized.
- Including mitigation categories such as prevention, property protection, etc. for the mitigation actions allows local officials to seek out a specific category that may fit with similar efforts in other local plans and programs.

Element D: Plan Update, Evaluation, and Implementation (*Plan Updates Only*)

Opportunities for Improvement

The Neuse Rive Region provides Capability Assessment and describes building codes including the Building code Effective Grading Schedule program. The program includes a grade range from 1 to 10 indicating the level of commitment to building code enforcement. ***Suggestion: Include each participating jurisdiction's grade as an opportunity for improvement, it may also assist with determining where exemplary commitment in building code enforcement exists.***

B. Resources for Implementing Your Approved Plan

- **Local Mitigation Planning Handbook**
This Handbook provides guidance to local governments on developing or updating hazard mitigation plans to meet the requirements under the Code of Federal Regulations (CFR) Title 44 – Emergency Management and Assistance §201.6.
Use the Local Plan Guide and Handbook in tandem to understand technical requirements
<http://www.fema.gov/library/viewRecord.do?fromSearch=fromsearch&id=7209>
- **Integrating Mitigation Strategies with Local Planning**
This resource provides practical guidance on how to incorporate risk reduction strategies into existing local plans, policies, codes, and programs that guide community development or redevelopment patterns.
<http://www.fema.gov/library/viewRecord.do?id=7130>
- **Mitigation Ideas**
Communities can use this resource to identify and evaluate a range of potential mitigation actions for reducing risk to natural hazards and disasters.
<http://www.fema.gov/media-library/assets/documents/30627?id=6938>
- **Risk MAP Program:**
This resource provides an introduction to Risk MAP and information about the products Risk MAP offers to better understand flood risk. This information can help planning to reduce flood risk and communicate with residents.
<https://www.fema.gov/risk-map-program-information-community-officials>

**SECTION 3:
MULTI-JURISDICTION SUMMARY SHEET (OPTIONAL)**

INSTRUCTIONS: For multi-jurisdictional plans, a Multi-jurisdiction Summary Spreadsheet may be completed by listing each participating jurisdiction, which required Elements for each jurisdiction were ‘Met’ or ‘Not Met,’ and when the adoption resolutions were received. This Summary Sheet does not imply that a mini-plan be developed for each jurisdiction; it should be used as an optional worksheet to ensure that each jurisdiction participating in the Plan has been documented and has met the requirements for those Elements (A through E).

MULTI-JURISDICTION SUMMARY SHEET												
#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requirements
1	Greene County	County					Y	Y	Y	Y	Y	
2	Hookerton	Town					Y	Y	Y	Y	Y	
3	Snow Hill	Town					Y	Y	Y	Y	Y	
4	Walstonburg	Town					Y	Y	Y	Y	Y	
5	Jones County	County					Y	Y	Y	Y	Y	
6	Maysville	Town					Y	Y	Y	Y	Y	
7	Pollocksville	Town					Y	Y	Y	Y	Y	
8	Trenton	Town					Y	Y	Y	Y	Y	
9	Lenoir County	County					Y	Y	Y	Y	Y	

MULTI-JURISDICTION SUMMARY SHEET

#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requirements
10	La Grange	Town					Y	Y	Y	Y	Y	
11	Kinston	City					Y	Y	Y	Y	Y	
12	Pink Hill	Town					Y	Y	Y	Y	Y	
13	Pitt County	County					Y	Y	Y	Y	Y	
14	Ayden	Town					Y	Y	Y	Y	Y	
15	Bethel	Town					Y	Y	Y	Y	Y	
16	Falkland	Town					Y	Y	Y	Y	Y	
17	Farmville	Town					Y	Y	Y	Y	Y	
18	Fountain	Town					Y	Y	Y	Y	Y	
19	Greenville	City					Y	Y	Y	Y	Y	
20	Grifton	Town					Y	Y	Y	Y	Y	
21	Grimesland	Town					Y	Y	Y	Y	Y	
22	Simpson	Village					Y	Y	Y	Y	Y	
23	Winterville	Town					Y	Y	Y	Y	Y	

MULTI-JURISDICTION SUMMARY SHEET

#	Jurisdiction Name	Jurisdiction Type (city/borough/ township/ village, etc.)	Plan POC	Mailing Address	Email	Phone	Requirements Met (Y/N)					
							A. Planning Process	B. Hazard Identification & Risk Assessment	C. Mitigation Strategy	D. Plan Review, Evaluation & Implementation	E. Plan Adoption	F. State Requirements
24	Wayne County	County					Y	Y	Y	Y	Y	
25	Eureka	Town					Y	Y	Y	Y		
26	Fremont	Town					Y	Y	Y	Y	Y	
27	Goldsboro	City					Y	Y	Y	Y	Y	
28	Mount Olive	Town					Y	Y	Y	Y	Y	
29	Pikeville	Town					Y	Y	Y	Y	Y	
30	Seven Springs	Town					Y	Y	Y	Y	Y	
31	Walnut Creek	Village					Y	Y	Y	Y	Y	

Appendix B Planning Process Documentation

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 – Project Kick-Off	<ol style="list-style-type: none"> 1) Introduction to DMA, CRS, and FMA requirements and the planning process 2) Review of HMPC responsibilities and the project schedule. 	February 7, 2019	Pitt County Commissioners’ Auditorium 1717 W. 5 th Street Greenville, NC
HMPC Mtg. #2	<ol style="list-style-type: none"> 1) Review and update plan goals 2) Brainstorm a vision statement 3) Report on status of actions from the 2015 plan 4) Complete the capability self-assessment 	February 26, 2019	Kinston Community Center 2602 W. Vernon Ave Kinston, NC
HMPC Mtg. #3	<ol style="list-style-type: none"> 1) Review Draft Hazard Identification & Risk Assessment (HIRA) 2) Draft objectives and Mitigation Action Plans 	July 25, 2019	Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC
HMPC Mtg. #4	<ol style="list-style-type: none"> 1) Review the Draft Hazard Mitigation Plan 2) Solicit comments and feedback 	March 9, 2020	Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC

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 Agendas, Minutes, and Sign-in Sheets

HMPC Meeting 1: February 7, 2019

Agenda

Neuse River Basin Regional Hazard Mitigation Plan
Hazard Mitigation Planning Committee Meeting
February 7, 2019, 2:00 PM
Pitt County Commissioners' Auditorium

- Introductions
- Project Overview
 - Participants
 - What is Hazard Mitigation?
 - Requirement for Update
 - Trends in Disasters
 - Disaster Mitigation Act of 2000
 - Federal and State Requirements
 - Planning Requirements
 - Planning Process Review
 - Scope of Work
 - Risk Management Tool (RMT)
- Project Schedule
- Plan Website
- Next Steps
 - Review and Update Mitigation Goals & Objectives
 - Review Existing Mitigation Projects
 - Complete Plan Survey
 - Share Link to Plan Website on Local Community Websites
- Questions

Neuse River Basin Regional Hazard Mitigation Plan
Hazard Mitigation Planning Committee Meeting
Tuesday, February 7, 2019-2:00 PM
Meeting Minutes

Landin Holland called the meeting to order at 2:00 pm in the Pitt County Commissioners Chambers.

Present

Refer to the attached sign-in sheet.

Introduction

Mr. Holland introduced himself and provided an explanation of the overall project, as well as the project team that will be working through the Planning Process.

Presentation

Mr. Holland provided a presentation that detailed project partners, project schedule, and plan content. This presentation has been attached as a component of these minutes.

Questions

Several questions were asked regarding the makeup/composition of the Hazard Mitigation Planning Committee at the County and municipal level. Mr. Holland advised everyone that there needed to be a primary and secondary staff member for non-Community Rating System (CRS) communities. Mr. Holland went on to say that local units of government that are participants in the CRS program must identify the primary and secondary staff members, as well as two citizen stakeholders. The defined stakeholders should not be elected officials.

Adjourn

There being no further business to conduct, Mr. Holland adjourned the meeting at 3:20 PM.

Neuse River Basin Regional Hazard Mitigation Plan
 Mitigation Advisory Committee Kick-Off Meeting
 Thursday, February 7, 2019, 2:00 PM

	Name	Organization	Phone	E-Mail
1.	Jamie Royell	Town of Mount Olive	919 580 2803	jroyell@townofmountolive.nc.gov
2.	Charles Brown	TOWN OF MOUNTAIN	919 738 1992	manager@townofmountain.nc.gov
3.	Gloria Crowder	Athens Regional	(410) 340-6445	gloria@athensregional.com
4.	Nathan Rhine	TOWN OF LA GRANGE	252-566-3186	NATHAN@LAZRANHENC.COM
5.	Samuel Koroogay	Lenoir County ES	252-361-1788	skoroogay@co.lenoir.nc.us
6.	Jeri King	Lenoir County ES	252-521-3655	jking@co.lenoir.nc.us
7.	Carol Sykes	Multiple Towns of Lenoir	252-568-3445	seawater.carol@gmail.com
8.	KIMBERLY MITCHELL	TOWN OF PINK HILL	252-568-3181	kmitche@townofpinkhill.com
9.	Trinity C. Kennedy	Town of Pink Hill	252-568-0690	trinityc.kennedy@yahoo.com
10.	Tim Ake	Jones County	252-665-3281	tpike@jonescounty.nc.gov
11.	Joseph Noble	Lenoir County	252-560-1745	josephnoble515@gmail.com
12.	Justin Tighman	Lenoir County	252-521-9077	justintighman@outlook.com
13.	Ronald Turner	TOWN OF WALSTONBURG	252-753-5667	turner@walstonburgmail.com
14.	Adam Short	City of Kinston	252-939-3269	adam.short@ci.kinston.nc.us
15.	Damien Locklear	City of Kinston	252-939-3222	damien.locklear@ci.kinston.nc.us
16.	Justin Oakes	Town of Farmville	252-753-6720	joakes@farmville-nc.gov
17.	Berry Gray	Wayne County	919-731-1650	berry.gray@waynecountygov.com
18.	Anthony Cape	Wayne County	919-731-1650	anthony.cape@waynecountygov.com
19.	Bryan Jones	Town of Winterville	252-215-2558	bryan.jones@winterville-nc.com
20.	Mark Nottingham	PIH County	252-902-3258	mark.nottingham@pittcountync.gov

Neuse River Basin Regional Hazard Mitigation Plan
Mitigation Advisory Committee Kick-Off Meeting

Thursday, February 7, 2019, 2:00 PM

21.	Brian Silva	Town of Grifton	252-917-9708	bsilva@grifton.com
22.	MARK LENZ	AMERICAN RED CROSS	252-414-5185	MARK.LENZ@REDCROSS.ORG
23.	Letha Hines	Town of Fountain	919-744-2881	TOFCleik2001@aol.com
24.	Robert Parchman	Walnut Creek	919-776-9687	Robert.Parchman@walnutcreek.nc.gov
25.	Daryl Norris	City of Greenville	252-329-4350	dnoorris@greenville.nc.gov
26.	Billy Merritt	City of Greenville	252-729-4478	BMEERRIT@GREENVILLE.NC.GOV
27.	Ann Maxwell	City of Greenville	252-531-4426	annmax63@gmail.com
28.	Berry Anderson	GREENE COUNTY EMERGENCY SERVICES	252-714-0626	Berry.Anderson@greencounty.nc.gov
29.	Toedl Whaley	Town of Snow Hill	252-560-5949	whaley@snowhillnc.com
30.	Tyler Shirley	Town of Hookerton	252-531-3780	hookertoncar32@gmail.com
31.	JAMES RHODES	PITT COUNTY	252-902-3276	james.rhodes@pittcountync.gov
32.	Stephen Smith	Town of Ayden	252-481-5827	SSmith@ayden.com
33.	Garrison Coburn	Pitt County	252-902-2010	garrisoncoburn@pittcountync.gov
34.	Jacazza Jones	NCEM Hazard Mit	919-825-2592	jacazza.jones@ncdps.gov
35.				
36.				
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HMPC Meeting 2: February 26, 2019

Agenda

Neuse River Basin Regional Hazard Mitigation Plan
Hazard Mitigation Planning Committee Meeting
February 26, 2019, 2:00 PM
Kinston Community Center

- Participants/Attendance
- Community Rating System
 - What is CRS?
 - CRS in Neuse River Basin Region
 - CRS Goals
- Mitigation Goals
 - Existing Goals from 2015 Plan
 - Recommended Revisions
 - Recommended Goals
- Update Mitigation Strategies
 - Existing Mitigation Strategies
 - Mitigation Action Reporting Form
- Community Capability Assessment
- Project Schedule
- Housekeeping
- Next Steps
 - Complete strategy exercise by March 26, 2019
 - Review and return capability assessment by March 26, 2019
- Questions

**Neuse River Basin Regional Hazard Mitigation Plan
Hazard Mitigation Planning Committee Meeting
Tuesday, February 26, 2019-2:00 PM
Meeting Minutes**

Landin Holland called the meeting to order at 2:00 PM at the Kinston Community Center.

Present

Refer to the attached sign in sheet.

Introduction

Mr. Holland introduced himself and provided an overview of the topics to be covered at the second meeting.

Presentation

Mr. Holland provided a presentation that focused on the community's participation in the planning process. In particular, Mr. Holland discussed a review of mitigation strategies and county/municipal capability outlined in the 2015 Plan at the local level. This presentation has been attached as a component of these minutes.

Questions

Mr. Holland was asked if all communities should provide a status for each existing strategy. Mr. Holland explained to the group that the County will provide the status for strategies that affect all communities. He went on to state that if there were strategies specific to a certain local jurisdiction, then that community should assign status and fill out a strategy worksheet, if a respective strategy is going to be maintained within the current update.

Adjourn

There being no further business to conduct, Mr. Holland adjourned the meeting at 3:05 PM.

Neuse River Basin Regional Hazard Mitigation Plan
 Hazard Mitigation Planning Committee Meeting #2

Tuesday, February 26, 2019, 2:00 PM

	Name	Organization	Phone	E-Mail
1.	Erin Lambert	Town of Mt. Olive	919-658-9538 ext. 111	inspections@townofmountolive.nc.gov
2.	Jamiriz Royal	"	919 583 2803	jamiriz@townofmountolive.nc.gov
3.	Brian Silva	Town of Grifton	252 917 9708	bsilva@grifton.com
4.	STONEY SLOAN	WALNUT CREEK	919 394 7366	stoney.sloan@suddenlink.net
5.	Craig Bowen	Walnut Creek	919-718-6373	CBowen@heraldoffice.com
6.	Robert Parchman	Walnut Creeke	919-718-9697	robert.parchman@walnutcreek.nc.gov
7.	Dennis Owens	Framont Twp	919-242-5151	owens.dennis@ncmail.com
8.	Justin Oakes	Town of Farmville	252-753-6720	joakes@farmville.nc.gov
9.	David Hoogins	Town of Farmville	252-753-6700	dhoogins@farmville.nc.gov
10.	Gloria Crowder	Wayne County	410-340-6445	gloria.crowder@gmail.com
11.	Daryl Norris	City of Greenville	252-329-4350	darryl.norris@greenville.gov
12.	Bryon Jones	Town of Winterville	252-215-2358	bryon.jones@winterville.com
13.	Jones Hill	Pitt County	252-902-3279	jones.hill@pittcounty.gov
14.	Cam Coburn	Pitt County	252-902-2010	cam.coburn@pittcounty.gov
15.	Mark Nottingham	Pitt County	252-902-3258	mark.nottingham@pittcounty.gov
16.	Renee Locklear	Greene County - Snow Hill	252-253-8300 252-747-3414	locklear@snowhill.nc.gov
17.	Todd G. Whaley	Greene County - Snow Hill	747-3414 252-560-5949	whaley@snowhill.nc.gov
18.	Tyler S. Shirley	Greene County - Hookerton	252-747-3816 252-531-3780	hookertoncar3@gmail.com
19.	BORRY ANDERSON	GREEN COUNTY - ES	252-747-2544 252-714-0626	banderson@greencountync.gov
20.	Tim Aike	Greene County - Holly Springs	252-665-3281	tpike@jonescounty.nc.gov

Neuse River Basin Regional Hazard Mitigation Plan
 Hazard Mitigation Planning Committee Meeting #2

Tuesday, February 26, 2019, 2:00 PM

21.	Samuel Kornegay	Lenoir County	252-361-1788	skornegay@co-1encn.nc.us
22.	Damien Locklear	Kingston Fire + Rescue	252-939-6173	damien.locklear@kingston.nc.us
23.	Nathan Rhine	Town of LaGrange	252-566-3186	NATHAN@LAAGRANGE.COM
24.	JEFF HUSS	CITY OF GREENVILLE	252-329-4486	JHUSS@GREENVILLE.GOV
25.	Timothy C. Kennedy	Town of Pink Hill	252-560-0670	timmyc.kennedy@tyshar.com
26.	Adam Short	Cities of Kingston	252-939-3264	adam.short@ci.kinston.nc.us
27.	Steve Harrell	Town of Ayden	252-481-5826	sharrell@ayden.com
28.	Berry Gray	Wayne County	919-988-1650	berry.gray@wayne.gov.com
29.	Anthony Cape	Wayne County	919-731-1650	anthony.cape@wayne.gov.com
30.	Letha Hines	Town of Fountain	252-749-2881	TDFCI@k3001@aol.com
31.				
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HMPC Meeting 3: July 25, 2019

Agenda

Neuse River Basin Regional Hazard Mitigation Plan
Hazard Mitigation Planning Committee Meeting
July 25, 2019, 3:00 PM
Lenoir County Cooperative Extension

- Participants/Attendance
- Project Update
 - Schedule
 - Participation
 - Repetitive Loss Data
- Mitigation Goals
 - Review of Goals and Objectives
 - Overview of Draft Mitigation Strategies
 - Next Steps
- Presentation of Hazard Identification and Risk Assessment (HIRA)
 - Hazard identification
 - Asset Inventory
 - Hazard Profile
- Housekeeping
- Public Comment
- Questions

Neuse River Basin Regional Hazard Mitigation Plan

Hazard Mitigation Planning Committee Meeting

Thursday, July 25, 2019-3:00 PM

Meeting Minutes

Landin Holland called the meeting to order at 3:00 pm in the Lenoir County Cooperative Extension.

Present

Refer to the attached sign in sheet.

Introduction

Mr. Holland introduced himself and provided an update regarding the project status, and attendance at the previous meetings.

Presentation

Mr. Holland provided a presentation that detailed project elements (see attached). This discussion provided a review of the Plan's existing as well as updated strategies. Mr. Holland requested that each jurisdiction review the strategies for accuracy and completeness. In particular, communities were requested to provide an accurate status, as well as an estimate of implementation cost. Projected cost can be based on either an estimate, or annual budget figures; however, if the task is carried out by staff then "staff time" can be stated. Mr. Holland then provided an explanation of the Hazard Identification Risk Analysis developed through the North Carolina Department of Public Safety's Risk Management Tool (RMT). Communities were asked to review this information in an effort to ensure accuracy regarding each community's potential vulnerability.

Questions

There were no question following the presentation.

Adjourn

There being no further business to conduct, Mr. Holland adjourned the meeting at 4:00 PM.

APPENDIX B: PLANNING PROCESS DOCUMENTATION

Neuse River Basin Regional Hazard Mitigation Plan
 Hazard Mitigation Planning Committee Meeting #3

Thursday, July 25, 2019, 3:00 PM

Name	Organization	Phone	E-Mail
Jacazza Jones	NCEM - Mitigation	919 825 2592	jacazza.jones@ncdps.gov
Brack Kearney	City of Kingston EB	252-361-1891	Brack.Kearney@ci.kinston.nc.us
Samuel Kearney	Lenoir County	252-361-1788	skearney@co.lenoir.nc.us
Jenni King	Lenoir County	252-521-3655	jking@co.lenoir.nc.us
Joseph Noble	Lenoir County	252-560-1745	joseph.noble@co.lenoir.nc.us
Brian Silva	Town of Grifton	252-917-9708	bsilva@grifton.com
Beery Anderson	GREENE COUNTY	252-714-0626	beery.anderson@GREENECOUNTY.nc.gov
David Lancaster	Greene County	919-920-6087	David.Lancaster@GREENECOUNTY.nc.gov
Tyler Shirley	Town of Hookerton	952-531-3780	hookertoncar3@gmail.com
Donna Cunningham	CITY OF GREENVILLE	252-329-4512	DCUNNINGHAM@GREENVILLE.nc.gov
Nathan Fluke	Town of LaGrange	252-566-3186	NATHAN@LAGRANGE.nc.gov

HMPC Meeting 4: March 9, 2020

Agenda

Neuse River Basin Regional Hazard Mitigation Plan
Hazard Mitigation Planning Committee Meeting
March 9, 2020, 3:30 PM
Lenoir County Cooperative Extension

- Planning Process
- Structure of the Plan
- Community Annexes
- Hazards Profiled
- Goals and Objectives
- Mitigation Action Plans
- Plan Implementation and Maintenance
- Certification Compliance
- Completing the Planning Process
- Next Steps
 - Review the Draft Plan
 - Provide Comments
- Questions

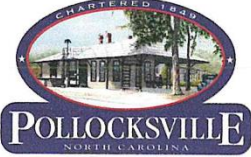
APPENDIX B: PLANNING PROCESS DOCUMENTATION

Neuse River Basin Regional Hazard Mitigation Plan
 Hazard Mitigation Planning Committee Meeting #4
 Monday, March 9, 2020, 3:30 PM

Name	Organization	Phone	E-Mail
Daryl Norris	City of Greenville	252-329-4350	dorris@greenville.nc.gov
Brian Meekin	City of Cokerhams	252-329-4478	BMeekin@Cokerhams.nc.gov
Tony Parker	CITY OF GREENVILLE, PLANNING	252-329-4116	TParker@GREENVILLE.NC.GOV
Roger Dail	Jones County	252-361-1899	rdail@jonescounty.nc.gov
Jenn King	Lenoir County, E.S.	252-521-3655	jking@colenoir.nc.us
Timothy C. Kennedy	Town of P. R. H. II	252-560-0690	timmykenned4@yahoo.com
Samuel Kameggy	Lenoir County ES	252-361-1788	skameggy@colenoir.nc.us
Beck Keenan	City of Kinston	252-361-1891	Beck_Keenan@ci.kinston.nc.us

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.

<p><u>Mayor</u> James V. Bender, Jr.</p>	 <p>POLLOCKSVILLE NORTH CAROLINA</p>	<p><u>Town Clerk & Tax Collector</u> Amanda Howard</p>
<p><u>Commissioners</u> Samuel F. Lincoln Nancy Barbee Michael J. Duffy Sherry W. Henderson Ellis Banks</p>	<p>103 Main Street P.O. Box 97, Pollocksville, NC 28573 252-224-9831 Fax 252-224-0423 admin@townofpollocksville.com</p>	<p><u>Finance Officer</u> Leighann Morgan</p> <p><u>Public Works</u> Robbie Tew</p>

February 1, 2019

Mr. Landin Holland, AICP, Senior Planner
Holland Consulting Planners, Inc.
3329 Wrightsville Avenue, Suite F
Wilmington, NC 28403

Dear Mr. Holland:

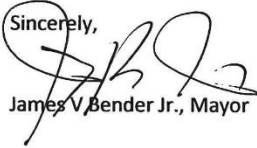
Please be advised that the Town of Pollocksville, Jones County, intends to participate in, and then adopt and implement the upcoming revision to the Neuse River Basin Regional Hazard Mitigation Plan. We are reaping the benefits now as a result of our previous commitment to the regional plan now in effect.

Due to our limited staff and the rather overwhelming nature of Hurricane Florence against our town, we are struggling to attend all the various meetings while dealing with various FEMA and insurance officials to address recovery in our town. The Jones County Emergency Services Director has agreed to serve as our lead representative on the MAC. We will make every effort to participate along with Jones County, and will monitor the process as well as post the URL for the plan update on the Town's website.

Currently, all law enforcement for the Town of Pollocksville is contracted with the Jones County Sheriff's Office. Additionally, the Town maintains a close working relationship with county officials in the area of public utilities. We feel that Jones County can well represent the Town's interest in process.

If you have questions or if we provide additional information, please do not hesitate to contact me.

With all good wishes,

Sincerely,

James V. Bender Jr., Mayor

cc: Franky Howard
Jones County Manager

TOWN OF BETHEL NORTH CAROLINA



Mr. Landin Holland
Senior Planner
Holland Consulting Planners, Inc.
3329 Writsville Avenue, Suite F
Wilmington, NC 28403

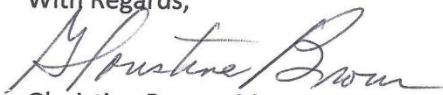
Dear Mr. Holland,

This letter provides documentation of the Town of Bethel participation in the Neuse River Basin Regional Mitigation Planning Process. The following describes past, present, and future participation efforts.

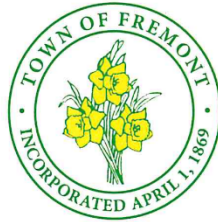
- Continued coordination with Pitt County is in place to ensure relevant information is communicated accordingly.
- A review of plan elements has and continues to be a priority.
- The community's elected body was informed of the planning process.
- Upon completion of the process the intent of our community will be to implement necessary action upon adoption of the plan.

If you have any further questions or directives regarding this matter please feel free to contact me.

With Regards,


Gloristine Brown, Mayor
Town of Bethel

Town of Bethel • North Carolina
7439 Main Street • PO Box 337 • Bethel, NC • 27812
Phone (252) 818-0891 • Fax (252) 818-0894 • www.bethelnc.org



The Daffodil Town

November 13, 2019

Landin Holland
Senior Planner
3329 Wrightsville Avenue. Suite F
Wilmington, NC 28403

Dear Ms. Anderson:

Subject: Hazard Mitigation Plan for Fremont, NC

I, Mayor Darron Flowers representing the Town of Fremont, attended the first meeting held to begin the process of updating the Neuse River Basin Regional Hazards Mitigation Plan. At the meeting we were told that there was no need for the smaller municipalities to attend the meetings as the bulk of the work would be done by the Mitigation staff of the County in which you are located. In the past the plan also covered the County and all municipalities.

After reviewing the Web page and reviewing the existing plan for Wayne County and Fremont we feel comfortable that we, as a Town, will benefit from the study and the revisions that will be implemented. As question arise we will have this document to respond with.

Sincerely,

A handwritten signature in black ink that reads "Darron Flowers".

Darron Flowers, Mayor

CC: Barbara Aycock, Town Administrator
Tim Howell, Public Works
Shannon Daly, Town Clerk
File

POST OFFICE BOX 4 | 120 EAST MAIN STREET | FREMONT, NC 27830
O: 919-242-5151 | F: 919-242-7212

www.fremontnc.gov



Town of Pikeville

Landin Holland MPA, AICP, CZO
Senior Planner
Holland Consulting Planners, Inc.
3329 Wrightsville Ave., Suite F
Wilmington, NC 28403

Mr. Holland,


This letter is in reference to an email I received from Cindy Anderson dated November 6, 2019, in regards to the Town of Pikeville and the Neuse River Basin Regional Hazard Mitigation Plan.

The Town of Pikeville has participated in the Neuse River Basin Regional Hazard Mitigation Planning Process in the past and is still an active participant. Due to an unforeseen medical leave with personnel in our town hall office, we were short staffed and I was unable to leave the office a large portion of this time. With that being said, the town does have frequent contact with the County Planning/Emergency Management personnel and remains in good standing with the county Emergency Management Department.

The town has recently reviewed the project website at <http://www.neuseriverhmp.com/> and familiarized staff and Mayor/Board of Commissioners with the current plan elements.

The Town of Pikeville Mayor and Board of Commissioners will review the current plan elements and following an adoption letter from FEMA, will adopt the plan process during a Board of Commissioners Meeting. The Town of Pikeville has all intention of implementing the plan elements following the adoption by the Board of Commissioners.

Regards,


Charles T. Hooks, Mayor

P.O. Box 9 • Pikeville, North Carolina 27863 • (919) 242-5126 • Fax (919) 242-4186

PLANNING STEP 2: INVOLVE THE PUBLIC

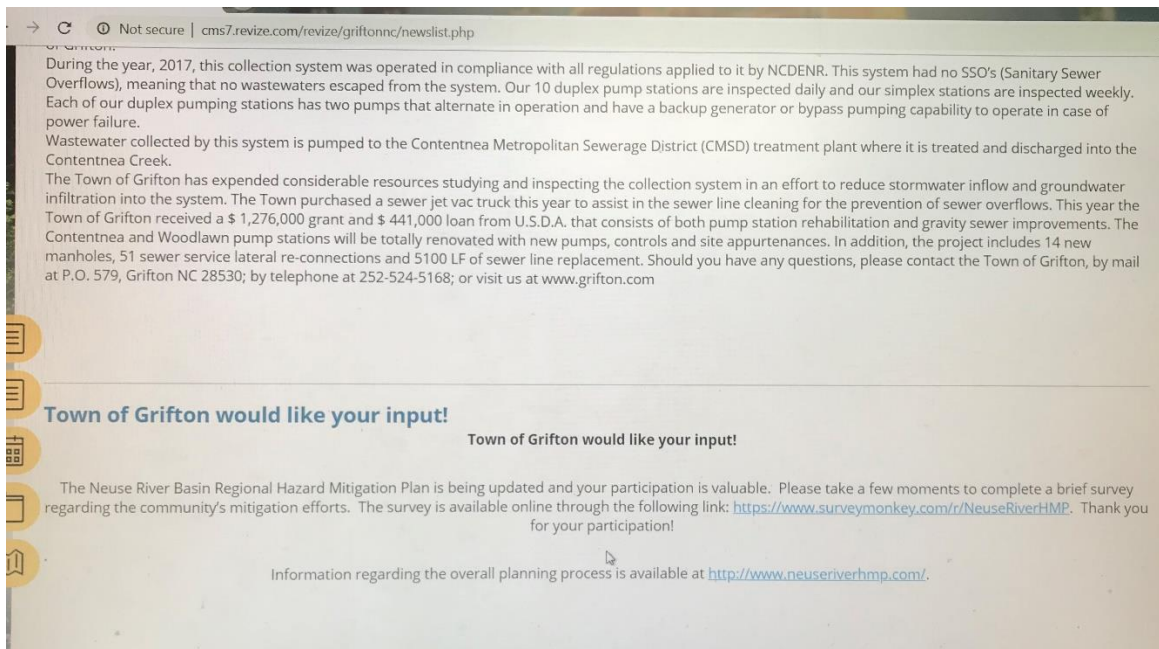
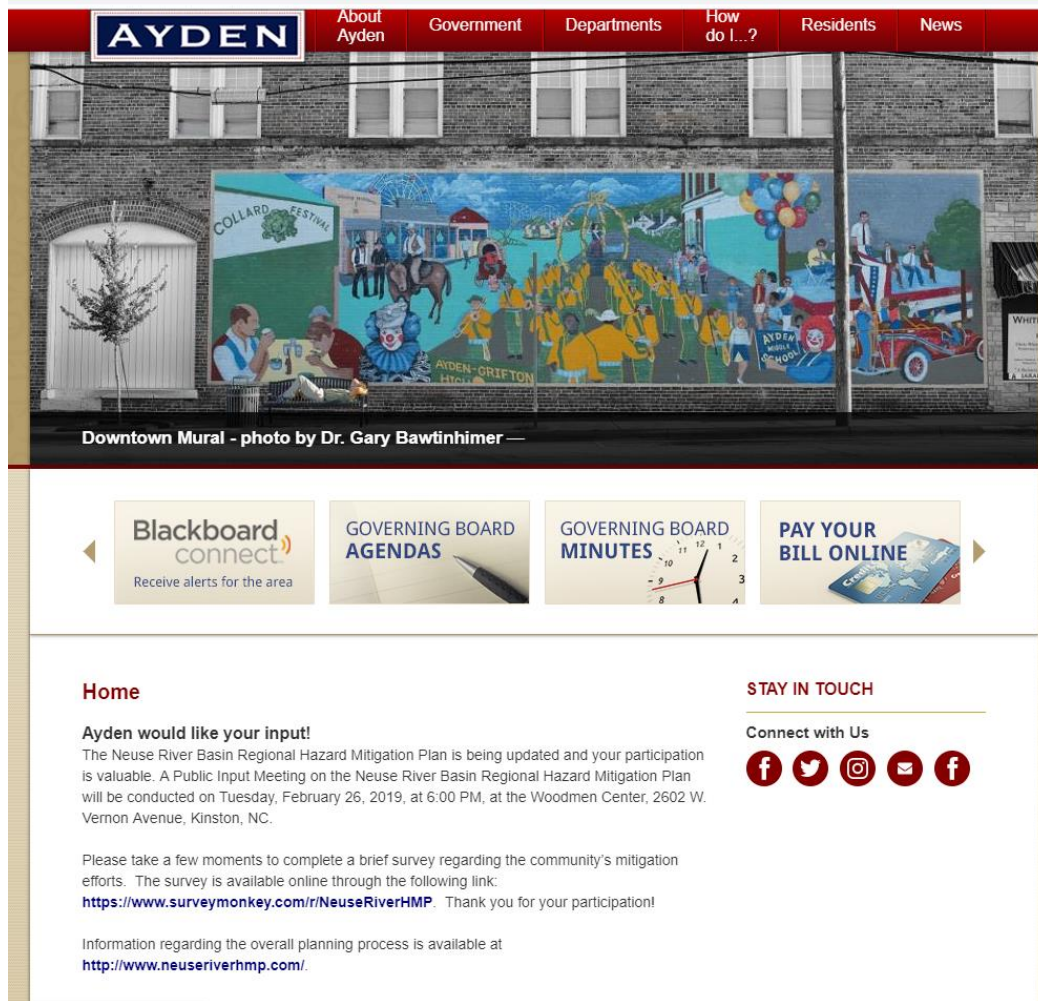
Table B.2 – Public Meeting Topics, Dates, Locations

Meeting Title	Meeting Topic	Meeting Date	Meeting Location
Public Meeting #1	<ol style="list-style-type: none"> 1) Introduction to DMA, CRS, and FMA requirements and the planning process 2) Review of HMPC responsibilities and the project schedule. 	February 26, 2019	Woodmen Center 2602 W. Vernon Ave Kinston, NC
Public Meeting #2	<ol style="list-style-type: none"> 1) Review “Draft” Hazard Mitigation Plan 2) Solicit comments and feedback 	March 9, 2020	Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC

Public Meeting Agendas, Minutes, Sign-in Sheets, and Announcements

Public Meeting 1: February 26, 2019

There were no attendees at this meeting.




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Main City Calendar

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Public Input Meeting - Neuse River Basin Hazard Plan

Date: 02/26/2019 6:00 PM
Location: Woodmen Center
2602 W. Vernon Avenue
Kinston, North Carolina 28590

 Add to my Calendar

City of Greenville would like your input!

The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. Please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link:
<https://www.surveymonkey.com/r/NeuseRiverHMP>

Thank you for your participation!

Information regarding the overall planning process is available at <http://www.neuseriverhmp.com/>.

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FEBRUARY, 2019

26 FEB NEUSE RIVER HAZARD MITIGATION PLAN PUBLIC INPUT MEETING

EVENT DETAILS

Farmville would like your input!

The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. Please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link: <https://www.surveymonkey.com/r/NeuseRiverHMP>. Thank you for your participation!

Information regarding the overall planning process is available at <http://www.neuseriverhmp.com/>.

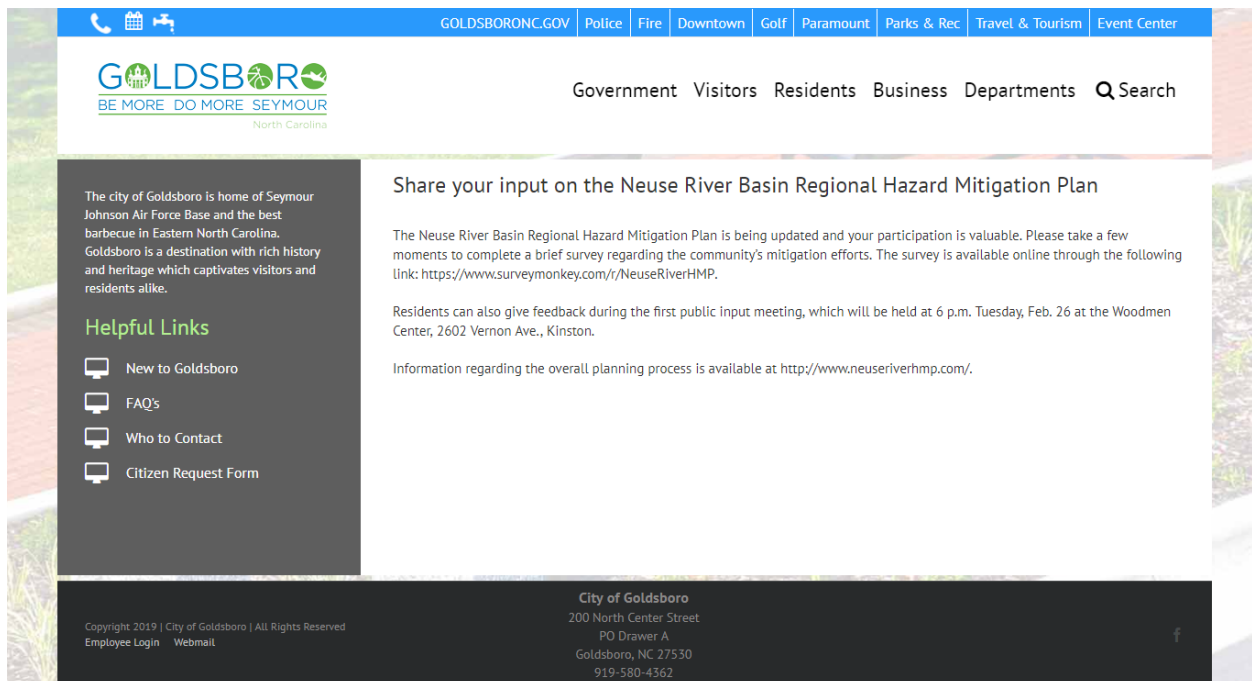
less

TIME

(Tuesday) 6:00 pm - 8:00 pm

LOCATION


Woodmen Center
2602 W. Vernon Avenue, Kinston, NC



APPENDIX B: PLANNING PROCESS DOCUMENTATION

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News & Notices

Posted on: February 13, 2019

Neuse River Basin Hazard Mitigation

The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. The first **Public Input Meeting** will be conducted Tuesday, February 26, 2019 at 6:00 PM at the Woodmen Center, 2602 W. Vernon Avenue, Kinston, NC.

Additionally, please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link: <https://www.surveymonkey.com/r/NeuseRiverHMP>. Thank you for your participation!

Information regarding the overall planning process is available at <http://www.neuseriverhmp.com/>.

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APPENDIX B: PLANNING PROCESS DOCUMENTATION

2/26/2019 Neuse River Basin Hazard Mitigation Planning Committee (HMPC) | Town of Hookerton, North Carolina
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Great Neighbors when you don't.*

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Churches (/churches)
Community Calendar (/community-calendar)
Upcoming Event (/upcoming-event)
FEMA (/fema)
Neuse River Basin Hazard Mitigation Planning Committee (HMPC) (/fema/neuse-river-basin-hazard-mitigation-planning-committee-hmpc)
Help our community (/help-our-community)

FEMA

Welcome To HOOKERTON

Neuse River Basin Hazard Mitigation Planning Committee (HMPC)

The **Neuse River Basin Hazard Mitigation Planning Committee (HMPC)** will conduct a **PUBLIC INPUT MEETING on Tuesday, February 26, 2019, at 6:00 p.m.**, at the Woodmen Center - located at 2602 W. Vernon Avenue, Kinston, NC. This meeting is open for all who wish to attend.

More information may be obtained on the Regional HMP website @ (<http://www.neuseriverhmp.com/>)

Town of Pink Hill North Carolina

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Local Weather
Today: P Cloudy 60°/33°
Tomorrow: P Cloudy 63°/43°
Wednesday: Showers 61°/46°

« Back to News & Notices

Neuse River Basin Hazard Mitigation Public Input Meeting

2/25/2019

The Neuse River Basin Regional Hazard Mitigation Plan is being updated. The first Public Input Meeting will be held Tuesday, February 26, 2019 at 6:00 p.m. at the Woodmen Center, located at 2602 W. Vernon Avenue, Kinston, NC.

Please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link:
<https://www.surveymonkey.com/r/NeuseRiverHMP>. Thank you for your participation!

Information regarding the overall planning process is available at <http://www.neuseriverhmp.com/>.

wellness inside & out
Pink Hill Wellness & Education Center

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- DEPARTMENTS
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- MEETINGS
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WELCOME TO
LENOIR COUNTY
NORTH CAROLINA



Lenoir County, NC is centrally located in eastern NC approximately 75 miles east of Raleigh (our state's capital) and 75 miles west of Morehead City (one of our seaports and the beautiful crystal coast). Our county is a blend of agriculture and manufacturing. Lenoir County has three incorporated municipalities: Kinston is the county seat, LaGrange, lies approximately 10 miles west of Kinston and Pink Hill approximately 15 miles south of Kinston.

Whether you are a long time resident, newcomer or thinking of relocating to Lenoir County we hope you will find everything you are looking for on this website. We take pride in making Lenoir County a great place to live, work and play!

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[Properties being sold at auction updated 12/18/2018](#)

[All Lenoir County Vendors must E-Verify](#)

[Lenoir County ABC Board Job Opening](#)

Lenoir County would like your input!

The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. Please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link:

<https://www.surveymonkey.com/r/NeuseRiverHMP>.

Thank you for your participation!

The next meeting of the Neuse River Basin Hazard Mitigation Planning Committee (HMPC) has been scheduled for **Tuesday, February 26, 2019, at 2:00 PM**, at the Kinston Community Center, 2602 W. Vernon Avenue, Kinston, NC. The first **Public Input Meeting** will be conducted that evening at 6:00 PM at the same location.

<http://www.neuseriverhmp.com>

APPENDIX B: PLANNING PROCESS DOCUMENTATION

The screenshot shows the top portion of the Neuse River MTD website. At the top left, there is a logo for "NEUSE RIVER MTD" and a navigation link for "Neuse River Planning Committee Meeting". Below this is a banner with the text "Create an Account - Increase your productivity, customize your experience, and engage in information you care about." and a "Sign In" button. The main header features the "KINSTON NORTH CAROLINA" logo and a search bar. A navigation menu includes "Government", "Business", "Community", "How Do I...", and "Services".

The central content area displays an "Alert Center" for "Main". It features a news item dated "February 22, 2019 3:10 PM" titled "Neuse River Planning Committee Meeting". The text of the alert states: "Planning Committee Meeting" and includes a link to "Click here to read more about it". Below the alert are social media sharing icons for Facebook, Twitter, and Email. A "LATEST UPDATE" box indicates a change on "February 25, 2019 8:48 AM": "The first Public Input Meeting will be conducted that evening at 6:00 PM at the same location." To the right of the alert is a sidebar with a search box, "Tools" (RSS, Notify Me, Show Archived), and "Categories" (All Categories, City Manager, Game Updates, Main, Nature Center Closing, Outages, Public Safety, Road Closures, Weather Alerts).

The bottom portion of the screenshot shows a browser window with the URL "cms7.revize.com/revize/snowhillnc/government/news_and_announcements.php". The page title is "News & Announcements" and features a large background image of a mountain landscape. A left sidebar contains a navigation menu with "Home", "Government", "Departments", "Residents", and "How Do I". The main content area is titled "NEWS & ANNOUNCEMENTS" and lists several items: "MEETING NOTICE" (Neuse River Basin Hazard Mitigation Planning Committee Meeting), "SNOW HILL PUBLIC BUDGET HEARING", and "BUDGET SUMMARY". The budget summary lists "General Fund \$1,064,350" and "Water/Sever Fund \$1,052,700". A footer note states: "Persons with disabilities who require special accommodations or auxiliary aids should contact the Town Clerk at least".

PittCounty
North Carolina

Government How Do I... Services Business Community

Home > News Flash

Planning & Development

Posted on: February 14, 2019

Neuse River Basin Hazard Mitigation Planning Committee meeting scheduled

The next meeting of the Neuse River Basin Hazard Mitigation Planning Committee (HMPC) has been scheduled for Tuesday, February 26, 2019, at 2:00 PM, at the Woodmen Center, 2602 W. Vernon Avenue, Kinston, NC. The first Public Input Meeting will be conducted that evening at 6:00 PM at the same location.

The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. Please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link: <https://www.surveymonkey.com/r/NeuseRiverHMP>. Thank you for your participation!

Information regarding the overall planning process is available at <http://www.neuseriverhmp.com/>.

Search: [input] All categories [dropdown] [search icon]

Tools: RSS, Notify Me®, View Archived

Categories: All Categories, Animal Services, County News, Hurricane Florence Recovery, Planning & Development, Social Services

Hurricane Florence News & Information

Hurricane Matthew News & Information

Boards & Commissions

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Boards & Commissions

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WAYNECOUNTY
North Carolina

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Home

Posted on: February 14, 2019

The Neuse River Basin Regional Hazard Mitigation Plan

Wayne County would like your input!

The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. Please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link: <https://www.surveymonkey.com/r/NeuseRiverHMP>. Thank you for your participation!

Information regarding the overall planning process is available at <http://www.neuseriverhmp.com/>.

Hazard Mitigation Plan Update

A Public Input Meeting regarding the update to the Neuse River Basin Hazard Mitigation Plan will be held on Tuesday, February 26th, 2019 at 6:00 PM at the Woodman Center, 2602 W. Vernon Avenue, Kinston, NC. Additional information regarding the planning process is available at <http://www.neuseriverhmp.com/>.

Additional Info...

Search: [input] All categories [dropdown] [search icon]

Tools: RSS, Notify Me

Categories: All Categories, About the County, Animal Services Lost Pets, Home, Press Releases, Tax Foreclosure Sales

APPENDIX B: PLANNING PROCESS DOCUMENTATION

Public Meeting 2: March 9, 2020

**Neuse River Basin Regional Hazard Mitigation Plan
Hazard Mitigation Planning Public Meeting #2
Monday March 9, 2020, 5:30 PM**

	Name	Organization (resident)	Phone	E-Mail
1.	Hannah Thompson-Welch	NC Forest Service	919-210-7037	hannah.thompson@ncegr.gov
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				
12.				
13.				
14.				
15.				
16.				
17.				
18.				
19.				
20.				



Home

The fourth meeting of the Neuse River Basin Regional Hazard Mitigation Planning Committee (HMPC) has been scheduled for **Monday, March 9, 2020, at 3:30 PM**, at the **Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC 28504**. The second Public Input Meeting will be conducted that evening at 5:30 PM at the same location. For more information check out <http://www.neuseriverhmp.com/>

RESURFACING IN PROGRESS--Over the next few weeks you may experience road closures and detours due to contractors working on resurfacing roads in our city limits. Please read the list carefully, pay attention to road signs, and prepare alternate routes to avoid delays. #stayalert #staysafe

Wildwood Dr - from NC 102 to Cedar Ln and from Cedar Ln to Old Snow Hill Rd
 Oakdale Dr - from Woodview Dr to Cedar Ln
 Sunset Dr

STAY IN TOUCH

Connect with Us



You are here: Home/Departments/Planning & Development

Meeting Notice:

The fourth meeting of the **Neuse River Basin Regional Hazard Mitigation Planning Committee (HMPC)** will be held on Monday, March 9, 2020, at 3:30 PM, at the Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC 28504. Attendance at this final meeting of the HMPC is important as we will be discussing release of the full draft of the plan for review.

The Public Input Meeting will be conducted that evening at 5:30 PM at the same location.

Farmville would like your input!

The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. Please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link: <https://www.surveymonkey.com/r/NeuseRiverHMP>. Thank you for your participation!

ENVIRONMENT

- Buildings & Grounds Department
- Planning & Development
- Public Works
- Utilities Department



Greene County Emergency Management

The Emergency Services Department coordinates local, State and Federal resources to expedite response and recovery from man-made and natural disasters. The Department plans for the four phases of Emergency Management which include mitigation, preparation, response and recovery to all types of disasters and emergencies.

Greene County Emergency Operations Plan

Neuse River Basin- Regional Hazard Mitigation Plan

Neuse River Basin RHMPC Meeting #4

The fourth meeting of the Neuse River Basin Regional Hazard Mitigation Planning Committee (HMPC) has been scheduled for Monday, March 9, 2020, at 3:30 PM, at the Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC 28504. The second Public Input Meeting will be conducted that evening at 5:30 PM at the same location. If your community has an active website, please post notification of the public input meeting AND a link to the Regional HMP website (<http://www.neuseriverhmp.com/>). Once the information is posted, please forward a screenshot of the page to canderson@hccplanning.com. Attendance at this final meeting of the HMPC is important as we will be discussing release of the full draft of the plan for review.

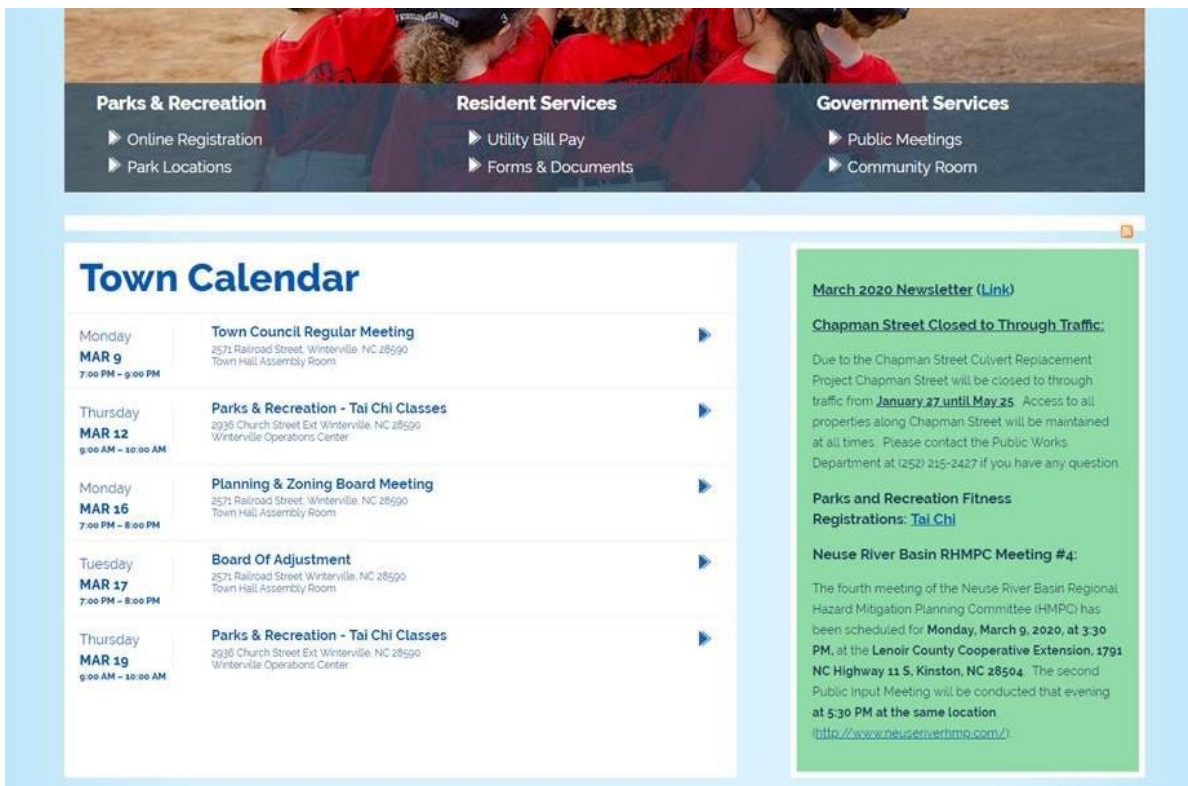
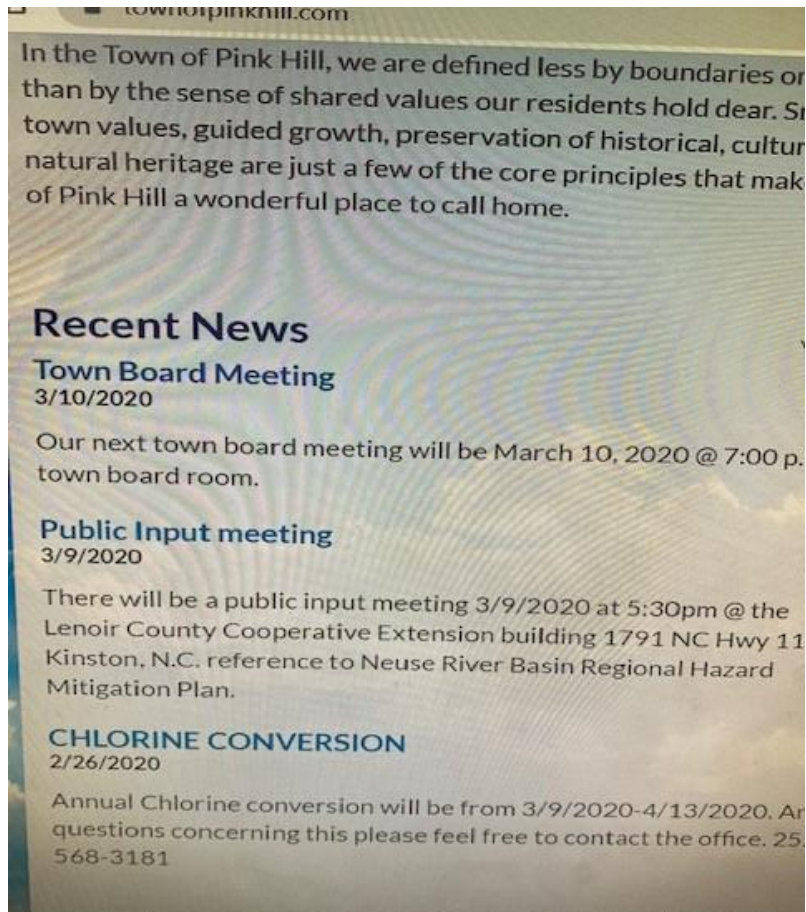


APPENDIX B: PLANNING PROCESS DOCUMENTATION

The screenshot shows a website for the Neuse River Basin Regional Hazard Mitigation Planning Committee (RHMPC). The header includes a logo for "Grifton N.C." and navigation links: HOME, EXPLORE, COMMUNITY, BUSINESS, GOVERNMENT, HOW DO I... The main heading is "NEUSE RIVER BASIN RHMPC MEETING" with a sub-heading "HOME / MORE NEWS / NEUSE RIVER BASIN RHMPC MEETING". Below the heading is a menu with "Edit This List", "His News", "Edit Meta Data", "Admin Panel", and "Help". The main content area is titled "Neuse River Basin RHMPC Meeting #4" and contains the following text:

The fourth meeting of the Neuse River Basin Regional Hazard Mitigation Planning Committee (HMPC) has been scheduled for **Monday, March 9, 2020, at 3:30 PM**, at the **Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC 28504**. The second Public Input Meeting will be conducted that evening at 5:30 PM at the same location. If your community has an active website, please post notification of the public input meeting AND a link to the Regional HMP website (<http://www.neuseriverhmp.com/>). Once the information is posted, please forward a screenshot of the page to canderson@hmpplanning.com. Attendance at this final meeting of the HMPC is important as we will be discussing release of the full draft of the plan for review.


The screenshot shows a Facebook post from the "Lenoir County Emergency Services" page. The post text reads: "Lenoir County Emergency Services Yes! a "test" will occur in the future. However, at this point we are allowing some time for individuals to sign up. This system is live and you will receive weather alerts when weather service issues them." The post has 1 like and 29w (29 weeks) old. Below the post is a link to "NEUSERIVERHMP.COM" titled "Neuse River Basin Regional HMP" with the text: "Welcome to the website for the 2019 Neuse River Basin Regional Hazard Mitigation Plan update. The Neuse River Basin is updating its 2015 plan to better protect the people and". The post has 604 People Reached, 20 Engagements, and 2 Shares. The bottom of the screenshot shows the "Like", "Comment", and "Share" buttons, along with a "Comment as Lenoir County Emergency Servi..." field.



Wed Feb. 26
Tax Foreclosure Sale The sale will be at the Wayne County Courthouse in Goldsboro, NC. Opening bids will be available approximately one week before the sale date. Please contact the Wayne County Staff Attorney's Office at (919) 705-1713 for additional information.
[Read More](#)

Tue Mar. 3
Board of Commissioners Meeting - Cancelled Notice is hereby given the Wayne County Board of Commissioners have cancelled their March 3, 2020 regular meeting. The next regular meeting will be held on the scheduled third Tuesday on March 17, 2020.
[Read More](#)

Mon Mar. 9
Hazard Mitigation Plan Update Hazard Mitigation Plan Update A Public Input Meeting regarding the update to the Neuse River Basin Hazard Mitigation Plan will be held on Monday, March 9, 2020 at 5:30 PM at the Lenoir County Cooperative Extension Building, 1791 NC Highway 11 S, Kinston, NC, 28504. Additional information regarding the planning process is available at <http://www.neuseriverhmp.com>.
[Read More](#)



- Home
- Government >
- Departments >
- Residents >
- How Do I >

Currently Viewing: Master for Wednesday March 25, 2020 (Month View)

March 2020 MONTH WEEK DAY ICAL CLOSE

Prior Month		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
March 1	2	3	4	5	6	7	8
		5:30 pm Economic Development Public Meeting					
8	9	10	11	12	13	14	15
		5:30 pm Neuse River Basin Regional Hazard Mitigation Planning Comm.					
		4:30 pm Board of Commissioners Meeting					
15	16	17	18	19	20	21	22
22	23	24	25	26	27	28	29
29	30	31	1	2	3	4	5

Event Detail - Google Chrome

snowhillnc.com/calendar_app/calendar_event_detail.html?eventId=46&date=3/9/2020&sho...

Calendar Name: Master
Event Name: Neuse River Basin Regional Hazard Mitigation Planning Comm.

CLOSE ICAL

Date:	Mar 9, 2020
Day:	Mon
Time:	03:30 pm - 06:30 pm
Duration:	3 Hours

Detail:
 The fourth meeting of the Neuse River Basin Regional Hazard Mitigation Planning Committee (HMPC) has been scheduled for Monday, March 9, 2020, at 3:30 PM, at the Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC 28504. The second Public Input Meeting will be conducted that evening at 5:30 PM at the same location. Regional HMP website <http://www.neuseriverhmp.com>

Event updated: Tuesday February 25, 2020 09:02:51 am

Viewing Event Details

Plan Website & Survey Outreach

52°
Clouds
W @ 17mph

ABOUT GOVERNMENT DEPARTMENTS ONLINE SERVICES ECONOMIC DEVELOPMENT enter search terms SEARCH

Home > Departments > Emergency Services > Emergency Management

EMERGENCY SERVICES

- FORMS/APPLICATIONS/FEE SCHEDULES
- Emergency Management
- Fire Marshal
- Emergency Medical Services

Emergency Management

FOR MOST RECENT INCLEMENT WEATHER FORECAST CLICK THE LINK BELOW:

[Latest Weather Briefing](#)

Greene County Emergency Management

The Emergency Services Department coordinates local, State and Federal resources to expedite response and recovery from man-made and natural disasters. The Department plans for the four phases of Emergency Management which include mitigation, preparation, response and recovery to all types of disasters and emergencies.

[Greene County Emergency Operations Plan](#)
[Neuse River Basin- Regional Hazard Mitigation Plan](#)

(Greene County) would like your input!

The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. Please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link: <https://www.surveymonkey.com/r/NeuseRiverHMP>. Thank you for your participation!

Information regarding meetings and the overall planning process is available at <http://www.neuseriverhmp.com/>.

JONES COUNTY
North Carolina

Home
About Us
Boards and Committees
County Departments
Frequently Asked Questions
Community Calendar
Organizations
Local Attractions
Contact Us
Helpful Links
Website Map
Online Services
Towns in Jones County
Careers with Jones County

In County Departments:

- Administration
- Civic Center
- Board of Elections
- Economic Development
- Emergency Services
 - Fire Services
 - Emergency Management
 - Emergency Medical Services
- Extension
- Finance
- Health Department
- Human Resources
- Inspections
- Jones County Schools
- Jones County Senior Services
- Lenoir Community College
- Recreation
- Register of Deeds
- Sheriff
- Social Services
- Soil & Water Conservation

Search

Timmy Pike
Emergency Services Director
794 Hwy 58 Trenton NC
Trenton, NC 28585
Office: 252-448-1897
Cell: 252-666-3281
Fax 252-448-1395
tpike@jonescountync.gov

Emergency Services Planner - Vacant

The Jones County Emergency Management Office exists to save lives and protect property by planning, preparing, responding to, and mitigating natural and man-made disasters.

During times of disaster the Jones County Emergency Management Office establishes and operates the County Emergency Operations Center.

Jones County Emergency Management works closely with local, state and federal agencies before, during and after emergencies. Emergency Management also works closely with nursing homes to ensure they are prepared.

Under federal regulation, Jones County Emergency Management also receives information from local businesses and industry about hazardous materials used and stored at their facility.

Jones County Emergency Management is a liaison for public safety groups for Homeland Security grants. This office is also responsible for writing and maintaining the County Multi-Hazard Emergency Operation Plan. This plan is available for public inspection at the County Emergency Management Office.

Primary Shelters:

Jones County Civic Center 832 Hwy 58 S Trenton, NC 28585
Maysville Elementary School 808 Sixth Street Maysville, NC 28555
Comfort Elementary School 4384 Hwy 41 W Trenton, NC 28585

Secondary Shelters:

Pollockville Elementary School 300 Trent Street Pollockville, NC 28573
Trenton Elementary School 188 Elementary School Lane Trenton, NC 28585
Jones Senior High School 1490 Hwy 58 S Trenton, NC 28585
Jones Middle School 190 Old New Bern Road Trenton, NC 28585

Evacuation Routes:

Highway 58 North to Highway 70 West
Highway 17 to Highway 58 North
Highway 41 East to Highway 70 West
Highway 41 West to Highway 258 North
Highway 258 North to Highway 70 West

Jones County would like your input!

The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. Please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link: <https://www.surveymonkey.com/r/NeuseRiverHMP>. Thank you for your participation!

Information regarding the overall planning process is available at <http://www.neuseriverhmp.com/>.

APPENDIX B: PLANNING PROCESS DOCUMENTATION

Lenoir County Emergency Services
 @LenoirCountyEmergencyServices

Home
 About
 Photos
 Reviews
 Events
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Posts
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 Community
 Info and Ads
 Create a Page

Lenoir County Emergency Services
 February 14 at 8:30 AM · 🌐

Lenoir County would like your input!
 The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. Please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link:
<https://www.surveymonkey.com/r/NeuseRiverHMP>. Thank you for your participation!
 Information regarding the overall planning process is available at <http://www.neuseriverhmp.com>... See More

Neuse River Basin Regional Hazard Mitigation Plan Survey
 Take this survey powered by [surveymonkey.com](https://www.surveymonkey.com). Create your own survey...

NEUSE RIVER MTG

NORTH CAROLINA

Government Business Community How Do I... Services

Home > News Flash

Neuse River Basin Hazard Mitigation Planning Committee Meeting

Posted on: February 22, 2019

The next meeting of the Neuse River Basin Hazard Mitigation Planning Committee (HMPC) has been scheduled for Tuesday, February 26, 2019, at 2:00 PM, at the Kinston Community Center, 2602 W. Vernon Avenue, Kinston, NC.

The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. Please take a few moments to complete a brief survey regarding the community's mitigation efforts. The survey is available online through the following link:
<https://www.surveymonkey.com/r/NeuseRiverHMP>

Thank you for your participation!

Information regarding the overall planning process is available at <http://www.neuseriverhmp.com/>.

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*Peace and Quiet when you want it.
Great Neighbors when you don't.*

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- [About Us \(/about-us\)](#)
- [Government \(/government\)](#)
- [Services \(/services\)](#)
- [Frequently Asked Questions \(/frequently-asked-questions\)](#)
- [Tourism \(/tourism\)](#)
- [Economic Development \(/economic-development\)](#)
- [Helpful Links \(/helpful-links\)](#)
- [Churches \(/churches\)](#)
- [Community Calendar \(/community-calendar\)](#)
- [Upcoming Event \(/upcoming-event\)](#)
- [FEMA \(/fema\)](#)
- [Help our community \(/help-our-community\)](#)



Town of Hookerton would like your input!

The Neuse River Basin Regional Hazard Mitigation Plan is being updated and your participation is valuable. Please take a few moments to complete a brief survey regarding the community's mitigation efforts. We appreciate your participation. The survey is available online through the following link:

<https://www.surveymonkey.com/r/NeuseRiverHMP>

Information regarding the overall planning process is available at <http://www.neuseriverhmp.com/> or by clicking on the 'Helpful Links' category on our Homepage. To obtain a hard copy of the survey, please visit the Hookerton Town Office, located at 303 E. Main St., Hookerton, NC 28538 - Monday through Friday between the hours of 8:00 a.m. and 5:00 p.m.

Comments

There are no comments yet.

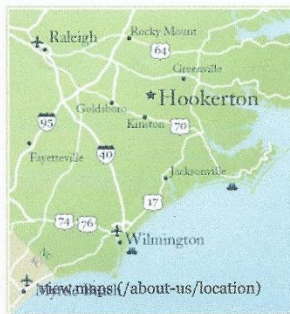
Leave a Comment

Name:*

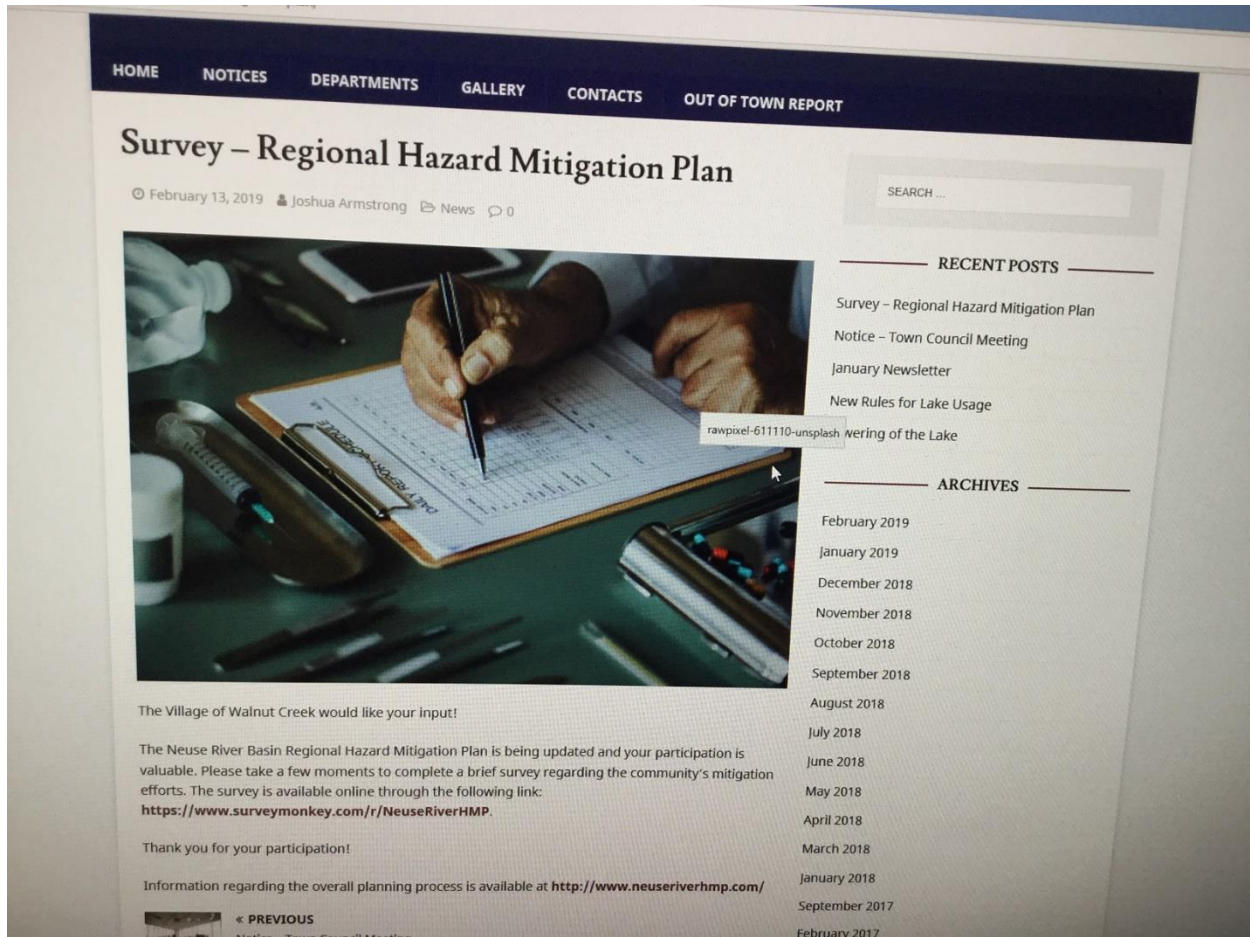
Email:*

Is water wet or dry?:*

Comment:*



[View map \(/about-us/location\)](#)



Mitigation Flyer

NEUSE RIVER BASIN REGIONAL HAZARD MITIGATION PLAN

What Is a Hazard Mitigation Plan? Why is it Important to Me?

A Hazard Mitigation Plan is the result of a planning process to identify hazards, develop strategies to reduce the loss of life and property damage resulting from these hazards, and educate community members about these hazards and loss reduction strategies. This planning process is structured around the four phases of the Disaster Mitigation Act of 2000, which the Region’s planning consultant has aligned with the ten steps of the Community Rating System (CRS). Having an adopted Hazard Mitigation Plan ensures a community is eligible for federal disaster funding. The planning team, with the community and stakeholders, has identified priority hazards, set goals, and developed mitigation actions. Now we need your feedback!



What is the Community Rating System?

The CRS is a national program developed by the Federal Emergency Management Agency (FEMA) to encourage communities to reduce their flood hazard risks. The CRS rewards the efforts communities take to exceed minimum requirements of the National Flood Insurance Program (NFIP) by providing discounts on flood insurance premiums. Specifically, the CRS encourages communities to reduce flood damage to existing buildings, manage development, protect new buildings, preserve and/or restore natural floodplain functions, help insurance agents obtain flood data, and help individuals obtain flood insurance.

What Hazards are Included in the Plan?

The planning committee has included the following hazards in the Neuse River Basin Regional Hazard Mitigation Plan and prioritized them as shown to the right.

High Risk	Hurricane
	Extreme Heat
	Severe Winter Storm
	Tornado
	Drought
Moderate Risk	Wildfire
	Flood
Low Risk	Severe Weather
	Dam Failure
Low Risk	Earthquake

Why is it Important to Me?

The mitigation actions and the action plan for implementation will be the framework for progress towards risk reduction and hazard mitigation in the Neuse River Basin Region. It is important for residents, business owners, property owners, and other stakeholders to be involved in this process to ensure that mitigation actions will be feasible, effective, and supported by the community. The planning team needs your input on these actions to prevent or lessen the impacts of hazards.

What Can I Do to Participate?

Visit the website. Get more information and follow the planning process at NeuseRiverHMP.com. The website contains announcements for upcoming meetings, minutes and presentations from past planning meetings, information on the identified hazards, draft planning documents for review, and more.

Send us information or comments. If you have information to share, contact the planning consultants at lholland@hccplanning.com and abigail.moore@woodplc.com. Additionally, the draft plan will be available for public review. You can provide comments on draft documents via the plan website.

WE NEED YOUR INPUT

Public Survey

The Neuse River 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 web and social media accounts, and made available online on the plan website.

Neuse River Basin Regional Hazard Mitigation Plan Public Survey

Online version can be found at: <https://www.surveymonkey.com/r/NeuseRiverHMP>

Greene, Jones, Lenoir, Pitt, and Wayne Counties, along with their local jurisdictions, are updating the Neuse River Basin Regional Hazard Mitigation Plan to assess and minimize risk to natural hazards. Your participation in this process is important to us. Your input will help us to better understand the vulnerabilities within the region and decide on how to best mitigate or reduce the impacts of these hazards. **Please help us by completing this survey by Friday, May 3rd and returning it to:**

Abby Moore, Wood
4021 Stirrup Creek Drive, Suite 100, Durham, NC 27703
Or by email to: abigail.moore@woodplc.com

This survey can also be completed online at: <https://www.surveymonkey.com/r/NeuseRiverHMP>

If you have any questions about this survey or want to learn about more ways to participate in the Neuse River Basin Regional Hazard Mitigation Plan update, please contact one of the planning consultants for the project: Landin Holland with Holland Consulting Planners at holland@hcpplanning.com, or Abby Moore with Wood at abigail.moore@woodplc.com. You can also visit the project website at www.NeuseRiverHMP.com.

BACKGROUND INFORMATION

1. Where do you live?

<input type="checkbox"/> Greene County	<input type="checkbox"/> Pitt County
<input type="checkbox"/> Jones County	<input type="checkbox"/> Wayne County
<input type="checkbox"/> Lenoir County	<input type="checkbox"/> Other: _____
2. Do you rent or own your home?
 Rent
 Own
3. How prepared do you feel for a hazard event?
 Not at all prepared Somewhat prepared Very prepared
4. Do you know where evacuation centers or storm shelters are?
 Yes
 No
5. Are you able to evacuate or take shelter if necessary?
 Yes
 No
6. Do you know where/how to get more information on hazard risk and preparedness?
 Yes
 No

HAZARD INFORMATION

7. The hazards addressed in the Hazard Mitigation Plan are listed below. Please indicate the level of significance that you perceive for each hazard. Please rate these hazards 1 through 3 as follows: 1=low, 2=moderate, 3=high.

- | | |
|--------------------|--|
| _____ Dam Failure | _____ Severe Weather (Thunderstorm/Lightning/Hail) |
| _____ Drought | _____ Severe Winter Storm |
| _____ Earthquake | _____ Tornado |
| _____ Extreme Heat | _____ Wildfire |
| _____ Flood | _____ Other _____ |
| _____ Hurricane | |

8. Describe specific hazard issues/problem areas that you would like the planning committee to consider.

9. Describe any actions you have taken to mitigate hazard risk for your family, home, or neighborhood.

10. Which categories of mitigation actions do you feel would be most effective?

- Preventive activities (e.g. planning and zoning, building codes)
- Property protection (e.g. retrofitting, insurance, flood prone property buyout)
- Natural resource protection (e.g. wetlands protection, erosion control, forest health protection)
- Emergency services (e.g. hazard threat recognition, hazard warning systems, critical facilities protection)
- Structural projects (e.g. storm drain improvements, hazardous tree removal,
- Public information (e.g. outreach projects, environmental education, public education)

11. What is the best way for you to receive information about how to make your family, home, or neighborhood more resilient to hazards? Please check all that apply.

- | | |
|---|--|
| <input type="checkbox"/> Television News/Advertisements | <input type="checkbox"/> County/Local website |
| <input type="checkbox"/> Radio News/Advertisements | <input type="checkbox"/> County/Local social media |
| <input type="checkbox"/> Public Forums/Workshops | <input type="checkbox"/> Email |
| <input type="checkbox"/> Public Library | <input type="checkbox"/> Text messages |
| <input type="checkbox"/> Print Media – newspaper, phone book, informational brochures | <input type="checkbox"/> Other _____ |

Thank you for your input!

Please provide your name and email below if you would like to be informed of future meetings related to the planning process.

Name: _____ Email: _____

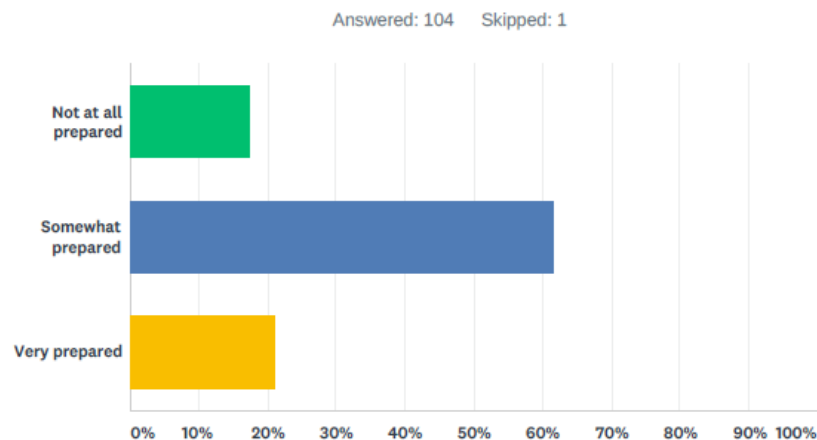
APPENDIX B: PLANNING PROCESS DOCUMENTATION

The region received 105 responses to the survey. The following bullet points summarize significant findings from the survey. Key questions and responses are detailed in Figure B.1 through Figure B.9.

- ▶ 17.3% of respondents say they feel not at all prepared for a hazard event; 61.5% feel somewhat prepared.
- ▶ 23.8% of respondents do not know where evacuation centers or storm shelters are located; however, 91.4% of respondents say they are able to evacuate or take shelter if necessary, which indicates that most people manage evacuating or taking shelter through their own resources. It is possible that these results skew toward those with more awareness of hazard risk and resources to respond.
- ▶ Over 29% of respondents do not know where to get more information on hazard risk and preparedness.
- ▶ Flood was rated the most significant hazard, followed by hurricane, severe weather, and tornado. Earthquake was rated the least significant hazard, followed by wildfire and drought.
- ▶ Respondents who reported having taken steps to mitigate risk at home reported a wide variety of actions, including property protection such as elevating equipment and maintaining drainage; preparedness actions such as emergency kits, supplies, and generators; and prevention, including decision-making regarding home purchase and political action regarding new development and growth management.
- ▶ Respondents largely favored structural projects and property protection for mitigation.

Figure B.1 – Survey Response, Preparedness

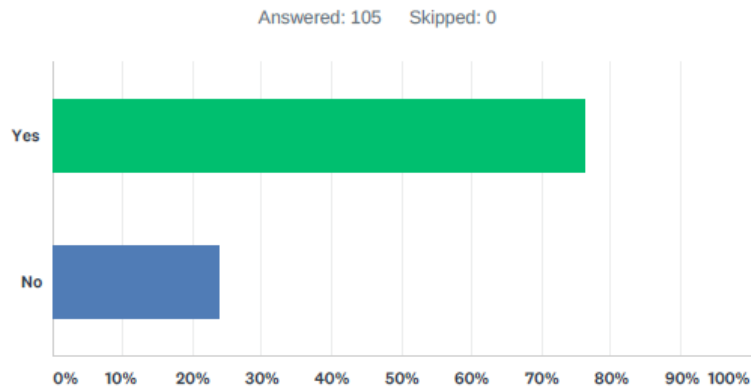
Q3 How prepared do you feel for a hazard event?



ANSWER CHOICES	RESPONSES
Not at all prepared	17.31% 18
Somewhat prepared	61.54% 64
Very prepared	21.15% 22
TOTAL	104

Figure B.2 – Survey Response, Evacuation Center/Shelter Awareness

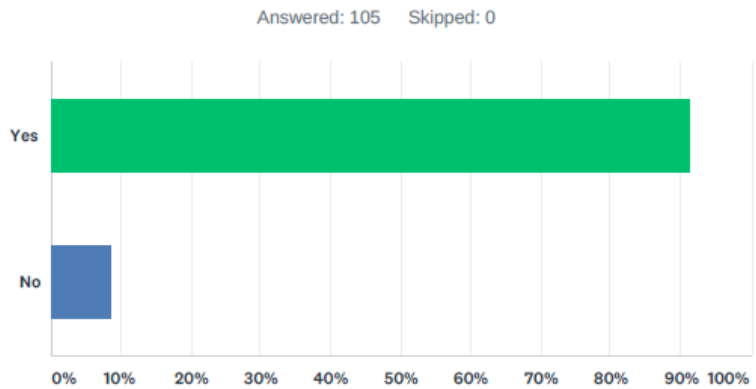
Q4 Do you know where evacuation centers or storm shelters are?



ANSWER CHOICES	RESPONSES	
Yes	76.19%	80
No	23.81%	25
TOTAL		105

Figure B.3 – Survey Response, Ability to Evacuate/Take Shelter

Q5 Are you able to evacuate or take shelter if necessary?

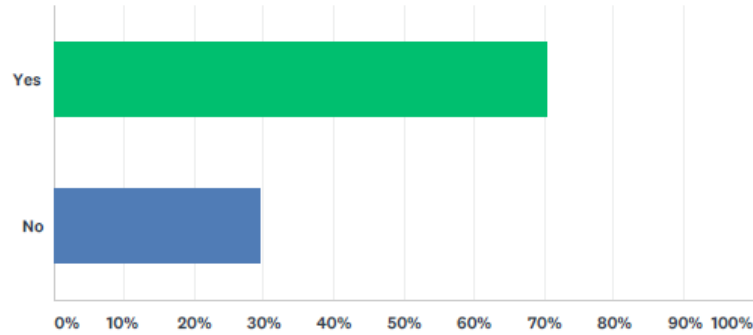


ANSWER CHOICES	RESPONSES	
Yes	91.43%	96
No	8.57%	9
TOTAL		105

Figure B.4 – Survey Response, Knowledge of Where to Find Hazard Information

Q6 Do you know where/how to get more information on hazard risk and preparedness?

Answered: 105 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	70.48%	74
No	29.52%	31
TOTAL		105

Figure B.5 – Survey Response, Hazard Significance Ratings

Q7 The hazards addressed in the Hazard Mitigation Plan are listed below. Please indicate the level of significance that you perceive for each hazard. Please rate these hazards 1 through 3 as follows: 1=low, 2=moderate, 3=high.

Answered: 71 Skipped: 34

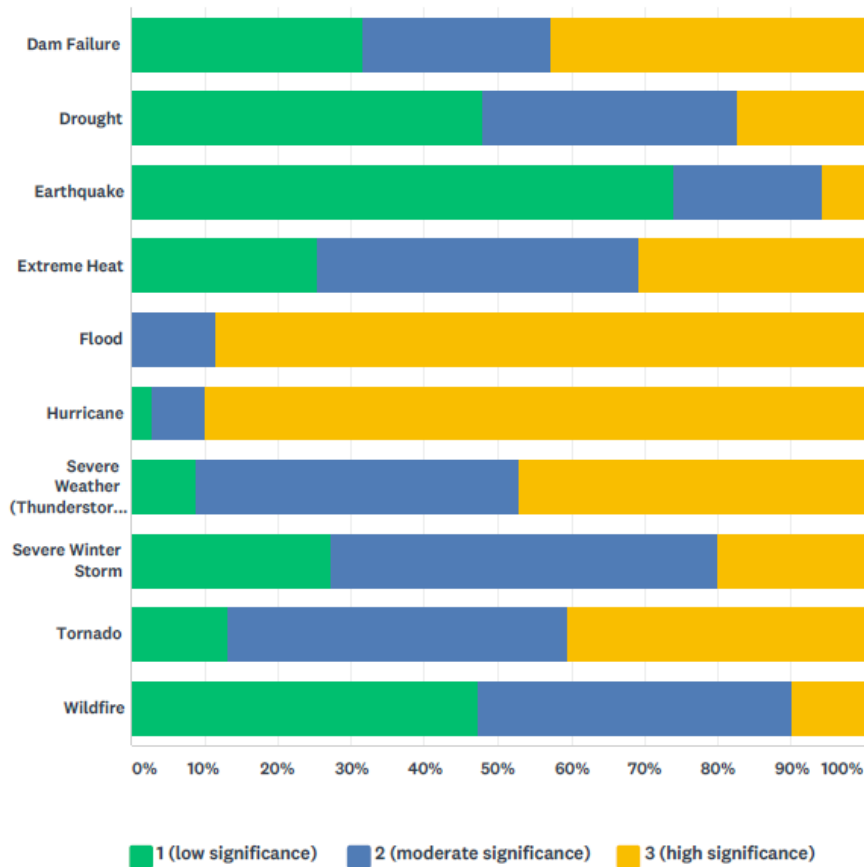


Figure B.6 – Survey Response, Key Hazard Issues/Concerns

Q8 Describe specific hazard issues/problem areas that you would like the planning committee to consider.

Answered: 57 Skipped: 48

stop dredging Neuse River building river going Lenoir county
 Also flooding city water need storm areas

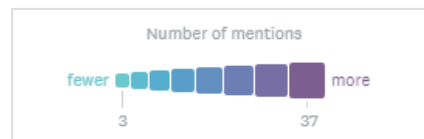


Figure B.7 – Survey Response, Personal Actions Taken for Mitigation

Q9 Describe any actions you have taken to mitigate hazard risk for your family, home, or neighborhood.

Answered: 47 Skipped: 58

food Bought try clean ditch home water development
 generator comes trees open flood removed yard None

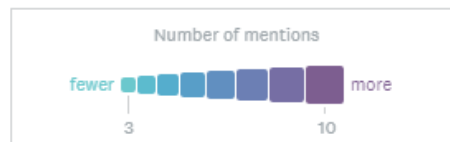


Figure B.8 – Survey Response, Preferred Mitigation Categories

Q10 Which categories of mitigation actions do you feel would be most effective?

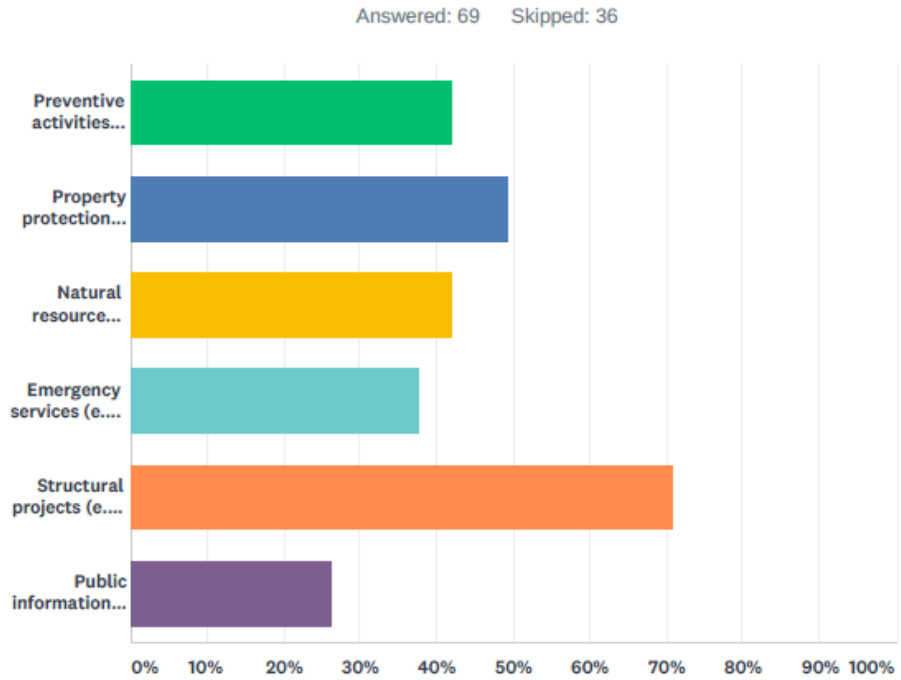
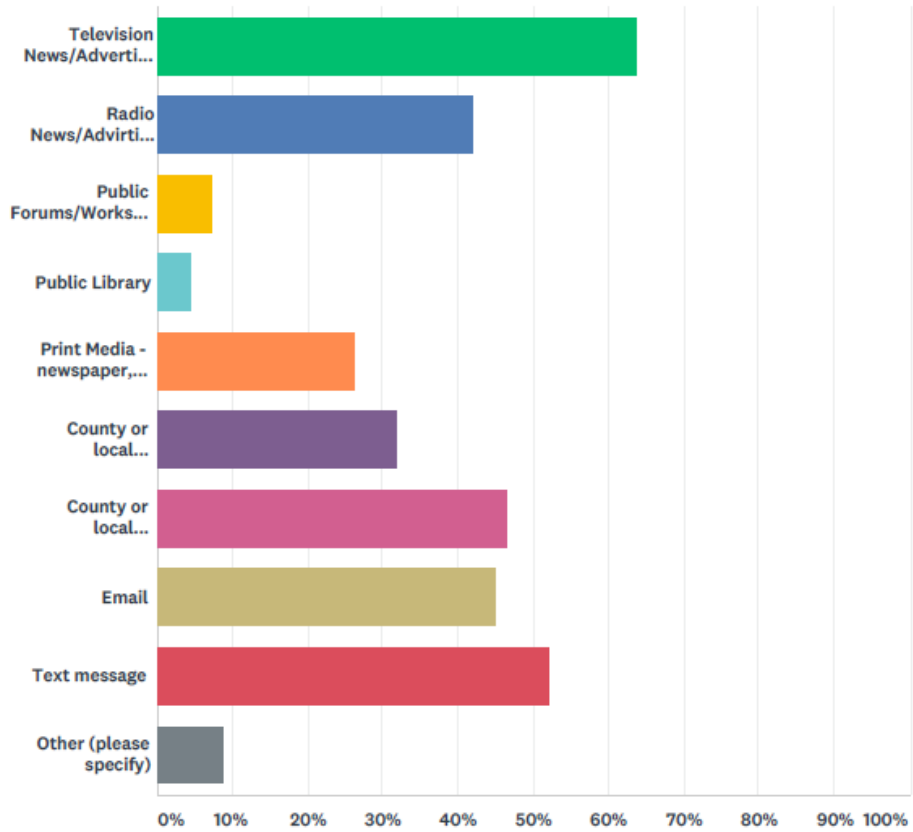


Figure B.9 – Survey Response, Preferred Public Outreach Methods

Q11 What is the best way for you to receive information about hazard events? Please check all that apply.

Answered: 69 Skipped: 36



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 attend a public meeting, review the draft plan, and provide feedback and comments. The coordination letter sent via email is provided below. A list of stakeholders detailing their involvement is provided in Table B.3.

Stakeholders were also involved through specific requests for data to support the development of the plan.

From: Cindy M. Anderson <canderson@hcplanning.com>
Sent: Tuesday, March 3, 2020 4:01 PM
To: cally.edwards@redcross.org; executive@habitatgoldsboro.org; meghan@rmhenc.org; jcieslar@uwpcnc.org; sarchibald@unitedwayne.org; ataskelly10@gmail.com; LenkerE@pitt.k12.nc.us; patrickmiller@greene.k12.nc.us; michael.bracy@jones.nc.net; bwilliams@lenoir.k12.nc.us; michaeldunsmore@wcps.org; guntera@ecu.edu; dpoole@umo.edu; jgtilghman38@lenoircc.edu; bdeans@waynecc.edu; llrouse@email.pittcc.edu; dbaumgardner@cravencountync.gov; jen.sawyer@carteretcountync.gov; eugene.foxworth@carteretcountync.gov; stacie_miles@onslowcountync.gov; matthew.barwick@duplincountync.com; ronaldbass@sampsonnc.com; braston.newton@johnstonnc.com; kevin.hubbard@johnstonnc.com; gdeno@wilson-co.com; lisa.williams@co.beaufort.nc.us; mwalters@edgecombeco.com; jgriffin@martincountyncgov.com; roy.mcclure@fema.dhs.gov; Edwardine.Marrone@fema.dhs.gov; ktodd@ISO.com; jbratcher@iso.com; sharper@iso.com; ewstrom@usgs.gov; Dan.Brubaker@ncdps.gov; jcrew@ncem.org; john.holley@ncdenr.gov; linda.culpepper@ncdenr.gov; tim.baumgartner@ncdenr.gov; Hannah.thompson@ncagr.gov; brendac@kinstonchamber.org; kate@greenvillenc.org; director@greenecountychamber.org; kated@waynecountychamber.org; bill.hopper@pittcountync.gov
Cc: Moore, Abigail; Stroud, David A
Subject: Neuse River Basin Regional Hazard Mitigation Plan

Good afternoon,

The Counties of Greene, Jones, Lenoir, Pitt, and Wayne are in the process of developing an update to the 2015 Neuse River Basin Regional Hazard Mitigation Plan. To assist with this process, the Counties and the Hazard Mitigation Planning Committee are seeking your input and expertise to support our planning effort.

We invite you to attend a public information meeting on the draft plan on **Monday, March 9, 2020, at 5:30 PM**, at the **Lenoir County Cooperative Extension, 1791 NC Highway 11 S, Kinston, NC 28504**. Additionally, soon after the public meeting we will be releasing the full draft of the plan for review. The draft will be posted on the plan website at <http://www.neuseriverhmp.com/draftDocuments.html>. The website already contains information on the risk assessment findings and the planning process, which we encourage you to review. We appreciate any input you may have! Please email any comments or feedback on the draft plan to Abigail Moore at abigail.moore@woodplc.com.

Thank you for your assistance in this important effort to make our communities safer and more resilient to hazards!



Cindy M. Anderson
Office Manager
3329 Wrightsville Ave, Ste F
Wilmington, NC 28403
Phone: 910/392-0060
Email: canderson@hcplanning.com

APPENDIX B: PLANNING PROCESS DOCUMENTATION

Table B.3 – Stakeholder List

First Name	Last Name	Organization
<i>Non-Profit Organizations</i>		
Cally	Edwards	American Red Cross – Northeastern North Carolina Chapter, Executive Director
Matt	Whittle	Habitat for Humanity, Goldsboro-Wayne
Meghan	King	Ronald McDonald House of Eastern NC, Executive Director
Jim	Cieslar	United Way of Pitt County, Executive Director
Sherry	Archibald	United Way of Wayne County, Executive Director
Atlas	Kelly	Building Hope NC, Executive Director
<i>Educational Institutions</i>		
Ethan	Lenker	Pitt County Schools, Superintendent
Patrick	Miller	Greene County Schools, Superintendent
Michael	Bracy	Jones County Schools, Superintendent
Brent	Williams	Lenoir County Public Schools, Superintendent
Michael	Dunsmore	Wayne County Public Schools, Superintendent
Lauren	Mink	ECU EHS Continuity and Emergency Planner
David	Poole	University of Mount Olive, President
Justin	Tilghman	Lenoir Community College, Associate Dean of Public Safety Division, Division Chair
Beverly	Deans	Wayne Community College Public Safety Division, Division Chair
Dr. Lawrence	Rouse	Pitt Community College, President
<i>Surrounding Municipalities</i>		
Dan	Baumgardner	Craven County Planning, Director
Jen	Sawyer	Carteret County Emergency Management Coordinator/Planner
Gene	Foxworth	Carteret County Planning and Development Director
Stacie	Miles	Onslow County Emergency Services Deputy Director
Matt	Barwick	Duplin County Fire and Emergency Management Deputy Director
Ronald	Bass	Sampson County Emergency Services, Director
Braston	Newton	Johnston County Planning Department, Director
Kevin	Hubbard	Johnston County Emergency Services, Director
Gordon	Deno	Wilson County Emergency Management, Director
Lisa	Williams	Beaufort County Emergency Management, Planning & Mitigation Specialist
Mark	Walters	Edgecombe County Emergency Services, Director
Jody	Griffin	Martin County Emergency Management, Director
<i>Federal Government</i>		
Roy	McClure	FEMA NFIP/CRS Specialist
Edwardine	Marrone	FEMA Mitigation Planning Specialist
Mandy	Todd	ISO/CRS Specialist
Mike	Bratcher	ISO/CRS Specialist
Sherry	Harper	ISO/CRS Technical Coordinator
Eric	Strom	USGS - Raleigh Field Office
-	-	Seymour Johnson Air Force Base
<i>State Government</i>		
Dan	Brubaker	State NFIP Coordinator
Chris	Crew	State Hazard Mitigation Officer
John	Holley	NCDENR - Land Quality Section Regional Office

APPENDIX B: PLANNING PROCESS DOCUMENTATION

First Name	Last Name	Organization
Linda	Culpepper	DEQ Division of Water Resources, Director
Tim	Baumgartner	DEQ Division of Mitigation Services, Director
Hannah	Thompson-Welch	NC Forest Service, Wildfire Mitigation Specialist
<i>Business Community</i>		
Brenda	Canup	Kinston-Lenoir Chamber of Commerce, Interim President
Kate	Teel	Greenville-Pitt County Chamber of Commerce
-	-	Greene County Chamber of Commerce
Kate	Daniels	Wayne County Chamber of Commerce, President and Executive Director
Bill	Hopper	Pitt-Greenville Airport, Executive Director

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

Once it was determined which flood hazards warranted the development of specific mitigation actions, the HMPC analyzed viable mitigation options that supported the identified goals and objectives. 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

C.2 ALTERNATIVE MITIGATION MEASURES PER CATEGORY

Note: the CRS Credit Sections are based on the 2017 CRS Coordinator's Manual.

C.2.1 Preventative and Regulatory Measures

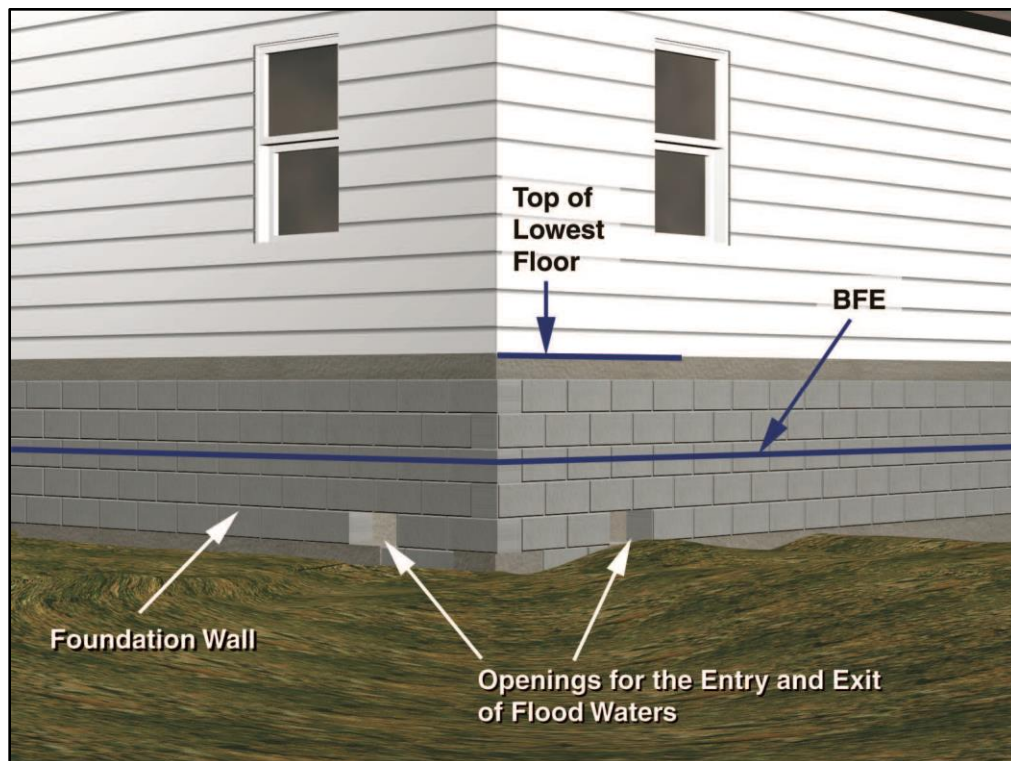
Preventative measures are designed to keep a problem - such as flooding - from occurring or from getting worse. The objective of preventative measures is to ensure that future development is not exposed to damage and does not cause an increase in damages to other properties. Building, zoning, planning and code enforcement offices usually administer preventative measures. Some examples of types of preventative measures include:

- ▶ Building codes
- ▶ Zoning ordinance
- ▶ Comprehensive or land use plan
- ▶ 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.



Source: FEMA Publication: *Above the Flood: Elevating Your Floodprone House, 2000*

Figure C.1 – Building Codes and Flood Elevations

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 Plan

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 Neuse River Region prepare land use plans in compliance with North Carolina Coastal Area Management Act (CAMA) requirements.

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.

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.

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;

APPENDIX C: MITIGATION ALTERNATIVES

- 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.

CRS Credit

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 Neuse River 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
Prevention Measures Considered by HMPC and Not Recommended			
-	Continue to provide detailed information regarding properties located within flood hazard areas as outlined under CRS Manual Section 322.a through 322.g.	Redundant	n/a
-	Continue to enforce all regulations outlined under the NC State Building Code. Although not a requirement, the County will encourage the use of wind resistant design techniques for all new residential construction.	Completed and now considered a day-to-day capability.	n/a
-	Support the efforts of the Greenville Utilities Commission (GUC) and Duke Energy to increase the resiliency of all infrastructure components.	Completed and now handled on an as-needed basis. Periodic meetings held with GUC and Duke Energy.	n/a

APPENDIX C: MITIGATION ALTERNATIVES

Action #	Mitigation Action	Reason for Pursuing / Not Pursuing	Funding
Prevention Measures and Funding Recommended for Implementation			
G8	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.	This issue has presented problems over the last few years; therefore, the County will continue to undertake efforts to improve upon response capacity regarding snow and ice removal on both rural and urban roadways.	GF, NCDOT
J8	Continue to participate in the Beaver Control Program (BCP) offered through NCDEQ. Additionally, the County will continue to support the Town of Trenton in its efforts to conduct its own BCP.	The County deals with this issue annually and will make this a priority through the implementation of this plan.	GF, NCDEQ, NCDPS
L2	Work with and assist the Neuse Regional Water and Sewer Authority in enforcing its Water Shortage Ordinance. These efforts will involve monitoring of regional drought conditions and coordination with NCDEQ.	Lenoir County will continue to assist the Water and Sewer Authority in their efforts to impose water use restrictions when deemed necessary.	GF

C.2.2 Property Protection Measures

Property protection measures are used to modify buildings or property subject to damage. 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.

Keeping the Hazard Away

Generally, natural hazards do not damage vacant areas. As noted earlier, the major impact of hazards is to people and improved property. 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.

Flooding

There are five common methods to keep a flood from reaching and damaging a building:

- Erect a barrier between the building and the source of the flooding.
- 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.

The latter three approaches are the most effective types to consider for the planning area.

APPENDIX C: MITIGATION ALTERNATIVES

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.



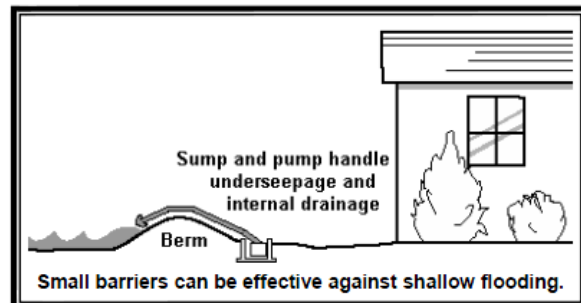
Relocation

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.



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.

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.



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

Neuse River

Regional Hazard Mitigation Plan
2020

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.

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 nonresidential 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.

APPENDIX C: MITIGATION ALTERNATIVES

Local Implementation/CRS Credit

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 Neuse River 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 Neuse River 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
Prevention Measures Considered by HMPC and Not Recommended			
-	Continue to work closely with real estate agents, contractors and business owners to ensure that prospective buyers and business operators are educated about development and hazards present within a flood hazard area. The County will prepare materials for dissemination to these entities to assist in this education process.	Redundant	n/a
Prevention Measures and Funding Recommended for Implementation			
P21	The City of Greenville will strengthen the City's existing stormwater control ordinances to require new residential development to provide 10-year flood ponds, instead of 1-year flood ponds. The City will ensure that development complies with all stormwater regulations.	Final determination has not been made regarding this standard; the City will continue to consider operations relating to local stormwater management policy during implementation of this plan.	GF
W2	Maintain a comprehensive Floodplain Management Program through the Community Rating System Program aimed at maintaining the lowest rating available to Wayne County flood insurance policyholders.	Wayne County, Goldsboro, and Walnut Creek will continue to participate in the CRS program. Those communities not currently part of the program will consider participating through implementation of this plan.	GF, NCDPS

APPENDIX C: MITIGATION ALTERNATIVES

Action #	Mitigation Action	Reason for Pursuing / Not Pursuing	Funding
W7	<p>Continue to promote the availability of flood insurance available through the National Flood Insurance Program (NFIP) using the following means:</p> <ul style="list-style-type: none"> • Post on County website • Provide information on building permit applications • Make available at the County library • Display information in the Inspections Department 	Wayne County, as well as each participating municipal jurisdiction, will work to educate property owners about the availability of NFIP flood insurance through the various mechanisms outlined within this strategy.	GF, NCDPS

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/River Restoration

There is a growing movement that has several names, such as "stream conservation," "bioengineering," or "riparian corridor restoration." The objective of these approaches is to return streams, stream banks and adjacent land to a more natural condition, including the natural meanders. 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/CRS Credit

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 Neuse River 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

APPENDIX C: MITIGATION ALTERNATIVES

earn a community credit. Communities could also get credit under this activity for providing a listing of 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
Natural Resource Protection Measures Considered by HMPC and Not Recommended			
-	Create a Best Management Practices guideline to collect several techniques into one plan.	Not enough administrative or fiscal resources to complete.	n/a
-	Continue efforts to keep White Oak River, Trent River, and local streams free of debris (natural and man-made). These efforts will involve both County efforts, as well as grant funding when feasible.	Procedures are already in place. Ongoing campaign to keep these streams clean.	n/a
Natural Resource Protection Measures and Funding Recommended for Implementation			
W10	Continue to maintain and enforce respective Water Shortage Ordinance. These efforts will involve monitoring of regional drought conditions and coordination with NCDENR.	Wayne County will continue to work in concert with NCDEQ to establish, and when necessary, impose water use restrictions to minimize issues associated with drought conditions.	GF
G7	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).	Greene County, as well as all participating municipal jurisdictions will continue to assist the State in enforcing the land development regulatory mechanisms.	GF
J7	Continue to maintain and enforce the County's Water Shortage Ordinance. These efforts will involve monitoring of regional drought conditions and coordination with NCDEQ	The County will continue to carry out this effort as a function of the County-wide Emergency Operations Plan.	GF

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

APPENDIX C: MITIGATION ALTERNATIVES

- 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.

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 /CRS Credit

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.

APPENDIX C: MITIGATION ALTERNATIVES

Communities in the Neuse River 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
Emergency Services Measures Considered by HMPC and Not Recommended			
-	Work to establish a flood and tornado immediate warning system to serve all County residents, including those located within incorporated areas.	Redundant	n/a
-	Continue coordination with Lenoir County in maintaining a joint E-911 call center. Although the primary facility is located in Lenoir County, Jones County will maintain the backup facility.	Jones County is already enforcing this. Should continue to operate this program.	n/a
-	Through implementation of the County's Emergency Operations Plan, ensure that there is an adequate food and water supply for citizens in shelters during and after a disaster.	Operational function of the EOP.	n/a
Emergency Services Measures and Funding Recommended for Implementation			
J16	Create a guidebook for non-governmental organizations and Faith-based organizations on emergency preparedness and their role in outreach, sheltering, and recovery.	The County has not initiated this effort but will do so through implementation of this plan.	Staff Time, Non-Profit Funding
L3	Continue to coordinate annually with the NC Forestry Division 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.	The County will continue efforts to work closely with the NC Forestry Division educate and inform citizens about dangers associated with wildfire.	GF, NC Forestry Division
L6	Work closely with the American Red Cross to address the sheltering needs of County residents. The County will continue to work on improving the preparedness of all existing shelter facilities, including the installation of on-site transformers at all shelter locations. Additionally, these efforts will involve support of the NC Coastal Region Evacuation and Sheltering (CRES) plan aimed at providing inland sheltering resources for coastal counties.	Lenoir County continues to work closely with the American Red Cross to improve upon shelter facilities, including the establishment of redundant power supplies at all shelters.	GF, NCDPS, ARC

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:

Neuse River

Regional Hazard Mitigation Plan
2020

APPENDIX C: MITIGATION ALTERNATIVES

- 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).



Retention pond

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

Neuse River

Regional Hazard Mitigation Plan
2020

APPENDIX C: MITIGATION ALTERNATIVES

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 /CRS Credit

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
Structural Project Measures Considered by HMPC and Not Recommended			
-	Factor in the information and strategies outlined within this plan when making decisions that will impact land development policy and infrastructure improvements and extensions.	Strategy determined to be ambiguous and lacking in substance.	n/a
-	Work with NC Cooperative Extension Service to assist farmers and foresters in addressing the drainage issues relating to their operations.	Completed and now considered a day-to-day capability.	n/a
Structural Project Measures and Funding Recommended for Implementation			
L13	Following the impacts of Hurricanes Mathew and Florence, establish new development within sites throughout the County that were cleared for development following Hurricane Floyd in 1998. This effort will address both redevelopment, as well as affordable housing needs.	These efforts will be carried out through implementation of this plan; however, this will not apply to buyout properties that are subject to FEMA related development restrictions.	GF, NCDPS
J19	Back wire electrical systems to accept permanent generators and provide generators for three county elementary schools. Also, establish permanent pad mount generators at these facilities.	This effort has not been initiated but will be carried out through implementation of this plan.	GF, NCDPS
P6	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 will apply for funding for all structures that meet cost-benefit thresholds as defined by FEMA. Pitt County will assist all municipal jurisdictions in working through the structural mitigation grant funding process.	This effort was carried out following the effects of Hurricanes Irene, Matthew, and Florence. Five properties were acquired after Hurricane Irene through 2 HMGP grant cycles. The County is in the process of acquiring units funded after Matthew, while applications for acquisition following Florence are still under review.	GF, NCPS, FEMA

C.2.6 Public Information

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.

Neuse River

Regional Hazard Mitigation Plan
2020

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 on the Internet.

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

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.

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

APPENDIX C: MITIGATION ALTERNATIVES

- 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 /CRS Credit

Communities in the Neuse River 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
Public Information and Outreach Measures Considered by HMPC and Not Recommended			
-	Maintain information on the County website, as well as the County Emergency Services Facebook page, regarding issues related to preparation and safety in the event of a natural disaster. These efforts will involve the distribution of emergency notifications when deemed necessary.	Redundant	n/a
-	Work with all participating municipal jurisdictions in identifying a long-term solution to digital data protection. These efforts will focus on off-site backup procedures.	Completed and now in maintenance phase.	n/a
Public Information and Outreach Measures and Funding Recommended for Implementation			
P15	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 on these issues to work with prospective builders.	Pitt County continues to provide this information to interested parties and employs a certified floodplain manager to assist citizens with construction in the SFHA.	GF, NCDPS

APPENDIX C: MITIGATION ALTERNATIVES

Action #	Mitigation Action	Reason for Pursuing / Not Pursuing	Funding
W5	<p>Educate, inform, and provide educational materials to citizens, contractors, local real estate agents and homeowners regarding information that will advise individuals about the hazards associated with floodplain development. Additionally, the County will utilize this service to inform a range of interest groups about the natural hazards present throughout Wayne County and services available to provide assistance, if and when the County is impacted.</p>	<p>Wayne County will maintain and distribute information regarding the promotion of proper development techniques within the defined flood hazard area.</p>	<p>GF, NCDPS</p>
W12	<p>Continue to expand upon the County's Code Red Emergency Notification System available to all residents. The Wayne County Office of Emergency Services will coordinate with all municipal jurisdictions regarding registration through the Wayne County Emergency Notification Registration Portal.</p>	<p>The County will review emergency notification protocols on an annual basis and where feasible improve upon the effectiveness of the overall system.</p>	<p>GF, NCDPS</p>

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