Cape Fear
Regional Hazard Mitigation Plan
2025











TABLE OF CONTENTS

Introduction ..... SECTION 1

Planning Process ..... SECTION 2

Community Profile ..... SECTION 3

Hazard Identification ..... SECTION 4

Hazard Profiles ..... SECTION 5

Capability Assessment ..... SECTION 6

Mitigation Strategy ..... SECTION 7

Mitigation Action Plan ..... SECTION 8

Plan Maintenance ..... SECTION 9

Acronyms. ..... APPENDIX A

Participation and Meetings ..... APPENDIX B

Public Survey Results ..... APPENDIX C

Critical Facilities ..... APPENDIX D

NFIP Information ..... APPENDIX E

Adoption Resolutions ..... APPENDIX F

High Hazard Dam Reports ..... APPENDIX G

Completed Mitigation Projects ..... APPENDIX H

Mitigation Action Implementation and Monitoring ..... APPENDIX I

SECTION 1: INTRODUCTION

This section provides a general introduction to the Cape Fear Regional Hazard Mitigation Plan. It consists of the following five subsections:

- 1.1 Background
- 1.2 Purpose
- 1.3 Scope
- 1.4 Authority
- 1.5 Summary of Plan Contents

1.1 Background

Natural hazards, such as winter storms, floods, and tornadoes, are a part of the world around us. Their occurrence is natural and inevitable, and there is little we can do to control their force and intensity. We must consider these hazards to be legitimate and significant threats to human life, safety, and property.

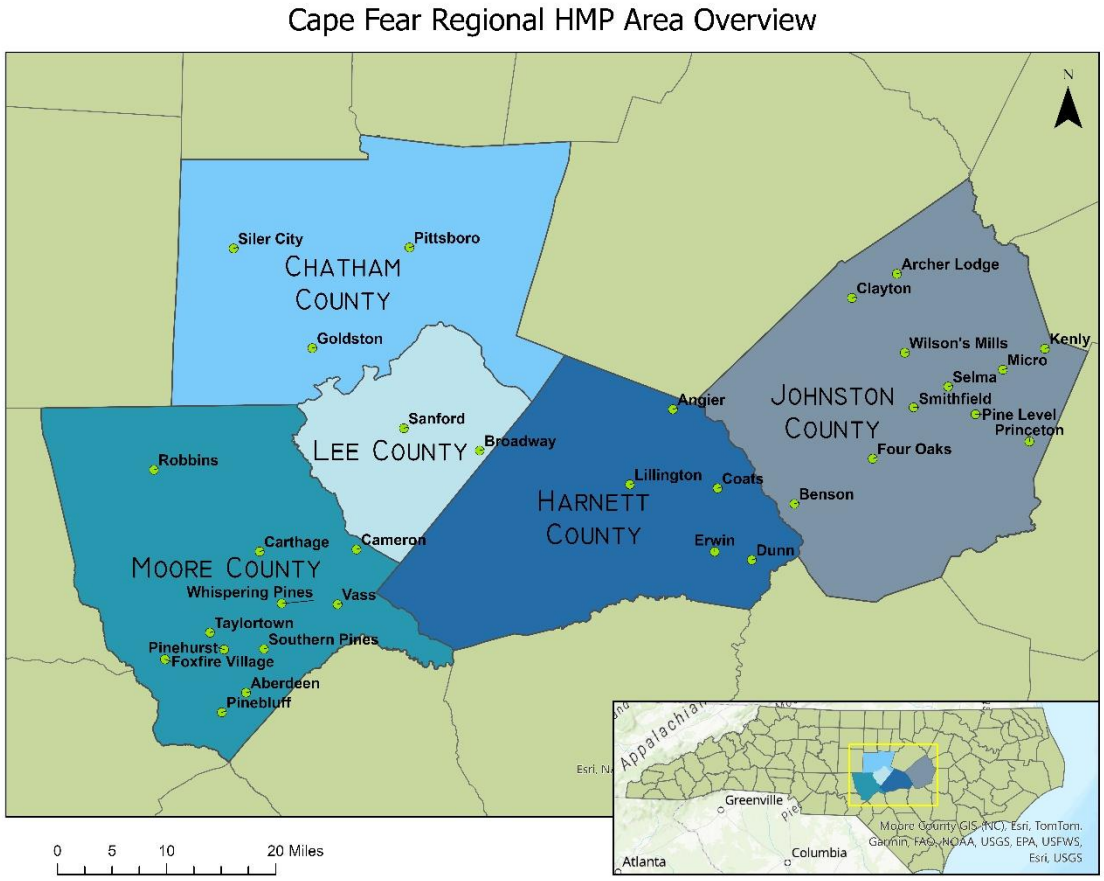


***Figure 1-1**: Cape Fear Regional HMP Area Overview*

The Cape Fear Region is in western North Carolina and includes the counties of Chatham, Lee, Harnett, Johnston, and Moore, as well as the municipal governments within those counties. This

area is vulnerable to a wide range of natural hazards, including winter storms, severe weather, and floods. It is also vulnerable to human-caused hazards, including chemical releases and hazardous material spills. These hazards threaten the life and safety of residents in the Cape Fear Region and have the potential to damage or destroy both public and private property, disrupt the local economy, and impact the overall quality of life of individuals who live, work, and vacation in the region.

While the threat from hazardous events may never be fully eliminated, there is much we can do to lessen their potential impact upon our communities and our citizens. By minimizing the impact of hazards on our built environment, we can prevent them from resulting in disasters. The concept and practice of reducing risks to people and property from known hazards is generally referred to as *hazard mitigation*.

FEMA Definition of Hazard Mitigation:

"Any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards."

Hazard mitigation techniques include both structural measures (such as strengthening or protecting buildings and infrastructure from the destructive forces of potential hazards) and non-structural measures (such as adopting sound land-use policies and creating public awareness programs). It is widely accepted that the most effective mitigation measures are implemented at the local government level, where decisions on regulating and controlling development are ultimately made. A comprehensive mitigation approach addresses hazard vulnerabilities that exist today and in the foreseeable future. Therefore, it is essential that projected patterns of future development are evaluated and considered in terms of how that growth will increase or decrease a community's overall hazard vulnerability.

A key component of a comprehensive approach to hazard mitigation is to develop, adopt, and update a local hazard mitigation plan. A hazard mitigation plan establishes a broad community vision and guiding principles for reducing hazard risk and further proposes specific mitigation actions to eliminate or reduce identified vulnerabilities.

Each of the five counties and their municipal jurisdictions participating in the development of the Cape Fear Hazard Mitigation Plan has existing hazard mitigation plans that have evolved over the years, as described in Section 2: ***Planning Process***. This regional plan draws from each of the County plans to document the region's sustained efforts to incorporate hazard mitigation principles and practices into routine government activities and functions. At its core, the Plan recommends specific actions to minimize hazard vulnerability and protect residents from losses to those hazards that pose the greatest risk. These mitigation actions go beyond simply recommending structural solutions to reduce existing vulnerability, such as elevation, retrofitting, and property acquisition projects. Local policies on community growth and development, incentives for natural resource protection, and public awareness and outreach activities are among the actions considered to reduce the region's vulnerability to identified hazards. The

Plan remains a living document, with implementation and evaluation procedures established to help achieve meaningful objectives and successful outcomes over time.

1.1.1 The Disaster Mitigation Act and the Flood Insurance Reform Act

To reduce the Nation's mounting natural disaster losses, the U.S. Congress passed the Disaster Mitigation Act of 2000 (DMA 2000), which amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Section 322 of DMA 2000 emphasizes the need for state, local, and Tribal 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 or Tribal government applying for federal mitigation grant funds. These funds include the Hazard Mitigation Grant Program (HMGP), administered by the Federal Emergency Management Agency (FEMA) within the Department of Homeland Security. Communities with an adopted and federally approved hazard mitigation plan are thereby pre-positioned and more likely to receive available mitigation funds before and after the next disaster strikes.

Additionally, the Flood Insurance Reform Act of 2004 (P.L. 108-264) created two new grant programs, Severe Repetitive Loss (SRL) and Repetitive Flood Claim (RFC), and modified the existing Flood Mitigation Assistance (FMA) program. One of the Act's requirements is that communities must have a FEMA-approved Hazard Mitigation Plan to be eligible for these FEMA mitigation programs. However, as of early 2014, these programs have been folded into a single Flood Mitigation Assistance (FMA) program.

This change was brought about by new federal flood insurance legislation, the Biggert-Waters Flood Insurance Reform Act (P.L. 112-141), passed in 2012. This act made several changes to the way the National Flood Insurance Program is to be run, including increases in rates to reflect true flood risk and changes in how Flood Insurance Rate Map (FIRM) updates impact policyholders. The Biggert-Waters Act further emphasizes Congress’s focus on mitigating vulnerable structures.

The Cape Fear Regional Hazard Mitigation Plan has been prepared in coordination with FEMA Region 4 and the North Carolina Division of Emergency Management (NCEM) to ensure that the Plan meets all applicable FEMA and state requirements for hazard mitigation plans. The Local Mitigation Plan Review Tool provides a summary of federal and state minimum standards and notes the location within the Plan where each requirement is met.

1.2 Purpose

The purpose of the Cape Fear Regional Hazard Mitigation Plan is to:

- Complete update of existing Plan to demonstrate progress and reflect current conditions.
- Increase public awareness and education.
- Maintain grant eligibility for participating jurisdictions.
- Maintain compliance with state and federal legislative requirements for local hazard mitigation plans.

1.3 Scope

The focus of the Cape Fear Regional Hazard Mitigation Plan is on those hazards determined to be at a higher or moderate risk in the Cape Fear Region, as determined through a detailed hazard risk assessment. Other hazards that pose a "low" or "negligible" risk will continue to be evaluated during future updates to the Plan, but they may not be fully addressed until they are determined to be of high or moderate risk. This enables participating counties and municipalities to prioritize mitigation actions based on the hazards understood to pose the greatest risk to lives and property. The geographic scope (i.e., the planning area) for the Plan includes Chatham, Lee, Harnett, Johnston, and Moore counties and their incorporated jurisdictions. Table 1-1 indicates the participating jurisdictions.

***Table 1-1**: Participating Jurisdictions in the Cape Fear Regional Hazard Mitigation Plan*

Chatham County	
Goldston	Siler City
Pittsboro	
Harnett County	
Angier	Erwin
Coats	Lillington
Dunn	
Johnston County	
Archer Lodge	Pine Level
Benson	Princeton
Clayton	Selma
Four Oaks	Smithfield
Kenly	Wilson's Mill
Micro	
Lee County	
Broadway	Sanford
Moore County	
Aberdeen	Robbins
Cameron	Southern Pines
Carthage	Taylortown
Foxfire Village	Vass
Pinebluff	Whispering Pines
Pinehurst	

1.4 Authority

The Cape Fear Regional Hazard Mitigation Plan has been developed in accordance with current state and federal rules and regulations governing local mitigation plans. Each participating county and local jurisdiction has adopted the Plan in accordance with standard local procedures. Copies of the community adoption resolutions for each participating jurisdiction are provided in **Appendix F**. The Plan shall be routinely monitored and revised to maintain compliance with the following provisions, rules, and legislation:

- Section 322, Mitigation Planning, of the Robert T. Stafford Disaster Relief and Emergency Assistance Act, as enacted by Section 104 of the Disaster Mitigation Act of 2000 (P.L. 106-390).
- FEMA's Final Rule published in the Federal Register, at 44 Code of Federal Regulations Part 201 (201.6 for local mitigation planning requirements.
- Flood Insurance Reform Act of 2004 (P.L. 108-264) and Biggert-Waters Flood Insurance Reform Act of 2012 (P.L. 112-141).

1.5 Summary of Plan Contents

The contents of this Plan are designed and organized to be as reader-friendly and functional as possible. While significant background information is included on the processes used and studies completed (i.e., risk assessment, capability assessment), this information is separated from the more meaningful planning outcomes or actions (i.e., mitigation strategy, mitigation action plan).

Section 2: ***Planning Process*** provides a complete narrative description of the process used to prepare the Plan. This includes identifying the participants on the planning team and describing how the public and other stakeholders were involved. It also includes a detailed summary of each key meeting, along with any associated outcomes.

Section 3: ***Community Profile*** provides a general overview of the Cape Fear region, including prevalent geographic, demographic, and economic characteristics. In addition, building characteristics and land use patterns are discussed. This baseline information provides a snapshot of the planning area and helps local officials identify the social, environmental, and economic factors that shape the region’s vulnerability to hazards.

The Risk Assessment is presented in two sections, including Section 4: ***Hazard Identification*** and Section 5: ***Hazard Profiles***. Together, these sections identify, analyze, and assess hazards that threaten the Cape Fear Region. The risk assessment also attempts to define any hazard risks that may uniquely or exclusively affect specific areas of the Cape Fear Region.

The Risk Assessment begins by identifying hazards that threaten the region. Next, detailed profiles are established for each hazard, building on available historical data from past hazard occurrences, spatial extent, and probability of future occurrence. This section culminates in a hazard risk ranking based on conclusions about the frequency of occurrence, spatial extent, and potential impact highlighted in each hazard profile. In essence, the information generated through the risk assessment serves a critical function as the participating jurisdictions in the Cape Fear Region seek to determine the most appropriate mitigation actions to pursue and

implement, enabling them to prioritize and focus their efforts on those hazards of greatest concern and those structures or planning areas facing the greatest risk(s).

The ***Capability Assessment***, found in Section 6, provides a comprehensive examination of the Cape Fear Region's capacity to implement meaningful mitigation strategies and identifies opportunities to increase and enhance that capacity. Specific capabilities addressed in this section include planning and regulatory capability, staff and organizational (administrative) capability, technical capability, fiscal capability, and political capability. Information was obtained through a detailed survey questionnaire and an inventory and analysis of existing plans, ordinances, and relevant documents. The purpose of this assessment is to identify any existing gaps, weaknesses, or conflicts in programs or activities that may hinder mitigation efforts, and to identify those activities that should be built upon to establish a successful and sustainable local hazard mitigation program.

The ***Community Profile***, ***Risk Assessment***, and ***Capability Assessment*** collectively serve as a basis for determining the goals of the Cape Fear Regional Hazard Mitigation Plan, each contributing to the development, adoption, and implementation of a meaningful and manageable Mitigation Strategy grounded in accurate background information.

The ***Mitigation Strategy***, found in Section 7, consists of broad goal statements and an analysis of hazard mitigation techniques for the jurisdictions participating in the Cape Fear Regional Hazard Mitigation Plan to consider to reduce hazard vulnerabilities. The strategy provides the foundation for a detailed ***Mitigation Action Plan***, found in Section 8, which links specific mitigation actions for each county and municipal department or agency to locally assigned implementation mechanisms and target completion dates. Together, these sections are designed to make the Plan both strategic, through the identification of long-term goals, and functional, through the identification of immediate and short-term actions that will guide day-to-day decision-making and project implementation.

In addition to identifying and prioritizing potential mitigation projects, emphasis is placed on using program and policy alternatives to make the Cape Fear Region less vulnerable to the damaging effects of hazards while improving the community's economic, social, and environmental health. The concept of multi-objective planning was emphasized throughout the planning process, particularly in identifying ways to link, where possible, hazard mitigation policies and programs with complementary community goals related to disaster recovery, housing, economic development, recreational opportunities, transportation improvements, environmental quality, land development, and public health and safety.

Plan Maintenance, found in Section 9, includes the measures that jurisdictions participating in the Cape Fear Regional plan will take to ensure the Plan's long-term, continuous implementation. The procedures also include how the Plan will be regularly evaluated and updated to remain a current and meaningful planning document.

SECTION 2: PLANNING PROCESS

This section describes the planning process undertaken to develop the Cape Fear Regional Hazard Mitigation Plan. It consists of the following eight subsections:

- 2.1 Overview of Hazard Mitigation Planning
- 2.2 History of Hazard Mitigation Planning in the Cape Fear Region
- 2.3 Preparing the Plan
- 2.4 The Cape Fear Regional Hazard Mitigation Planning Committee
- 2.5 Community Meetings and Workshops
- 2.6 Involving the Public
- 2.7 Involving the Stakeholders
- 2.8 Documentation of Plan Progress



Figure 2-1: *Cape Fear Hazard Mitigation Kick-off Meeting*

2.1 Overview of Hazard Mitigation Planning

Local hazard mitigation planning is the process of organizing community resources, identifying and assessing hazard risks, and determining how best to minimize or manage them. This process culminates in a hazard mitigation plan that identifies specific mitigation actions, each designed to achieve both short-term planning objectives and a long-term community vision.

To ensure the functionality of a hazard mitigation plan, responsibility for each proposed mitigation action is assigned to a specific individual, department, or agency, along with a schedule or target completion date for its implementation (see Section 9: ***Plan Maintenance***). Plan maintenance procedures are established to monitor implementation progress and evaluate and enhance the mitigation plan. These plan maintenance procedures ensure that the Plan remains a current, dynamic, and effective planning document over time and becomes integrated into the routine local decision-making process.

Communities that participate in hazard mitigation planning have the potential to accomplish many benefits, including:

- saving lives and property,
- saving money,
- speeding recovery following disasters,
- reducing future vulnerability through wise development and post-disaster recovery and reconstruction,
- expediting the receipt of pre-disaster and post-disaster grant funding, and
- demonstrating a firm commitment to improving community health and safety.

Typically, communities that participate in mitigation planning are described as having the potential to produce long-term, recurring benefits by breaking the cycle of disaster losses. A core assumption of hazard mitigation is that the investments made before a hazard event will significantly reduce the demand for post-disaster assistance by lessening the need for emergency response, repair, recovery, and reconstruction. Furthermore, mitigation practices will

enable residents, businesses, and industries to re-establish themselves in the wake of a disaster, getting the community economy back on track sooner and with less interruption.

The benefits of mitigation planning go beyond solely reducing hazard vulnerability. Mitigation measures, such as the acquisition or regulation of land in known hazard areas, can help achieve multiple community goals, including preserving open space, maintaining environmental health, and enhancing recreational opportunities. Thus, it is vitally important that any local mitigation planning process be integrated with concurrent local planning efforts, and that any proposed mitigation strategies consider existing community goals or initiatives that may complement or hinder their future implementation.

2.2 History of Hazard Mitigation Planning in the Cape Fear Region

Each of the thirty-seven participating jurisdictions, listed below, had a previously adopted hazard mitigation plan:

- Chatham County
  - Goldston
  - Pittsboro
  - Siler City
- Harnett County
  - Angier
  - Coats
  - Dunn
  - Erwin
  - Lillington
- Johnston County
  - Archer Lodge
  - Benson
  - Clayton
  - Four Oaks
  - Kenly
  - Micro
  - Pine Level
  - Princeton
  - Selma
  - Smithfield
  - Wilson's Mills
- Lee County
  - Broadway
  - Sanford
- Moore County



Figure 2-2: *Cape Fear Hazard Mitigation Kick-off Meeting*

- Aberdeen
- Cameron
- Carthage
- Foxfire Village
- Pinebluff
- Pinehurst
- Robbins
- Southern Pines
- Taylortown
- Vass
- Whispering Pines

The Plan was developed using the multi-jurisdictional planning process recommended by the Federal Emergency Management Agency (FEMA).

2.3 Preparing the Plan

Hazard mitigation plans must be updated every five years to remain eligible for federal mitigation funding. To simplify planning efforts, the jurisdictions in Chatham, Harnett, Lee, Johnston, and Moore Counties joined to create the Regional Hazard Mitigation Plan. This allows resources to be shared among the participating jurisdictions and eases the administrative burden on all participants.

To prepare the *Plan*, a team led by the consulting firm at AECOM was hired to provide professional mitigation planning services. The Region ensured that a professional planner facilitated the planning process. Kelly Keefe from AECOM served as the lead planner for this project.

Per the contractual scope of work, the consultant team followed the mitigation planning process recommended by FEMA (Publication Series 386[1] and Local Mitigation Plan Review Guide[2]) and recommendations provided by the North Carolina Division of Emergency Management (NCEM) mitigation planning staff. The Local Mitigation Plan Review Tool provides a detailed summary of FEMA's current minimum standards of acceptability for compliance with the Disaster Mitigation Act of 2000 (DMA 2000) and notes the location within this *Plan* where each requirement is met. These standards are based on FEMA's Final Rule, as published in the Federal Register, in Part 201 of the Code of Federal Regulations (CFR).[3] The Planning Committee used FEMA's Local Mitigation Plan Review Guide (April 2025)[2] as a reference while completing the *Plan*.

[1] Federal Emergency Management Agency (2002). State and Local Mitigation Planning How-To Series.
[2] Federal Emergency Management Agency (2011). *Local Mitigation Plan Review Guide*.
[3] Mitigation Planning. Code of Federal Regulations. Title 44. Part 201.

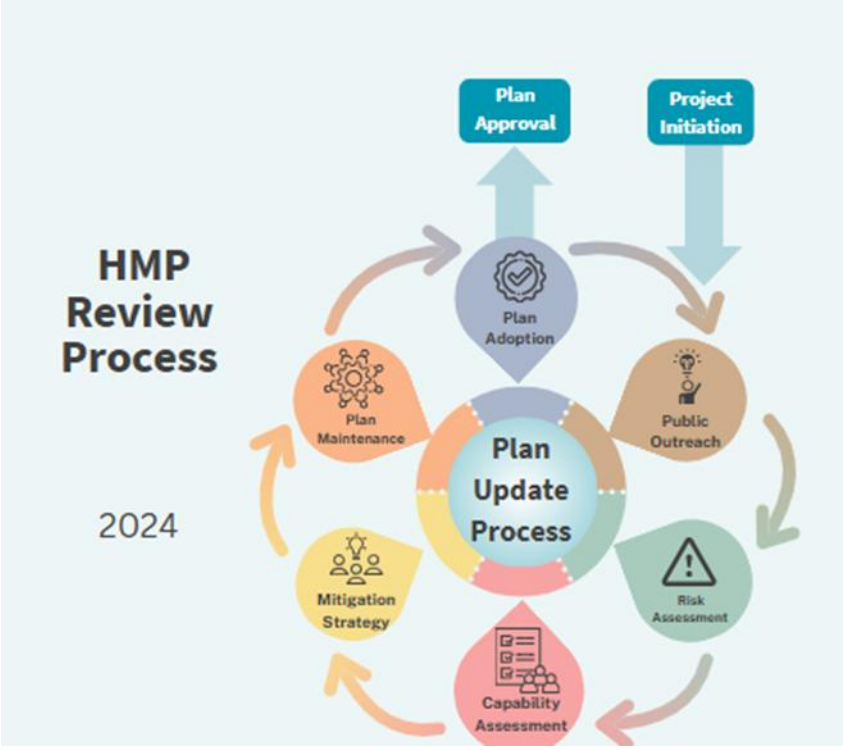


***Figure 2-3**: Mitigation Planning Process*

Additionally, the Planning Committee determined that it was important to include and analyze some man-made hazards in the *Plan* to provide a more comprehensive approach to hazard management within the Region. Although this is not required by regulations regarding hazard mitigation planning at the State or Federal level, it is a noteworthy step toward an all-hazards approach to risk analysis and management.

Key elements from the previously approved plan are referenced throughout the document (e.g., existing actions) and require a discussion of changes made. For example, all the Risk Assessment, Section 5, elements needed to be updated to include the most recent information. It was also necessary to review the Region's goals. The Capability Assessment, Section 6, includes updated information for all participating jurisdictions, and the Mitigation Action Plan provides implementation status updates for all actions identified in the previous plans.

The process used to prepare this Plan included 12 major steps completed over about 12 months, beginning in July 2025. Each of these planning steps resulted in critical work products and outcomes that collectively make up the *Plan*. Specific sections of the *Plan* are further described in Section 1: *Introduction*.

Over the past five years, each participating jurisdiction has been actively implementing the existing *Plan*. This is documented in the *Mitigation Action Plan* through implementation status updates for each Mitigation Action. The *Capability Assessment* also documents changes and improvements in each participating jurisdiction's capabilities to implement the *Mitigation Strategy*. Further detailed below, the planning process was conducted through Hazard

Mitigation Planning Committee (HMPC) meetings, comprising local government staff from each participating jurisdiction and advisory stakeholders.

Throughout the planning process, all jurisdictions were invited to participate through email invitations to designated representatives and HMPC members listed to virtual, in-person, and hybrid HMPC meetings described below. All jurisdictions in the planning area were invited by email and contributed to the plan update process by attending scheduled meetings and were involved in the planning process by engaging and actively participating in the development of the plan. For individuals who preferred one-on-one communication, the representative of the participating jurisdictions provided input and edits to the plan content, and one-on-one communications via email and virtual Committee meetings with AECOM planners were arranged, which is also referred to as **Alternate Participation** throughout this plan. **Alternate Participation** was the preferred method of participation in the planning process for jurisdictions, as otherwise indicated throughout the plan.

Table 2-1: Cape Fear Hazard Mitigation Planning Participation Details

Jurisdiction	Meeting Attendance	Alternate Participation	Capabilities Assessment Update	Mitigation Actions Update
Chatham	**Yes**	–	**Yes**	**Yes**
Goldston	Yes	–	Yes	Unchanged
Pittsboro	Yes	–	Yes	Unchanged
Siler City	Yes	–	Yes	Yes
Harnett	Yes	–	Yes	Yes
Angier	Yes	–	Yes	Yes
Coats	Yes	–	Yes	Yes
Dunn	No	Provided NFIP participation information on Microsoft Form	Unchanged	Unchanged
Erwin	Yes	–	Yes	Yes
Lillington	Yes	–	Yes	Yes
Johnston	Yes	–	Yes	Yes
Archer Lodge	Yes	–	Yes	Yes
Benson	Yes	–	Yes	Yes
Clayton	Yes	–	Yes	Yes
Four Oaks	Yes	–	Yes	Yes
Kenly	Yes	–	Yes	Yes
Micro	Yes	–	Yes	Yes
Pine Level	Yes	–	Yes	Yes
Princeton	Yes	–	Yes	Yes
Selma	Yes	–	Yes	Yes
Smithfield	Yes	–	Yes	Yes
Wilson's Mills	Yes	–	Yes	Yes
Lee	Yes	–	Yes	Yes
Broadway	No	Yes	Yes	Yes
Sanford	Yes	–	Unchanged	Unchanged
Moore	Yes	–	Yes	Yes
Aberdeen	Yes	–	Yes	Yes
Cameron	Yes	–	–	–
Carthage	Yes	Participation in NFIP Participation Form	Yes	Unchanged
Foxfire Village	Yes	–	Yes	Yes
Pinebluff	Yes	–	Yes	Yes
Pinehurst	Yes	–	Yes	Yes

Jurisdiction	Meeting Attendance	Alternate Participation	Capabilities Assessment Update	Mitigation Actions Update
Robbins	Yes	–	Yes	Yes
Southern Pines	Yes	–	Yes	Yes
Taylortown	Yes	–	Yes	Yes
Vass	Yes	Participation in NFIP Participation Form	Yes	Unchanged
Whispering Pines	Yes	–	No	Yes

2.4 Cape Fear Regional Hazard Mitigation Planning Committee

To guide the development of this *Plan*, Chatham, Harnett, Johnston, Lee, and Moore Counties and their jurisdictions created the Hazard Mitigation Planning Committee (Planning Committee). The Planning Committee represents a community-based planning group comprised of representatives from various County and municipal departments, as well as other key stakeholders identified. Members serve as critical partners in the planning process.

Beginning in July 2025, the Planning Committee members engaged in regular discussions, local meetings, and planning workshops to discuss and complete tasks associated with preparing the Plan. This working group coordinated all aspects of plan preparation and provided valuable input to the process. In addition to regular meetings, team members routinely communicated and stayed informed through an e-mail distribution list.

Specifically, the tasks assigned to the Planning Committee members included:

- Participating in Planning Committee meetings and workshops
- Provide the best available data as required for the *Risk Assessment* portion of the *Plan*
- Provide information that will help complete the *Capability Assessment* section of the *Plan* and provide copies of any mitigation or hazard-related documents for review and incorporation into the *Plan*
- Support the development of the *Mitigation Strategy*, including the design and adoption of Countywide goal statements
- Help design and propose appropriate mitigation actions for their department/agency for incorporation into the *Mitigation Action Plan*
- Review and provide timely comments on all study findings and draft plan deliverables
- Support the adoption of the *Plan.*

Table 2-2 lists the members of the Planning Committee who were responsible for participating in the development of the *Plan*.

***Table 2-2**: Members of the Cape Fear Regional Hazard Mitigation Planning Committee*

Name	Title	Department/Agency
John Royal	**Emergency Management Coordinator**	**Chatham**
Steve Newton	Emergency Management Director	Chatham
Mike Reitz	Director of Emergency Management Communications	Chatham
Taylor Sanchez	Emergency Management Coordinator	**Apex
Mike Cooper	Cary Fire Department Chief	**Cary
Michael Martin	Cary Fire Department Assistant Chief	**Cary
Jonathan Hensley	Mayor	Goldston
Colby Sawyer	Director of Communications and Emergency Management	Pittsboro
Jack Meadows	Town Manager	Siler City
Tim Mack	Planning and Community Development Director	Siler City
Tim Garner	Senior Planner	Siler City
Ryan Dawson	Assistant Emergency Management Coordinator	Harnett County
Zach Shean	**Emergency Management Coordinator**	**Harnett**
Jay Sikes	Assistant Director of Development Services	Harnett
Ryan Dawson	Assistant Emergency Management Coordinator	Harnett
Jay Sikes	Assistant Director of Development Services	Harnett
Lee Thompson	Interim Town Manager	Angier
Barbera Hollerand	Town Manager	Coats
Billy Godwin	Assistant City Manager	Dunn
Snow Bowden	Town Manager	Erwin
Joseph Jeffries	Town Manager	Lillington
Landon T. Chandler	Planning Director	Lillington
Alicia Adams	Administrative Services Director	Lillington
Sandy Wood	**Emergency Division Chief**	**Johnston**

Name	Title	Department/Agency
Jonathan Pope	Assistant Emergency Management Coordinator	Johnston
Josh Holloman	Deputy Director, Emergency Services	Johnston
Ryan Parker	Director of Emergency Services	Johnston
Kristen Byrd	Assistant Emergency Management Coordinator	Johnston
Chandra Farmer	Public Utilities Director	Johnston
Braston Newton	Planning Department Director	Johnston
Bryan Chadwick	Town of Administrator	Archer Lodge
Calla Godwin	Assistant Town Manager	Benson
Rich Cappola	Town Manager	Clayton
Stacey Turner	Deputy Fire Chief	Clayton
Rhonda Lee	Town Clerk	Four Oaks
Kevin Hubbard	Fire Chief	Kenly
Tony Sears	Interim Town Manager	Kenly
Kimberly Moffet	Interim Town Clerk	Micro
Sharon Evans	Interim Town Administrator	Pine Level
Michael King	Town Administrator	Princeton
Alexis Carter	Town Manager	Selma
Michael Scott	Town Manager	Smithfield
Stephen Wensman	Planning Director	Smithfield
Bill Dreitzler	Contract Engineer	Smithfield
Kimberly Pickett	Assistant Town Manager	Smithfield
Wendy Oldham	Planning Director	Wilson's Mills
Leighanna Worley	Town Administrator	Wilson's Mills
Donald Andrews	**Emergency Services Coordinator**	**Lee**
Matthew Britt	Emergency Management Director	Lee
Donald Andrews	Mayor	Broadway
Matt Arnold	Fire Chief	Sanford
Scot Brooks	**Emergency Manager**	**Moore**
Bryan Phillips	Deputy Director of Public Safety	Moore
Phillip Richardson	Fire Chief	Aberdeen

Name	Title	Department/Agency
Wendy Butner	Town Administrator	Cameron
Jennifer Hunt	Town Planner	Carthage
Lisa Kivett	Town Planner	Carthage
		Foxfire Village
Jonathan Richardson	Fire Chief	Pinebluff
Carlton Cole	Assistant Village Manager	Pinehurst
Clint Mack	Town Manager	Robbins
Mike Cameron	Fire Chief	Southern Pines
Carolyn Cole	Town Administrator	Taylortown
Chirs Lawson	Planning and Zoning	Vass
Linda Christopher	Zoning Administrator	Whispering Pines
Rich Lambdin	Fire Rescue Chief	Whispering Pines
*Served as the County's main point of contact		

Table 2-2 lists points of contact for municipalities that are elected to designate their respective County officials to represent their jurisdiction on the Planning Committee, generally because they did not have the time or staff to be able to attend on their own. Moreover, County officials noted early in the planning process that it would be much more effective to engage the smaller municipalities throughout the Region through municipal-level meetings. Although these representatives were not present at all meetings, each was involved throughout the planning process and participated by providing suggestions and comments on the plan through municipal-level review meetings, email, and phone conversations.

2.4.1 Multi-Jurisdictional Participation

The Cape Fear Regional Hazard Mitigation Plan includes five counties and thirty-two incorporated municipalities. To satisfy multi-jurisdictional participation requirements, each county and its participating jurisdictions were required to perform the following tasks:

- Participate in mitigation planning meetings and/or workshops;
- Identify completed mitigation projects, if applicable; and
- Develop (and/or update/verify) and adopt their local Mitigation Action Plan.

Each jurisdiction participated in the planning process and has developed a local Mitigation Action Plan unique to its jurisdiction. Each jurisdiction will adopt its Mitigation Action Plan separately. This provides jurisdictions with the means to monitor and update their Plan regularly.

2.5 Community Meetings and Workshops

The preparation of this Plan required a series of meetings and workshops to facilitate discussion, build consensus, and initiate 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 *Plan's* drafting stages. The following is a summary of the key meetings and community workshops held during the development of the plan update. In many cases, routine discussions and additional meetings were held by local staff to accomplish planning tasks specific to their department or agency, such as approving specific mitigation actions for their department or agency to undertake and include in the Mitigation Action Plan. A timeline of the Planning Committee meetings and plan update processes for the Cape Fear region can be reviewed in Figure 2-3. Please see Appendix B for sign-in sheets and flyers for meetings and workshops throughout the planning process. For guidance on best practices for virtual meetings, refer to the Guide to Virtual Mitigation Planning Meetings.

Calendar			Pre-Kickoff Meeting	HMPC Regional Kickoff Meeting	Community Awareness Survey	Capability Assessment	Risk Assessment Meeting	Mitigation Action Update Form	Mitigation Action Strategy Meeting	NFIP Information Survey	Draft Review & Public Meetings	HMPC Reviews Draft & Provides Feedback	Draft Delivered to NCEM	NCEM Delivers Draft to FEMA	FEMA Approves the Plan	Local Adoption by Each Jurisdiction
2025	June	Week 1	6/2/2025													
		Week 2														
		Week 3														
		Week 4														
	July	Week 1		7/10/2025												
		Week 2														
		Week 3														
		Week 4				8/1/2025										
	August	Week 1														
		Week 2					8/14/2025									
		Week 3														
		Week 4														
	September	Week 1														
		Week 2														
		Week 3							9/18/2025							
		Week 4														
	October	Week 1														
		Week 2									10/9/2025					
		Week 3														
		Week 4														
	November	Week 1														
		Week 2														
		Week 3														
		Week 4														
	December	Week 1														
		Week 2														
		Week 3														
		Week 4														
2026	January	Week 1														
		Week 2														
		Week 3														
		Week 4														
	February	Week 1														
		Week 2														
		Week 3														
		Week 4														

***Figure 2-4**: Timeline of the Cape Fear Regional Hazard Mitigation Plan Update Process*

2.5.1 Pre-Kickoff Meeting (June 2, 2025)

This meeting was held to introduce the AECOM planning committee and the Hazard Mitigation Plan (HMP) update process. This included representatives from each county and the AECOM planning team. The project overview explained the purpose of the planning process. It also covered the project's geographic scope, the proposed schedule, and a detailed breakdown of the key project tasks. The roles and responsibilities for AECOM and all participating jurisdictions were also covered. These roles and responsibilities were presented as follows:

AECOM

- Oversee, manage, and document the completion of all key project tasks

County Coordinators

- Serving as the lead coordinating agency
- Assistance with the collection of documents, data, and other information
- Coordination for project meetings
- Responding to frequent questions or inquiries from the public or stakeholders
- Coordinating with participating jurisdictions

All Participating Jurisdictions

- Designate local jurisdiction lead
- Attend HMPC meetings
- Coordination between counties, municipalities, and local stakeholders
- Data collection and information sharing
- Mitigation strategy development (Mitigation Action Plans)
- Assist with public outreach
- Review and comment on draft plan materials

2.5.2 HMPC Regional Kickoff Meeting (July 10th, 2025)

Ms. Kelly Keefe, Ms. McKenzie Houston, Ms. Peyton Campbell, and Ms. Ashley Ervin from AECOM led the meeting of the Planning Committee and began by having attendees introduce themselves. The attendees included representatives from various departments and local jurisdictions across the counties participating in the plan update. Ms. Keefe then



***Figure 2-5**: Cape Fear Regional Hazard Mitigation Plan Kick-off Meeting*

provided an overview of the items to be discussed at the meeting before presenting PowerPoint slides.

During the presentation, Ms. Keefe had the group complete a virtual exercise to assess the most important hazards to the community and at-risk populations. The results of the survey were as follows:

- What recent hazards have had the biggest impact on your county/jurisdiction?
    - Flood – 75%
    - Tornado – 5%
    - Heatwave – 5%
    - Lightning – 5%
    - Strong winds – 10%

- Which populations or areas in your county/jurisdiction are the most at-risk during disasters?
    - The majority said low-income and the elderly

- How will you engage at-risk populations in your planning process?
    - The majority said public communication and surveys

Ms. Keefe discussed the expiration dates for the previous plan and presented a list of all the participating jurisdictions. She confirmed the list of jurisdictions participating in the meeting attendees. Ms. Keefe then explained the mitigation planning process and the specific tasks to be accomplished for this project, including planning, risk assessment, capability assessment, mitigation strategy, mitigation action plan, and plan maintenance procedures. For the risk assessment portion of the process, Ms. Keefe asked each county to designate a point person to coordinate the gathering of Geographic Information System (GIS) data required for the analysis. The project schedule was presented, and Ms. Keefe noted that the timeline is important for developing a quality plan that meets state and federal deadlines.

The project staffing chart was presented to show the number of experienced individuals who will work on this project. Ms. Keefe reviewed the roles and responsibilities of AECOM, the County leads, the participating jurisdictions, and other stakeholders. The presentation concluded with a discussion of the next steps in project development. She encouraged meeting participants to distribute the Public Participation Survey. A digital version of the public survey was also made available via SurveyMonkey, and each jurisdiction was encouraged to share the link on its local website.

Ms. Keefe stated that the next Regional Hazard Mitigation Planning Committee meeting would be scheduled for August 2025 to discuss the findings of the risk and capability assessments and begin proposing mitigation actions. Ms. Keefe asked each jurisdiction to review their existing mitigation actions in preparation for the next meeting.

2.5.3 HMPC Risk Assessment Meeting (August 14, 2025)

The risk assessment meeting on August 14th, 2025, was held online for the HMPC and reviewed the opportunities to develop the mitigation impact strategy. All attendees were asked to sign in and provide their name and the jurisdiction that they represent. While attendees waited for the meeting to begin, they were given the opportunity to participate in the Community Awareness Survey, which was distributed via a link and QR code. An introduction to the AECOM planning team was then given, followed by a brief overview of the purpose of the HMPC Risk Assessment Meeting.

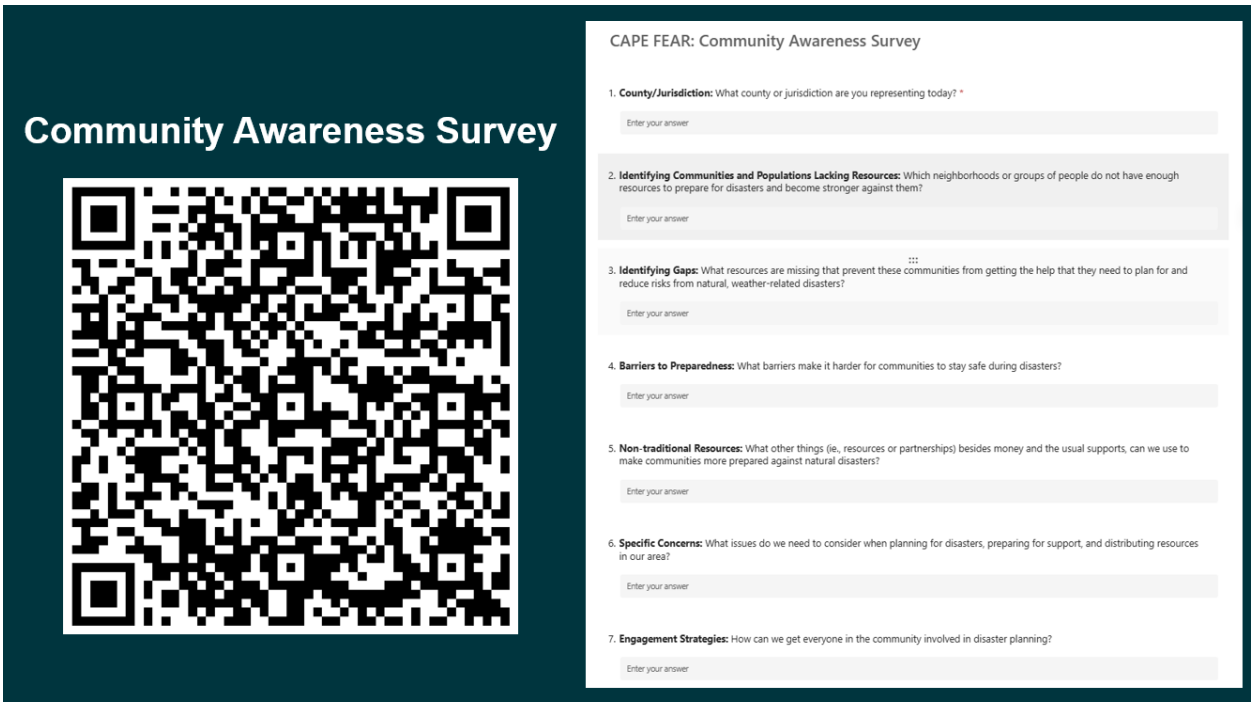


Figure 2-6: *Cape Fear Community Awareness Survey*

Next, a table of capability assessments that had been received and those that had not were presented to attendees to show which jurisdictions still need to turn in a capability assessment, which was due on August 1, 2025. This was originally distributed by email during the previous kickoff meeting. Next, the public survey was introduced to the HMPC via a link and QR code, distributed during the meeting and by email, along with draft language for their use. This public survey provides the public with an opportunity to participate in the HMP update process, with results summarized in 2.6.1. The HMPC was encouraged to distribute the public survey and to advertise it to residents of their jurisdiction and the planning area, so that the HMPC can gain a clearer understanding of residents' preferences, experiences, and general feedback throughout the planning process.

The additional stakeholders to be invited to participate in the planning process were discussed, and the HMPC was asked to provide input on any stakeholder organizations in the planning area that should be invited to public HMP meetings. This includes local and regional agencies involved in hazard mitigation activities, agencies that regulate development, neighboring

communities, businesses, academia, private interests, and non-profits. Before this meeting, the AECOM team had already researched and added a significant number of potential stakeholder groups to the contact list for invitations to public meetings. Examples of stakeholder groups included in the stakeholder list were provided to help the HMPC understand the types of groups we are looking to invite to the public meetings and to participate in the planning process.

The Community Awareness Survey was presented to the HMPC again to allow attendees to respond if they had not yet done so. Next, the process for updating the mitigation action was outlined. This includes how to access the mitigation actions, what the mitigation action worksheets look like, how to fill them out, and how to reach the AECOM team if the HMPC has difficulty accessing those documents.

After the AECOM team demonstrated how to access, complete, and submit the mitigation action updates for their jurisdiction, the critical facilities count was provided, including those in the 0.2% Annual Chance Floodplain, the AE Zone, and X Zones. The HMPC was asked to provide input when the draft plan is distributed, to ensure that all critical facilities in the planning area are included on the list.

The AECOM team explained the purpose of having the HMPC verify the community's assets and capabilities, including strengthening mitigation actions and vulnerability statements for hazard-related impacts. This included the example vulnerability statement below:

> 0.5% of housing units in Chatham County, 0.8% in Harnett County, 1.1% in Johnston County, 0.9% in Lee County, and 0.9% in Moore County do not have telephone service within the housing unit.[4]
>
> - The National Weather Service (NWS) reported an average of 10.52 minutes of lead time between 2006 and 2024 before tornado occurrences[5]
> - Alerts may be transmitted and require telephone service, which means that it is critical that residents in the planning area have access to telephone services in their housing units
> - **Recommendation:** ensure that all residents have at least one method of receiving emergency alerts in their residence

[4] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[5] National Oceanic and Atmospheric Association [NOAA] & National Weather Service [NWS]. (n.d.). Severe weather warnings for tornadoes: Storm based lead time (minutes) (By U.S. Department of Commerce). Retrieved July 28, 2025, from https://performance.commerce.gov/KPI-NOAA/NOAA-Severe-weather-warnings-for-tornadoes-Storm-b/ysdv-8h2r

Example maps for historic places or districts and the Flood Hazard Designations, critical facilities, and Flood Hazard Areas, and an overview of the flood maps for each county in the planning area.

The AECOM team showed the HMPC the three dams in the Cape Fear HMP area that had been designated as high-hazard dams and had pending NCEM funding applications under the High Hazard Program Dams (HHPD). HMPC members were encouraged to consider whether any high-hazard dams in their jurisdiction may be eligible and interested in obtaining HHPD funding to improve dam safety and rehabilitate high-hazard dams. The AECOM team explained that the HMPC should determine which high-hazard dams are interested in obtaining funding and bring potential projects to the AECOM team as soon as possible.

Attendees were invited to ask questions or provide feedback, and the HMPC's responsibilities were outlined. The due date for mitigation actions was set for September 4, 2025; the next meeting date and time were given to the HMPC, and a tentative draft public meeting date was given.

2.5.4 HMPC Mitigation Action Strategy (September 18, 2025)

The risk assessment meeting on September 18th, 2025, was held online for the HMPC to evaluate the mitigation actions submitted as a group and to provide an opportunity to answer any questions about the planning process. All attendees were asked to sign in and provide their name and the jurisdiction that they represent. While attendees waited for the meeting to begin, they were given the opportunity to participate in the Community Awareness Survey, which was distributed via a link and QR code.

Participation status, capabilities assessments received, and mitigation actions received were presented, as the due date for the mitigation actions was set for September 4th, 2025. But due to the amount of missing mitigation actions, the AECOM team decided to extend the deadline to October 2nd to allow sufficient time to develop the draft plan.

The public survey was presented again today to ensure that HMPC members who had not attended the previous meetings could distribute it with the QR code, link, and draft language. Stakeholder invitation requirements were reviewed again to allow HMPC members who had not attended previous meetings to suggest stakeholder groups from their planning area to invite. The HMPC was encouraged to turn in mitigation actions as soon as possible to allow the AECOM team enough time to develop the draft plan.

Finally, the requirements for public comment opportunities were explained to the attendees. Ideas for public comment opportunities were also discussed and include public meetings, Facebook Live events, Teams meetings, uploading the plan and feedback link to the website, social media posts, printed flyers, mail, newspaper ads, and others. The meeting concluded with reminders to turn in capability assessments and mitigation action updates as soon as possible and a reminder about the October 9th, 2025, draft plan meeting.

2.5.5 HPMC Plan Draft Review (October 9, 2025)

This meeting was held virtually to show attendees how to provide input and access the draft Cape Fear HMP Draft. All attendees were asked to sign in and provide their name and the jurisdiction that they represent. Next, the participation status of each jurisdiction in the planning area was reviewed, including the capabilities assessment and mitigation action statuses. The status of the National Flood Insurance Program (NFIP) surveys received was discussed, along with the rationale for requesting NFIP participation information. The attendees were informed that the NFIP survey was sent to floodplain managers or administrators identified in the capabilities assessments.

The goals of the Cape Fear Regional HMP were reviewed along with the hazards address in preparation for distributing the draft. Next, a few map examples were shown to highlight the layout of maps within the plan. The attendees were notified that the link for the Cape Fear HMP draft, the link to the draft feedback form, the narrative for public distribution to seek input from residents of the planning area, and a flyer for public distribution to seek input from the planning area would be sent out in an email after the meeting concluded.

Attendees were asked to distribute the draft plan and draft feedback form to stakeholders, restating the FEMA stakeholder requirements and opportunities for feedback. The attendees were asked to provide feedback on the key areas of critical facilities, vulnerability and impact statements, and NFIP participation information. The attendees were also given a list of suggestions on how the planning area could provide stakeholders with the opportunity to participate in the HMP update process. Attendees were asked to provide comments by October 23rd at the latest so that the AECOM team has enough time to incorporate those into the plan. The participants were also given the next steps, including submitting the plan to NCEM, NCEM submitting the plan to FEMA, and a timeline for Cape Fear HMP adoption resolutions, which are required for each jurisdiction to be eligible for FEMA funding.

2.6 Involving the Public

A vital component of the mitigation planning process involved public participation. Individual citizen and community-based input provide the entire planning committee with a greater understanding of local concerns and increase the likelihood of successfully implementing mitigation actions by developing community “buy-in” from those directly affected by public officials' decisions. As citizens become more involved in decisions that affect their safety, they are more likely to appreciate the hazards 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 city safer from the potential effects of hazards. Resources such as FEMA’s “What Would You Do?” scenarios and Ready.gov provide valuable tools and guidance to help individuals and families prepare for emergencies and reduce their vulnerability to disasters.

Public involvement in the development of the *Cape Fear Regional Hazard Mitigation Plan* was sought using two methods: (1) public survey instruments were made available online; and (2) copies of the draft Plan deliverables were made available for public review on county and

municipal websites. The public was provided with two opportunities to be involved in the development of the regional plan at two distinct periods during the planning process: (1) during the drafting stage of the Plan; and (2) upon completion of a final draft Plan, but before official plan approval and adoption. In addition, a public participation survey (discussed in greater detail in Section 2.6.1) was made available during the planning process at various locations throughout Chatham, Harnett, Johnston, Lee, and Moore Counties, as well as on county and municipal websites.

Each participating jurisdiction will hold public meetings before the local governing bodies officially adopt the final plan. These meetings will occur at different times after FEMA grants conditional approval of the Plan. Adoption resolutions will be included in Appendix F.

2.6.1 Public Participation Survey

The Planning Committee successfully encouraged citizens to provide input on the mitigation planning process through the *Public Participation Survey*. The *Public Participation Survey* was designed to capture data from residents of the Cape Fear Region who may not be able to attend public meetings or otherwise participate in the mitigation planning process.



***Figure 2-7**: Public Participation Survey QR Code and Form Example*

The Public Participation Survey was distributed to the Regional HMPC for residents to complete online via an electronic link on county and municipal websites. The survey was open from the July 10th HMPC meeting until the day before the HMPC and Public Draft Review meeting on October 9th, 2025. There were 187 responses in the area, and numerous counties and jurisdictions assisted in distributing the survey throughout the planning area. The results of the survey are provided in Appendix C and are summarized below:

1. **Have you ever experienced or been impacted by a natural disaster?**
   - 85.56% of respondents reported that they had experienced a natural disaster.

2. **If yes, which of these natural hazards have you experienced or been impacted by?**
   - **Dam/Levee Failure:** 7.98%
   - **Drought:** 32.53%
   - **Earthquake:** 15.95%
   - **Flood:** 47.85%
   - **Hazardous Materials Incident:** 8.59%
   - **Heat Wave:** 34.36%
   - **Hurricane:** 81.60%
   - **Nuclear Accident:** 0.61%
   - **Terror Threat:** 12.27%
   - **Severe Weather (Thunderstorm/ Lightning/ Hail):** 72.39%
   - **Tornado:** 27.61%
   - **Wildfire:** 9.20%
   - **Winter Storm:** 62.58%
   - **Other:**
     - "Derecho"
     - "Hurricane Fran, Floyd, Matthew"
     - "Tsunami warning that thankfully didn't materialize after major earthquake"

3. **How concerned are you about the possibility of your community being impacted by each of these natural hazards?:**

Table 2-33: *Percentage of respondents who reported each level of concern about being impacted by the hazard.*

Hazard	Not Concerned	Somewhat Concerned	Very Concerned
Dam/Levee Failure	50.85%	36.72%	12.43%
Drought	18.23%	60.22%	21.55%
Earthquake	72.88%	22.03%	5.08%
Flood	16.22%	20.00%	43.78%
Hazardous Materials Incident	27.62%	53.04%	19.34%
Heat Wave	10.81%	52.43%	36.76%
Hurricane	2.15%	35.48%	62.37%
Nuclear Accident	36.81%	49.45%	13.74%
Terror Threat	31.11%	46.67%	22.22%
Severe Weather (Thunderstorm/ Lightning/ Hail)	3.28%	36.07%	60.66%
Tornado	9.78%	48.91%	41.30%
Wildfire	20.77%	52.46%	26.78%
Winter Storm	20.88%	50.55%	28.57%

4. **How important is each of the following specific community assets to you?** Many respondents reported this level of concern for the community assets
   - **Airports**: Neutral (34.43%)
   - **Colleges and Universities:** Very Important (30.60%)
   - **Day Care and Elder Care Facilities:** somewhat Important (37.97%)
   - **Emergency Operations Centers:** Very Important (78.49%)
   - **Emergency Shelters:** Very Important (53.48%)
   - **Fire, Police, and EMS Stations:** Very Important (87.10%)
   - **Historic Buildings:** Somewhat Important (39.13%)
   - **Hospitals and Medical Facilities:** Very Important (86.02%)
   - **Local Businesses:** Very Important (46.77%)
   - **Major Roads and Bridges:** Very Important (80.65%)
   - **Parks and Recreation:** Somewhat Important (36.02%)
   - **Schools (K-12):** Very Important (49.73%)
   - **Town Hall/Courthouse:** Somewhat Important (33.88%)
   - **Other:**
     "Electric Grid"
     "Walking Paths and Trails"
     "Fuel resupply points"
     "Churches, groceries... very important"
     "Public Transportation"
     "Power Stations and Systems"

5. **Please tell us how important each statement is to you by checking the appropriate circle:** Majority of respondents reported this level of concern for the statements
   - **Protecting Private Property:** Very Important (70.43%)
   - **Protecting Critical Facilities:** Very Important (93.05%)
   - **Preventing Development in Hazard Areas:** Very Important (68.45%)
   - **Enhancing the Function of Natural Features (for example, streams, wetlands, etc.):** Very Important (61.62%)
   - **Protecting Historical and Cultural Landmarks:** Somewhat Important (37.43%)
   - **Protecting and Reducing Damage to Utilities:** Very Important (81.82%)
   - **Strengthening Emergency Services:** Very Important (81.28%)
   - **Promoting Cooperation Among Public Agencies, Citizens, Non-profit Organizations, and Businesses:** Very Important (70.05%)

6. **What actions can you and your local government take to minimize the risk of future natural hazard damage and enhance resilience in your neighborhood?**
   - **Assist Vulnerable Populations:** 66.84%
   - **Education and Awareness Activities:** 74.87%
   - **Elevate your Home or Business:** 14.44%
   - **Floodproof Your Home or Business**: 35.83%
   - **Keep Storm Drains Clean:** 78.07%
   - **Protect Power Lines:** 73.80%
   - **Purchase Flood Insurance:** 25.13%

- **Reduce Stormwater Runoff:** 66.31%
- **Restrict Development in Floodplain Areas:** 83.96%
- **Other:** 16.04%
  - "Put power grid underground and enhance road network"
  - "Maintain ditches and verges along county roads. (Hasn't been done where I live in 10-15 years)"
  - "My neighborhood desperately needs drainage and water management."
  - "Understand Emergency Gathering points and evacuation routes."
  - "Hold public and private parties responsible for maintaining infrastructure like dams."
  - "Make developers improve infrastructure before building."
  - "Keep defensible space around house; identify flammable plantings"
  - "Create a plan to ensure safe infant and young child feeding in disasters, including educating all emergency personal on the CDC's IYCF-E resources and ensuring access to community infant/young child feeding resources"
  - "Must restrict development in floodplain areas!!!"
  - "Explain the 250 and 500 flood risk levels to people."
  - "Hold Developers Accountable and quit using 10-year storms for standards."
  - "Stop rampant development and clear-cutting of forests. Plant more trees!! Slow down population growth in urban and overbuilt suburban areas."

7. **What are the most effective ways for you to receive information about how to make your home and neighborhood more resistant to natural hazards?**
   - Internet (Social Media): **53.76%**
   - Internet (Web Pages): **68.82%**
   - Mail: **46.24%**
   - Mobile Messages or Alerts: **70.97%**
   - Newspaper: **17.20%**
   - Public Meetings: **32.26%**
   - Radio: **30.65%**
   - Television: **41.40%**
   - Other: **7.53%**
     - "Social Media is not the most reliable source of info, so use it as a tool to remind...not to inform."
     - "Local CERT/GMRS radio net in Chatham County (developing)"
     - "Chatham CERT newsletter"
     - "Ham radio broadcast announcements"
     - "Text"
     - "Email"
     - "Via Social groups/clubs: Rotary, Kiwanis, Radio Group, DAR, SAR, Chamber of Commerce, CERT, Masons, Bookclubs, 4H, etc."
     - "Outreach Meeting"

8. **Is your home located in a floodplain?**
   - Yes: **5.38%**
   - No: **79.03%**
   - I Don't Know: **15.59%**

9. **Do you have flood insurance?**
   - Yes: **9.24%**
   - No: **85.87%**
   - I Don't Know: **4.89%**

10. **If you don't have flood insurance, why not?**
    - The house is not located in a floodplain **– 53.49%**
    - Flood insurance is too expensive **– 11.05%**
    - I don't think it's necessary because it never floods **– 3.49%**
    - I don't think it's necessary because I'm elevated or otherwise protected **– 11.63%**
    - I don't think it's necessary because I have homeowners' insurance **– 4.07%**
    - I've never really considered it **– 9.30%**
    - Other **– 6.98%**
      - "Some calculators and engineers have told me my home has a very low risk of flooding; I think it's possible, but it doesn't drive me to purchase flood insurance at this time. I have bought flood insurance in some previous years."
      - "I rent"
      - "The home is paid for"
      - "I have a separate disaster insurance policy"
      - "Not in a flood plan and elevated neighborhood"
      - "I am above the floodplain, but some of my non-house property is in a floodplain that was stable for decades until climate change and massive upstream development entirely altered the local environmental dynamics."
      - "I want to purchase flood insurance, but I would never meet the qualifications to make a claim."
      - "When we bought our home, we didn't know we were in the flood zone. We later bought flood insurance... it didn't cover half the damage. It's very expensive. I am now living in another location, but I'm stuck with property in the flood zone."

11. **What methods of communication do you prefer for receiving updates and information about the plan?**
    - Internet (Social Media) – **55.43%**
    - Internet (Web Pages) – **72.0%**
    - Public Meetings – **40.0%**

12. In which community do you live?

Table 2-4: *Number of respondents from each county and percentage of respondents from each community*

Chatham County	**109 Respondents**
Goldston	1.83%
Pittsboro	37.61%
Siler City	5.5%
Harnett County	**10 Respondents**
Angier	40%
Coats	10%
Dunn	10%
Erwin	30%
Lillington	10%
Johnston County	**9 Respondents**
Pine Level	22.22%
Princeton	11.11%
Smithfield	11.11%
Lee County	**11 Respondents**
Broadway	36.36%
Sanford	45.45%
Moore County	**33 Respondents**
Aberdeen	15.15%
Cameron	3.03%
Carthage	3.03 %
Foxfire Village	36.36 %
Pinebluff	6.06%
Pinehurst	9.09%
Robbins	3.03%
Southern Pines	3.03%
Vass	3.03%
Whispering Pines	12.12%

13. How long have you lived in the Cape Fear region? (Chatham, Harnett, Lee, Johnston, and Moore)

- Less than a Year – **1.61%**
- 1-5 Years – **16.13%**

- 6-9 Years – **17.20%**
- 10-19 Years – **23.12%**
- 20 Years or More **– 41.94%**

14. What type of building do you live in?

- Single Family Home **– 91.98%**
- Duplex **– 2.16%**
- Apartments (3-4 Units in Structure) **– 0%**
- Apartments (5 or More Units in Structure) **– 0.54%**
- Condominium **– 0%**
- Manufactured Home **– 3.78%**
- Other – **1.62%**

15. Additional Comments:

- "Concern for bridge on Millbrook into Powell Place, Pittsboro. When was the bridge last checked for strength? There's no way in or out if that bridge falls in."
- "My neighborhood needs drainage and water management."
- "Extreme heat should be a priority"
- "Because of the runaway development being allowed, and not charging impact fees to developers, our county cannot keep pace with critical infrastructure improvements. Legislation must be changed!"
- "It is essential to protect public infrastructure (roads/bridges) and utilities (water, gas, electric, sewer)"
- "I was flooded out of my home twice in two years. The issues still have not been completely resolved 7 years later. Mass building and construction in Moore County has created a major issue. Not only flooding, but roads are also not compatible with the daily traffic that travels through the area. The hospital is full, and the ER has a constant wait. Moore County needs growth, but there must be a better way. The rubber-stamping of housing developments needs to be thoroughly investigated, especially in wetlands and flood-prone areas. I really fear the next big storm. It's not if, it's when."
- "The importance of being prepared for a disaster (natural/manmade) cannot be overstated."
- "Upgrade and widen major East-West State Routes between Cumberland and Moore Counties, specifically SR690 and SR 24-27. Widen the Little River channel at SR 87. Inspect and clear debris in all culverts along these routes before Hurricane season and spring rains."
- "Create a special medical needs registry (see Dare County's example) so that residents are identified that need special care during evacuations or assistant if they lose power or their road/driveway is washed out."
- "I'm not a resident, but I work in the area. I am very concerned about getting stuck and not being able to make it home because of the increased flooding that has impacted roadways recently. The additional and over-development that I've observed in the area is cause for more concern, because more areas will soon be impacted by record flooding or flash flooding."

- "We also need to improve cellular service in our area. When our power goes out or Wi-Fi, then I am unable to receive any information or place calls due to a dead zone in our area."
- "Stop developing floodplains, too many roads are being washed out."
- "Our neighborhood should not flood, but water consistently runs across Pee Dee Road. We have complained about this for years. Now, multiple homes have been flooded."
- "Generators or whole-house generators are also very helpful in long-term disasters. Getting timely pre-planning info to the community is also very important, as many don't pay attention until the last minute. Having nearby heavy equipment/chain saws to help with tree removal and road replacement is important."
- "The overdevelopment of flood-prone areas needs to be stopped or highly controlled. Developments should NOT just be green-lighted. The more concerts and housing there are, the more runoff there is. We are seeing water problems all over Moore County."
- "Development needs to protect and even create wetlands (not just catchment ponds/retaining walls) to deal with water. We need to reduce the number of paved surfaces that cause runoff. We need to encourage/create rain gardens in parking lots, etc., to slow and absorb runoff."

2.7 Involving the Stakeholders

The Planning Committee encouraged greater openness and broader participation in the mitigation planning process. The Region also went above and beyond in its local outreach efforts by designing and distributing the *Public Participation Survey*. This opportunity was provided to local officials, residents, businesses, academia, and other private interests in the Cape Fear Region to participate and provide input throughout the local mitigation planning process.

The Planning Committee prioritized incorporating organizations designated as "Community Lifelines" as active stakeholders in the hazard mitigation planning process. The Committee considers "Community Lifelines" the most fundamental service in the community, enabling all other aspects of society to function when stabilized. The integrated network of assets, services, and capabilities that provide community lifeline services is used day to day to support recurring needs. Lifelines enable the continuous operation of critical government and business functions and are essential to human health and safety or economic security, as described in the National Response Framework, 4th Edition.[6] Stakeholders designated as "Community Lifelines" are listed in the table below under the Stakeholder Type column.

The development of this plan incorporated information from existing plans, studies, reports, technical information and initiatives, such as hazard mitigation plans, local comprehensive

[6] Federal Emergency Management Agency. (2019). *National Response Framework, Fourth Edition*. U.S. Department of Homeland Security. https://www.fema.gov/sites/default/files/documents/NRF_FINALApproved_2011028.pdf

plans, and flood insurance studies as well as other relevant data from neighboring communities and other jurisdictions, like Wake, Franklin, Nash, Wilson, Wayne, Sampson, Cumberland, Hoke, Scotland, Richmond, Montgomery, Randolph, Alamance, Orange and Durham counties through review and analysis. These neighboring jurisdictions were invited by email to participate in the planning process and provide input to shape the plan's content.

Table 2-51: List of stakeholders invited to participate in the HMP Planning Process. *When the email addresses of specific individuals were not available, general information emails were used, and these are indicated below where no name is provided.*

Name	Stakeholder Type	Organization	Title	County, Jurisdiction, or Affiliation
Adam Crocker	Natural and Cultural resources	Town Of Aberdeen Parks And Recreation	Parks & Recreation Director	Aberdeen
Brian Norris	Agencies that regulate development	Town Of Aberdeen Planning	Chief Building Inspector	Aberdeen
Joe Wood	Infrastructure	Town Of Aberdeen Public Works	Public Works Director	Aberdeen
Pamela Graham	Agencies that regulate development	Town Of Aberdeen Planning	Planning Director	Aberdeen
Austin Yarbrough	Natural and Cultural resources	Town Of Angier Parks And Recreation	Interim Parks & Rec Director	Angier
Brandon Johnson	Infrastructure	Town Of Angier Public Works	Public Works Director	Angier
Jeff Jones	Agencies that regulate development	Town Of Angier Community Development	Planning Director	Angier
Jason Kress	Agencies that regulate development	Archer Lodge Planning & Economic Development	Town Planner	Archer Lodge
Allen Smith	Infrastructure	Town Of Carthage Public Works	Public Works Director	Carthage
Jennifer Hunt	Agencies that regulate development	Town Of Carthage Planning, Zoning, And Permitting	Town Planner	Carthage
Adam Gaines	Safety	Chatham County Emergency Communication	Assistant Communications Director	Chatham
Blake Mills	Utilities	Chatham County	Director of Public Utilities	Chatham
Brandon Anacona	Agencies that regulate	Chatham County Central Permits & Building	Assistant Director of Permitting and	Chatham

Name	Stakeholder Type	Organization	Title	County, Jurisdiction, or Affiliation
	development	Inspection	Inspections	
Brandon Dawson	Planning	Chatham County Planning	Conservation & Resiliency Coordinator	Chatham
Chatham County Chamber of Commerce	Economic Development	Chatham County Chamber Of Commerce	Organization	Chatham
Chatham County Housing Authority	Housing	Chatham County Housing Authority	Organization	Chatham
David Camp	Agencies that regulate development	Chatham County Central Permits & Building Inspection	Director of Permitting and Inspections	Chatham
Dorothy Rawleigh	Health and Human Services	Chatham County Public Health	Health Promotion and Policy Director	Chatham
Drew Blake	Natural and Cultural resources	Chatham County Watershed Protection	Assistant Director of Watershed Protection	Chatham
James Fields	Safety	Chatham County Emergency Management	Emergency Management Logistics Specialist	Chatham
Jason Sullivan	Planning	Chatham County Planning	Planning Director	Chatham
Jennifer Kristiansen	Health and Human Services	Chatham County Department Of Social Services	Director of Social Services	Chatham
Jina Stamey	Natural and Cultural resources	Chatham County Parks And Recreation	Assistant Director	Chatham
Jiona Mills	Health and Human Services	Chatham County Public Health	Community Engagement Specialist	Chatham
Kevin Lindley	Environmental	Chatham County Department Of Environmental Quality	Director of Environmental Quality	Chatham
Michael Reitz	Safety	Chatham County Emergency Communication	Communications Director	Chatham
Michael Smith	Economic Development	Chatham Economic Development Corporation	President	Chatham
Michael Zelek	Health and Human Services	Chatham County Public Health	Director of Public Health	Chatham
Nick Haffele	Planning	Chatham County GIS	Director of GIS	Chatham
Noy Johnson	Economic Development	Chatham Economic Development Corporation	Office Administrator	Chatham

Name	Stakeholder Type	Organization	Title	County, Jurisdiction, or Affiliation
Rachael Thorn	Natural and Cultural resources	Chatham County Watershed Protection	Director of Watershed Protection	Chatham
Susannah Goldston	Natural and Cultural resources	Soil & Water Conservation District	District Director	Chatham
Tracy Burnett	Natural and Cultural resources	Chatham County Parks And Recreation	Director	Chatham
Roy E. Allen	Academia	Carolina Community College	Dean of Public Safety	Chatham, Harnett, Lee County
Nick Holcomb	Economic Development	Town Of Coats Economic Development	Town Manager	Coats
Doug Stevens	Natural and Cultural resources	Town Of Erwin	Director of Parks & Recreation	ERwin
Dylan Eure	Agencies that regulate development	Town Of Erwin	Town Planner	Erwin
Mark Byrd	Infrastructure	Town Of Erwin	Public Works Director	Erwin
Town of Goldston Planning Board	Agencies that regulate development	Town Of Goldston Planning Board	Organization	Goldston
Chance Torain	Transportation	Harnett Area Rural Transportation Systems	Transit Services Manager	Harnett
Clint Williams	Safety	Harnett County Gis/E-911	GIS/E-911 Operations Administrator	Harnett
Dr. Michael C. Threatt	Housing	Sanford Housing Authority	Chief Executive Officer	Harnett
Harnett County Partnership for Children	Community Lifelines	Harnett County Partnership For Children	Organization	Harnett
Harnett Food Pantry	Community Lifelines	Harnett Food Pantry	Organization	Harnett
Harnett Regional Water	Infrastructure	Harnett Regional Water	Organization	Harnett
Jay Sikes	Agencies that regulate development	Harnett County Planning Services	Assistant Director of Development Services/Manager of Planning Services	Harnett
Lynn Lambert	Natural and Cultural resources	Harnett County Soil And Water Conservation District	Natural Resources Director/Conservation Education Coordinator	Harnett

Name	Stakeholder Type	Organization	Title	County, Jurisdiction, or Affiliation
Mark Locklear	Agencies that regulate development	Harnett County Planning Services	Director of Development Services	Harnett
Stephen Barrington	Economic Development	Harnett County Department Of Economic Development	Director	Harnett
Tim Matthews	Health and Human Services	Nc Cooperative Extension: Harnett County Center	County Extension Director and Extension Agent, Horticulture & Environmental Edu.	Harnett
Bryan Spivey	Natural and Cultural resources	Johnston County Center	County Extension Director and Extension Agent, Horticulture & Environmental Edu.	Johnston
Chandra Cox Farmer	Infrastructure	Johnston County Public Utilities	Director	Johnston
Community & Senior Services of Johnston County	Community Lifelines	Community & Senior Services Of Johnston County	Organization	Johnston
Johnston County Department of Social Services	Community Lifelines	Johnston County Department Of Social Services	Organization	Johnston
Johnston County Economic Development	Economic Development	Johnston County Economic Development	Organization	Johnston
Johnston County Inspections	Agencies that regulate development	Johnston County Inpections	Organization	Johnston
Johnston County Planning	Agencies that regulate development	Johnston County Planning	Organization	Johnston
Johnston County Soil and Water Conservation District	Natural and Cultural resources	Johnston County Soil And Water Conservation District	Organization	Johnston
Johnston County Visitors Bureau	Health and Human Services	Johnston County Visitors Bureau	Organization	Johnston
Johnston Health Foundation	Charity	Johnston Health Foundation	Organization	Johnston
Letitia (Tish) Jones	Safety	Johsnton County Gis	GIS Director	Johnston

Name	Stakeholder Type	Organization	Title	County, Jurisdiction, or Affiliation
Marilyn Pearson	Health and Human Services	Johnston County Public Health	Health Director	Johnston
Morgan Harris	Safety	Johnston County 911 Communications	Director	Johnston
Randy Smale	Housing	Johnston County Housing Assistance Payments Program	Director	Johnston
Todd Johnson	Natural and Cultural resources	Johnston County Heritage Center	Director	Johnston
Angela Wood	Safety	Lee County Gis Strategic Services	Director of GIS Strategic Services	Lee
Brandon Key	Agencies that regulate development	Lee County Development Services	Development Services Director	Lee
Joseph Keel	Natural and Cultural resources	Lee County Parks And Recreation	Director of Parks & Recreation	Lee
Melanie Rodgers	Health and Human Services	Lee County Senior Services	Director of Senior Services	Lee
Partnership for Children and Families	Charity	Partnership For Children And Families	Organization	Lee
Salvation Army of Wake and Lee Counties	Charity	Salvation Army Of Wake And Lee Counties	Organization	Lee
Shannon Biddy	Natural and Cultural resources	Lee County Soil And Water	Soil Conservation Supervisor	Lee
Takishia McMiller	Health and Human Services	Lee County Department Of Social Services	Director of Social Services	Lee
Tonya Surratt	Infrastructure	County Of Life Transit System Public Transportation	Transportation Coordinator	Lee
William Heath Cain	Health and Human Services	Lee County Public Health	Director of Public Health	Lee
Brandon Harris	Natural and Cultural resources	Town Of Lillington Parks And Recreation	Assistant Parks & Recreation Director	Lillington
Landon Chandler	Agencies that regulate development	Town Of Lillington	Planning Director	Lillington
Lillington Rotary	Charity	Lillington Rotary	Organization	Lillington
William Baker	Natural and Cultural	Town Of Lillington Parks	Parks & Recreation	Lillington

Name	Stakeholder Type	Organization	Title	County, Jurisdiction, or Affiliation
	resources	And Recreation	Director	
Chris Wiley	Natural and Cultural resources	Moore County Parks And Recreation	Director of Parks & Recreation	Moore
Dena Barner	Agencies that regulate development	Moore County Inspections And Permitting	Central Permitting Division Leader	Moore
Moore County Department of Public Works	Infrastructure	Moore County Department Of Public Works	Organization	Moore
Moore County Health Department	Health and Human Services	Moore County Health Department	Organization	Moore
Sonia Biggs	Infrastructure	Moore County Department Of Transportation	Transportation Director	Moore
Stuart Mills	Charity	Partners For Children And Families	Executive Director	Moore
Dawn Neighbors	Community Lifelines	Harnett County Community Foundation; Johnston County Community Foundation; Lee County Community Foundation	Community Leadership Officer	Multiple
Family Promise of Moore County	Charity	Family Promise Of Moore County	Organization	Multiple
Gideon Adams	Charity	Food Bank Of Central And Eastern North Carolina	Vice President of Community Health and Engagement	Multiple
Janet Johnson	Community Lifelines	Red Cross Greater Triangle Area Chapter	Executive Director	Multiple
Jimmy Randolph	Economic Development	Sanford Area Growth Alliance	CEO	Multiple
Meg Moss	Infrastructure	Central Electrical Membership Corporation	Director of Marketing and Member Engagement	Multiple
Sandhills/Moore Coalition for Human Care	Community Lifelines	Sandhills/Moore Coalition For Human Care	Organization	Multiple
Southern Pines Land and Housing Trust	Community Lifelines	Southern Pines Land And Housing Trust	Organization	Multiple
Southmountain	Charity	Southmountain Children	Organization	Multiple

Name	Stakeholder Type	Organization	Title	County, Jurisdiction, or Affiliation
Children and Family Services		And Family Services		
UNC Health	Health and Human Services	UNC Health	Organization	Multiple
David Thompson	Natural and Cultural resources	Town Of Pine Bluff Public Works	Public Works Manager	Pine Bluff
Alex Cameron	Agencies that regulate development	Village Of Pinehurst Planning And Inspections	Planning and Inspections Director	Pinehurst
Angie Whisnant	Natural and Cultural resources	Village Of Pinehurst Parks And Recreation	Director of Parks & Recreation	Pinehurst
Mike Apke	Infrastructure	Village Of Pinehurst Public Services And Engineering Administration	Public Services and Engineering Director	Pinehurst
Daniel Snipes	Infrastructure	Town Of Pittsboro Public Works	Director of Public Works	Pittsboro
Katy Keller	Natural and Cultural resources		Director of Parks & Recreation	Pittsboro
Randy Cahoon-Tingle	Agencies that regulate development	Town Of Pittsboro Planning	Planning Director	Pittsboro
Brad Thompson	Agencies that regulate development	Town Of Princeton Planning And Zoning		Princeton
Angela Wood	Agencies that regulate development	City Of Sanford Strategic Services	Strategic Services Director	Sanford
Fedd Walker	Infrastructure	City Of Sanford Public Works Department	Public Works Director	Sanford
Karen Kennedy	Agencies that regulate development	City Of Sanford Community Development	Community Development Manager	Sanford
Marshall Downey	Agencies that regulate development	City Of Sanford Planning Department	Director	Sanford
George Shook	Infrastructure	Town Of Selma Public Works	Public Works Supervisor	Selma
Ted Credle	Infrastructure	Town Of Smithfield Department Of Public	Public Utilities Director	Smithfield

Name	Stakeholder Type	Organization	Title	County, Jurisdiction, or Affiliation
		Utilities		
	Community Lifelines	Smithfield Rescue		Smithfield
BJ Grieve	Agencies that regulate development	Southern Pines Planning	Planning Director	Southern Pines
Chris Lawson	Agencies that regulate development	Town Of Vass Planning And Zoning	Town Planner	Vass
Bob Kissinger	Infrastructure	Village Of Whispering Pines Public Works	Public Works Director	Whispering Pines
Linda Christopher	Agencies that regulate development	Village Of Whispering Pines Zoning And Code Enforcement	Zoning Administrator	Whispering Pines
Robin Styers	Agencies that regulate development	Village Of Whispering Pines Zoning And Code Enforcement	Code Enforcement	Whispering Pines
Patrick Moore	Infrastructure	Town Of Wilson's Mills Public Works Department	Public Works Director	Wilson's Mills
Wendy Oldham	Agencies that regulate development	Town Of Wilson's Mills Planning, Zoning, And Code Enforcement	Planning Director	Wilson's Mills
Joshua Creighton	Neighboring Communities	Wake County Emergency Management	Deputy Director	Wake County
Nicholas Thorpe	Neighboring Communities	Franklin County Emergency Management	Emergency Management Director	Franklin County
Stacie Shatzer	Neighboring Communities	Nash County Emergency Management	County Manager	Nash County
County Managers Office	Neighboring Communities	Wilson County Emergency Management	County Managers Office	Wilson County
Wayne County Manager	Neighboring Communities	Wayne County Emergency Management	County Manager	Wayne County
Dawson McLamb	Neighboring Communities	Sampson County Emergency Management	EM Coordinator	Sampson County
Chini Gault	Neighboring Communities	Cumberland County Emergency Management	Emergency Management Director	Cumberland County
Bryan Marley	Neighboring Communities	Hoke County Emergency Management	Emergency Management Director / Fire Marshal	Hoke County
Robert Sampson	Neighboring Communities	Scotland County Emergency Management	Emergency Management	Scotland County

Name	Stakeholder Type	Organization	Title	County, Jurisdiction, or Affiliation
			Coordinator	
Bob Smith	Neighboring Communities	Richmond County Emergency Management	Director of Emergency Services	Richmond County
Montgomery County Emergency Management	Neighboring Communities	Montgomery County Emergency Management	Montgomery County Emergency Management	Montgomery
Christie McCorquodale	Neighboring Communities	Randolph County Emergency Management	Major	Randolph County
Christopher Saul	Neighboring Communities	Alamance County Emergency Management	Director of Emergency Management	Alamance County

2.8 Documentation of Plan Progress

Progress in hazard mitigation planning for the participating jurisdictions is documented in this plan update. Since hazard mitigation planning efforts officially began in most participating communities with the development of the initial Hazard Mitigation Plans in 2003, many mitigation actions have been completed and implemented across the participating jurisdictions. These actions will help reduce the overall risk posed by natural hazards to people and property in the Region. The completed actions are documented in the Mitigation Action Plan (Section 8) and Appendix H.

In addition, community capability continues to improve through the implementation of new plans, policies, and programs that promote hazard mitigation at the local level. The current state of local capabilities for the participating jurisdictions is captured in Section 6. The participating jurisdictions continue to demonstrate their commitment to hazard mitigation and planning, as evidenced by establishing the Planning Committee to update the Plan and by continuing to involve the public in the hazard mitigation planning process.

Coordination with other community planning efforts is also 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. Integrating existing planning efforts and mitigation policies, and action strategies into this plan establishes a credible and comprehensive plan that ties into and supports other community programs. The development of this plan incorporated information from existing plans, studies, reports, technical information, and initiatives, such as hazard mitigation plans, local comprehensive plans, and flood insurance studies, as well as other relevant data from neighboring communities and other jurisdictions.

SECTION 3: COMMUNITY PROFILE

This section of the Plan provides a general overview of the Cape Fear Region. It consists of the following four subsections:

- 3.1 Geography and the Environment
- 3.2 Population and the Demographics
- 3.3 Housing, Infrastructure, and Land Use
- 3.4 Employment and Industry

3.1 Geography and the Environment

The Cape Fear Region is in central North Carolina, mostly in the Piedmont region but also partially in the Inner Coastal Plain region. The region is also situated between the Triad and Triangle, two of the state's three largest centers of population and commerce. For the purposes of this plan, the Cape Fear Region includes Chatham, Harnett, Johnston, Lee, and Moore Counties and their respective municipalities.

The Cape Fear Region offers many recreational opportunities and tourist attractions, including the Cape Fear River, Jordan Lake Recreation Area, Raven Rock State Park, regional parks, numerous golf courses and resorts, and horse farms. Residents can enjoy the region's predominantly rural character and small-town atmosphere while still having access to the conveniences of being close to two major metropolitan areas. Over the past 30 years, the retiree population has also grown steadily as retirees, attracted by the quality of life in golf, horse country, and recreation, choose to relocate to the Cape Fear Region.

The total land area of each of the participating counties is presented in Table 3-1.

***Table 3-1**: Total Land Areas of Participating Counties*

County	Total Land Area
Chatham County	682 square miles
Harnett County	595 square miles
Johnston County	791 square miles
Lee County	255 square miles
Moore County	698 square miles

Source: United States Census Bureau

According to the State Climate Office of North Carolina, the Cape Fear Region enjoys a moderate climate that is characterized by short winters and hot, humid summers. Precipitation is generally well distributed throughout the year, and annual totals average 48 inches.

The region is partially protected from masses of cold air by mountain ranges that flow southward from Canada during winter. From December to February, the average high temperature ranges from the lower to the upper 50s, and the average low temperature is around 30°F. However, the temperature drops to 10°F or 12°F about once during an average winter in central North

Carolina. The mountains also act as a barrier preventing most wintery precipitation from entering the region, and snow and sleet are usually light and occur on average once or twice per year.

In spring, temperatures begin to rise, and the average temperature increase is greater in May than in any other month. In general, the days are warm, and the nights are cool during spring. Average high temperatures increase from the 60s in March to the upper 70s and lower 80s in May. There is a similar increase in average low temperatures, which are in the upper 30s in March and climb to the mid-50s in May. Additionally, tornadoes are most likely early in the spring; however, North Carolina is outside the principal tornado area of the United States.

Tropical air over the region brings warm temperatures and rather high humidity during the summer. Average high temperatures range from the mid-80s to the lower 90s, and low temperatures average in the 60s. Summer precipitation is normally the greatest, and July is the wettest month. Summer rainfall is also the most variable, with daily showers and periods of one to two weeks without rain both common. Thunderstorms are also common events in the region during the summer months.

Autumn is the season characterized by the most rapid temperature changes. The drop-off is the greatest in October and continues through November. Average high temperatures begin in the lower 80s in September and fall to the low to mid 60s by November. Average lows also drop significantly from 60°F to about 38°F from September to November. Autumn is the driest season, and November is the driest month in the region.

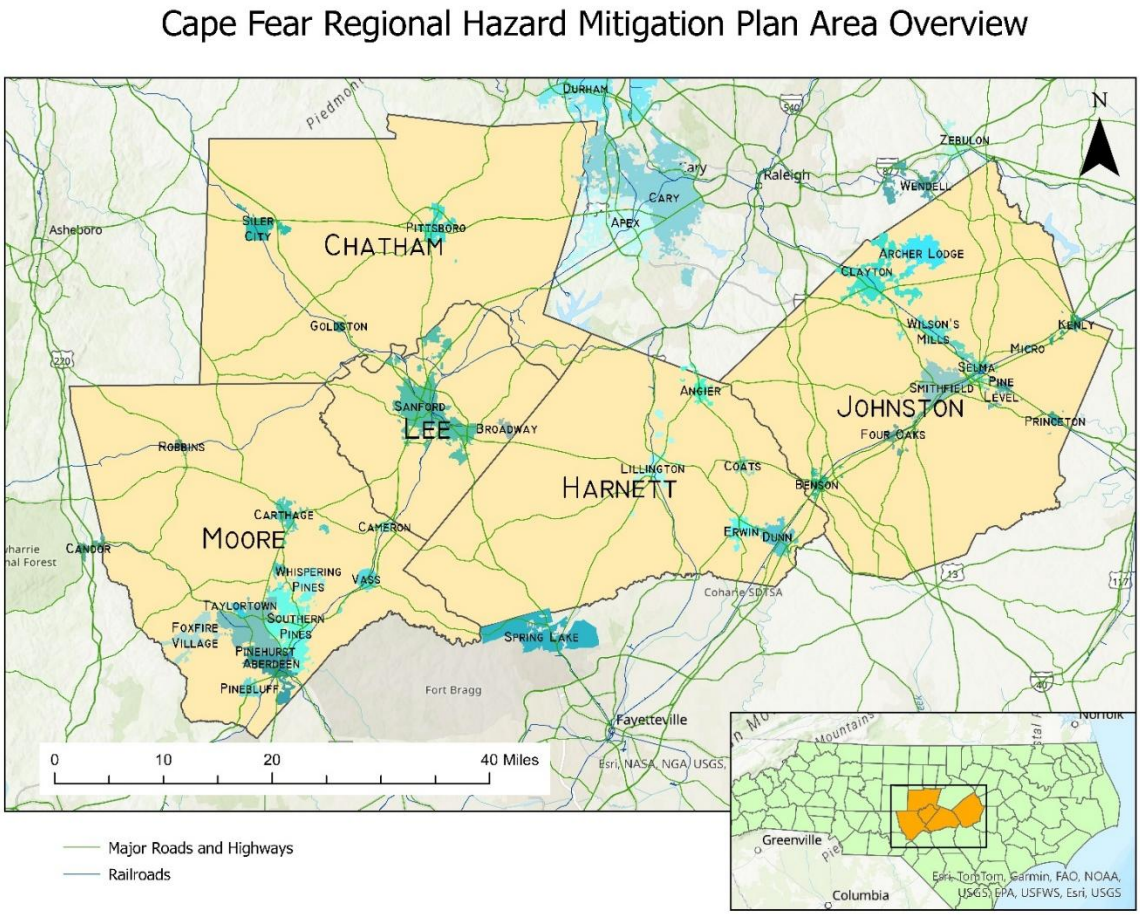


***Figure 3-1**: Cape Fear Region Orientation Map*

3.2 Population and Demographics

Moore County is the largest participating county in the region by land area, and Harnett County is the largest county by population. Between 2010 and 2023, all the participating counties experienced population growth. Johnston County had the largest growth, with a 34.19% increase, followed by Chatham County at 23.33% and Harnett County at 19.03%. Population counts from the U.S. Census Bureau from 2010 and 2020, including the American Community Survey (ACS) 2023 population estimate, for each of the participating counties, are presented in Table 3-2.

Table 3-2: Population Counts for Participating Counties

Jurisdiction	2010 Census Population[1]	2020 Census Population[2]	2023 ACS Population Estimate[3]	% Change 2010-2023
Chatham County	**63,505**	**76,285**	**78,319**	**23.33%**
Goldston	268	234	367	36.94%
Pittsboro	3,743	4,537	4,640	23.96%
Siler City	7,887	7,702	7,905	0.23%
Harnett County	**114,678**	**133,568**	**136,503**	**19.03%**
Angier	4,350	5,265	5,746	32.09%
Coats	2,112	2,155	2,029	-3.93%
Dunn	9,263	8,446	8,512	-8.11%
Erwin	4,405	4,542	4,617	4.81%
Lillington	3,194	4,735	4,683	46.62%
Johnston County	**168,878**	**215,999**	**226,623**	**34.19%**
Archer Lodge	4,292	4,797	5,036	17.33%
Benson	3,311	3,967	4,144	25.16%
Clayton	16,116	26,307	28,043	74.01%
Four Oaks	1,921	2,158	2,372	23.48%
Kenly	1,339	1,491	2,351	75.58%
Micro	441	458	788	78.68%
Pine Level	1,700	2,046	2,072	21.88%
Princeton	1,194	1,315	1,543	29.23%
Selma	6,073	6,317	6,611	8.86%
Smithfield	10,966	11,292	11,798	7.59%
Wilson's Mill	2,277	2,534	2,652	16.47%
Lee County	**57,866**	**63,285**	**64,565**	**11.58%**
Broadway	1,229	1,267	1,429	16.27%

[1] U.S. Census Bureau. (n.d.). TOTAL POPULATION. *Decennial Census, DEC Summary File 1, Table P1*. Retrieved June 16, 2025, from https://data.census.gov/table/DECENNIALSF12010.P1

[2] U.S. Census Bureau. "TOTAL POPULATION." *Decennial Census, DEC Demographic and Housing Characteristics, Table P1*, https://data.census.gov/table/DECENNIALDHC2020.P1?t=Populations+and+People&g=040XX00US37_050XX00US37037,37085,37101,37105,37125. Accessed on 16 Jun 2025.

[3] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). ACS Demographic and Housing Estimates. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP05. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP05

Jurisdiction	2010 Census Population[1]	2020 Census Population[2]	2023 ACS Population Estimate[3]	% Change 2010-2023
Sanford	28,094	30,261	30,833	9.75%
Moore County	**88,247**	**99,727**	**102,840**	**16.54%**
Aberdeen	6,350	8,516	8,969	41.24%
Cameron	285	244	357	25.26%
Carthage	2,205	2,775	2,840	28.80%
Foxfire Village	902	1,288	1,730	91.80%
Pinebluff	1,337	1,473	1,723	28.87%
Pinehurst	13,124	17,581	17,992	37.09%
Robbins	1,097	1,168	1,398	27.44%
Southern Pines	12,334	15,545	16,052	30.14%
Taylortown	722	634	728	0.83%
Vass	720	952	1,092	51.67%
Whispering Pines	2,928	4,987	5,081	73.53%
TOTAL	**493,174**	**588,864**	**608,850**	**23.46%**

***Table 3-3**: ACS Characteristics of the planning area (2023)*

Jurisdiction	Age and Sex Estimates [4]		Disability Characteristics[5]		Limited English–speaking Household[6]	Economic Characteristics [7]		
	Median Age	65 years or older	People with a disability	People with an independent living difficulty		Median Household Income	Unemployment Rate[8]	Mean travel time to work (minutes)
Chatham County	**47.6**	**24.9%**	**11.8%**	**4.8%**	**2.9%**	**$88,534**	**3.3%**	**30.4**
Goldston	38.5	18.8%	11.5%	2.0%	0%	$39,592	0.0%	30.3
Pittsboro	42.5	19.7%	12.2%	6.4%	4.9%	$64,792	2.1%	32.0
Siler City	35.3	11.0%	9.7%	5.3%	9.5%	$51,751	4.1%	20.1
Harnett County	**35.4**	**13.4%**	**15.5%**	**6.4%**	**1.4%**	**$69,012**	**5.2%**	**32.6**
Angier	40.0	16.4%	16.2%	5.8%	1.1%	$51,162	3.2%	36.0
Coats	41.5	20.7%	17.6%	7.0%	1.4%	$38,098	6.1%	29.8
Dunn	44.4	23.5%	22.7%	13.0%	0.9%	$47,310	3.4%	25.3
Erwin	46.0	22.5%	18.2%	7.2%	0%	$50,077	1.9%	31.5
Lillington	36.1	15.0%	12.4%	3.5%	0.2%	$63,393	3.4%	28.3

[4] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Age and Sex. *American Community Survey, ACS 5-Year Estimates Subject Tables, Table S0101*. Retrieved June 16, 2025, from https://data.census.gov/table/ACSST5Y2023.S0101

[5] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810

[6] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Limited English Speaking Households. *American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1602*. Retrieved June 16, 2025, from https://data.census.gov/table/ACSST5Y2023.S1602

[7] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Economic Characteristics. *American Community Survey, ACS 1-Year Estimates Data Profiles, Table DP03*. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP1Y2023.DP03

[8] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Employment Status. American Community Survey, ACS 5-Year Estimates Subject Tables, Table S2301. Retrieved June 16, 2025, from https://data.census.gov/table/ACSST5Y2023.S2301

Jurisdiction	Age and Sex Estimates [4]		Disability Characteristics[5]		Limited English–speaking Household[6]	Economic Characteristics [7]		
	Median Age	65 years or older	People with a disability	People with an independent living difficulty		Median Household Income	Unemployment Rate[8]	Mean travel time to work (minutes)
Johnston County	**38.3**	**13.5%**	**13%**	**5.1%**	**2.0%**	**$79,838**	**4.1%**	**31.0**
Archer Lodge	42.7	13.1%	7.8%	0.6%	0%	$98,170	0%	32.2
Benson	35.0	20.1%	11.6%	5.3%	2.8%	$65,614	9.8%	24.3
Clayton	32.7	10.9%	10.3%	6.1%	3.3%	$73,348	2%	32.0
Four Oaks	40.6	16.3%	11.8%	4.7%	2.1%	$69,974	5.1%	40.4
Kenly	34.8	12.7%	16.4%	9.8%	0%	$46,229	7.8%	27.3
Micro	31.5	15.4%	22.1%	10.5%	5.3%	$51,094	15.2%	28.8
Pine Level	35.3	14.6%	13.5%	5.7%	0%	$72,663	4.6%	21.2
Princeton	34.8	16.7%	21.5%	8.5%	0.5%	$36,656	1.7%	28.1
Selma	33.6	14.3%	15.5%	7.5%	8.4%	$37,440	3.2%	27.8
Smithfield	42.7	19.7%	24.4%	10.8%	2.4%	$37,827	8.2%	24.0
Wilson's Mill	28.1	5.1%	13.0%	3.3%	0.8%	$61,677	11.7%	29.2
Lee County	**39.9**	**16.9%**	**17.7%**	**6.4%**	**3.5%**	**$63,060**	**3.7%**	**24.8**
Broadway	48.1	28.5%	19.2%	8%	0%	$62,679	2.8%	28.9
Sanford	34.9	14.6%	15.2%	5.0%	6.7%	$54,294	4.0%	23.0
Moore County	**42.8%**	**24%**	**14.0%**	**5.9%**	**2.1%**	**$82,837**	**3.5%**	**28.1**
Aberdeen	36.1	14.8%	10.9%	2.5%	4.9%	$72,955	3.2%	27.7
Cameron	34.3	19.0%	5.3%	2.3%	0%	$74,688	2.2%	24.4
Carthage	45.9	22.8%	20.8%	7.6%	1%	$62,177	1.6%	24.8
Foxfire Village	38.9	22.5%	8.6%	3.0%	0.8%	$75,163	1.3%	24.3

Jurisdiction	Age and Sex Estimates [4]		Disability Characteristics[5]		Limited English–speaking Household[6]	Economic Characteristics [7]		
	Median Age	65 years or older	People with a disability	People with an independent living difficulty		Median Household Income	Unemployment Rate[8]	Mean travel time to work (minutes)
Pinebluff	40.6	19.9%	19.74%	8.0%	0%	$75,188	8.9%	23.1
Pinehurst	54.3	37.4%	14.1%	5.4%	1.2%	$104,955	4.4%	26.3
Robbins	27.1	9.8%	16.9%	10.7%	11.3%	$50,023	0.9%	28.9
Southern Pines	38.6	28.4%	16.7%	7.4%	3.0%	$83,681	5.6%	24.0
Taylortown	49.6	22.8%	28.7%	17.2%	0%	$47,969	6.2%	24.2
Vass	31.3	11.7%	11.7%	6.6%	2.6%	$56,042	3.1%	25.1
Whispering Pines	37.1	13.7%	5.6%	3.1%	0.7%	$112,517	6.0%	30.2
Planning Area Average	40.80	18.54%	14.40%	5.72%	2.38%	$76,656	3.96%	29.38

***Table 3-4**: Decennial Census Demographic Information*[9]

Jurisdiction	Decennial Census Profile of General Population and Housing Characteristics (2020)							
	Black or African American	White	American Indian and Alaska Native	Asian	Native Hawaiian or Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino (of any race)
Chatham County	**10.4%**	**71.4%**	**0.6%**	**2.1%**	**0.0%**	**8.3%**	**7.2%**	**13.6%**
Goldston	2.1%	92.7%	0.4%	0%	0%	0.9%	3.8%	3.0%
Pittsboro	17.9%	66.4%	0.6%	1.7%	0.1%	5.7%	7.6%	10.7%

[9] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). PROFILE OF GENERAL POPULATION AND HOUSING CHARACTERISTICS. Decennial Census, DEC Demographic Profile, Table DP1. Retrieved June 17, 2025, from https://data.census.gov/table/DECENNIALDP2020.DP1

Jurisdiction	Decennial Census Profile of General Population and Housing Characteristics (2020)							
	Black or African American	White	American Indian and Alaska Native	Asian	Native Hawaiian or Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino (of any race)
Siler City	19.4%	30.8%	1.8%	1.2%	0%	35.0%	11.9%	51.0%
Harnett County	**20.5%**	**61.3%**	**1.1%**	**1.1%**	**0.2%**	**7.1%**	**8.7%**	**14.1%**
Angier	19.3%	57.0%	0.9%	0.8%	0%	12.7%	9.2%	21.6%
Coats	17.2%	64.0%	0.8%	0.6%	0%	9.4%	7.9%	15%
Dunn	39.7%	47.4%	1.1%	0.7%	0%	5.4%	5.6%	9.3%
Erwin	17.7%	66.5%	1.0%	0.2%	0.2%	8.3%	6.1%	13.5%
Lillington	33.1%	50.6%	1.1%	0.8%	0.2%	7.6%	6.5%	12.2%
Johnston County	**15.6%**	**65.9%**	**0.8%**	**1.0%**	**0.1%**	**11.7%**	**8.4%**	**20.7%**
Archer Lodge	7.5%	72.8%	0.8%	0.6%	0.1%	7.2%	11.0%	15.8%
Benson	25.4%	57.9%	1.1%	0.5%	0%	8.3%	6.7%	15.6%
Clayton	23.6%	57.8%	0.5%	1.6%	0%	6.2%	10.2%	14.3%
Four Oaks	18.9%	62.3%	0.6%	0.5%	0%	11.0%	6.8%	18.5%
Kenly	34.7%	49.1%	0.2%	0.6%	0%	5.3%	10.1%	13.7%
Micro	10.9%	70.7%	1.5%	0.2%	0%	5.5%	11.1%	10.5%
Pine Level	12.4%	64.0%	0.5%	0.2%	0%	13.0%	9.9%	23.9%
Princeton	24.6%	64.7%	0.2%	0.6%	0.2%	3.3%	6.3%	7.7%
Selma	36.7%	28.1%	1.2%	0.5%	0%	21.4%	12.1%	37.7%
Smithfield	28.0%	47.6%	0.9%	1.0%	0.1%	13.3%	9.3%	23.6%
Wilson's Mill	19.8%	53.3%	1.4%	0.4%	0%	15.1%	10.0%	30.3%
Lee County	**10.7%**	**60.7%**	**0.8%**	**1.0%**	**0.1%**	**3.4%**	**8.4%**	**20.7%**

Jurisdiction	Decennial Census Profile of General Population and Housing Characteristics (2020)							
	Black or African American	White	American Indian and Alaska Native	Asian	Native Hawaiian or Other Pacific Islander	Some Other Race	Two or More Races	Hispanic or Latino (of any race)
Broadway	6.9%	76.1%	1.9%	0.6%	0%	6.2%	8.3%	13.3%
Sanford	24.0%	47.3%	0.9%	1.5%	0.1%	16.4%	9.8%	28.2%
Moore County	**10.7%**	**77.2%**	**0.8%**	**1.3%**	**0.1%**	**3.4%**	**6.6%**	**7.4%**
Aberdeen	20.8%	64.9%	1.2%	1.9%	0%	2.6%	8.5%	7.1%
Cameron	14.3%	78.7%	0%	0.4%	0%	3.7%	2.9%	5.7%
Carthage	15.1%	70.1%	1.3%	0.4%	0%	2.7%	10.5%	9.5%
Foxfire Village	4.2%	84.9%	1.0%	1.4%	0.1%	1.4%	7.1%	4.3%
Pinebluff	14.4%	73.8%	1.3%	1.8%	0.1%	2.6%	6.0%	6.0%
Pinehurst	3.2%	87.5%	0.5%	2.2%	0%	1.1%	5.5%	3.9%
Robbins	4.3%	44.5%	1.0%	1.0%	0%	35.2%	14.0%	50.4%
Southern Pines	17.0%	73.0%	0.6%	1.5%	0.1%	1.5%	6.4%	5.3%
Taylortown	57.9%	33.3%	0.8%	1.1%	0%	1.7%	5.2%	3.5%
Vass	8.2%	80.7%	0.3%	1.4%	0%	2.6%	6.8%	6.3%
Whispering Pines	1.5%	87.6%	0.4%	1.4%	0.1%	1.3%	7.8%	5.5%

3.3 Housing, Infrastructure, and Land Use

3.3.1 Housing

According to the 2013 ACS 5-Year estimate, there were 212,616 housing units in the Cape Fear Region, of which the majority are single-family homes or mobile homes. The 2023 ACS 5-year estimate shows 253,651 housing units in the planning area, an increase of approximately 19.3% since 2013. The planning area has an estimated average median home value of $283,040, with approximately 230,658 occupied housing units and 22,993 vacant housing units. Between 2013 and 2023, Johnston County experienced the largest increase in housing units in the planning area, increasing by approximately 29.87%, followed by Chatham County with a 20.88% increase and Harnett County with a 14.08% increase. Housing information for the four participating counties is presented in Table 3-5.

***Table 3-5**: Housing Characteristics of Participating Counties*

Jurisdiction	Housing Units (2013)[10]	ACS 2023 Selected Housing Characteristics 5-Year Estimates[11]						
		Housing Units (2023)	Change in Housing Units (2013-2023)	Renter Occupied	Owner Occupied	Occupied Housing Units	Vacant Housing Units	Median Home Value (2023)
Chatham County	28,964	35,013	20.88%	6,317	25,936	32,253	2,760	$397,800
Harnett County	47,381	54,051	14.08%	14,838	33,801	48,639	5,412	$220,700
Johnston County	68,000	88,314	29.87%	18,845	63,448	82,293	6,021	$267,600
Lee County	24,117	26,854	11.35%	8,396	16,263	24,659	2,195	$213,800
Moore County	44,154	49,419	11.92%	10,133	32,681	42,814	6,605	$315,300
Total	**212,616**	**253,651**	**19.30%**	**58,529**	**172,129**	**230,658**	**22,993**	**$283,040**

Several housing characteristics can indicate residents' capabilities in the planning area to prepare for, respond to, and recover from natural hazard impacts. This includes vehicle access, plumbing and kitchen facilities within the housing unit, telephone service, housing unit type, construction guidelines applicable when the unit was built, access to computers, and access to the internet in the housing unit.

[10] U.S. Census Bureau. (n.d.). SELECTED HOUSING CHARACTERISTICS. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 19, 2025, from https://data.census.gov/table/ACSDP5Y2013.DP04

[11] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. *American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04*. Retrieved June 19, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

Vehicles Available

Not having vehicles available before, during, and after a natural disaster can limit residents' evacuation capabilities, leaving them stranded or dependent on public transportation. Vehicle Availability is crucial during time-sensitive, rapidly evolving natural hazard events, when evacuation and access to emergency services may be required. This includes hazards such as dam failure, flooding, hurricanes, or wildfires, in which residents may be stranded or unable to move out of the projected area of impact. The county with the highest estimated percentage of residents without vehicles available in their housing unit is Lee County (4.3%), followed by Moore County (4.1%), Johnston & Harnett County (3.8%), and Chatham County (2.9%). The jurisdictions with the highest percentages of households without vehicle access are estimated to be Smithfield (15.8%), Robbins (13.1%), Kenly (13.0%), and Selma (12.8%).

Plumbing and Kitchen Facilities

Housing units without plumbing facilities can indicate vulnerability in the planning area, as units with limited sanitation and plumbing capabilities can have a worse public health impact during and after disasters. A housing unit without complete kitchen facilities can indicate a limited ability to store and prepare food for natural hazards, where power outages and supply disruptions may limit the ability to serve and prepare food. The estimated percentage of housing units without plumbing and complete kitchen facilities in the counties in the planning area is relatively low, but jurisdictions with elevated percentages should evaluate how to address these vulnerabilities.

Telephone Service, Computing Devices, and Internet Subscriptions

Residents in the planning area without telephone service, computing devices, or internet subscriptions may have limited ability to receive emergency alerts, access resources to prepare for natural hazards, and receive real-time alerts. Residents without telephone service in their housing unit may not receive emergency alerts and evacuation orders, have a reduced ability to call for help during medical emergencies and disasters, and may be especially dangerous for individuals who rely on others to complete daily living activities. Lacking computing devices or internet subscriptions means residents may not be able to research available emergency services, such as shelters or evacuation routes, to prepare for natural hazards. This also limits residents' ability to apply for disaster relief assistance online, access real-time weather updates, receive community alerts, check in with friends or family, and research resources available before, during, and after natural hazard events in their community.

Johnston County is estimated to have the highest percentage of housing units without telephone service (1.1%), followed by Lee & Moore County (0.9%), Harnett County (0.8%), and Chatham County (0.5%). The three jurisdictions with the highest percentage of housing units without telephone service are Cameron (3.8%), Benson (3.3%), and Clayton (2.3%), all of which are higher than the North Carolina (NC) average of 0.9% of housing units with telephone service available. It is estimated that 5.9% of households in NC lack access to a computing device, and 11.4% lack an internet subscription. Compared to the state average of 11.4% of households without an internet subscription, Lee County has a significantly higher proportion of residents without internet subscriptions (23.8%). Other jurisdictions with notably higher percentages of households without access to a computing device and internet subscriptions include Taylortown,

Kenly, and Sanford. Jurisdictions with significant percentages of households with limited access to communications resources should consider mitigation actions to address limited internet, telephone, and/or computer access.

Mobile Homes, Boats, Recreational Vehicles (RVs), and Vans as a Primary Housing Unit

Residents of the planning area who have a Boat, RV, Mobile Home, Van, or similar as their primary housing unit may be at an elevated risk of experiencing damage from natural hazards such as floods, high winds, hurricanes, and tornadoes. Jurisdictions in the planning area with large portions of primary residences in these housing unit types should consider mitigation actions to address disproportionate vulnerabilities during natural disasters. The NC state average for mobile homes was 13.2% in 2023, and for Boats, RVs, Vans, and other non-traditional home structures, it was less than 1%. The county with the highest proportion of mobile homes is Harnett County (18.5%), followed by Lee County (14.3%), Johnston County (14.0%), Chatham County (13.0%), and Moore County (11.0%).

***Table 3-6**: Housing characteristics in the planning area (2023 Estimates)*

Jurisdiction	ACS Selected Housing Characteristics Estimates[12]								ACS Types of Computers and Internet Estimates[13]	
	No Vehicles Available	Lacking Plumbing Facilities	Lacking Complete Kitchen Facilities	No Telephone Service	Mobile Home	Boat, RV, Van, Etc.	Total Housing Units	Housing Units Built 2020 or Later	No Computing Devices	No Internet Subscription
Chatham County	**2.9%**	**0.1%**	**0.6%**	**0.5%**	**13.0%**	**0.1%**	**35,013**	**3.5%**	**5%**	**13.2%**
Goldston	0%	0%	0%	0%	2.5%	0%	162	0%	7.9%	23.6%
Pittsboro	5.3%	0%	1.5%	1.6%	3.5%	0%	2,082	4.2%	8.2%	11.6%
Siler City	7.4%	0%	0%	0%	20.2%	0%	3,161	0%	6.1%	17.7%
Harnett County	**3.8%**	**0.3%**	**0.4%**	**0.8%**	**18.5%**	**0.1%**	**54,051**	**1.8%**	**6.1%**	**16.3%**
Angier	5.3%	0.2%	0.6%	0.7%	3.7%	0%	2,627	2.9%	11.9%	14.5%
Coats	4.3%	1.7%	3.9%	0%	4.6%	0%	1,108	1.9%	8.1%	19.8%
Dunn	10.1%	0.9%	1.2%	1.3%	0.6%	0%	4,161	0.6%	9.2%	24.0%
Erwin	3.1%	0%	1.0%	0.6%	6.9%	0%	2,030	0.2%	6.9%	20.9%
Lillington	1.3%	0.6%	0%	0%	0%	0%	1,462	1.8%	1.8%	6.4%
Johnston County	**3.8%**	**0.2%**	**0.3%**	**1.1%**	**14.0%**	**0.1%**	**33,314**	**3.2%**	**4.9%**	**13.7%**
Archer Lodge	4.8%	0%	0%	0.9%	14.3%	0%	1,827	1.3%	8.2%	7.0%
Benson	7.7%	0%	0.3%	3.3%	0%	0%	1,916	0.4%	7.0%	15.6%
Clayton	1.8%	0.2%	0.2%	2.3%	2.5%	0.1%	10,927	2.6%	3.7%	10.5%
Four Oaks	6.5%	0%	0%	0%	11.2%	0%	1,128	0.7%	4.9%	29.3%
Kenly	13.0%	0%	1.2%	0%	15.6%	0%	956	0%	11.7%	25.9%
Micro	5.6%	0%	0.7%	1.4%	16.5%	0%	315	6.0%	7.7%	23.5%
Pine Level	3.1%	0%	0%	0%	11.4%	0%	843	0%	7.0%	17.2%
Princeton	11.3%	0%	0%	0%	14.7%	0%	728	1.5%	7.2%	27.2%
Selma	12.8%	0%	2.3%	1.4%	9.3%	0%	2,974	2.2%	9.0%	23.7%
Smithfield	15.8%	0%	0%	2%	5.3%	0%	5,447	0.4%	9.4%	24.1%
Wilson's Mill	4.1%	0%	0%	0%	20.8%	0%	807	5.1%	2.7%	9.5%
Lee County	**4.3%**	**0.4%**	**0.6%**	**0.9%**	**14.3%**	**0.2%**	**26,854**	**2.1%**	**5.1%**	**23.8%**
Broadway	0.5%	0%	0%	0%	6.2%	0%	677	4.1%	2.9%	19.0%
Sanford	6.6%	0.1%	0.2%	1.0%	4.7%	0%	12,364	1.9%	6.6%	27.7%
Moore County	**4.1%**	**0.1%**	**0.9%**	**0.9%**	**11.0%**	**0.1%**	**49,419**	**2.4%**	**5.3%**	**10.2%**
Aberdeen	3.8%	0%	0%	0%	3.2%	0%	4,207	1.9%	7.9%	8%

Cameron	0%	0%	0%	3.8%	26.9%	0%	175	0%	6.1%	6.1%
Carthage	6.6%	0%	2.3%	0.9%	13.1%	0%	1,331	0%	9.5%	20.1%
Foxfire Village	1.2%	0%	0%	0%	0%	0%	711	4.8%	0%	0.6%
Pinebluff	3.4%	0%	1.1%	0%	1.1%	0%	666	0%	1.9%	9.4%
Pinehurst	2.6%	0%	0.3%	0.7%	0.7%	0%	9,670	2.2%	2.3%	4.2%
Robbins	13.1%	0%	0%	0%	11.7%	0%	545	0.6%	7.7%	13.9%
Southern Pines	8.5%	0%	2.9%	0.4%	1.4%	0%	8,711	2.3%	4.7%	9.4%
Taylortown	8.6%	0%	0%	1.3%	5.6%	0%	357	0%	11.9%	30.4%
Vass	5.2%	0%	0%	1.4%	5.8%	0%	499	11%	6.3%	7.5%
Whispering Pines	0%	0%	0%	0%	0%	0%	1,854	7.8%	0%	4.2%

3.3.2 Infrastructure

Transportation

Several major highways cross the Cape Fear Region. Interstate 95 is one of two interstates that pass directly through the Cape Fear Region, traversing northeast to southwest through Dunn, Benson, Four Oaks, Smithfield, Selma, Kenly, and the easternmost corner of the region. The second interstate that passes through the region is Interstate 40, which travels northwest to southwest along the southwest edge of Johnston County. Interstate 73 also serves the region and runs north to south along its westernmost border. United States (US) Route 1 connects the region to Wake County and the Triangle, passing northeast to southwest through Chatham, Lee, and Moore Counties. US-70 also connects the region to Wake County and the Triangle, traversing northwest to southeast through Johnston County. US-421 is another important highway that links the region to the Triad, crossing northwest to southeast through Chatham, Lee, and Harnett Counties. The major north-south thoroughfare in the region is US-15, which enters Chatham County, runs through Lee County, and continues into Moore County. The major east-west thoroughfare is US-64, which traverses Chatham County and again connects the region to the Triangle. Additionally, in Harnett County, Highway 210 runs between Angier and Lillington and south into Fayetteville. There are also several designated scenic byways in the Cape Fear Region, including Devil's Stompin' Ground Road in Chatham and Moore Counties, Pottery Road and Sandhills Scenic Drive in Moore County, Averasboro Battlefield Scenic Byway in Harnett County, and Blue-Gray Scenic Byway in Johnston County.

[12] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. *American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04*. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[13] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Types of Computers and Internet Subscriptions. American Community Survey, ACS 5-Year Estimates Subject Tables, Table S2801. Retrieved June 16, 2025, from https://data.census.gov/table/ACSST5Y2023.S2801

Raleigh-Durham International Airport (RDU) is the nearest commercial airport to the Cape Fear Region. The airport currently offers direct daily flights to 39 domestic and international cities. RDU airport is about 50 miles from the region's center. An additional relief airport, Raleigh Exec, is located a few miles northeast of Sanford in Lee County to provide additional capacity to RDU. Additional general aviation airports servicing the Cape Fear Region include the Harnett Regional Jetport, Johnston County Airport, Moore County Airport, and Siler City Municipal Airport.

***Table 3-7**: Roads in the planning area and their flood zones*

Route Type	Flood Hazard Zone				Grand Total
	0.2% Annual Chance of Flood	A	AE	X	
	Miles of roads				
Interstate	2.54	–	20.74	114.13	137.41
NC Route	6.92	1.13	39.11	490.10	537.27
Non-system	40.91	0.28	93.45	3221.26	3355.90
Other State Agency Route	0.02	–	9.43	36.88	46.34
Projected Route	–	–	1.20	5.37	6.56
Ramp	0.50	–	1.68	79.51	81.68
Rest Area	–	–		1.54	1.54
Secondary Route	55.44	–	328.25	4400.89	4784.58
US Route	12.97	–	44.28	525.64	582.88
Grand Total	**119.30**	**1.41**	**538.14**	**8875.32**	**9534.17**

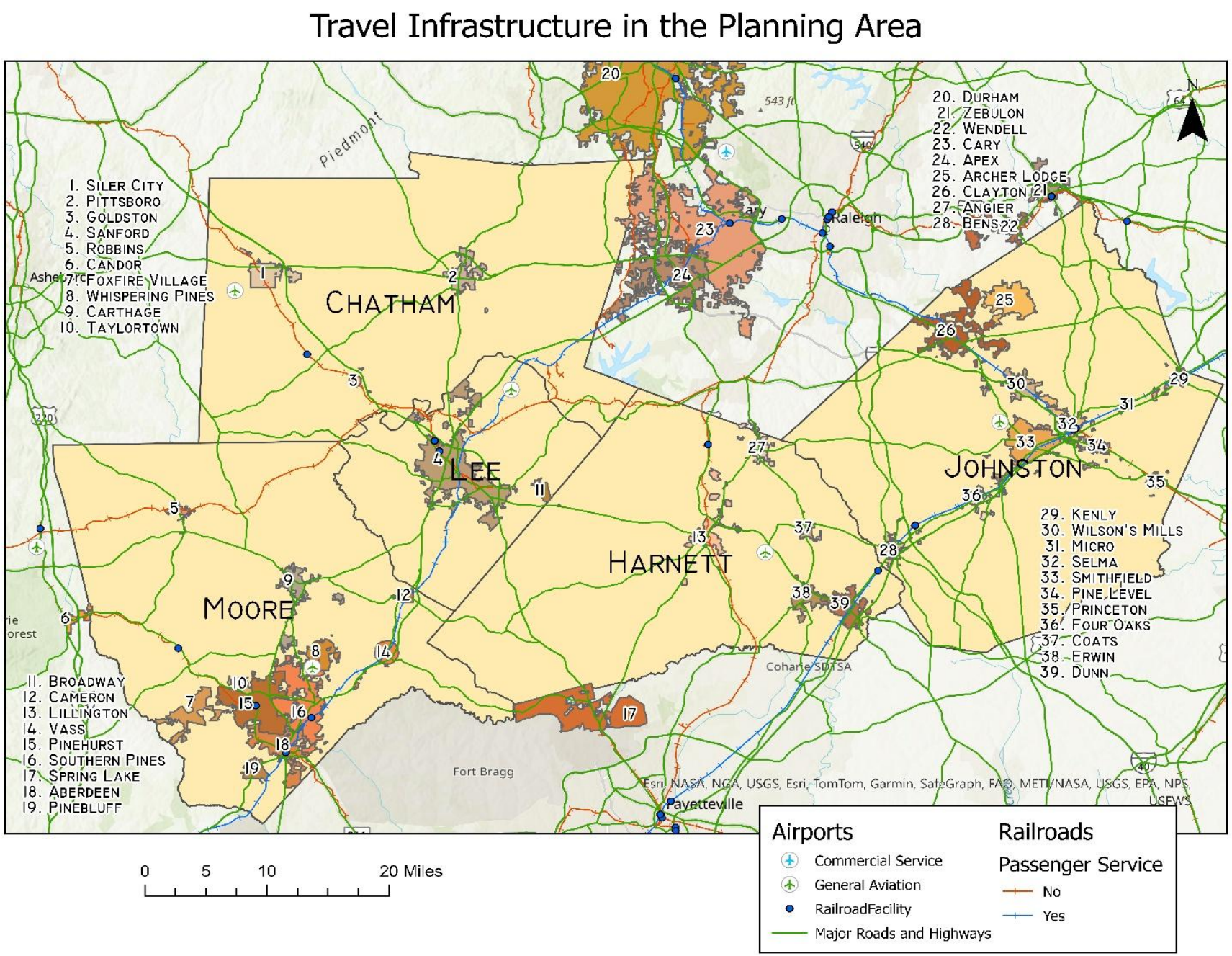


***Figure 3-2**: Major travel infrastructure in the planning area*

Utilities

Electrical power in the Cape Fear Region is provided by one public utility, several electricity cooperatives, and several municipalities in Johnston County. Duke Energy Progress serves major portions of all five counties in the region. The electricity cooperatives servicing the region include Central Electric Membership Corporation in Chatham, Harnett, Lee, and Moore Counties; Randolph Electric Membership Corporation in both Chatham and Moore Counties; South River Electric Membership Corporation in Harnett County; South River Electric Membership Corporation, Tri-County Electric Membership Corporation, and Wake Electric Membership Corporation in Johnston County; and Pee Dee Electric Membership Corporation in Moore County. The Towns of Benson, Clayton, Selma, and Smithfield are all members of the North Carolina Eastern Municipal Power Association and are affiliated with ElectriCities of North Carolina; as such, they provide municipally owned and operated electric service to their residents.

Water and sewer service is provided by many municipalities, as well as by Chatham, Harnett, Johnston, and Moore Counties in the Cape Fear Region. Although some areas require wells and septic systems, much of the region is served by municipal or county providers.

Community Facilities

There are several public buildings and community facilities located throughout the Cape Fear Region. According to the data collected for the vulnerability assessment (Section 6.4.1), there are 91 fire stations, 44 police stations, and 194 public schools located within the study area.

There are several medical care facilities located in the Cape Fear Region. The largest is Moore Regional Hospital, a 395-bed acute-care hospital in Pinehurst, which serves as the referral center for a 15-county region in North Carolina. The Johnston Medical Center in Smithfield, the Central Carolina Hospital in Sanford, and the Betsy Johnson Hospital in Dunn are three additional acute care hospitals with 199, 137, and 101 beds, respectively. There are also three smaller hospitals: Good Hope Hospital in Erwin, Central Harnett Hospital outside Lillington, and Chatham Hospital in Siler City.

***Table 3-8**: Critical Facilities in the planning area and their flood hazard*

Facility Type	Facilities in the Flood Hazard Zone		
	0.2% Annual Chance of Flood	AE	X
Chatham	1		101
Emergency Operations Center	–	–	1
EMS and Fire Department	–	–	7
EMS Rescue Services	1	–	2
Fire Station	–	–	19
Hospice	–	–	1
Hospital	–	–	1
Medical Facility	–	–	7
Mental Health Homes	–	–	19

Facility Type	Facilities in the Flood Hazard Zone		
	0.2% Annual Chance of Flood	AE	X
Nursing Home	–	–	19
School	–	–	19
Law Enforcement	–	–	6
Harnett	1	1	130
Emergency Operations Center	–	–	1
EMS and Fire Department	–	–	14
Fire and Rescue	–	–	3
Fire Station	–	–	21
Hospice	–	–	2
Hospital	–	–	2
Medical Facility	1	–	8
Mental Health Homes	–	–	12
Nursing Home	–	–	32
School	–	1	26
Law Enforcement	–	–	9
Johnston	4	4	232
Emergency Operations Center	–	–	1
EMS and Fire Department	–	–	10
EMS Rescue Services	–	–	2
Fire and Rescue	–	–	1
Fire Station	–	–	36
Hospice	–	–	1
Hospital	–	–	1
Medical Facility	–	–	16
Mental Health Homes	1	2	57
Nursing Home	3	2	48
School	–	–	45
Law Enforcement	–	–	14
Lee	2	2	92
Emergency Operations Center	–	1	–
EMS and Fire Department	–	–	8
Fire Station	–	–	15
Hospital	–	–	1
Medical Facility	–	1	11
Mental Health Homes	1	–	21
Nursing Home	1	–	16
School	–	–	15
Law Enforcement	–	–	5
Moore	–	1	171

Facility Type	Facilities in the Flood Hazard Zone		
	0.2% Annual Chance of Flood	AE	X
Emergency Operations Center	–	–	1
EMS and Fire Department	–	–	19
EMS Rescue Services	–	1	5
Fire and Rescue	–	–	4
Fire Station	–	–	23
Hospital	–	–	1
Medical Facility	–	–	13
Mental Health Homes	–	–	38
Nursing Home	–	–	28
School	–	–	25
Law Enforcement	–	–	14
Total	**8**	**8**	**726**

There are also numerous parks and recreational areas in the Cape Fear Region. These include the Cape Fear River Trail Park, the Neuse River Greenway Trail, Jordan Lake Recreation Area, Raven Rock State Park, White Pines Nature Preserve, Weymouth Woods-Sandhills Nature Preserve, and Clemmons Educational State Forest, as well as numerous other parks, golf courses, and resorts, and horse farms. These facilities offer recreational opportunities to the region's residents and many visitors each year.

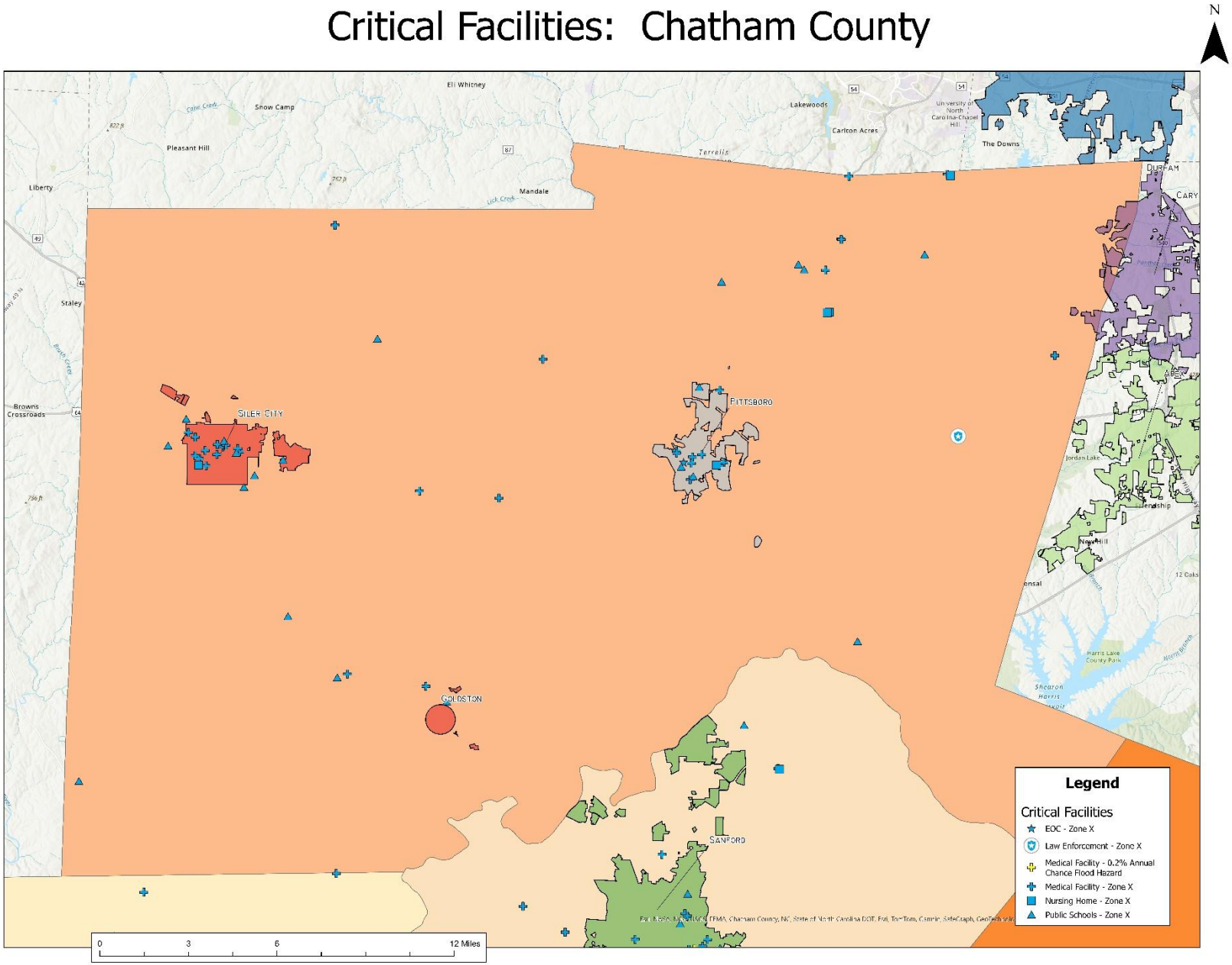
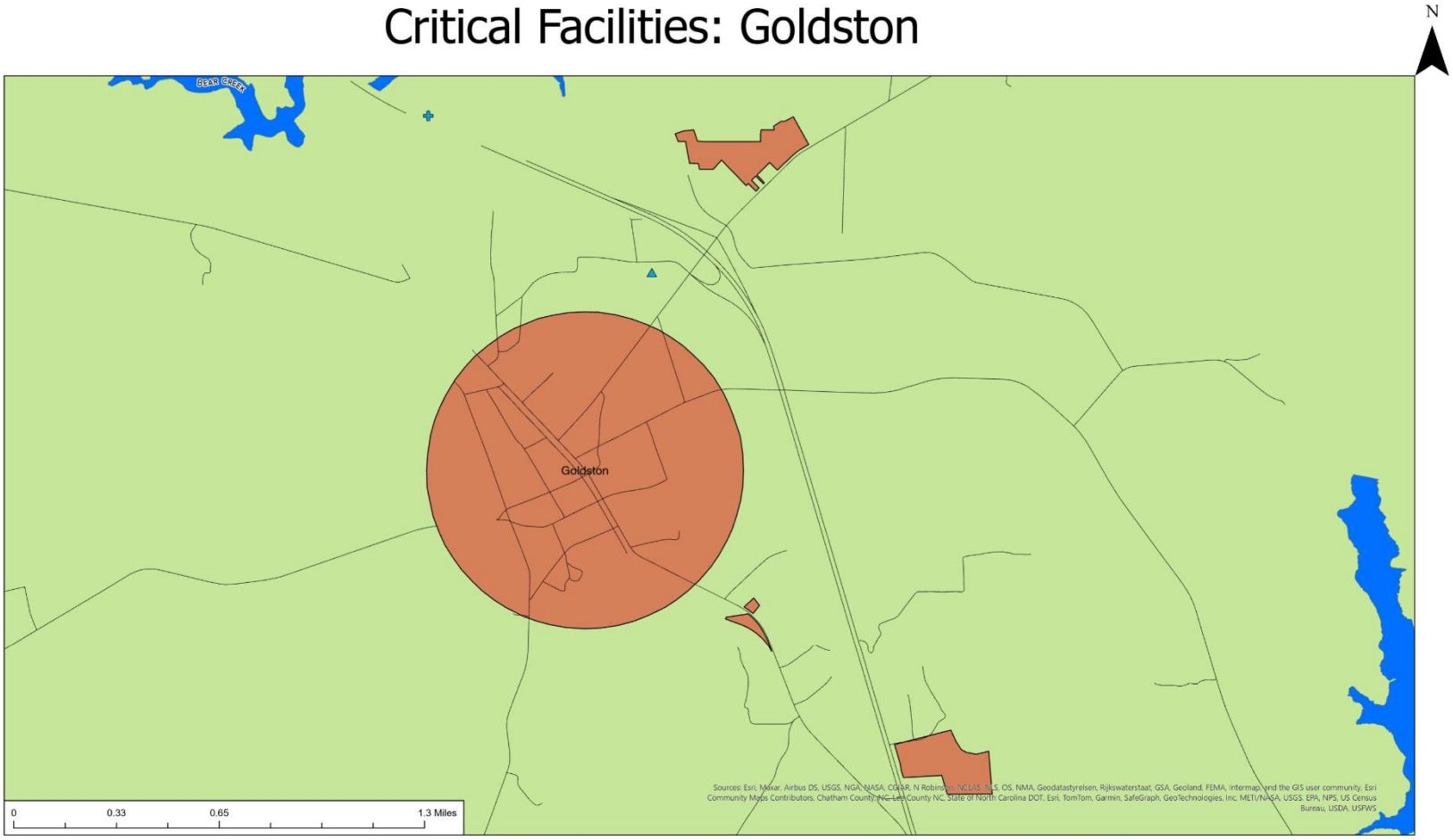
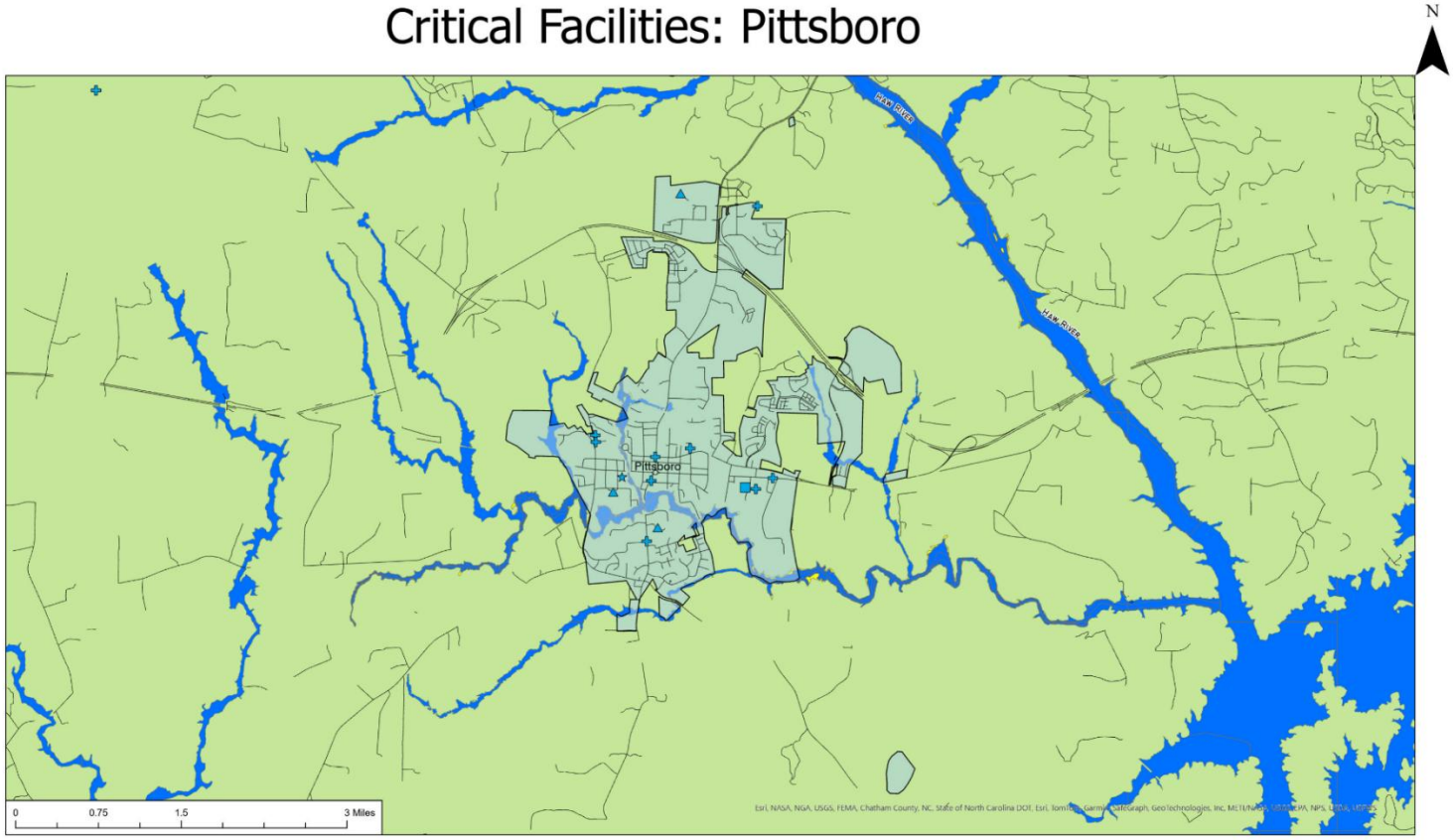


***Figure 3-3**: Critical Facilities in Chatham County*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Hillforest Rest Home	Home For The Aged	P O Box 98		Gaston	27832	HAL-019-016
J S Waters Elementary	None	55 J S Waters School Road		Goldston	27252	

***Figure 3-4**: Critical Facilities in Goldston*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Liselotte Care Home	Family Care	3004 Silk Hope Gum Springs Rd.		Pittsboro	27312	FCL-019-006
Cambridge Hills of Pittsboro	Home For The Aged	PO Box 1209		Pittsboro	27312	HAL-019-015
Pittsboro Christian Village	Home For The Aged	1825 East Street		Pittsboro	27312	HAL-019-006
Summerfield Assisted Living	Home For The Aged	P O Box 4094		Burlington	27215	HAL-019-014
UNC Hospice	Hospice	P O Box 1077		Pittsboro	27312	HOS0370
Chatham Counseling Center	Mental Health Homes	40 Camp Drive		Pittsboro	27312	MHL-019-002
CLLC (Carolina Living & Learning Center)	Mental Health Homes	325 Russet Run		Pittsboro	27312	MHL-019-007
Club Insight	Mental Health Homes	815 Sanford Road	Kathleen Cole	Pittsboro	27312	MHL-019-024
Horton's Assessment Agency	Mental Health Homes	P.O. Box 1423		Pittsboro	27312	MHL-019-003
The Laurels of Chatham	Nursing Home Facilit	72 Chatham Business Park		Pittsboro	0	NH0523
THE LAURELS OF CHATHAM	NURSING HOMES	72 CHATHAM BUSINESS DRIVE		PITTSBORO	5687	NH0523
Chatham County Emergency Management	EOC	297 West St		Pittsboro, NC 27312		
Horton Middle	None	79 Horton Road		Pittsboro	27312	
Northwood High	None	310 Northwood High School Rd		Pittsboro	27312	
Pittsboro Elementary	None	375 Pittsboro School Road		Pittsboro	27312	

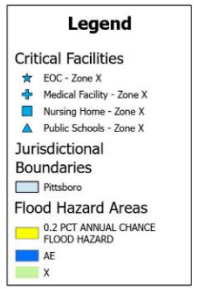
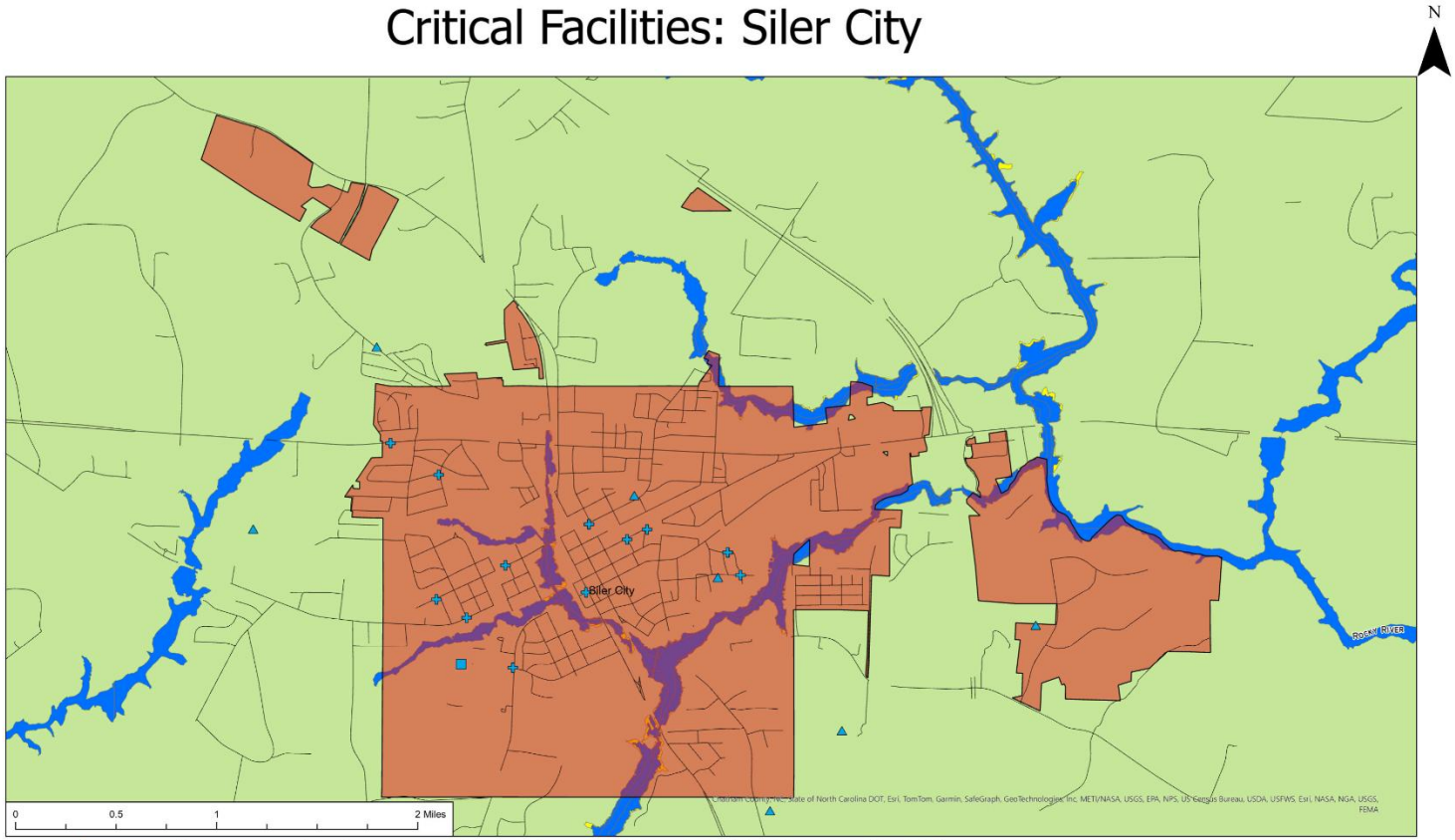


***Figure 3-5**: Critical Facilities in Pittsboro*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
First Choice Home Care, Inc.	Home Care	114 West Raleigh Street		Siler City	27344	HC2070
Sister 2 Sister Solution Inc.	Home Care	1002 12th Street		Siler City	27344	HC2152
UNC Home Health	Home Care	401 East Third Street		Siler City	27344	HC0505
Chatham Hospital, Inc.	Hospital	P O Box 649		Siler City	27344	H0007
Chatham County Group Home #1	Mental Health Homes	217 East Beaver Street	Chatham County Group Homes,	Siler City	27344	MHL-019-026
Chatham County Group Home #2	Mental Health Homes	217 East Beaver Street	Chatham County Group Homes,	Siler City	27344	MHL-019-027
Chatham County Group Home #3	Mental Health Homes	217 East Beaver Street	Chatham County Group Homes,	Siler City	27344	MHL-019-028
East Cardinal Street Facility-Siler City	Mental Health Homes	1105 E. Cardinal Street		Siler City	27344	MHL-019-001
Griffin House	Mental Health Homes	PO Box 207	Chatham County Group Homes,	Siler City	27344	MHL-019-023
Nooe House A	Mental Health Homes	217 East Beaver Street	Chatham County Group Home,	Siler City	27344	MHL-019-030
Nooe House B	Mental Health Homes	217 East Beaver Street	Chatham County Group Home,	Siler City	27344	MHL-019-031
Services for Alcohol and Substance Abuse (SASA)	Mental Health Homes	514 East Third Street Suite A	Dr. Pamela Frasier	Siler City	27344	MHL-019-032
Winfred West	Mental Health Homes	217 East Beaver Street	Chatham County Group Homes,	Siler City	27344	MHL-019-022
SunBridge Care & Rehabilitation for Siler City	Nursing Home Facilit	900 West Dolphin Street	P O Box 789	Siler City	0	NH0395
SILER CITY CARE AND REHABILITATION CENTER	NURSING HOMES	900 WEST DOLPHIN STREET		SILER CITY	3711	NH0395
Chatham Middle	None	2025 South 2nd Avenue Ext		Siler City	27344	
SAGE Academy	None	501 Martin L King Jr Blvd		Siler City	27344	
Jordan Matthews High	None	910 East Cardinal Street		Siler City	27344	
Siler City Elementary	None	671 Ellington Road		Siler City	27344	
Chatham Charter	None	2200 Hamp Stone Road		Siler City	27344	
Virginia Cross Elementary	None	234 Cross School Road		Siler City	27344	
Chatham Youth Dev Center	None	560 Progress Blvd		Siler City	27344	

***Figure 3-6**: Critical Facilities in Siler City*

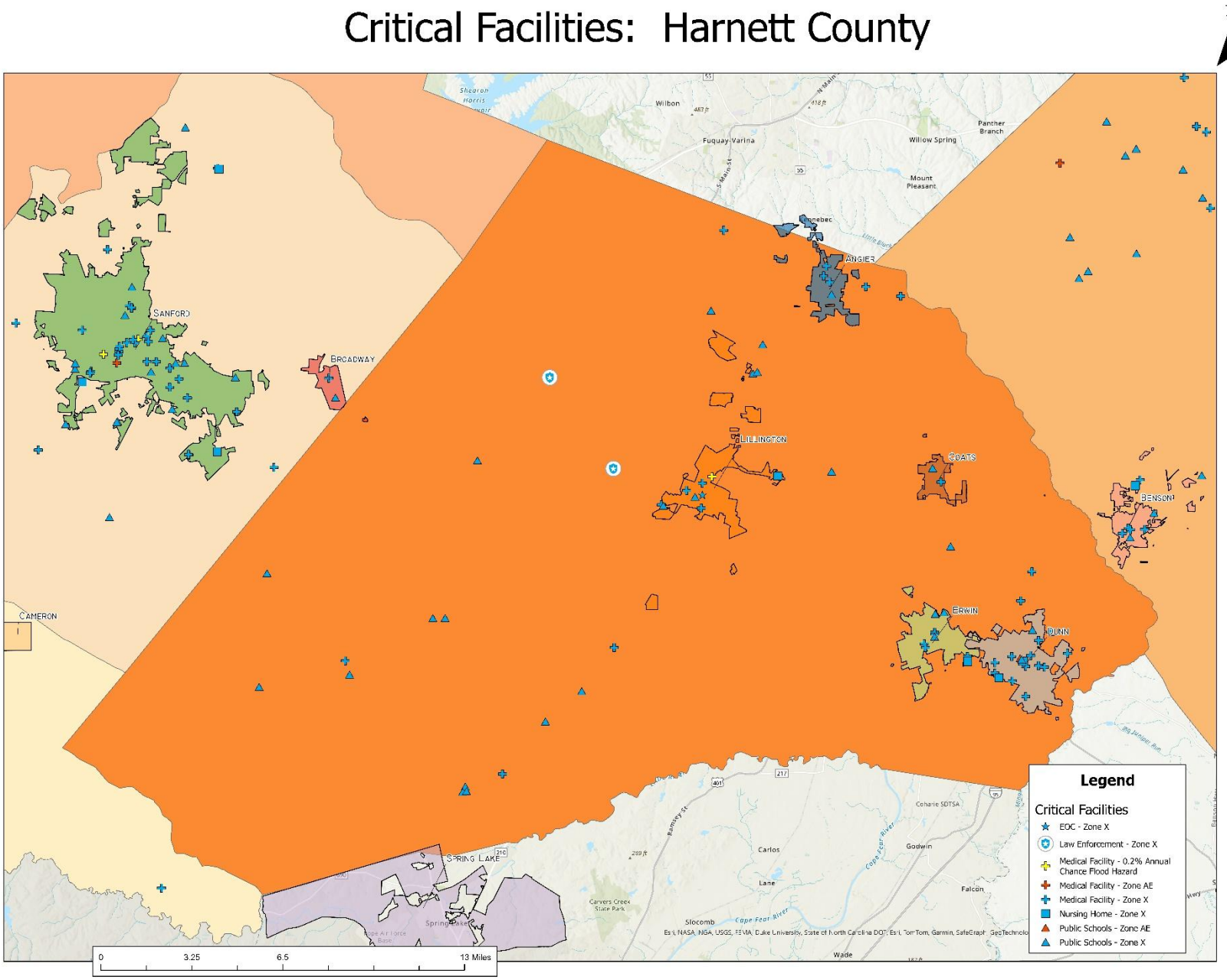
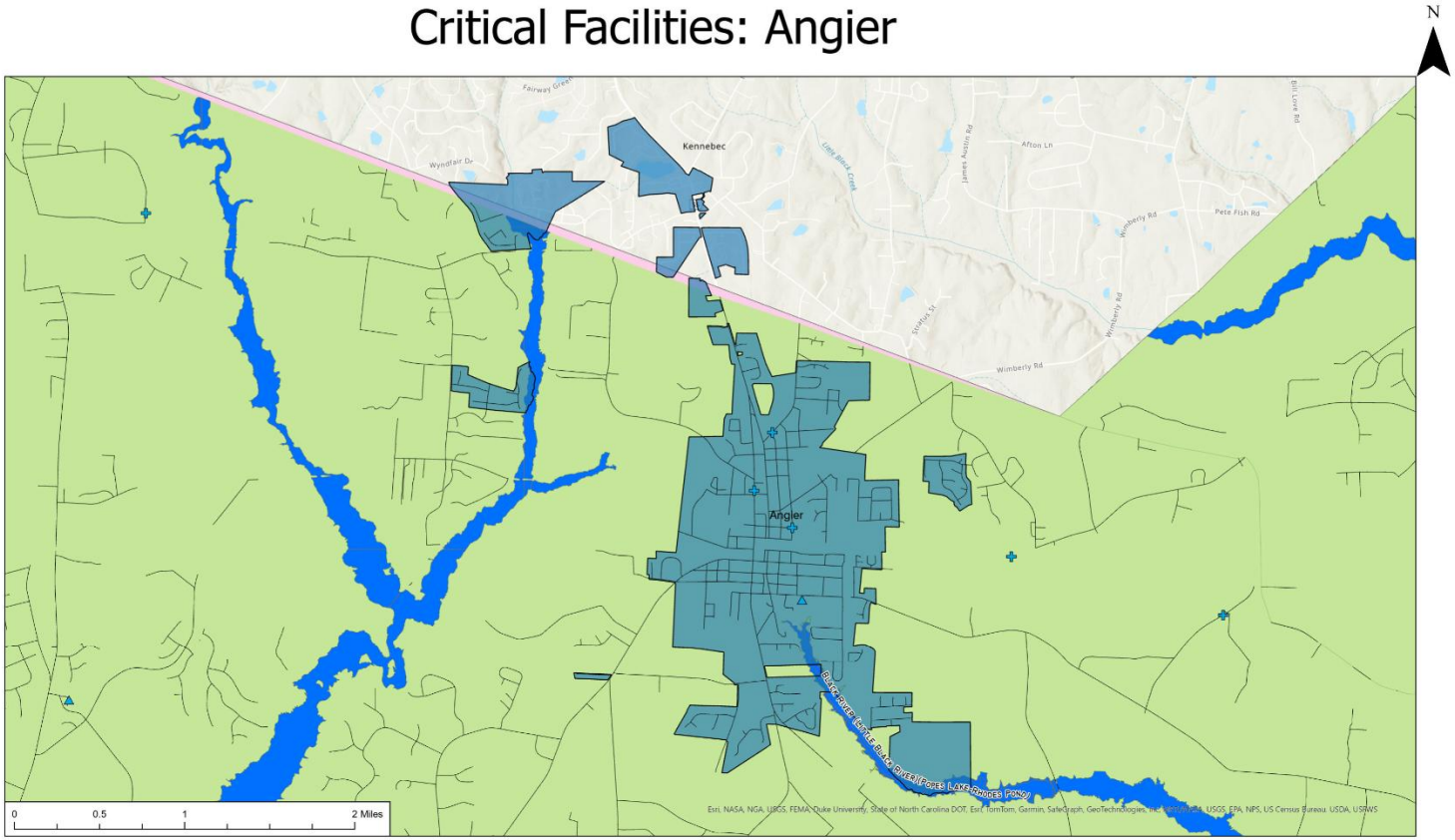


***Figure 3-7**: Critical Facilities in Harnett County*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Primrose Villa Retirement Home	Family Care	P O Box 1091		Angier	27501	FCL-043-009
Oak Hill Living Center	Home For The Aged	P O Box 759		Angier	27501	HAL-043-015
Primrose Villa Retirement Home II	Home For The Aged	P O Box 1091		Angier	27501	HAL-043-013
Primrose Villa Retirement III	Home For The Aged	P O Box 1091		Angier	27501	HAL-043-017
Primrose Villa Retirement IV	Home For The Aged	P O Box 1091		Angier	27501	HAL-043-019
Senter's Rest Home	Home For The Aged	P. O. Box 670		Fuquay-Varina	27526	HAL-043-014
Stage Coach Manor	Home For The Aged	PO Box 877		Angier	27501	HAL-043-018
CMI Angier Group Home	Mental Health Homes	P.O. Box 1300		Angier	27501	MHL-043-021
The DWI Center	Mental Health Homes	728 North Raleigh Street	The DWI Ctr.	Angier	27501	MHL-043-038
Angier Elementary	None	130 E McIver St		Angier	27501	
LaFayette Elementary	None	108 LaFayette Sch Rd		Kipling	27543	

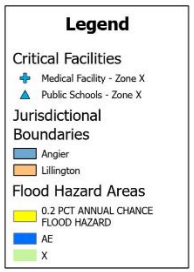
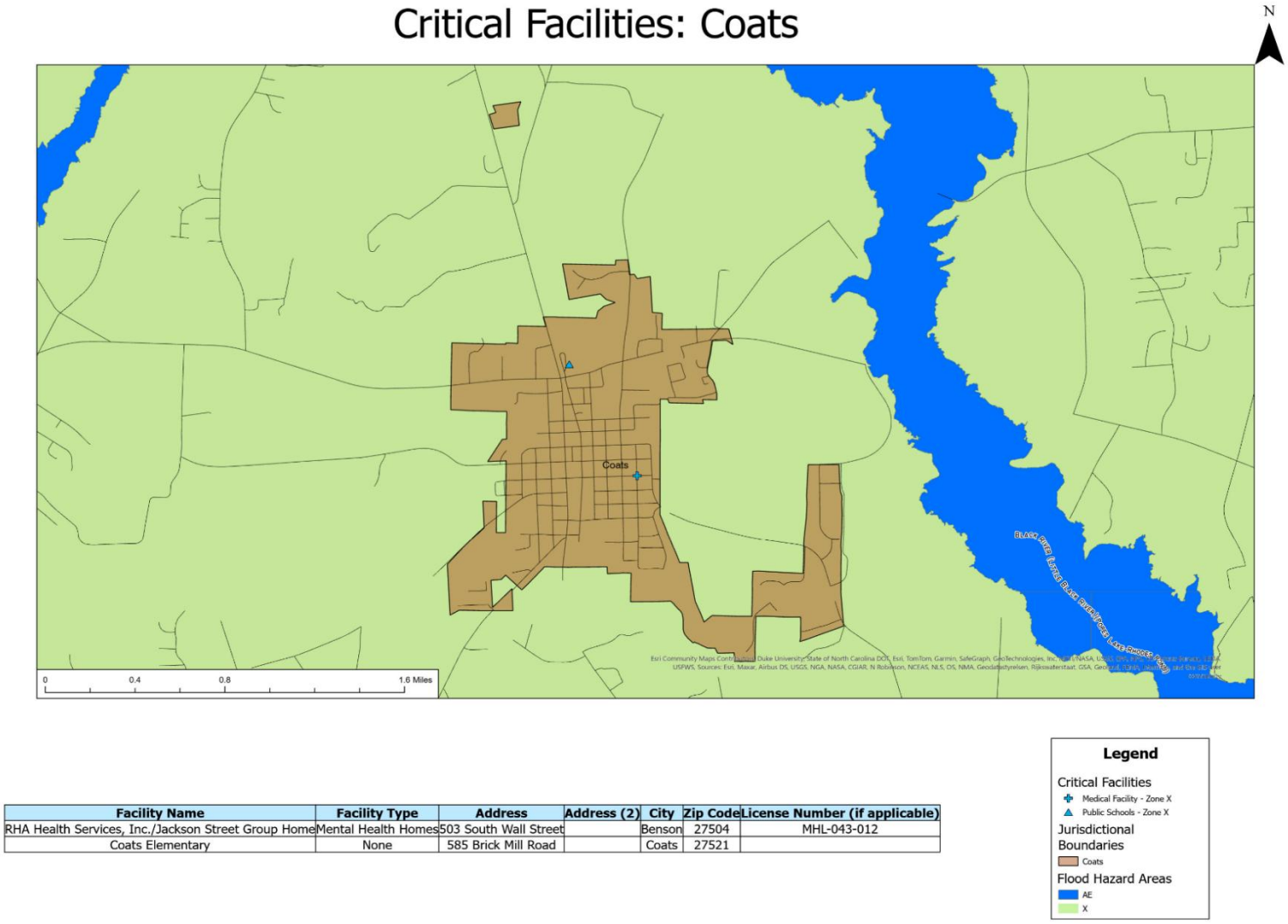
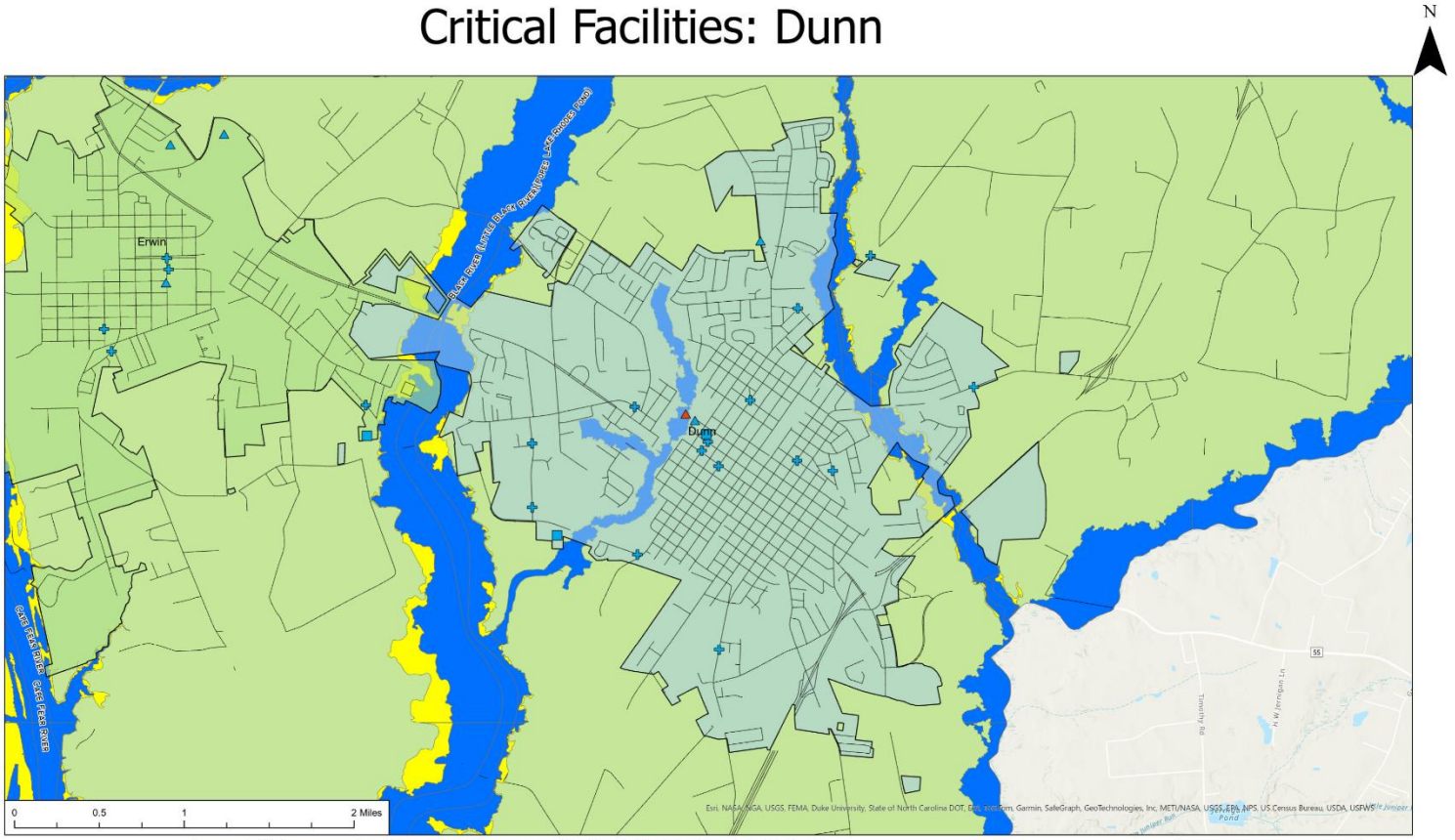


***Figure 3-8**: Critical Facilities in Angier*



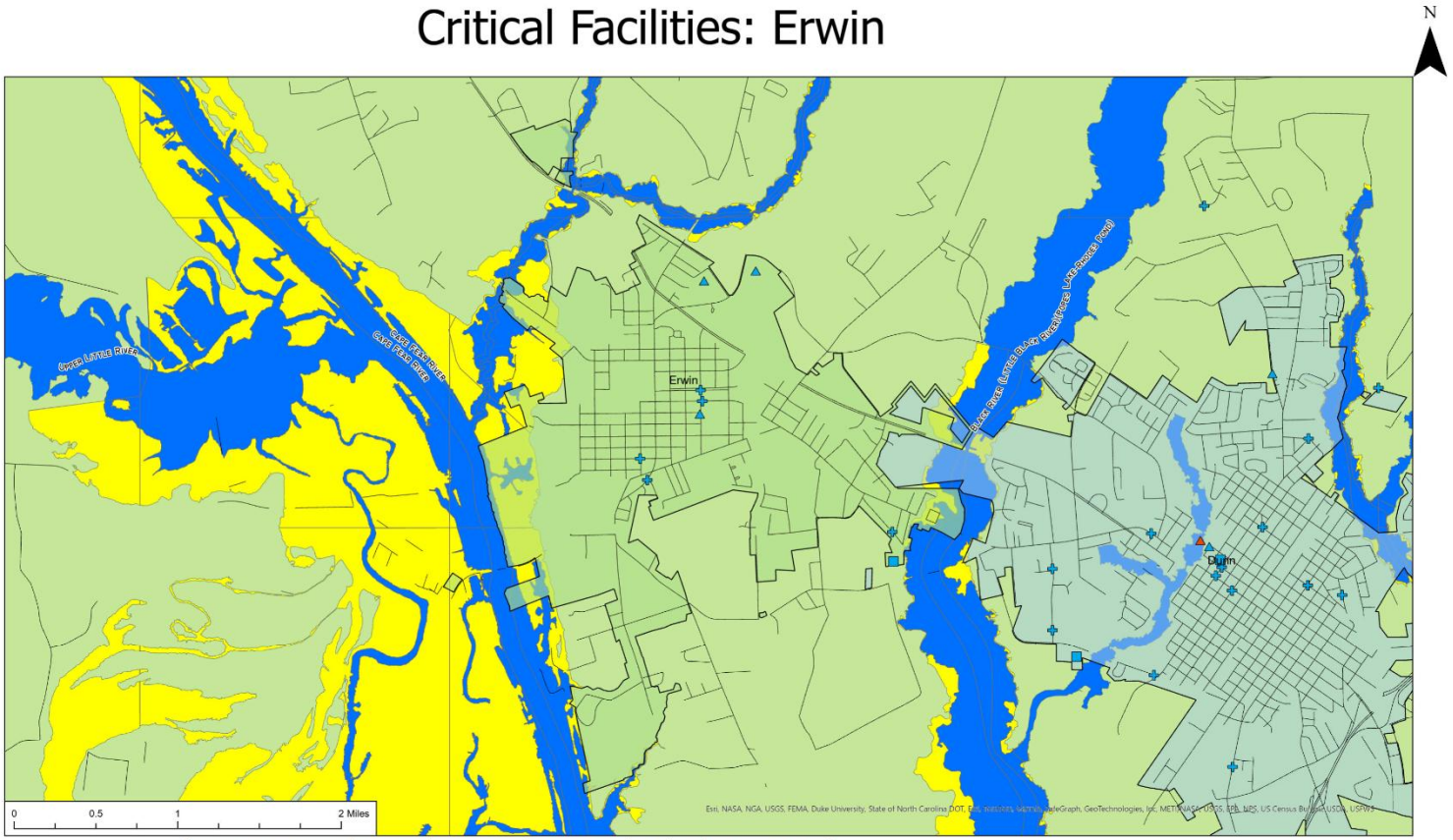
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
RHA Health Services, Inc./Jackson Street Group Home	Mental Health Homes	503 South Wall Street		Benson	27504	MHL-043-012
Coats Elementary	None	585 Brick Mill Road		Coats	27521	

***Figure 3-9**: Critical Facilities in Coats*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Basic Home Health Care, LLC	Home Care	P.O. Box 2155		Dunn	28335	HC2230
Family Medical Supply, Inc.	Home Care	P. O. Box 1121		Dunn	28334	HC1536
Interim HealthCare	Home Care	P. O. Box 2249		Whiteville	0	HC0889
Pelham Home Health	Home Care	P.O. Box 9754		Fayetteville	28311	HC2303
Core Family Care Center	Home For The Aged	P O Box 923		Dunn	28335	HAL-043-001
Core Family Care Center #2	Home For The Aged	P O Box 923		Dunn	28335	HAL-043-002
Senior Citizens Village	Home For The Aged	P O Box 247		Dunn	28335	HAL-043-006
Community Home Care and Hospice	Hospice	5301 Morganton Road		Fayetteville	28314	HOS2048
Hospice of Harnett County, Inc.	Hospice	P O Box 373		Erwin	28339	HOS0375
Betsy Johnson Regional Hospital	Hospital	P O Dwr 1706		Dunn	28335	H0024
Good Hope Hospital, Inc.	Hospital	410 Denim Drive		Erwin	28339	H0080
Elm Street	Mental Health Homes	501-C South Wall Street	RHA Health Services, Inc.	Benson	27504	MHL-043-027
Elmore Blackey Fellowship Home	Mental Health Homes	PO Box 463	Program Resource Institute,	Dunn	28335	MHL-043-015
Erwin #2 Group Home	Mental Health Homes	202 West B Street		Erwin	28339	MHL-043-013
Erwin Avenue Home	Mental Health Homes	100 Erwin Avenue		Erwin	28339	MHL-043-006
Massey Home	Mental Health Homes	519 E. Townsend Street		Dunn	28334	MHL-043-016
McKay's Place	Mental Health Homes	PO Box 2813		Fayetteville	28302	MHL-043-020
Britthaven of Harnett	Nursing Home Facilit	PO Box 1597		Dunn	28335	NH0576
IHS of Dunn	Nursing Home Facilit	711 Susan Tart Road	P O Box 948	Dunn	0	NH0482
Parrish Nursing Center, Inc.	Nursing Home Facilit	201 North Ellis Avenue	P O Box 1707	Dunn	0	NH0144
BRITTHAVEN OF HARNETT	NURSING HOMES	604 LUCAS ROAD		DUNN	6623	NH0576
DUNN REHABILITION AND NURSING CENTER	NURSING HOMES	711 SUSAN TART ROAD		DUNN	5557	NH0482
MAGNOLIA LIVING CENTER	NURSING HOMES	201 NORTH ELLIS AVENUE		DUNN	3806	NH0144
Gentry Primary	None	114 Porter Drive		Erwin	28339	
Triton High	None	215 Maynard Lake Road		Erwin	28339	
Erwin Elementary	None	301 S 10th St		Erwin	28339	
Harnett Primary	None	800 W Harnett St		Dunn	28334	
Wayne Avenue Elem	None	910 W Harnett St		Dunn	28334	
Dunn Middle	None	1301 Meadowlark Road		Dunn	28334	

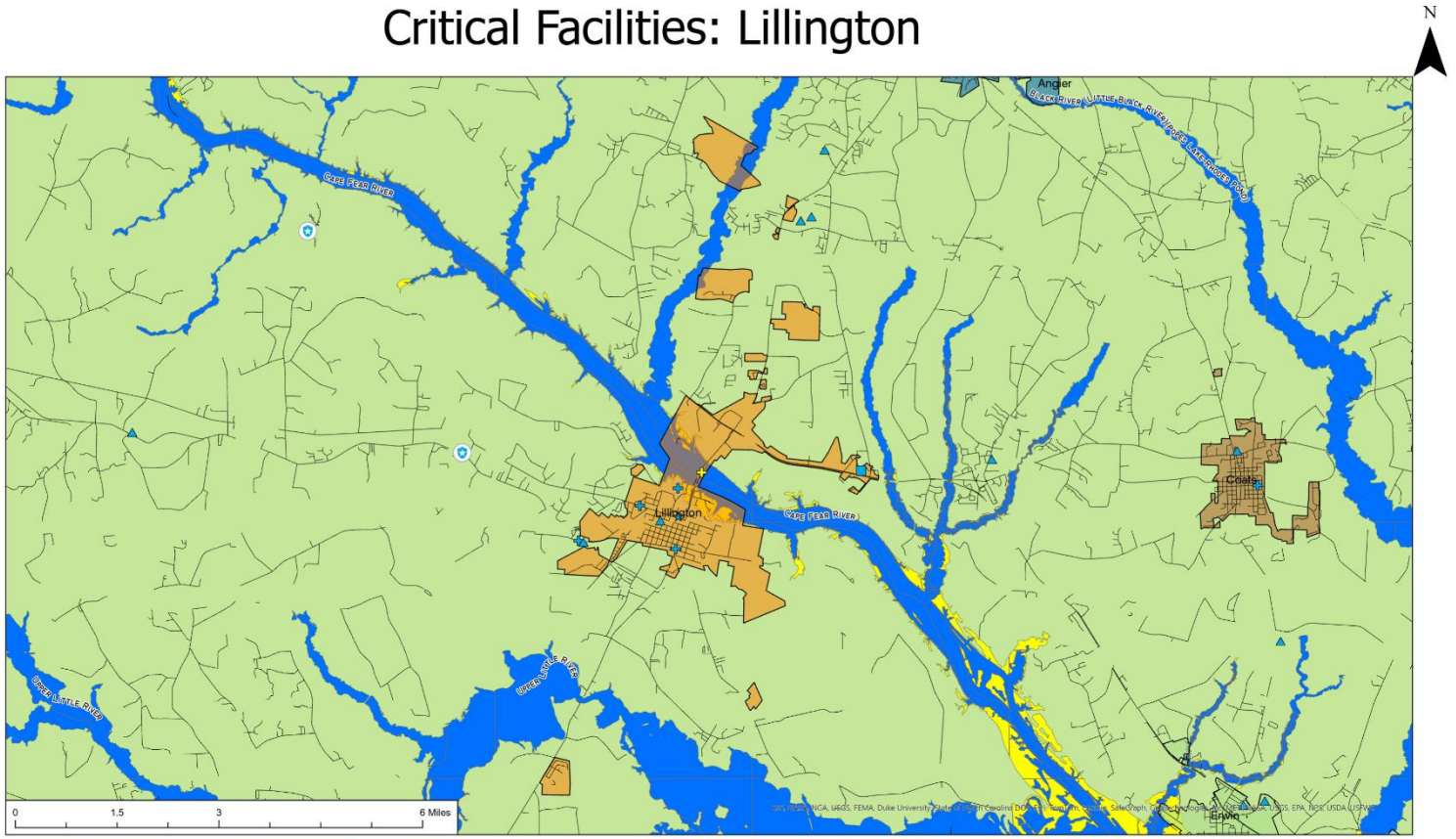
***Figure 3-10**: Critical Facilities in Dunn*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Basic Home Health Care, LLC	Home Care	P.O. Box 2155		Dunn	28335	HC2230
Family Medical Supply, Inc.	Home Care	P. O. Box 1121		Dunn	28334	HC1536
Interim HealthCare	Home Care	P. O. Box 2249		Whiteville	0	HC0889
Liberty Home Care	Home Care	105 Hunt Valley Drive		Dunn	28334	HC0125
Pelham Home Health	Home Care	P.O. Box 9754		Fayetteville	28311	HC2303
Senior Citizens Village	Home For The Aged	P O Box 247		Dunn	28335	HAL-043-006
Community Home Care and Hospice	Hospice	5301 Morganton Road		Fayetteville	28314	HOS2048
Hospice of Harnett County, Inc.	Hospice	P O Box 373		Erwin	28339	HOS0375
Betsy Johnson Regional Hospital	Hospital	P O Dwr 1706		Dunn	28335	H0224
Good Hope Hospital, Inc.	Hospital	410 Denim Drive		Erwin	28339	H0080
Elm Street	Mental Health Homes	501-C South Wall Street	RHA Health Services, Inc.	Benson	27504	MHL-043-027
Elmore-Blackey Fellowship Home	Mental Health Homes	PO Box 463	Program Resource Institute,	Dunn	28335	MHL-043-015
Erwin #2 Group Home	Mental Health Homes	202 West B Street		Erwin	28339	MHL-043-013
Erwin Avenue Home	Mental Health Homes	100 Erwin Avenue		Erwin	28339	MHL-043-006
Massey Home	Mental Health Homes	519 E. Townsend Street		Dunn	28334	MHL-043-016
McKay's Place	Mental Health Homes	PO Box 2813		Fayetteville	28302	MHL-043-020
Brittthaven of Harnett	Nursing Home Facilit	PO Box 1597		Dunn	28335	NH0576
IHS of Dunn	Nursing Home Facilit	711 Susan Tart Road	P O Box 948	Dunn	0	NH0482
Parrish Nursing Center, Inc.	Nursing Home Facilit	201 North Ellis Avenue	P O Box 1707	Dunn	0	NH0144
BRITTHAVEN OF HARNETT	NURSING HOMES	604 LUCAS ROAD		DUNN	6623	NH0576
DUNN REHABILITTION AND NURSING CENTER	NURSING HOMES	711 SUSAN TART ROAD		DUNN	5557	NH0482
MAGNOLIA LIVING CENTER	NURSING HOMES	201 NORTH ELLIS AVENUE		DUNN	3906	NH0144
Gentry Primary	None	114 Porter Drive		Erwin	28339	
Triton High	None	215 Maynard Lake Road		Erwin	28339	
Erwin Elementary	None	301 S 10th St		Erwin	28339	
Harnett Primary	None	800 W Harnett St		Dunn	28334	
Wayne Avenue Elem	None	910 W Harnett St		Dunn	28334	
Dunn Middle	None	1301 Meadowlark Road		Dunn	28334	

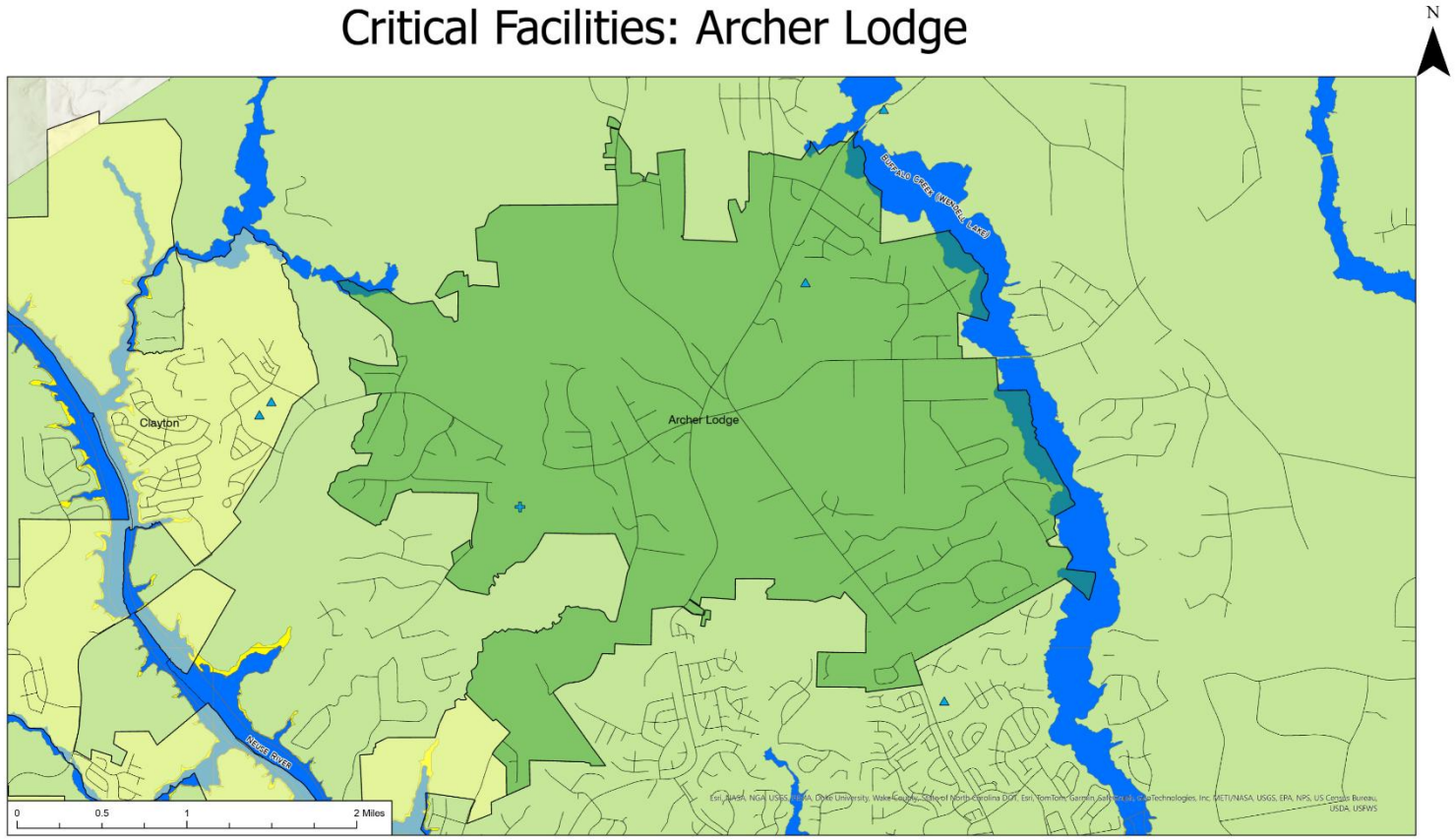


***Figure 3-11**: Critical Facilities in Erwin*



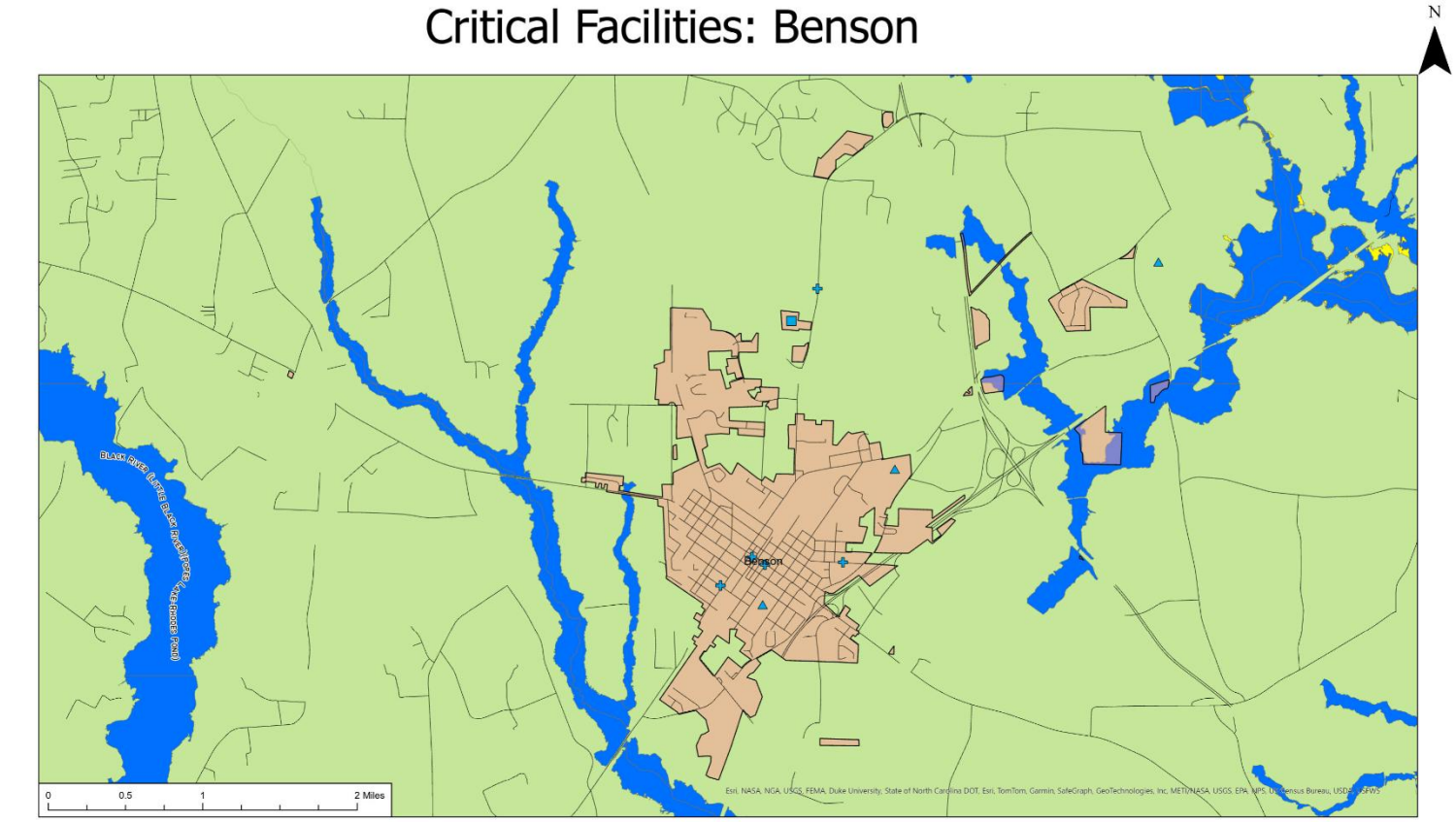
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Affinity Health Services, Inc.	Home Care	P. O. Box 2503		Lillington	27546	HC1477
Annie's Nursing Service	Home Care	1406 South MAin Street		Lillington	27546	HC2246
McPhail's Home Healthcare	Home Care	P. O. Box 609		Lillington	28311	HC1372
Pinecrest Gardens of Lillington	Home For The Aged	P.O. Box 1934		Lillington	27546	HAL-043-012
Duncan Street Residential	Mental Health Homes	5608 Denham Court	Tala Habilitative Services	Fayetteville	28304	MHL-043-037
RHA Health Services, Inc./Jackson Street Group Home	Mental Health Homes	503 South Wall Street		Benson	27504	MHL-043-012
UNIVERSAL HEALTH CARE LILLINGTON	NURSING HOMES	1995 CORNELIUS HARNETT BOULEVARD		LILLINGTON	8276	NH0444
NORTH CAROLINA DIVISION OF PARKS - RAVEN ROCK STATE PARK	PARK POLICE	3009 RAVEN ROCK ROAD		LILLINGTON	27546	
NORTH CAROLINA FORESTRY SERVICE	PARK POLICE	3259 OLD UNITED STATES HIGHWAY 421		LILLINGTON	27546	
Harnett County Emergency Management	EOC	108 E Front St		Lillington, NC 27546		
North Harnett Primary	None	282 N Harnett School Rd		Angier	27501	
Boone Trail Elementary	None	1425 Adcock Road		Lillington	27546	
Buies Creek Elementary	None	340 Main Street		Buies Creek	27506	
Coats Elementary	None	585 Brick Mill Road		Coats	27521	
Gentry Primary	None	114 Porter Drive		Erwin	28339	
Triton High	None	215 Maynard Lake Road		Erwin	28339	
Western Harnett High	None	10637 NC Hwy 27 West		Lillington	27546	
Western Harnett Middle	None	11135 NC Hwy 27 West		Lillington	27546	
STAR Academy	None	900 11th Street		Lillington	27546	
Harnett Central Middle	None	2529 Harnett Central Rd		Angier	27501	
Harnett Central High	None	2911 Harnett Central Rd		Angier	27501	
CoatsErwin Middle	None	2833 NC Hwy 55E		Dunn	28334	
LillingtonShawtown Elementary	None	855 Old US 421		Lillington	27546	

***Figure 3-12**: Critical Facilities in Lillington*



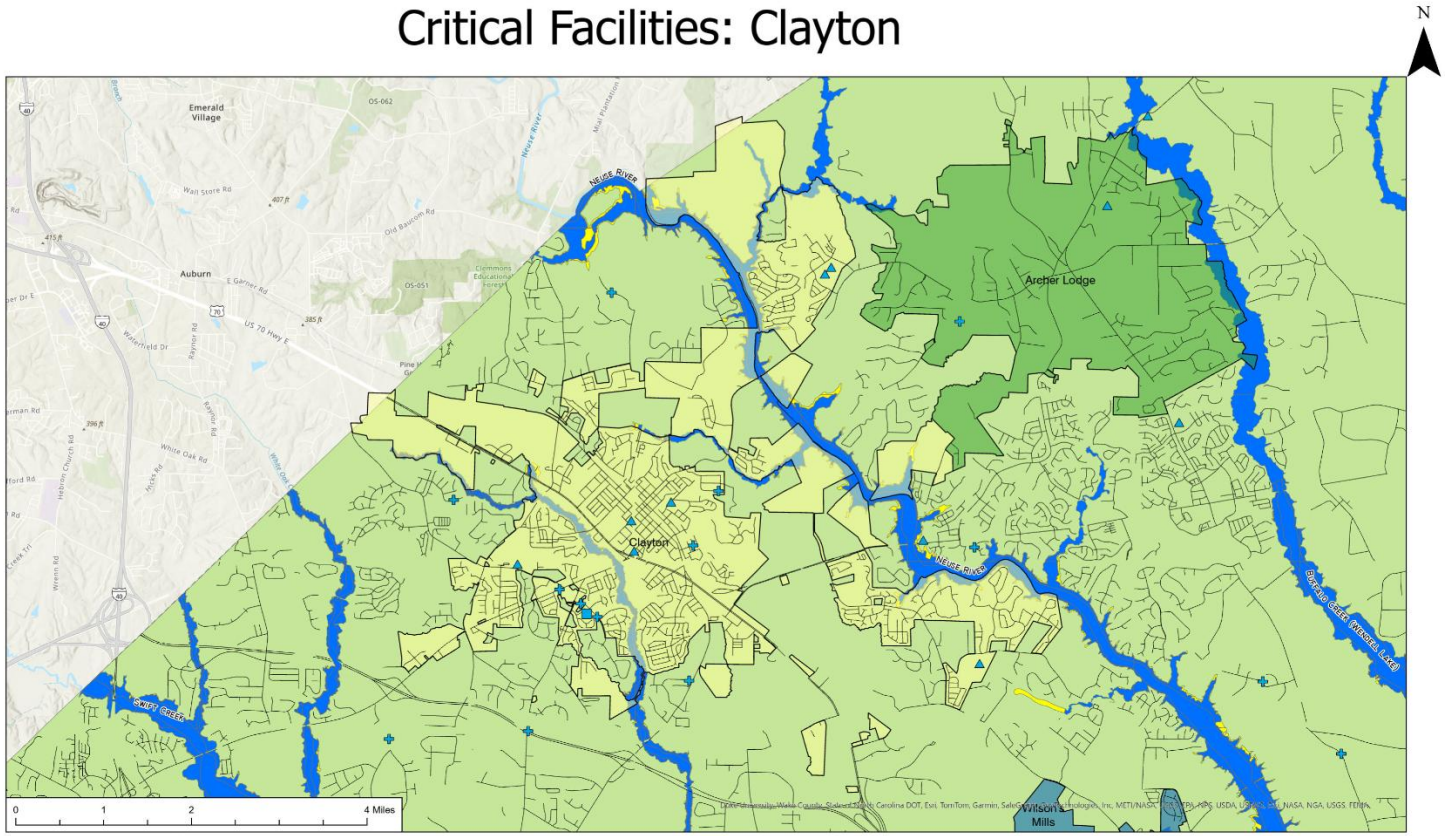
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Altman Therapeutic Home	Mental Health Homes	214 Dogwood Ave.		Clayton	27520	MHL-051-104
Serenity Place	Mental Health Homes	120 Lake Point Drive	Serenity Place	Clayton	27520	MHL-051-126
Wendell Elementary	Magnet	3355 Wendell Blvd		Wendell	27591	
Riverwood Elementary	None	108 Athletic Club Blvd		Clayton	27527	
Riverwood Middle	None	204 Athletic Club Blvd		Clayton	27527	
River Dell Elementary	None	12100 Buffalo Road		Clayton	27527	
Archer Lodge Middle	None	762 Wendell Rd		Wendell	27591	

***Figure 3-13**: Critical Facilities in Archer Lodge*



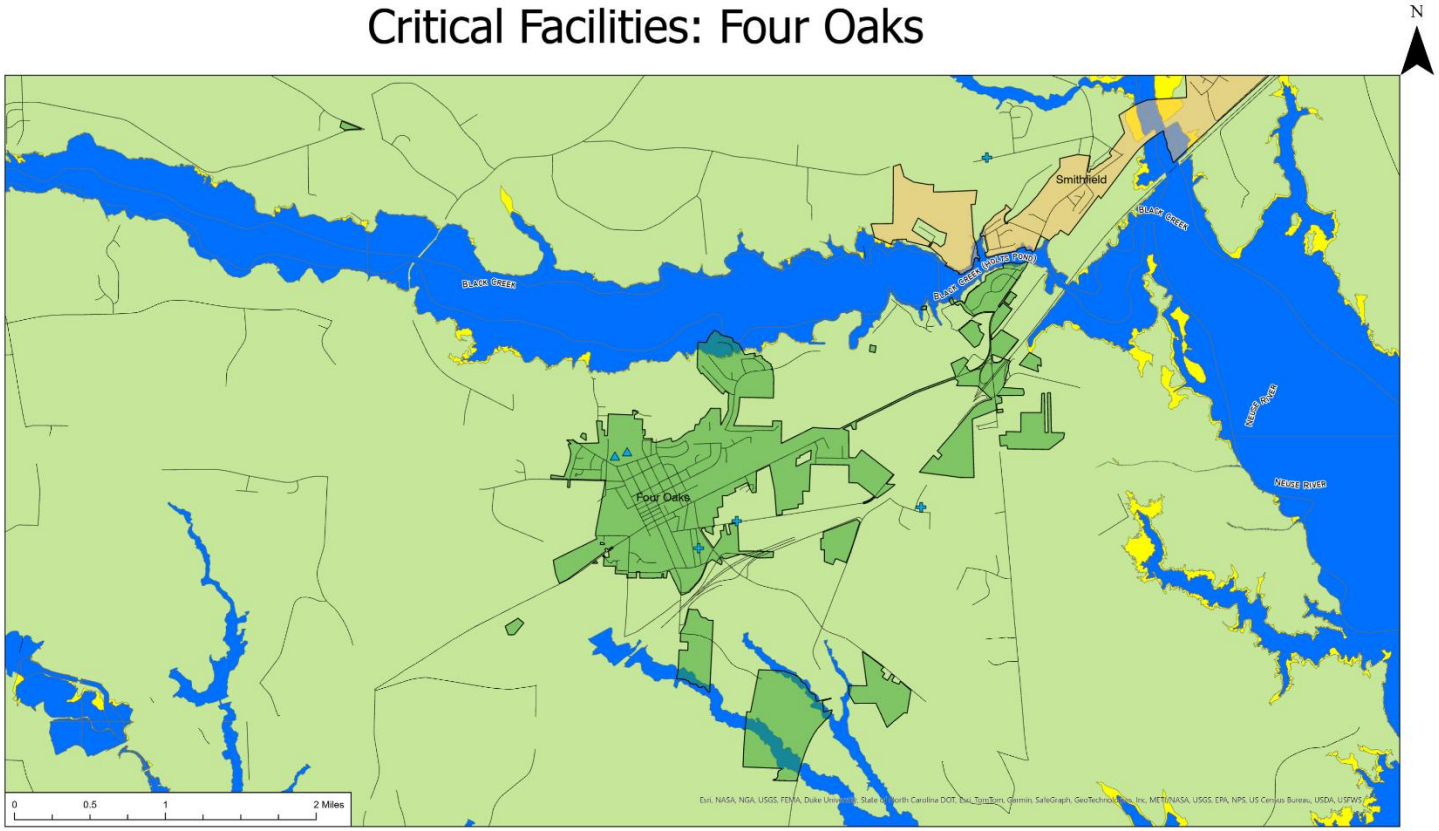
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Personal Home Care Specialists, Inc.	Home Care	P.O. Box 1292		Benson	27504	HC2059
Oasis #1	Home For The Aged	PO Box 636		Benson	27504	HAL-051-010
Oasis #2	Home For The Aged	P O Box 636		Benson	27504	HAL-051-011
Oasis #3	Home For The Aged	P O Box 636		Benson	27504	HAL-051-012
Oasis #4	Home For The Aged	P.O. Box 636		Benson	27504	HAL-051-013
Oasis #5	Home For The Aged	P.O. Box 636		Benson	27504	HAL-051-014
Oasis #6	Home For The Aged	P.O. Box 636		Benson	27504	HAL-051-015
Benson Vocational Center	Mental Health Homes	501-C South Wall Street	Benson Vocational Center	Benson	27504	MHL-051-022
Canterbury Road Home	Mental Health Homes	503 S. Wall Street		Benson	27504	MHL-051-011
Johnston Counseling Services	Mental Health Homes	102G North Market Street		Benson	27504	MHL-051-103
Liberty Commons Nsg. and Rehab. Ctr. of Johnston Ct	Nursing Home Facilit	2315 Highway 242 North		Benson	0	NH0606
Unprecedented Care	Home For The Aged	157 Stewart Road		Dunn	28334	HAL-043-009
LIBERTY COMMONS NURSING AND REHABILITATION CENTER OF JOHNSTON COUNTY	NURSING HOMES	2315 NC HIGHWAY 242 NORTH		BENSON	7820	NH0606
South Johnston High	None	10381 US Hwy 301 S		Four Oaks	27524	
Benson Elementary	None	2040 Hwy 50 N		Benson	27504	
Benson Middle	None	1600 N Wall Street		Benson	27504	

***Figure 3-14**: Critical Facilities in Benson*



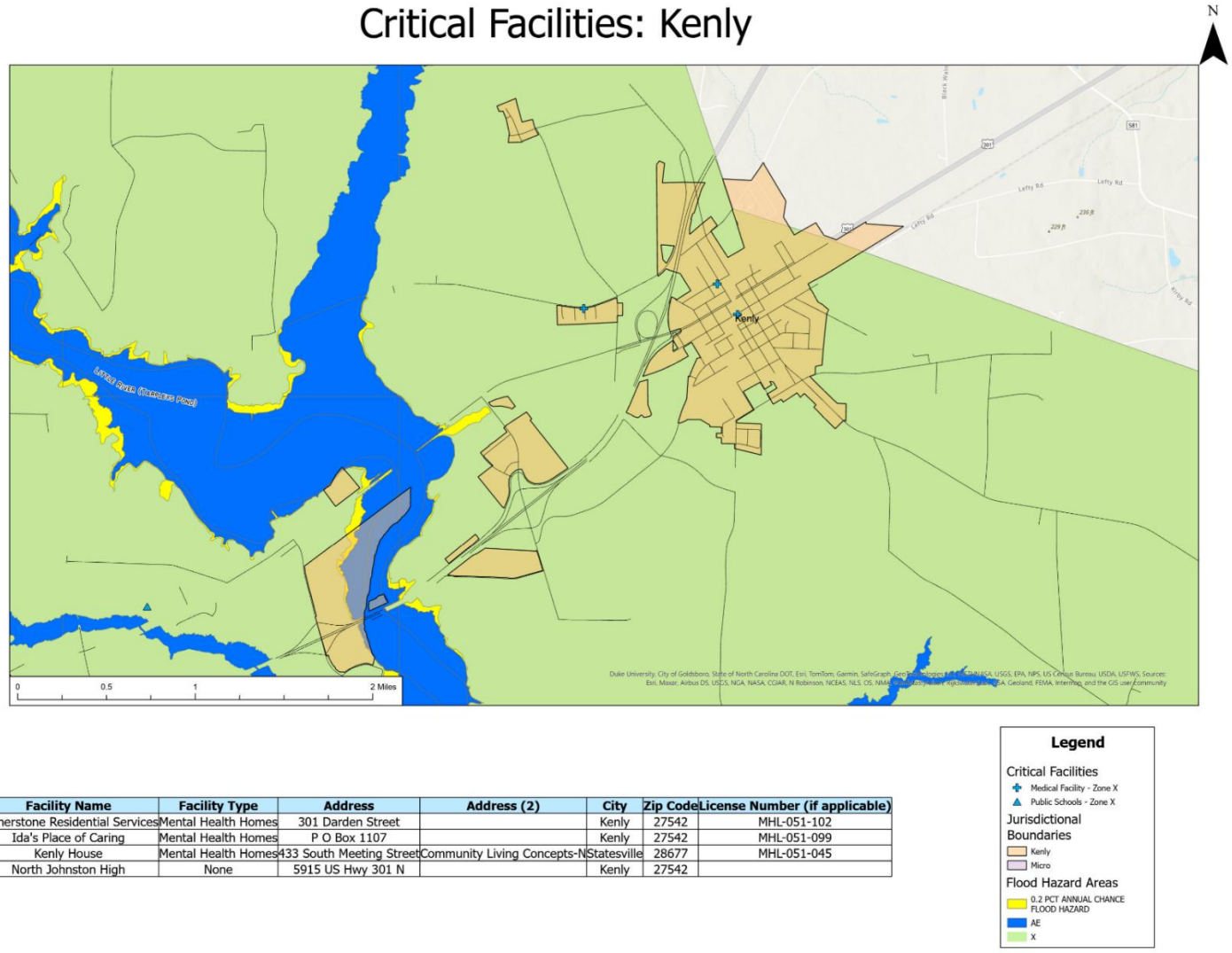
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Front Street Family Care Home	Family Care	P.O. Box 25752		Raleigh	27611	FCL-051-017
Hilltop Manor	Family Care	4969 Buffalo Road		Selma	27576	FCL-051-016
Action Health Staffing	Home Care	P. O. Box 158		Wilson	27894	HC1792
Azalea Village	Home For The Aged	P. O. Box 627		Clayton	27520	HAL-051-022
Altman Therapeutic Home	Mental Health Homes	214 Dogwood Ave.		Clayton	27520	MHL-051-104
Barbara Dunn	Mental Health Homes	10 Sunnybrook Road		Raleigh	27610	MHL-051-088
Bridge	Mental Health Homes	2318 Huntsbridge		Clayton	27520	MHL-051-075
Godwin Family Care	Mental Health Homes	471 Clark Pond Road		Clayton	27576	MHL-051-122
Mary and Gaddius Barnes	Mental Health Homes	1850 Barbour Mill Road		Clayton	27520	MHL-051-097
Rose Of Sharon Group Home	Mental Health Homes	161 Kentucky Derby Dr.		Clayton	27520	MHL-051-105
Royal Home	Mental Health Homes	7406-I Chapel Hill Road		Raleigh	27607	MHL-051-092
Serenity House	Mental Health Homes	120 Lake Point Drive	Serenity Place	Clayton	27520	MHL-051-125
Serenity Place	Mental Health Homes	120 Lake Point Drive	Serenity Place	Clayton	27520	MHL-051-126
Brian Center Health & Retirement/Clayton	Nursing Home Facilit	204 Dairy Road		Clayton	0	NH0475
BRIAN CENTER HEALTH AND RETIREMENT - CLAYTON	NURSING HOMES	204 DAIRY ROAD		CLAYTON	7216	NH0475
East Clayton Elementary	None	2075 NC Highway 42 East		Clayton	27527	
Clayton High	None	600 S Fayetteville St		Clayton	27520	
West Clayton Elementary	None	1012 S Lombard St		Clayton	27520	
Cooper Elementary	None	849 North Mial St		Clayton	27520	
Clayton Middle	None	490 Guy Rd		Clayton	27520	
Wendell Elementary	Magnet	3355 Wendell Blvd		Wendell	27591	
Riverwood Elementary	None	108 Athletic Club Blvd		Clayton	27527	
Riverwood Middle	None	204 Athletic Club Blvd		Clayton	27527	
River Dell Elementary	None	12100 Buffalo Road		Clayton	27527	
Archer Lodge Middle	None	762 Wendell Rd		Wendell	27591	
Powhatan Elementary	None	3145 Vinson Rd		Clayton	27520	

***Figure 3-15**: Critical Facilities in Clayton*



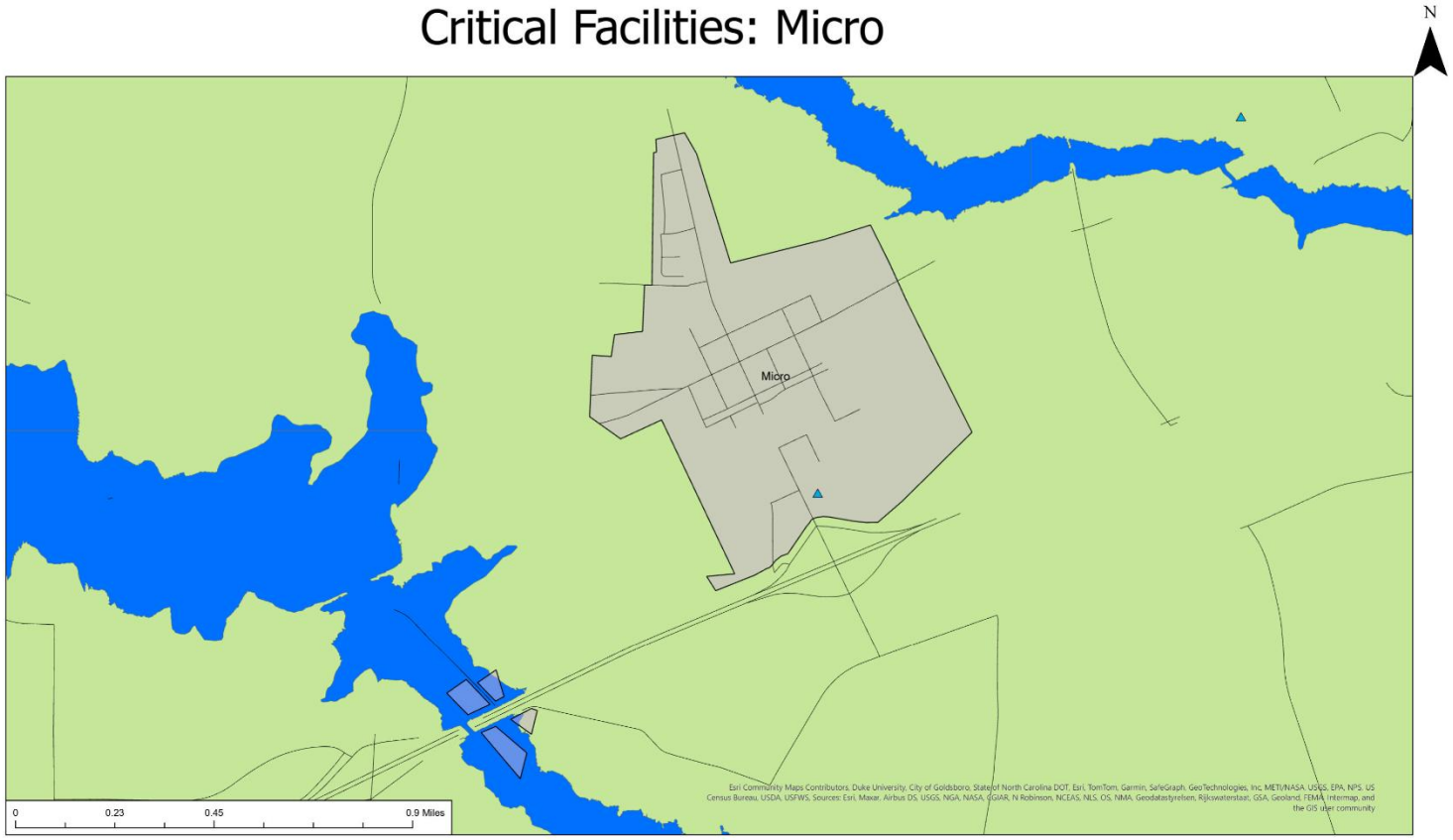
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Johnston County Group Home #1	Family Care	P. O. Box 1768		Smithfield	27577	FCL-051-006
The Oasis of Four Oaks	Home For The Aged	P O Box 759		Four Oaks	27524	HAL-051-016
Country Manor Group Home	Mental Health Homes	503 South Wall Street		Benson	27504	MHL-051-009
Ward Home	Mental Health Homes	6036 Six Forks Road	Alpha Omega Health	Raleigh	27609	MHL-051-121
Four Oaks Elementary	None	180 Hatcher St		Four Oaks	27524	
Four Oaks Middle	None	1475 Boyette Road		Four Oaks	27524	

***Figure 3-16**: Critical Facilities in Four Oaks*



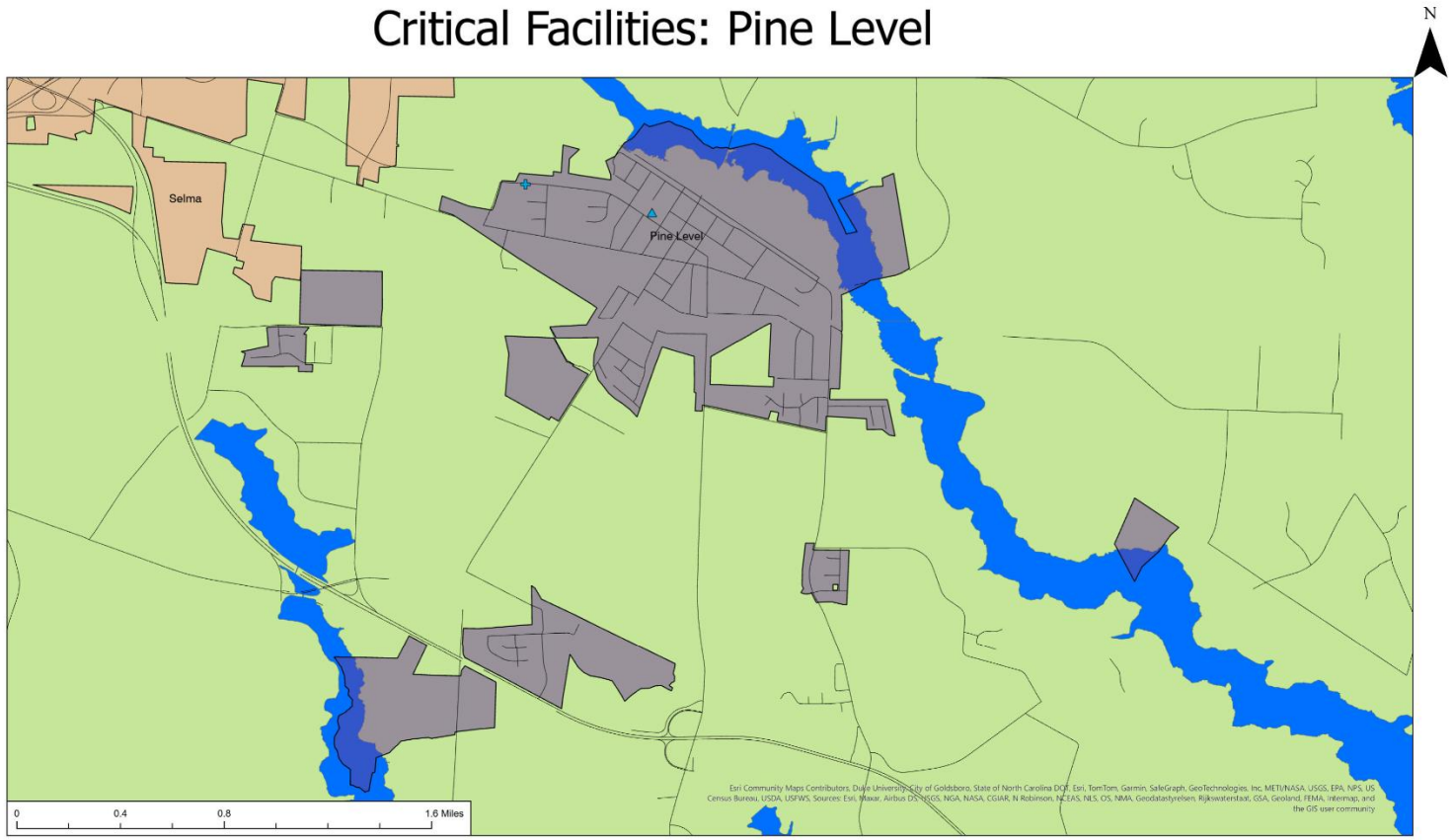
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Cornerstone Residential Services	Mental Health Homes	301 Darden Street		Kenly	27542	MHL-051-102
Ida's Place of Caring	Mental Health Homes	P O Box 1107		Kenly	27542	MHL-051-099
Kenly House	Mental Health Homes	433 South Meeting Street	Community Living Concepts-N	Statesville	28677	MHL-051-045
North Johnston High	None	5915 US Hwy 301 N		Kenly	27542	

***Figure 3-17**: Critical Facilities in Kenly*



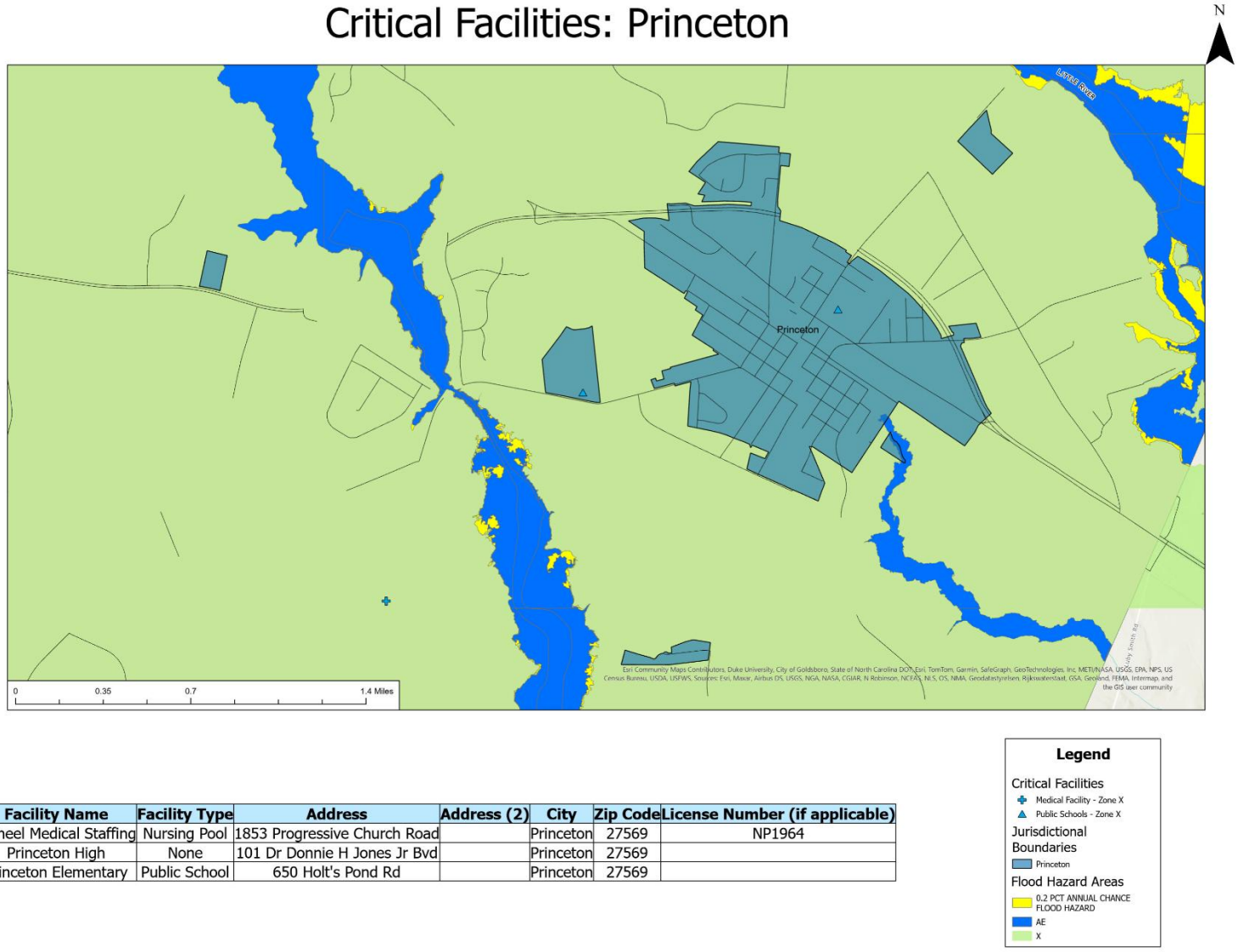
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
North Johnston Middle	None	301 E Main St		Micro	27555	
North Johnston High	None	5915 US Hwy 301 N		Kenly	27542	

***Figure 3-18**: Critical Facilities in Micro*



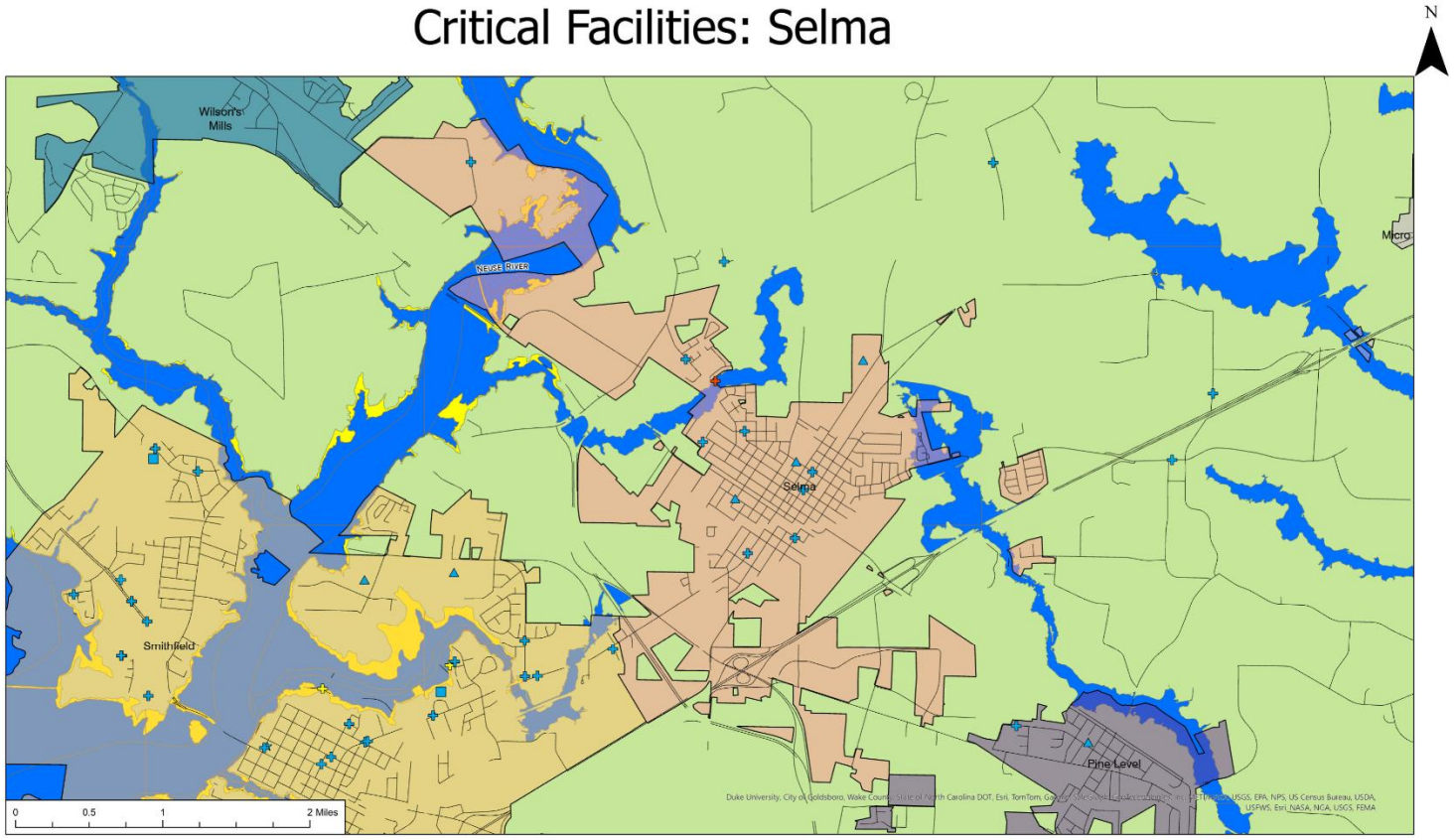
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Johnston County Group Home #3	Mental Health Homes	PO Box 1768	Johnston County Group Homes	Smithfield	27577	MHL-051-113
MicroPine Level Elementary	None	304 Blanche Street		Pine Level	27568	

***Figure 3-19**: Critical Facilities in Pine Level*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Tarheel Medical Staffing	Nursing Pool	1853 Progressive Church Road		Princeton	27569	NP1964
Princeton High	None	101 Dr Donnie H Jones Jr Bvd		Princeton	27569	
Princeton Elementary	Public School	650 Holt's Pond Rd		Princeton	27569	

***Figure 3-20**: Critical Facilities in Princeton*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Affinity Healthcare Services, Inc.	Home Care	P. O. Box 1404		Smithfield	27577	HC1836
Alpha-Omega Health, Inc.	Home Care	6026 Six Forks Road		Raleigh	27609	HC1682
Care Focus	Home Care	PO Box 1765		Burlington	27216	HC2141
Community-based Learning Alternatives Center, Inc.	Home Care	P.O. Box 1629		Smithfield	27577	HC2212
Community-based Learning Alternatives Center, Inc.	Home Care	P.O. Box 1629		Smithfield	27577	MHL-051-999
Continuum Home Care of Smithfield	Home Care	P. O. Box 2280		Smithfield	27577	HC1219
Helping Hands Home Care, Inc.	Home Care	P. O. Box 1656		Smithfield	27577	HC1996
Home Health and Hospice Care, Inc.	Home Care	2402 Wayne Memorial Drive		Goldsboro	27534	HC2007
Johnston County Council on Aging, Inc.	Home Care	P. O. Box 2235		Smithfield	27577	HC2271
Johnston Memorial Home Care and Hospice	Home Care	P.O Box 1376		Smithfield	27577	HC2083
Autumn Acres of Johnston County, Inc.	Home For The Aged	474 Jerry Road		Selma	27576	HAL-051-001
Autumn Care of Johnston County, Inc.	Home For The Aged	474 Jerry Road		Selma	27576	HAL-051-062
Autumn Home Care of Johnston County, Inc.	Home For The Aged	474 Jerry Road		Selma	27576	HAL-051-003
Carolina House of Smithfield	Home For The Aged	830 Buffalo Road		Smithfield	27577	HAL-051-024
Christian Care of Smithfield #1	Home For The Aged	P.O.Box 269		Smithfield	27577	HAL-051-021
Christian Care of Smithfield #II	Home For The Aged	P.O.Box 269		Smithfield	27577	HAL-051-022
Classic Care Homes	Home For The Aged	101 Annie Parker Circle		Smithfield	27577	HAL-051-018
Classic Care Homes 108	Home For The Aged	101 Annie Parker Circle		Smithfield	27577	HAL-051-019
Classic Care Homes 106	Home For The Aged	101 Annie Parker Circle		Smithfield	27577	HAL-051-020
Meadowview Assisted Living Center	Home For The Aged	PO Box 2800		Smithfield	27577	HAL-051-025
Community Home Care & Hospice	Hospice	5301 Morganton Road		Fayetteville	28314	HO02135
Johnston Memorial Hospital	Hospital	P O Box 1376		Smithfield	27577	HI0131
Community Based Learning Alternatives Center, Inc.	Mental Health Homes	1306 West Market Street	C-BLAC, Inc.	Smithfield	27577	MHL-051-128
Day By Day Treatment Center	Mental Health Homes	1161 River Road		Selma	27575	MHL-051-008
E.N. Eaves Home	Mental Health Homes	4301 Main-2-Road, Ste. 207	Professional Care Mgmt.	Harrisburg	28075	MH-051-130
Exodus House	Mental Health Homes	P.O. Box 1078		Smithfield	27577	MHL-051-035
Josh House	Mental Health Homes	P.O. Box 1078		Smithfield	27577	MHL-051-046
Johnston Counseling Services	Mental Health Homes	200 Fairway Drive, Suite One		Smithfield	27577	MHL-051-062
Johnston Counseling Services/REAP	Mental Health Homes	308 Fairway Drive Suite 1	Johnston Counseling Svcs In	Smithfield	27577	MHL-051-100

Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Johnston County Area Mental Health Center	Mental Health Homes	PO Box 411	Johnston County Area MH/DD/SAS	Smithfield	27577	MHL-051-004
Johnston County Group Home #2 Smithfield	Mental Health Homes	PO Box 1768	Johnston County Group Homes	Smithfield	27577	MHL-051-112
Johnston County Group Home #3	Mental Health Homes	PO Box 1768	Johnston County Group Homes	Smithfield	27577	MHL-051-113
Lane Home	Mental Health Homes	P.O. Box 1065		Selma	27576	MHL-051-048
Matt And Diana Rajpoot Therapeutic Home	Mental Health Homes	15 Ormand Lane		Selma	27576	MHL-051-069
Meeting Street Substance Abuse Services	Mental Health Homes	P.O. Box 15		Smithfield	27577	MHL-051-077
Rainbow House	Mental Health Homes	P.O. Box 1078		Smithfield	27577	MHL-051-017
Spoiler Therapeutic Home	Mental Health Homes	103 Shady Grove Court		Selma	27576	MHL-051-106
Stanrifs Therapeutic Home	Mental Health Homes	703 S. Pollock St.		Selma	27576	MHL-051-101
Unity House	Mental Health Homes	PO Box 411	Johnston Area MH/DD/SAS Care	Smithfield	27577	MHL-051-001
VOCA-Greenwood Group Home	Mental Health Homes	301 South Church Street Ste. 280J	Community Alternatives - NC	Rocky Mount	27804	MHL-051-036
VOCA-Laurelwood	Mental Health Homes	301 South Church Street Ste. 280J	Community Alternatives-NC	Rocky Mount	27804	MHL-051-037
Wall's Therapeutic Home	Mental Health Homes	57 Brown Wall Rd.		Selma	27576	MHL-051-034
Walnut Group Home	Mental Health Homes	4201 Main 3Road Suite 207	Professional Care Mgmt. Inc.	Harrisburg	28075	MHL-051-115
Brittheaven of Smithfield	Nursing Home Facilit	515 Barbour Road	P.O Box 2390	Smithfield	0	NH0371
Smithfield Manor, Inc.	Nursing Home Facilit	901 Berkshire Road	P.O Box 1940	Smithfield	0	NH0182
SMITHFIELD MANOR	NURSING HOMES	901 BERKSHIRE ROAD		SMITHFIELD	4731	NH0182
BRITTHAVEN OF SMITHFIELD	NURSING HOMES	515 BARBOUR ROAD		SMITHFIELD	7698	NH0371
Johnston County Emergency Management	EOC	710 Bridge St		Smithfield, NC	27577	
Smithfield/Selma High	Public School	700 Booker Dairy Rd		Smithfield	27577	
Smithfield Middle	Public School	3490 Buffalo Rd		Smithfield	27577	
Selma Middle School	None	1510 Hwy 70 E		Selma	27576	
MicroPine Level Elementary	None	304 Blanche Street		Pine Level	27568	
Selma Elementary	None	311 W Richardson St		Selma	27576	
West Smithfield Elementary	None	2665 Galilee Road		Smithfield	27577	
South Campus Community Middle	None	425 S Collier Street		Smithfield	27577	
Neuse Charter School	None	909 Booker Dairy Rd		Smithfield	27577	
Johnston Co Early College Academy	Early College	225 College Rd		Smithfield	27520	

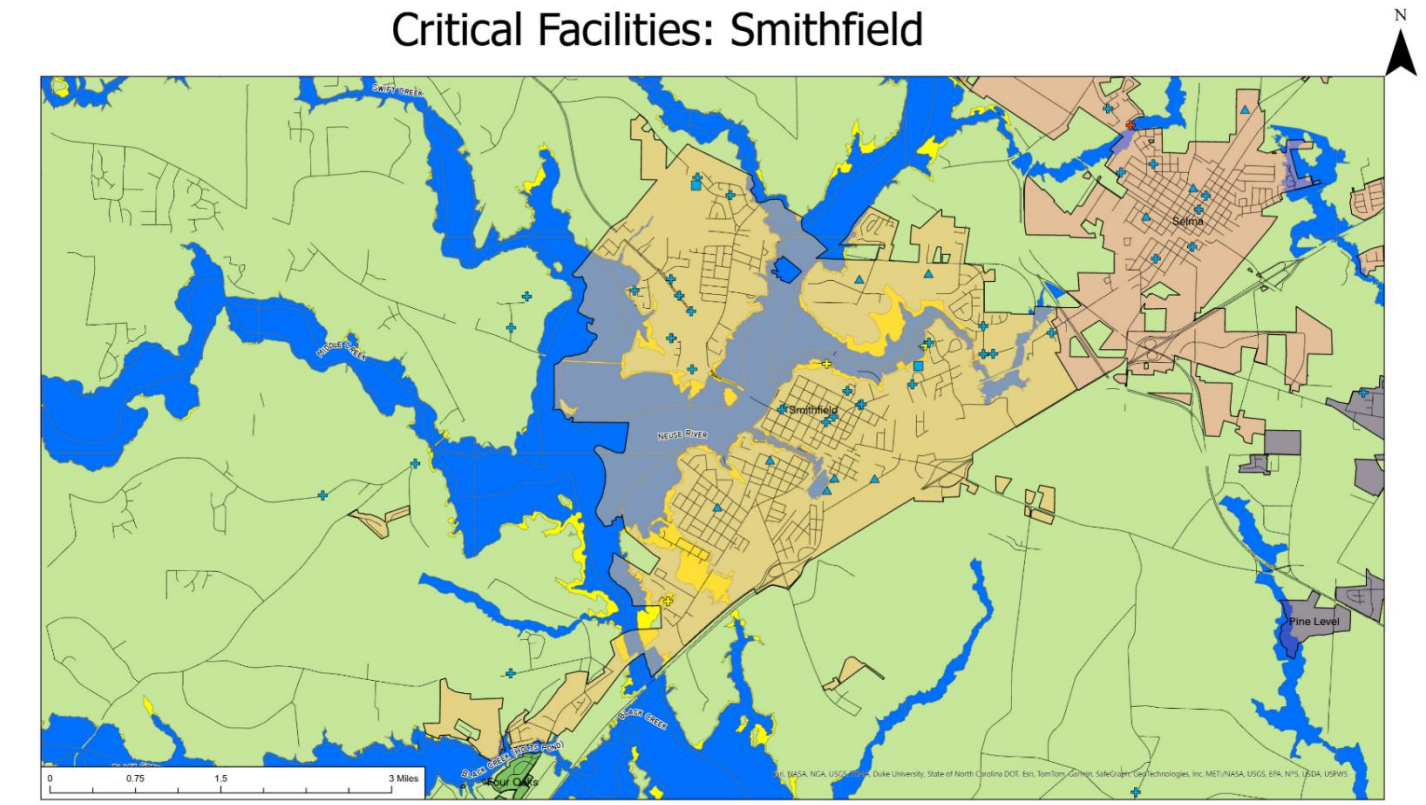
Legend

Critical Facilities
- EOC - Zone X
- Medical Facility - 0.2% Annual Chance Flood Hazard
- Medical Facility - Zone AE
- Medical Facility - Zone X
- Nursing Home - Zone X
- Public Schools - Zone X

Jurisdictional Boundaries
- Micro
- Pine Level
- Selma
- Smithfield
- Wilson's Mills

Flood Hazard Areas
- 0.2 PCT ANNUAL CHANCE FLOOD HAZARD
- AE
- X

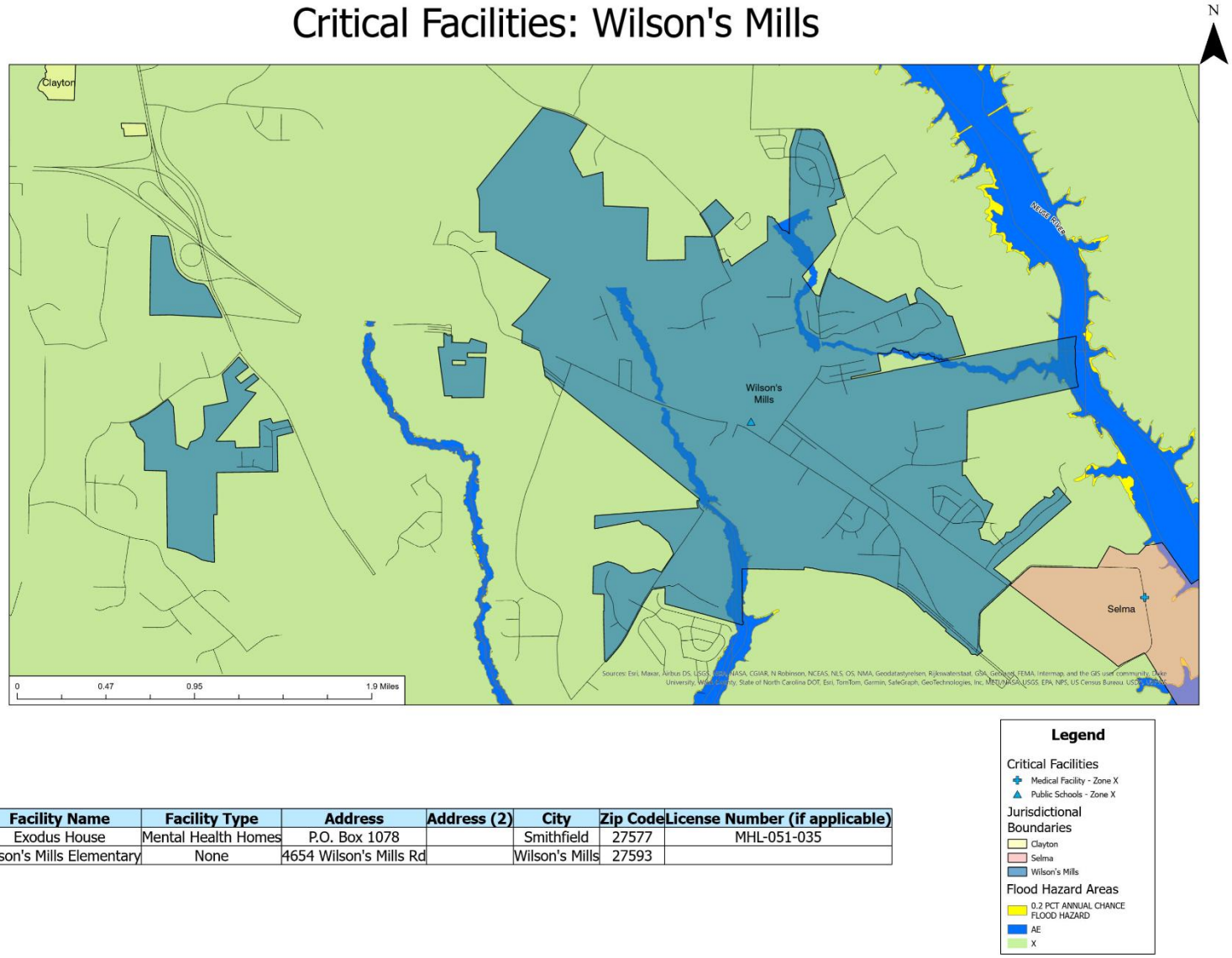
***Figure 3-21**: Critical Facilities in Selma*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Affinity Health Services, Inc	Home Care	P. O. Box 1404		Smithfield	27577	HC1830
Alpha Omega Health, Inc.	Home Care	9208 Six Forks Road		Raleigh	27615	HC15892
Care Focus	Home Care	PO Box 1785		Burlington	27216	HC2142
Community Based Learning Alternatives Center, Inc.	Home Care	P.O. Box 1629		Smithfield	27577	HC2233
Community Based Learning Alternatives Center, Inc	Home Care	P.O. Box 1629		Smithfield	27577	MHL 051 999
Corpsmart Home Care of Smithfield	Home Care	P. O. Box 2290		Smithfield	27577	HC1227
Helping Hands Home Care, Inc.	Home Care	P. O. Box 1634		Smithfield	27577	HC1896
Home Health and Hospice Care, Inc.	Home Care	2402 Wayne Memorial Drive		Goldsboro	27534	HC2503
Johnston County Council on Aging, Inc.	Home Care	P. O. Box 2228		Smithfield	27577	HC0771
Johnston Memorial Home Care and Hospice	Home Care	P. O Box 1370		Smithfield	27577	HC0380
Autumn Wind of Smithfield, Inc.	Home for the Aged	430A Rv 210		Smithfield	27577	HAL-051-009
Carolina House of Smithfield	Home For The Aged	830 Berkshire Road		Smithfield	27577	HAL-051-014
Christian Care of Smithfield #1	Home For The Aged	P. O Box 269		Smithfield	27577	HAL-051-021
Christian Care of Smithfield #3	Home for the Aged	P. O. Box 269		Smithfield	27577	HAL-051-023
Classic Care Homes	Home For The Aged	101 Annie Parker Circle		Smithfield	27577	HAL-051-018
Classic Care Homes 103	Home For The Aged	101 Annie Parker Circle		Smithfield	27577	HAL-051-019
Classic Care Homes 105	Home For The Aged	101 Annie Parker Circle		Smithfield	27577	HAL-051-020
Meadowview Assisted Living Center	Home for The Aged	PO Box 2580		Smithfield	27577	HAL-051-025
Community Home Care & Hospice	Hospice	9301 Honeycutt Road		Fayetteville	28314	HOS0378
Johnston Memorial Hospital	Hospital	P O Box 1179		Smithfield	27577	HO152
Brooks Home for Boys	Mental Health Homes	4351 Main Street Suite 207	PCM, Inc.	Harrisburg	28075	MHL-051 124
Community Based Learning Alternatives Center, Inc	Mental Health Homes	1308 West Market Street	C-BLAC, Inc.	Smithfield	27577	MHL-051-128
Coach Home for Girls	Mental Health Homes	4351 Main Street Suite 207	Professional Care Management	Harrisburg	28075	MHL-051-123
Country Manor Group Home	Mental Health Homes	703 South Wall Street		Benson	27504	MHL-051-009
Day By Day Treatment Center	Mental Health Homes	1101 River Road		Selma	27576	MHL-051-008
E. M. Rivers Home	Mental Health Homes	4351 Main Street Ste. 207	Professional Care Mgmt.	Harrisburg	28075	MHL-051 130
Heath Avenue Home	Mental Health Homes	310 East Heath Avenue		Smithfield	27577	MHL-051-010
Jenkins Therapeutic Home	Mental Health Homes	14755 Old Sunset Road		Smithfield	27577	MHL-051-089
Josh House	Mental Health Homes	P.O. box 1078		Smithfield	27577	MHL-051-046

Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Johnston Counseling Services	Mental Health Homes	300 Runway Drive, Suite One		Smithfield	27577	MHL-051-082
Johnston Counseling Services/BLAP	Mental Health Homes	300 Fairview Drive Suite 1	Johnston Counseling Svcs In	Smithfield	27577	MHL-051-100
Johnston County Area Mental Health Center	Mental Health Homes	PO Box 413	Johnston County Area MH/DD/SAS	Smithfield	27577	MHL-051-004
Johnston County Group Home #2 Smithfield	Mental Health Homes	PO Box 1788	Johnston County Group Homes	Smithfield	27577	MHL-051-112
Johnston County Group Home #3	Mental Health Homes	PO Box 1788	Johnston County Group Homes	Smithfield	27577	MHL-051-113
Johnston County Respite Care Home	Mental Health Homes	3310 NC 210 Hwy		Smithfield	27577	MHL-051-033
Meeting Street Substance Abuse Services	Mental Health Homes	P.O. Box 15		Smithfield	27577	MHL-051-027
Rainbow House	Mental Health Homes	P.O. Box 1078		Smithfield	27577	MHL-051-017
Spoller Therapeutic Home	Mental Health Homes	310 Shady Grove Court		Selma	27576	MHL-051-106
Stancil's Therapeutic Home	Mental Health Homes	703 S. Pollock St.		Selma	27576	MHL-051-101
Unity House	Mental Health Homes	PO Box 413	Johnston Area MH/DD/SAS Cen	Smithfield	27577	MHL-051-003
VOCA-Greenwood Group Home	Mental Health Homes	301 South Church Street Ste. 202	Community Alternatives - NC	Rocky Mount	27804	MHL-051-036
VOCA-Laurelwood	Mental Health Homes	301 South Church Street Ste. 202	Community Alternatives-NC	Rocky Mount	27804	MHL-051-037
Walnut Group Home	Mental Health Homes	4351 Main Street Suite 207	Professional Care Mgmt, Inc	Harrisburg	28075	MHL-051-115
Birthhaven of Smithfield	Nursing Home Facility	515 Barbour Road	P O Box 2080	Smithfield	0	NH0371
Smithfield Manor, Inc.	Nursing Home Facility	902 Berkshire Road	P O Box 1940	Smithfield	0	NH0182
SMITHFIELD MANOR	NURSING HOMES	902 BERKSHIRE ROAD		SMITHFIELD	4731	NH0182
BRITTAWOOD OF SMITHFIELD	NURSING HOMES	515 BARBOUR ROAD		SMITHFIELD	4731	NH0371
Johnston County Timestancy Management	POC	210 Bridge St		Smithfield, NC 27577		
Smithfield/Selma High	Public School	700 Booker Dairy Rd		Smithfield	27577	
Smithfield Middle	Public School	1455 Buffalo Rd		Smithfield	27577	
Selma Middle School	None	1310 Hwy 301 N		Selma	27576	
South Campus Community High	None	521 Martin Luther King Jr Dr		Smithfield	27577	
Selma Elementary	None	911 W Richardson St		Selma	27576	
West Smithfield Elementary	None	2065 Galilee Road		Smithfield	27577	
South Smithfield Elementary	None	201 W Sanders St		Smithfield	27577	
South Campus Community Middle	None	426 S Collier Street		Smithfield	27577	
Neuse Charter School	None	969 Booker Dairy Rd		Smithfield	27577	
Johnston Co Early College Academy	Early College	220 College Rd		Smithfield	27530	

***Figure 3-22**: Critical Facilities in Smithfield*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Exodus House	Mental Health Homes	P.O. Box 1078		Smithfield	27577	MHL-051-035
Wilson's Mills Elementary	None	4654 Wilson's Mills Rd		Wilson's Mills	27593	

***Figure 3-23**: Critical Facilities in Wilson's Mills*

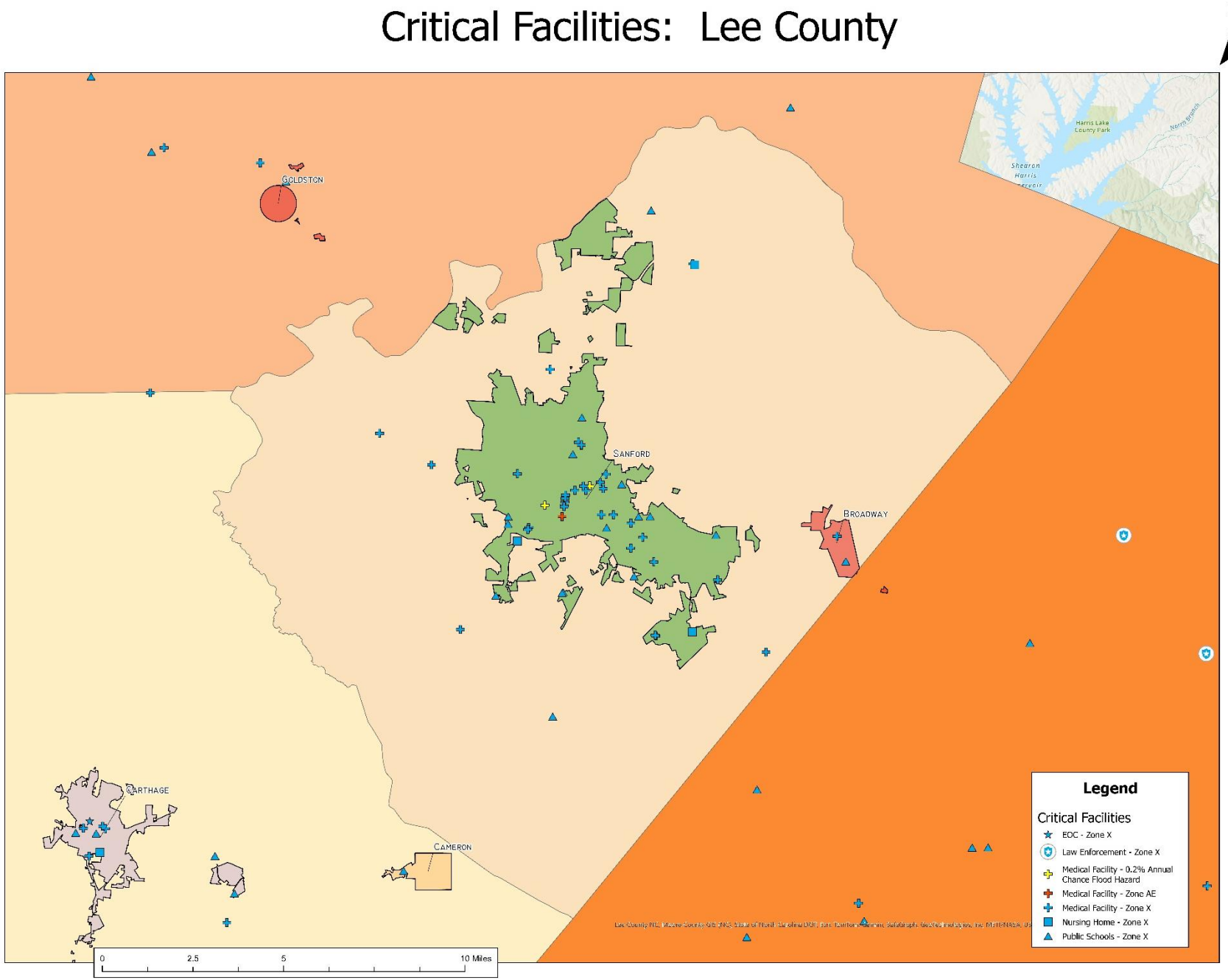
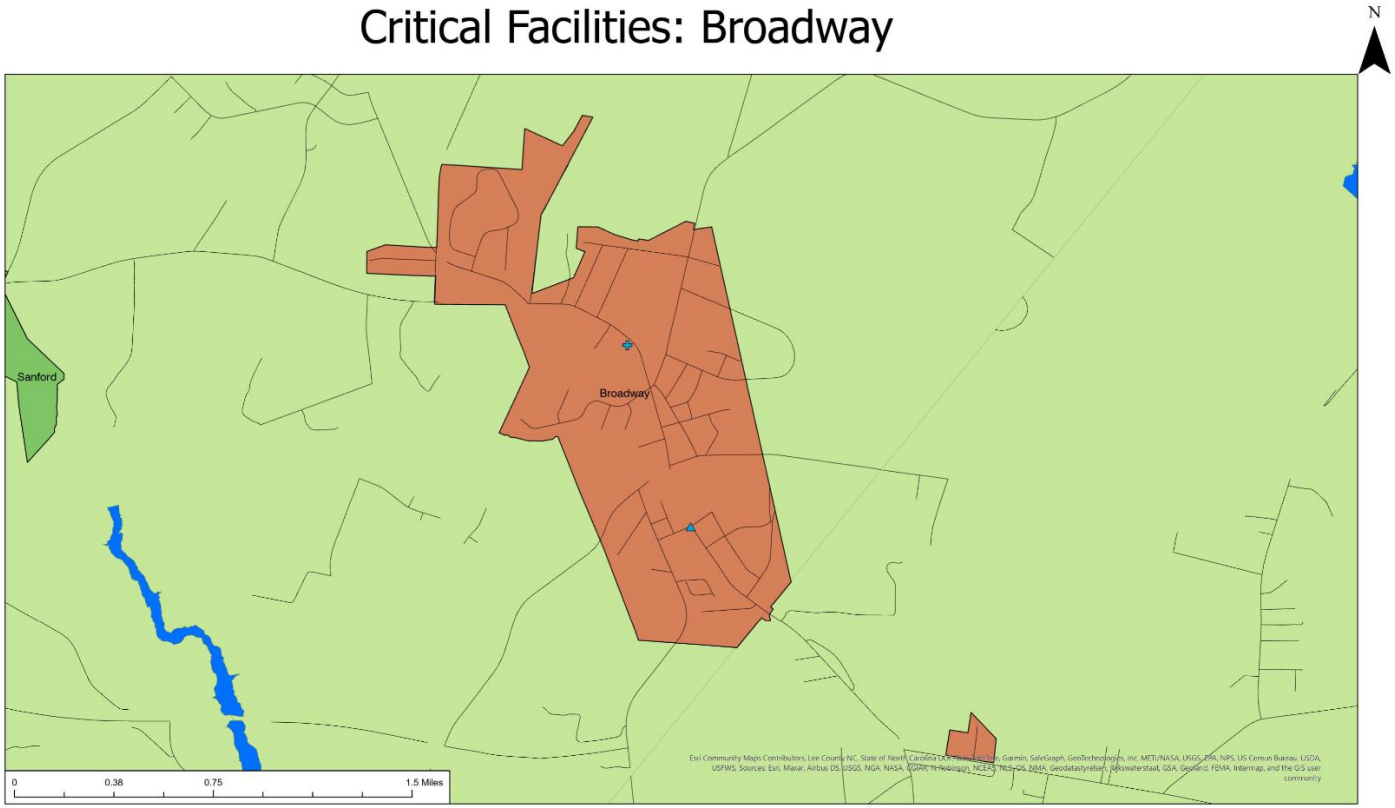
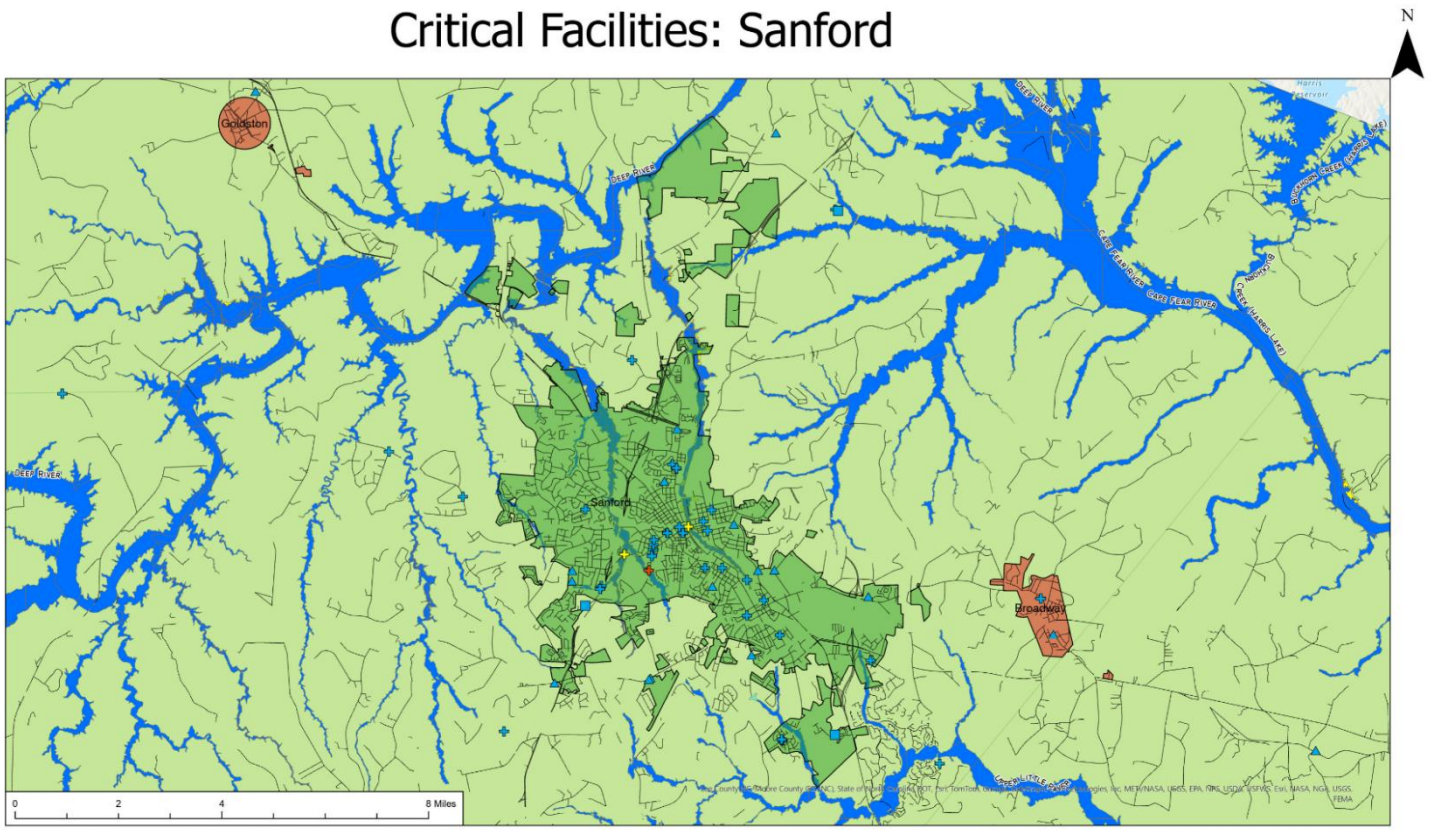


***Figure 3-24**: Critical Facilities in Lee County*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
John Rey IRT	Mental Health Homes	P.O. Box 37399		Raleigh	27627	MHL-053-038
Broadway Elementary	None	307 S Main St		Broadway	27505	

***Figure 3-25**: Critical Facilities in Broadway*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (If applicable)
Golf Home	Mental Health Homes	2125 Poplarwood Court, Ste 304		Raleigh	27604	MHL-053-1004
Central Carolina Integ Cardiac Rehabilitation Progra	Cardiac Rehabilitat	1135 Carthage St		Sanford	27330	CRP3040
Kellum's Family Care Home	Family Care	P. O. Box 56		Sanford	27331	FCL-053-1002
L & J Family Care Home	Family Care	P.O. Box 2252		Sanford	27330	FCL-053-1004
Mary's Family Care Home	Family Care	308 Mcrae Street		Sanford	27330	FCL-053-955
Community Home Care & Hospice	Home Care	9301 Morganton Road		Fayetteville	28314	HC3034
First Choice Home Care	Home Care	1135 Carthage Street		Sanford	27330	HC2717
Healthquilt Home Care	Home Care	1810A Westgate Drive, Suite A		Pinehurst	27376	HC3272
Liberty Home Care	Home Care	1001 Carthage Street		Sanford	27330	HC0426
Parkview In-Home Aide Services, Inc.	Home Care	P. O. Box 4057		Sanford	0	HC3034
Quality Home HealthCare, Inc.	Home Care	106 Park Avenue		Sanford	27330	HC2195
Total Life Care, Inc.	Home Care	PO Box 2505		Sanford	27331	HC2250
Advanced Estates Retirement Center	Home For The Aged	1115 Carthage Street		Sanford	27330	HAL-053-1015
Gentle Care Residential Facility	Home For The Aged	PO Box 481		Sanford	28331	HAL-053-1012
Oakgrove Home	Home For The Aged	P. O. Box 640		Sanford	27331	HAL-053-1001
Oakhaven II	Home For The Aged	P.O. Box 640		Sanford	0	HAL-053-1002
Parkview Retirement Center, Inc.	Home For The Aged	P.O Box 4057		Sanford	0	HAL-053-1006
Wilkerson	Home For The Aged	1107 Carthage St.		Sanford	27330	HAL-053-1008
Central Carolina Hospital	Hospital	1135 Carthage St		Sanford	27330	H0243
Broadway	Mental Health Homes	303 South Wall Street	Rish Health-Seca Inc.	Benson	27504	MHL-053-1017
Brookwood Group Home	Mental Health Homes	108 Seawell St.		Sanford	27332	MHL-053-1014
Carbenton Road Facility-Sanford	Mental Health Homes	185 Carbenton Road		Sanford	27330	MHL-053-1001
Center for Independent Living	Mental Health Homes	209 Cole Street		Sanford	27330	MHL-053-1004
Clearwater	Mental Health Homes	501 C South Wall Street	Rish Health Services, Inc.	Benson	27504	MHL-053-1006
Harbour Clinic	Mental Health Homes	138 S. Steele Street, 3rd Floor		Sanford	27330	MHL-053-1010
Hickory Grove Home	Mental Health Homes	2620 Reliance Avenue		Apex	27502	MHL-053-1024
Hooker Home	Mental Health Homes	4238 Carbenton Rd.		Sanford	27330	MHL-053-1022
Janice Jones Home	Mental Health Homes	2125 Poplarwood Court Ste. 304		Raleigh	27604	MHL-053-1026
John Ray IMT	Mental Health Homes	P.O. Box 37999		Raleigh	27627	MHL-053-1028
Lee County Group Home II	Mental Health Homes	P O Box 1273	926 Hawkin Avenue, suite 10	Sanford	27330	MHL-052-1001
Lee County Group Home, Inc. # 1	Mental Health Homes	PO Box 1373	716 Hawkins Ave. Suite 103	Sanford	27330	MHL-053-1009
Lee County Resource Center	Mental Health Homes	P.O. Box 37		Sanford	27330	MHL-053-1011
New Ridge Group Home	Mental Health Homes	700 Arthur Maddox Road		Sanford	27330	MHL-053-1027
PAS Counseling Services Of Sanford	Mental Health Homes	PO Box 747		Lillington	27546	MHL-052-1020
Skill Creations of Sanford	Mental Health Homes	P.O. Box 1664		Goldsboro	0	MHL-053-1001
Source Therapeutic Home	Mental Health Homes	700 Villa Circle		Sanford	27330	MHL-053-1021
T.L.C. Home, Inc.	Mental Health Homes	1775 Hawkins Avenue		Sanford	27330	MHL-053-1008
Terry Hicker	Mental Health Homes	1522 Maine Circle		Sanford	27330	MHL-052-1026
UCP Lee County Group Home	Mental Health Homes	4334 Lee Avenue		Sanford	27330	MHL-053-1040

Facility Name	Facility Type	Address	Address (2)	City	Zip Code
VOA-Seth Street Group Home	Mental Health Homes	2520 Reliance Ave.		Apex	27502
Woodrow Scoggins Residential Treatment Center	Mental Health Homes	P. O. Box 1263		Sanford	27330
Convalescent Center of Lee County, Inc.	Nursing Home Facilit	714 Westover Drive	P O Box 1150	Sanford	0
Convalescent Center of Sanford, Inc.	Nursing Home Facilit	2702 Farrell Road	P O Box 2845	Sanford	27330
Mega Force Staffing	Nursing Pool	P. O. Box 12449		Fayetteville	28311
LEE COUNTY NURSING AND REHABILITATION CENTER	NURSING HOMES	714 WESTOVER DRIVE		SANFORD	8401
LIBERTY COMMONS NURSING AND REHABILITATION CENTER OF LEE COUNTY	NURSING HOMES	310 COMMERCE DRIVE		SANFORD	5306
SANFORD HEALTH AND REHABILITATION COMPANY	NURSING HOMES	2701 FARRELL ROAD		SANFORD	8305
J B Wakers Elementary	None	3013 Wakers School Road		Cokesbury	27351
J B Ingram Jr Elementary	None	1306 Wicker St		Sanford	27330
West Lee Middle	None	3301 Wicker St		Sanford	27332
Boone Trail Elementary	None	1425 Adcock Road		Lillington	27546
Benjamin T Bullock Elem	None	1410 McNeill Road		Sanford	27330
Bragg Street Academy	None	904 Bragg Street		Sanford	27330
Broadway Elementary	None	307 S Main St		Broadway	27505
Deep River Elementary	None	4680 Deep River Rd		Sanford	27330
East Lee Middle	None	1107 Broadway St		Sanford	27330
Floyd L Knight Children Center	None	607 W Richbath St		Sanford	27330
Lee County High	None	1708 Nash Street		Sanford	27330
J Glenn Edwards Elementary	None	2115 Cemetery Rd		Sanford	27332
Tramway Elementary	None	360 Center Church Road		Sanford	27330
Lee Early College	Early College	1105 Kelly Drive		Sanford	27330
Southern Lee High School	None	2301 Tramway Road		Sanford	27332
Warren Williams Elementary Alternative	None	901 Lawrence St		Sanford	27330
San Lee Middle School	None	2309 Tramway Rd		Sanford	27332

***Figure 3-26**: Critical Facilities in Sanford*

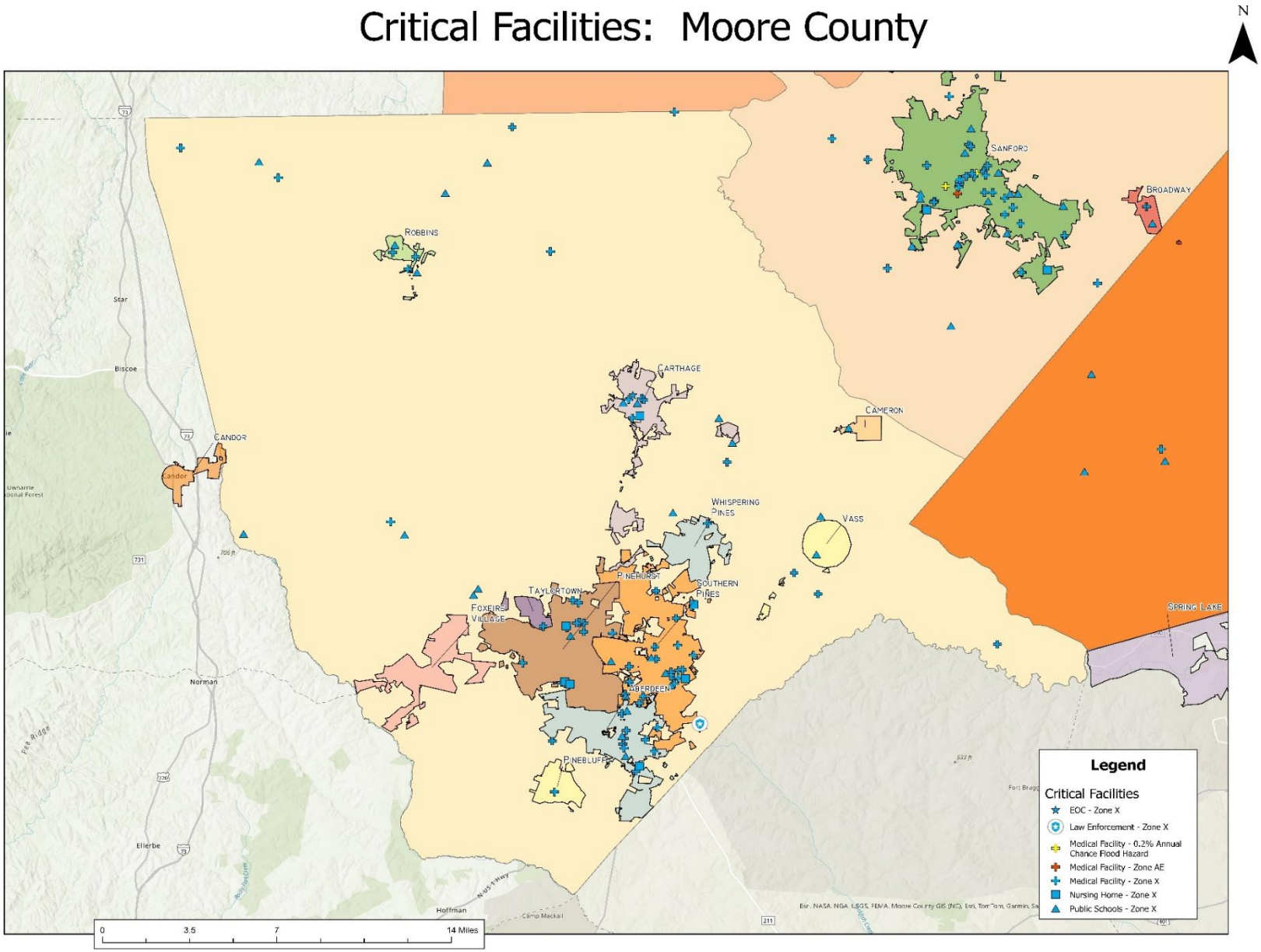
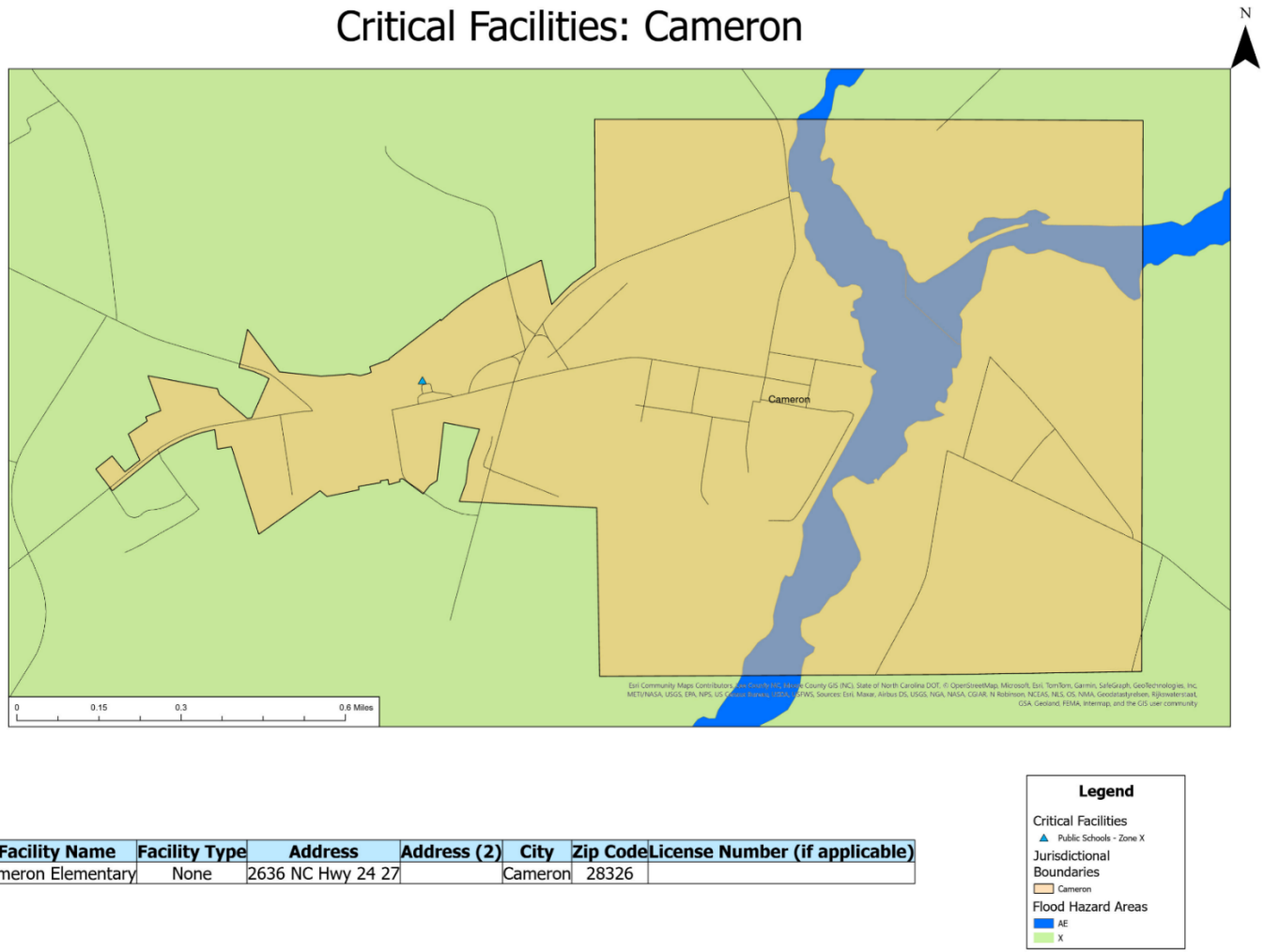
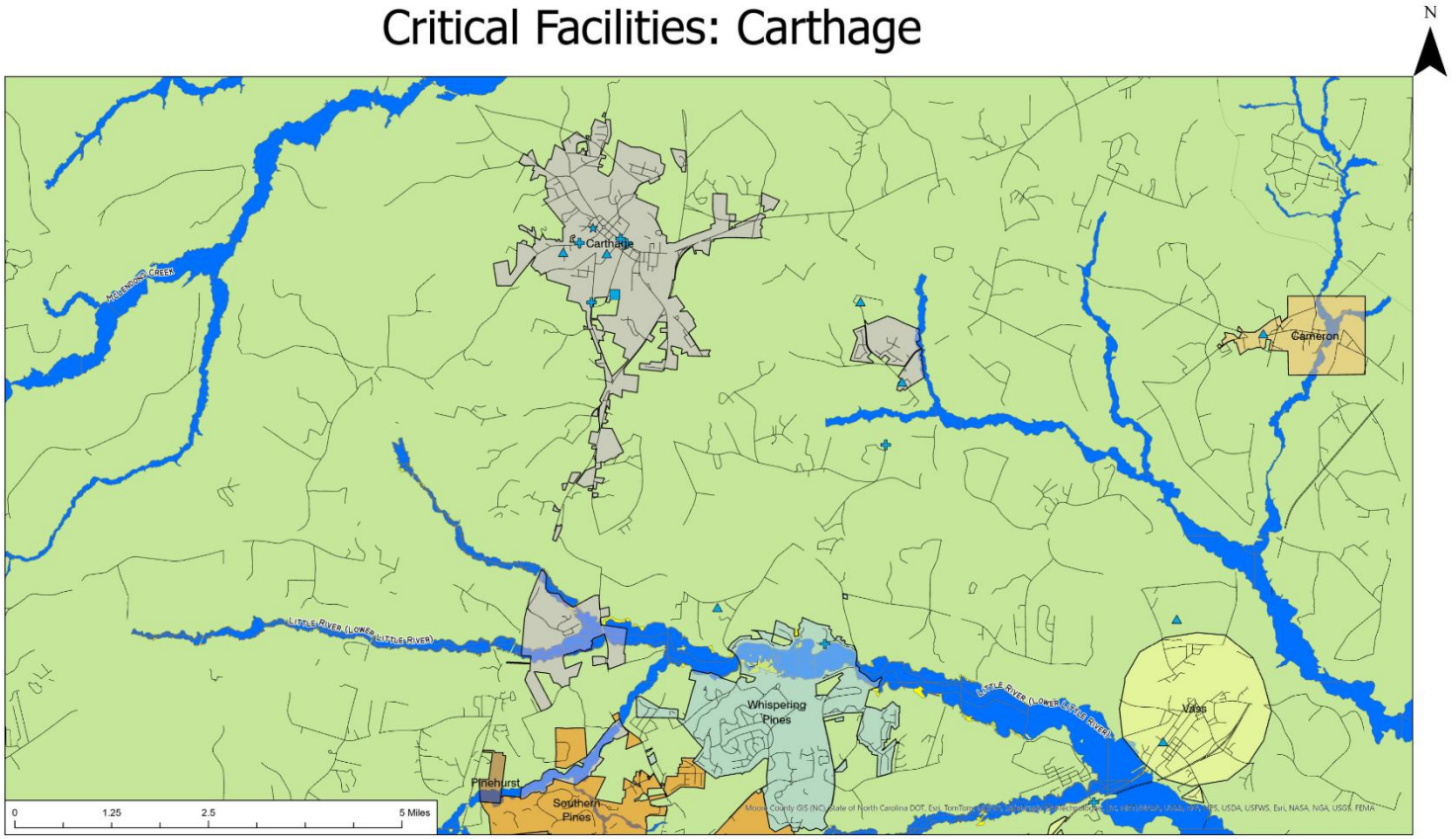


***Figure 3-**27: Critical Facilities in Moore County*



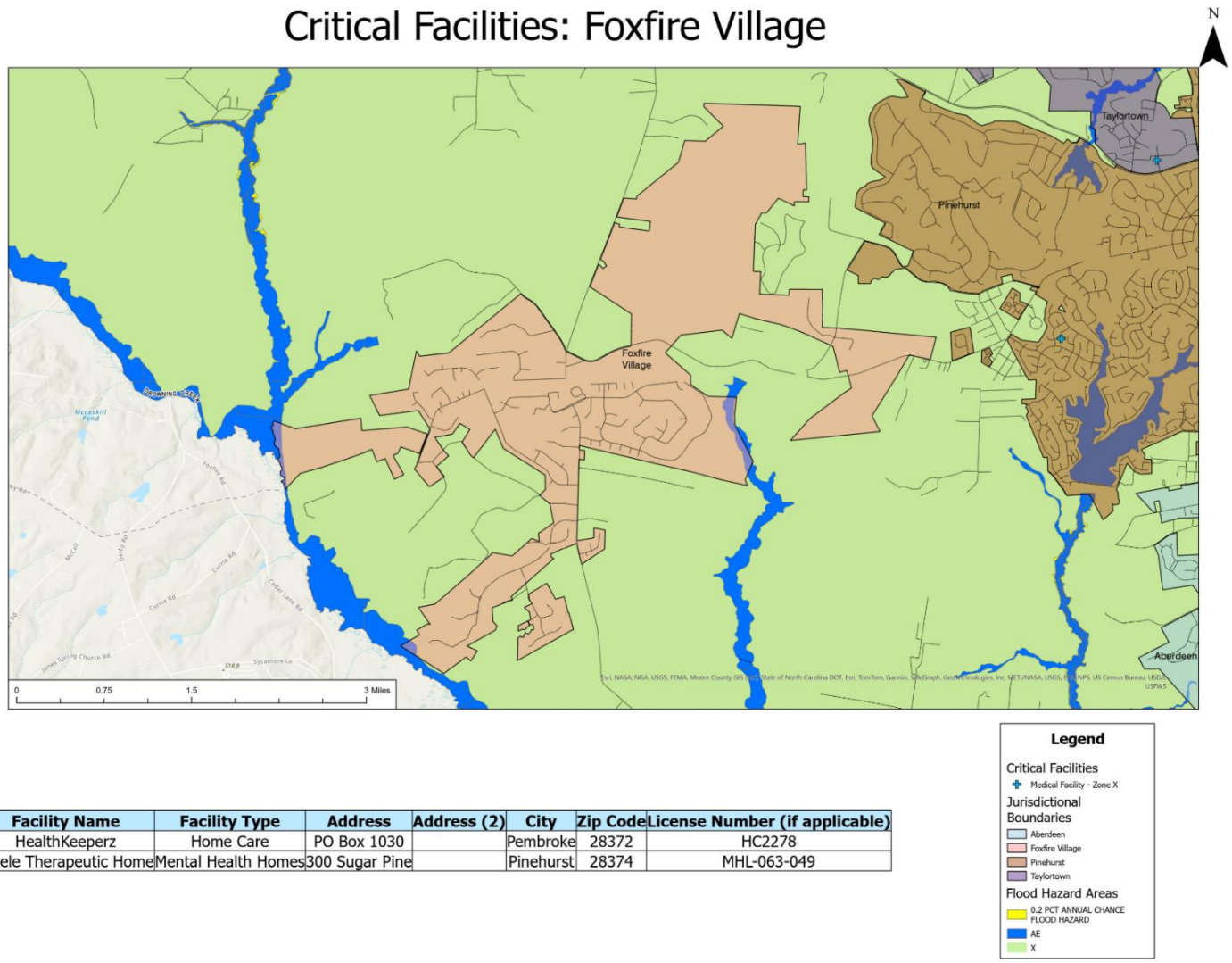
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Cameron Elementary	None	2636 NC Hwy 24 27		Cameron	28326	

***Figure 3-28**: Critical Facilities in Cameron*



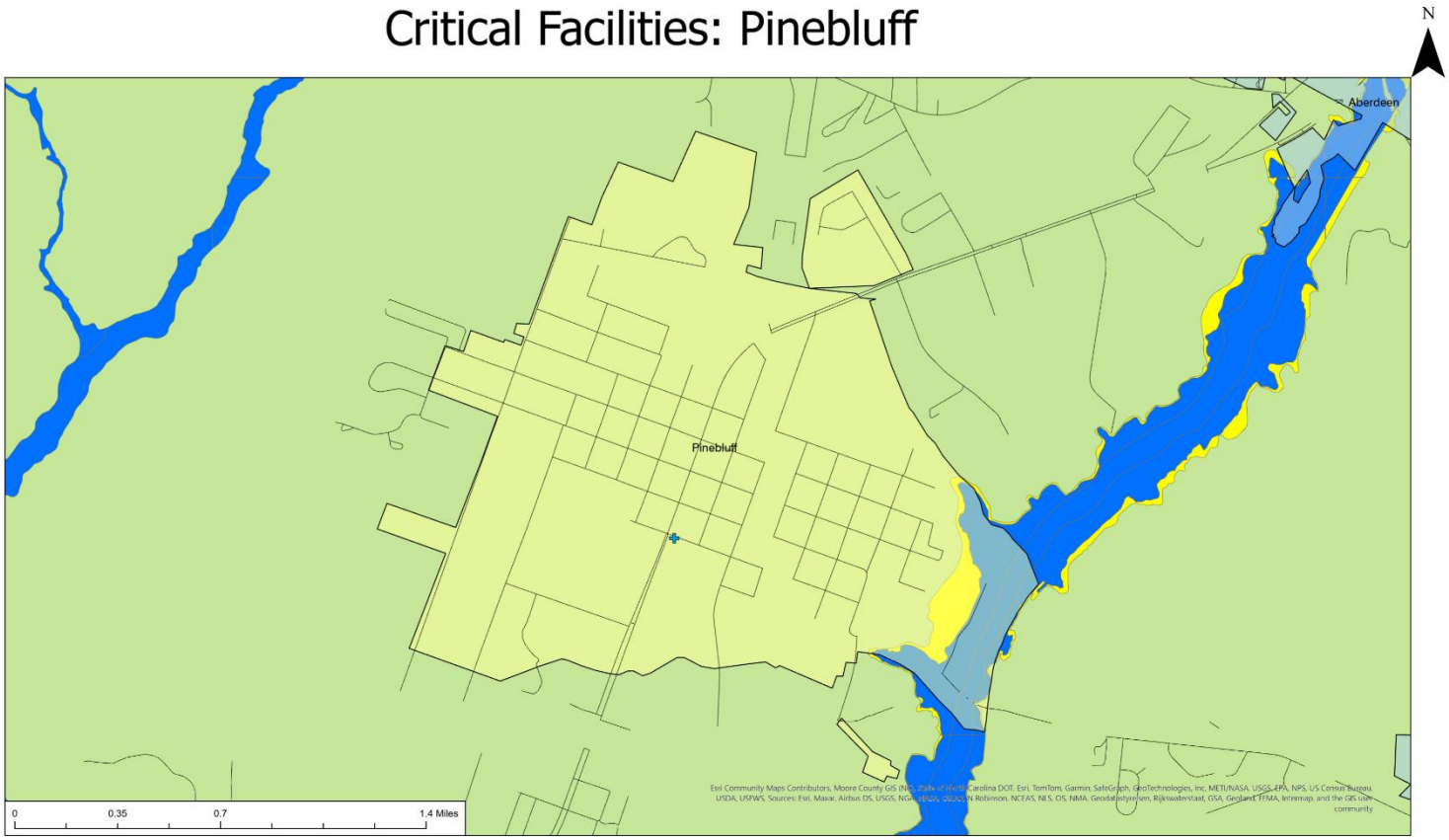
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Moore County Department of Aging	Home Care	P O Box 487		Carthage	28327	HC0775
Tara Plantation of Carthage	Home For The Aged	820 South McNeill Street		Carthage	28327	HAL-063-011
Crystal Lake Court CASAWORKS	Mental Health Homes	PO Box 190	285 Camp Easter Road	Lakeview	28350	MHL-063-055
Helen Johnson	Mental Health Homes	P.O. Box 1831		Carthage	28327	MHL-063-054
Sandhills Teen Challenge	Mental Health Homes	P.O. Box 1701		Southern Pines	28388	MHL-063-008
Sparks Therapeutic Home	Mental Health Homes	209 Lakeview Dr.		Whispering Pines	28327	MHL-063-035
Pinelake Health and Rehabilitation Center	Nursing Home Facilit	801 Pinehurst Avenue		Carthage	28327	NH0539
PEAK RESOURCES - PINELAKE	NURSING HOMES	801 PINEHURST AVENUE		CARTHAGE	9338	NH0539
Moore County Emergency Management	EOC	103 Saunders St		Carthage, NC 28327		
Cameron Elementary	None	2636 NC Hwy 24 27		Cameron	28326	
Carthage Elementary	None	312 Rockingham St		Carthage	28327	
New Century Middle	None	1577 Union Church Road		Cameron	28326	
Sandhills Farm Life Elementary	None	2201 Farm Life Rd		Carthage	28327	
Union Pines High	None	1981 Union Church Rd		Cameron	28326	
VassLakeview Elementary	None	141 James Street		Vass	28394	
Pinckney Academy	None	160 Pinckney Road		Carthage	28327	
Crain's Creek Middle	Public School	4625 Union Church Rd		Carthage	28327	

***Figure 3-29**: Critical Facilities in Carthage*



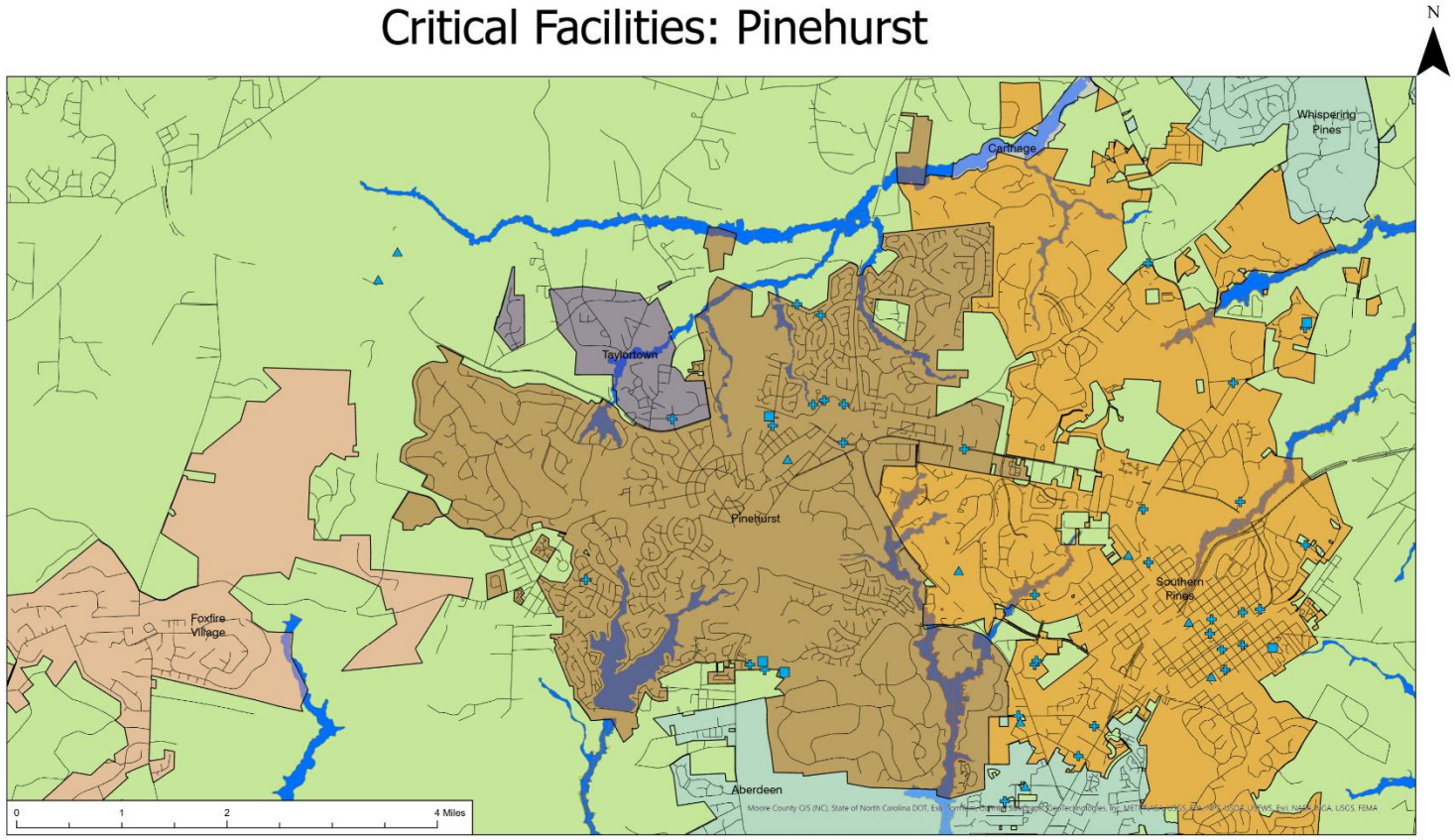
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
HealthKeeperz	Home Care	PO Box 1030		Pembroke	28372	HC2278
Steele Therapeutic Home	Mental Health Homes	300 Sugar Pine		Pinehurst	28374	MHL-063-049

***Figure 3-30**: Critical Facilities in Foxfire Village*



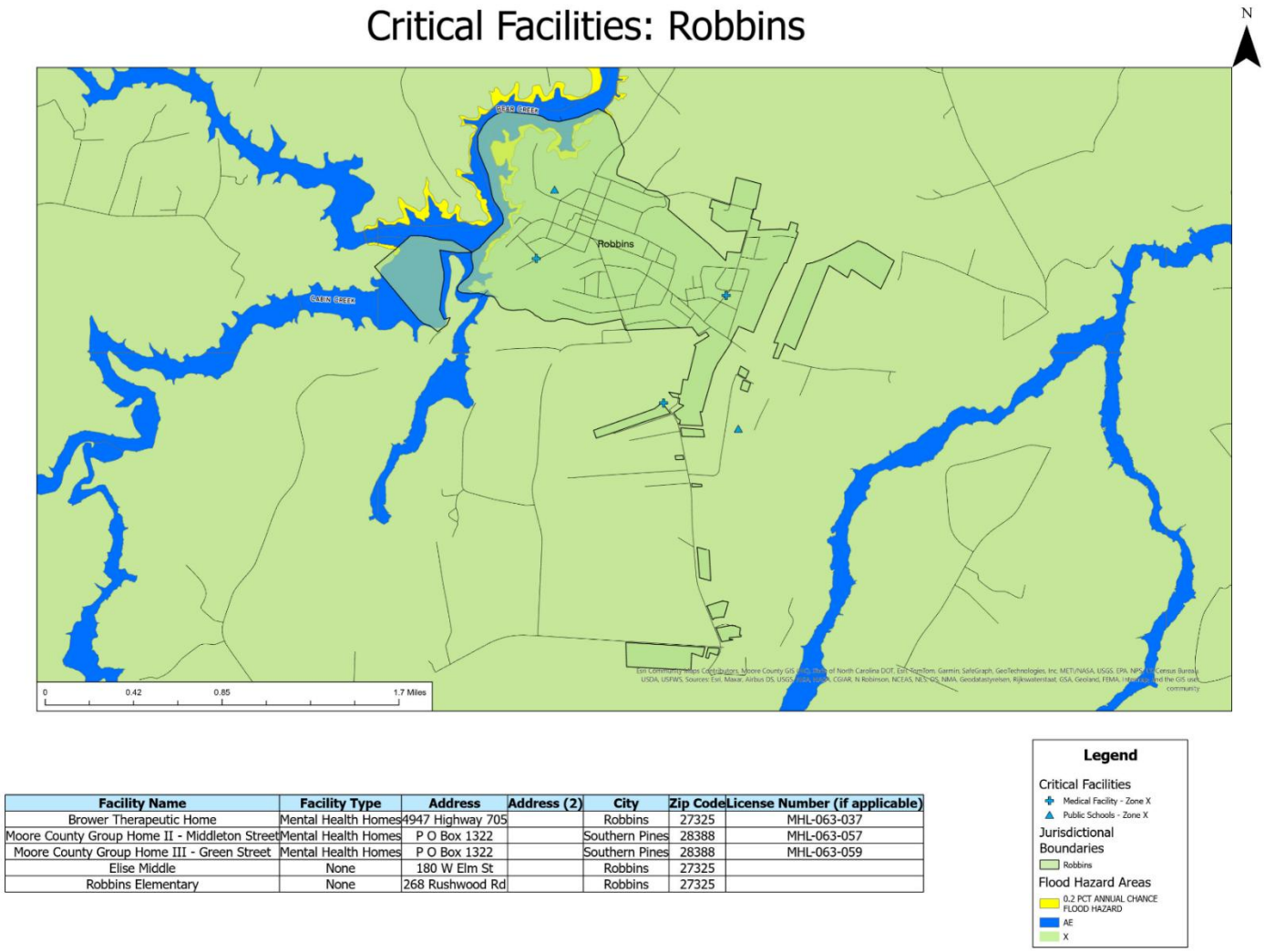
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Woodland House	Mental Health Homes	P.O. Box 877		Pinebluff	28373	MHL-063-009

***Figure 3-31**: Critical Facilities in Pinebluff*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
HEALTHSOUTH Surgery Center of Southern Pines	Ambulatory Surgery	3170 Midland Rd		Southern Pines	28388	450025
Cardinal Cottage	Family Care	155 Blake Boulevard		Pinehurst	28374	FCL-063-005
Savannah Family Care	Family Care	128 North Carlisle Street		Southern Pines	28387	FCL-063-009
Community Residential Services, Inc	Home Care	P O. Box 1357		Southern Pines	28387	063771
FirstHealth Hospice & Palliative Care	Home Care	3 Aviemore Drive		Pinehurst	28374	HC0527
HealthKeepers	Home Care	PO Box 3030		Pembroke	28372	HC2278
Liberty Home Care	Home Care	90 Memorial Drive		Pinehurst	28374	HC0002
Quail Haven Village	Home Care	198 Blake Blvd.		Pinehurst	28374	HC1362
Alberta Glen @ Edge of Southern Pines	Home For The Aged	115 Brakewood Road		Southern Pines	28387	HAL-063-013
Alberta Shelley House of Southern Pines	Home For The Aged	101 Brakewood Road		Southern Pines	28387	HAL-063-009
Magnolia Gardens	Home For The Aged	594 Murray Hill Road		Southern Pines	28387	HAL-063-007
Southern Pines Manor	Home For The Aged	PO Box 1721		Fayetteville	0	HAL-063-012
The Regency on Morganton	Home For The Aged	JMD Management, LLC	Pkr/ Peachtree Pkwy, Suite 3	Cumming	30041	HAL-063-014
FirstHealth Moore Reg. Hosp. and Pinehurst *Footnote	Hospital	P O Box 3000		Pinehurst	28374	H0100
Rari Circle	Mental Health Homes	PO Box 1206	Specialized Svcs & Personnel	Aberdeen	28315	MHL-063-052
Cardinal Clinic LLC	Mental Health Homes	4155 Fairview Dr., Ste. 201		Fayetteville	28314	MHL-063-030
Creel Road Group Home	Mental Health Homes	201 Moore Street		Fayetteville	28301	MHL-063-017
Longleaf	Mental Health Homes	P.O. Box 1256		Aberdeen	28313	MHL-063-031
Magnolia Group Home	Mental Health Homes	15233 Aspect Road		Manton	96264	MHL-063-012
Moore County Group Home #4	Mental Health Homes	163 E New Hampshire Ave.	Community Residential Servi	Southern Pines	28387	MHL-063-046
Moore County Group Home #7 - Connecticut Ave.	Mental Health Homes	P O Box 1262		Southern Pines	28388	MHL-063-058
Murray Hill	Mental Health Homes	PO Box 1206	Specialized Svcs & Personnel	Aberdeen	28387	MHL-063-053
Oakcroft Residential	Mental Health Homes	101 Central Drive		Aberdeen	28315	MHL-063-026
Pennsylvania Avenue Group Home	Mental Health Homes	P O Box 1262		Southern Pines	28387	MHL-063-056
Recovery Associates	Mental Health Homes	770 N.W. Broad Street		Southern Pines	28387	MHL-063-033
Sandhills Center for MH/DD/SAS Services-Pinehurst	Mental Health Homes	P.O. Drawer 039		Pinehurst	28370	MHL-063-003
Steele Therapeutic Home	Mental Health Homes	300 Sugar Pine		Pinehurst	28374	MHL-063-049
Tanglewood Apartments	Mental Health Homes	231 Tanglewood Drive		Southern Pines	28387	MHL-063-022
The Bethany House, Inc.	Mental Health Homes	340 East Vermont Avenue		Southern Pines	28387	MHL-063-005
Underhill Therapeutic Home	Mental Health Homes	225 W. New Hampshire Avenue		Southern Pines	28387	MHL-063-052
Vadkin Place	Mental Health Homes	259 Rutherford Street		Wadesboro	28170	MHL-063-059
Manor Care Health Services - Pinehurst	Nursing Home Facilit	205 Rattlesnake Trail		Pinehurst	0	N40230
Pinehurst Healthcare & Rehabilitation Center	Nursing Home Facilit	300 Blake Boulevard	P O Box 3309	Pinehurst	0	N40304
Quail Haven Village	Nursing Home Facilit	155 Blake Boulevard		Pinehurst	0	N40305
St. Joseph of The Pines Health Center	Nursing Home Facilit	103 Goldman Drive		Southern Pines	0	N40586
SAINT JOSEPH OF THE PINES HEALTH CENTER	NURSING HOMES	103 GOSSMAN ROAD		SOUTHERN PINES	2225	N40589
QUAIL HAVEN VILLAGE	NURSING HOMES	155 BLAKE BOULEVARD		PINEHURST	8950	N40605
PINEHURST HEALTHCARE AND REHABILITATION	NURSING HOMES	300 BLAKE BOULEVARD		PINEHURST	8434	N40304
PINOX VILLAGE	NURSING HOMES	EAST RHODE ISLAND AVENUE EXTENSION		SOUTHERN PINES	0	N40127
MANORCARE HEALTH SERVICES - PINEHURST	NURSING HOMES	205 RATTLESNAKE TRAIL		PINEHURST	2939	N40230
Pinecrest High	None	250 Vail Gilmore Lane		Southern Pines	28387	
Pinehurst Elementary	None	330 Dundee Road		Pinehurst	28374	
The Academy of Moore County	None	12388 Hwy 220S South		Aberdeen	28313	
Southern Pines Primary	None	1750 W New York Ave		Southern Pines	28387	
Southern Pines Elementary	None	215 S Way St		Southern Pines	28387	
West Pine Middle	None	144 Archie Road		West End	27376	
Sandhills Theatre Arts Renaiss	None	140 Southern Dunes Drive		Vass	28394	
Southern Middle	None	273 Johnson Street		Aberdeen	28315	
West Pine Elementary	None	272 Archie Rd		West End	27376	

***Figure 3-32**: Critical Facilities in Pinehurst*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Brower Therapeutic Home	Mental Health Homes	4947 Highway 705		Robbins	27325	MHL-063-037
Moore County Group Home II - Middleton Street	Mental Health Homes	P O Box 1322		Southern Pines	28388	MHL-063-057
Moore County Group Home III - Green Street	Mental Health Homes	P O Box 1322		Southern Pines	28388	MHL-063-059
Elise Middle	None	180 W Elm St		Robbins	27325	
Robbins Elementary	None	268 Rushwood Rd		Robbins	27325	

***Figure 3-33**: Critical Facilities in Robbins*

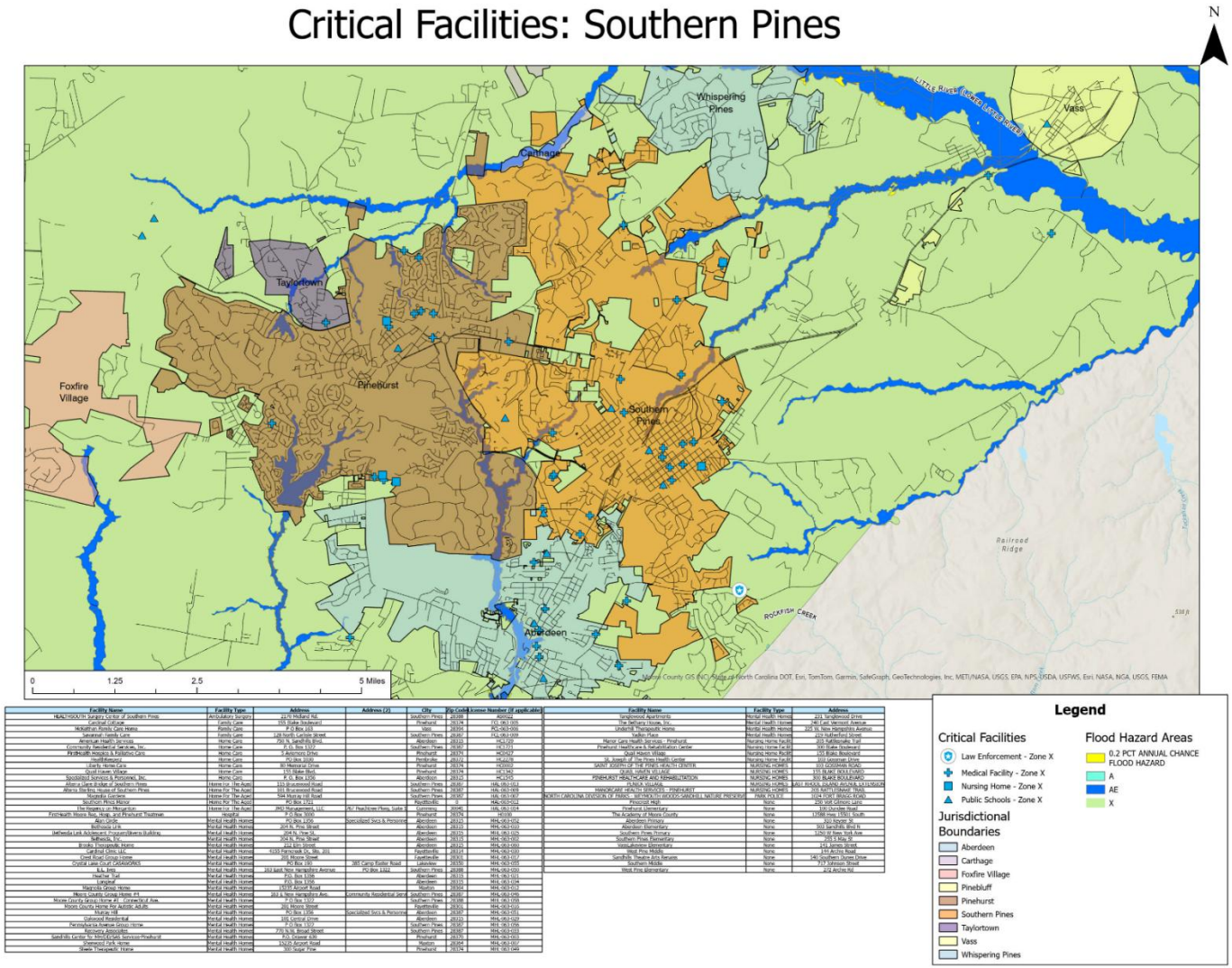
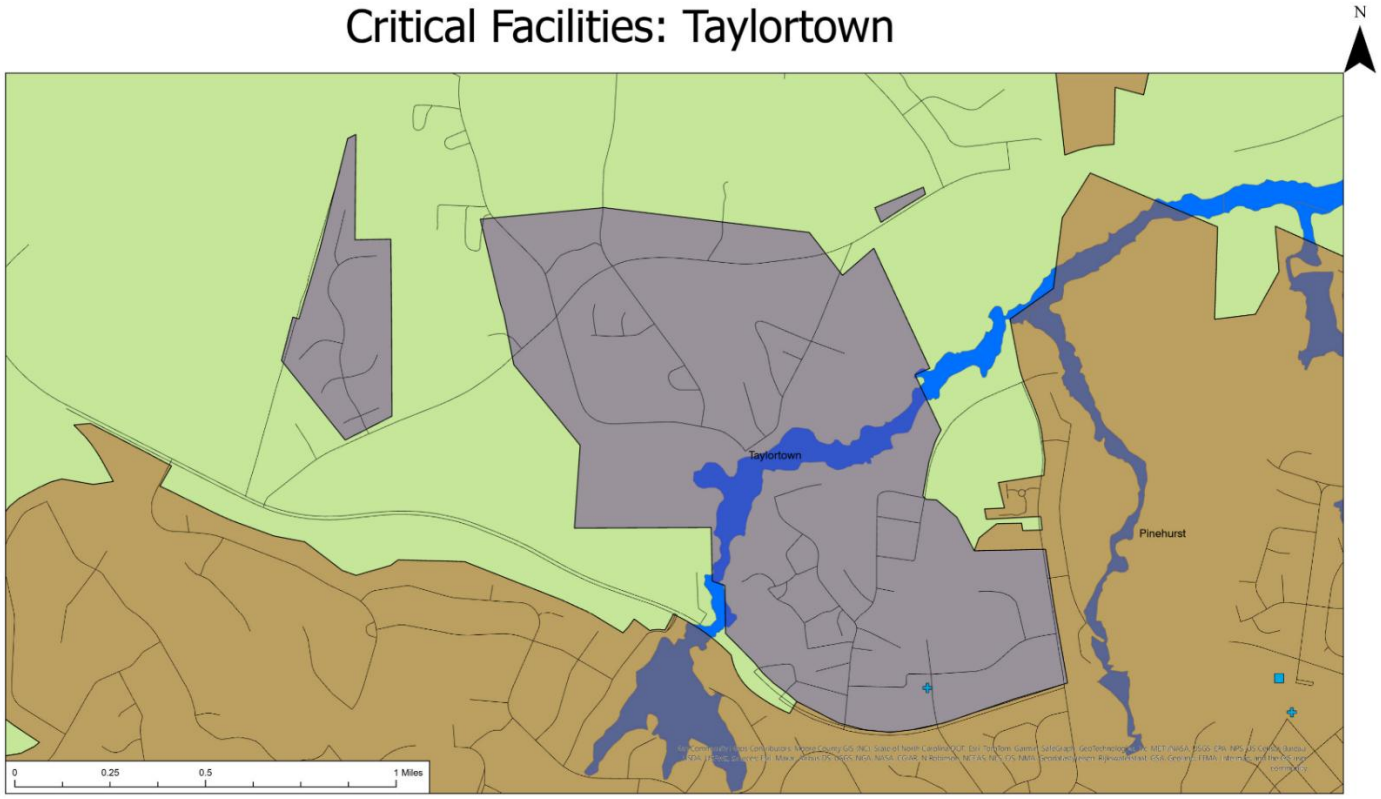
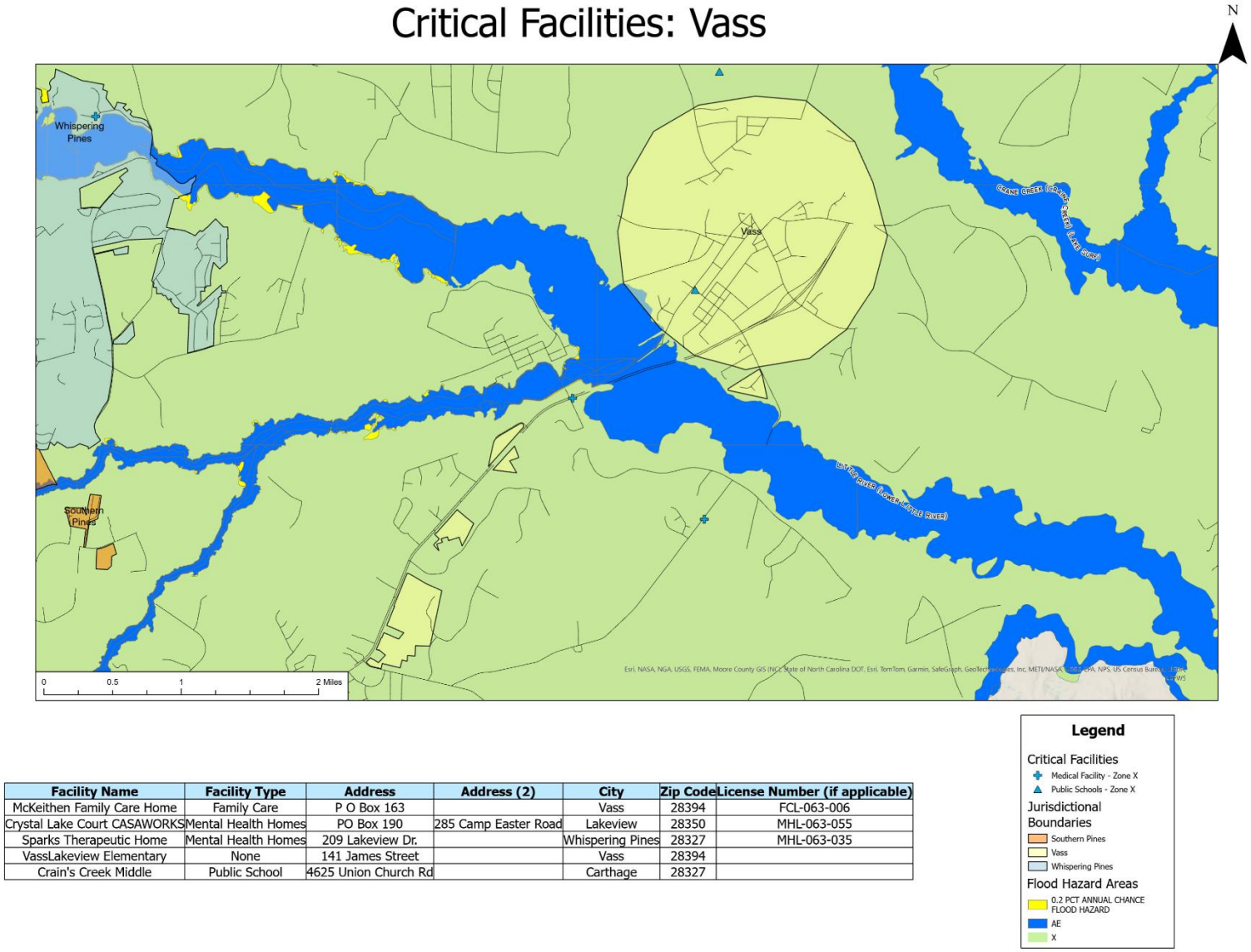


***Figure 3-34**: Critical Facilities in Southern Pines*



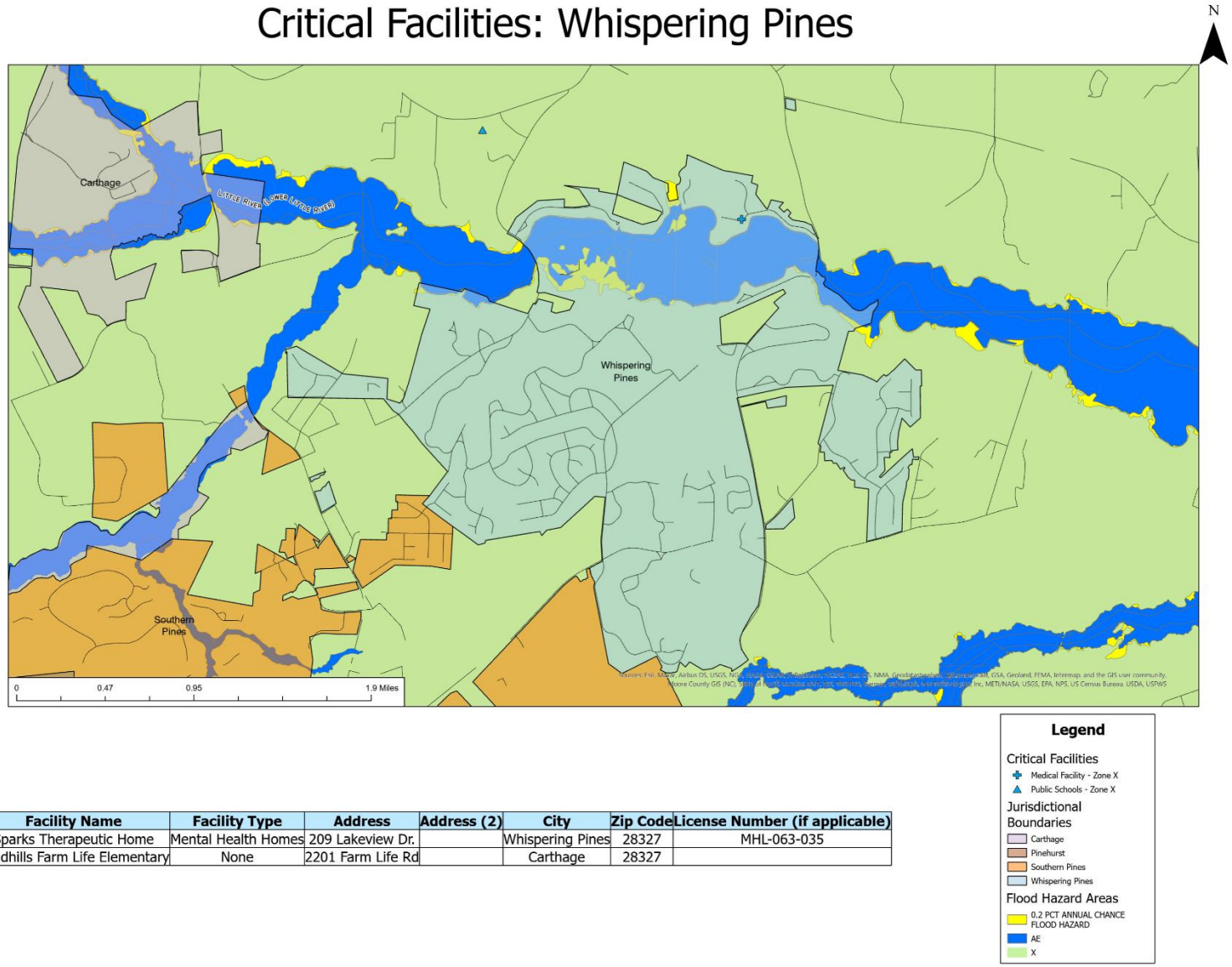
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
HealthKeeperz	Home Care	PO Box 1030		Pembroke	28372	HC2278
Manor Care Health Services - Pinehurst	Nursing Home Facilit	205 Rattlesnake Trail		Pinehurst	0	NH0230
MANORCARE HEALTH SERVICES - PINEHURST	NURSING HOMES	205 RATTLESNAKE TRAIL		PINEHURST	7639	NH0230

***Figure 3-35**: Critical Facilities in Taylortown*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
McKeithen Family Care Home	Family Care	P O Box 163		Vass	28394	FCL-063-006
Crystal Lake Court CASAWORKS	Mental Health Homes	PO Box 190	285 Camp Easter Road	Lakeview	28350	MHL-063-055
Sparks Therapeutic Home	Mental Health Homes	209 Lakeview Dr.		Whispering Pines	28327	MHL-063-035
VassLakeview Elementary	None	141 James Street		Vass	28394	
Crain's Creek Middle	Public School	4625 Union Church Rd		Carthage	28327	

***Figure 3-36**: Critical Facilities in Vass*



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Sparks Therapeutic Home	Mental Health Homes	209 Lakeview Dr.		Whispering Pines	28327	MHL-063-035
Sandhills Farm Life Elementary	None	2201 Farm Life Rd		Carthage	28327	

***Figure 3-37**: Critical Facilities in Whispering Pines*

3.3.3 Land Use

The Cape Fear Region is experiencing growth and development due to its proximity to the major metropolitan areas in the Triangle and Triad. There are many incorporated municipalities located throughout the study area, which make up most of the area's population. The incorporated areas are also where many businesses, commercial uses, and institutional uses are located. Land uses in the balance of the study area generally consist of residential and commercial development in the municipal areas, with agricultural and recreational uses in the more rural unincorporated areas. Agriculture remains one of the largest land uses in the region and comprises a mix of cropland, pastureland, and woodland dispersed across the region. However, over the last two decades, the region has become more urbanized, and agricultural production has declined.

In Chatham County, the land cover is 23% farmland and 68% forest, and 65% of the county is not permanently protected open space and is not considered suitable to accommodate additional development in the future.[14] Johnston County is considered relatively rural, with developed uses accounting for 23% of the land area, and 75% of the land categorized as vacant or used for agriculture, 19.7% for residential uses, and 2% for commercial and industrial development.[15] According to the Moore County Working Lands Protection Plan, 18% of the county is farmland and 67% is privately owned forestland.[16] The majority of land in Lee County is categorized as undeveloped or agricultural (55.8%), followed by large lot residential (17.5%), residential (16.1%), other (right of way) (4.8%), industrial (2.9%), public or institutional (1.7%), and commercial (1.2%).[17] In Harnett County, agricultural lands comprise 48% of the total area, residential uses represent 21%, commercial and industrial uses represent 2.3%, and built lands, or land with a significant built structure, represent 24% of the total land.[18]

[14] Chatham County Community Profile. (2017). Chatham County. Retrieved September 23, 2025, from https://www.chathamcountync.gov/government/departments-programs-i-z/planning/adopted-plans/comprehensive-plan

[15] Johnston County. (2023). Comprehensive Land Use Plan. In Johnston County Planning. Retrieved September 23, 2025, from https://www.johnstonnc.gov/planning/content.cfm?pageid=47

[16] USDA Natural Resource Conservation Service, & Bonham, J. G. (2012). Moore County Working Lands Protection Plan (G. Lawrence, S. Maddox, Moore County Planning & Community Development Department, NC Cooperative Extension - Moore County, & Moore County Working Lands Protection Plan Consensus Working Group, Eds.). Retrieved September 23, 2025, from https://umo.edu/wp-content/uploads/Moore_County_FLP.pdf

[17] Benchmark Planning. (2018). Plan SanLee: Land Use Plan (By City of Sanford, Lee County, & Town of Broadway). Retrieved September 23, 2025, from https://sanfordnc.net/819/Land-Use-Plan

[18] Stewart, City Collective, & LJB. (2025). Harnett Horizons 2040 Comprehensive Land Use Plan. In Harnett County, Harnett County North Carolina. Retrieved September 23, 2025, from https://www.harnett.org/planning/long-range-planning-.asp

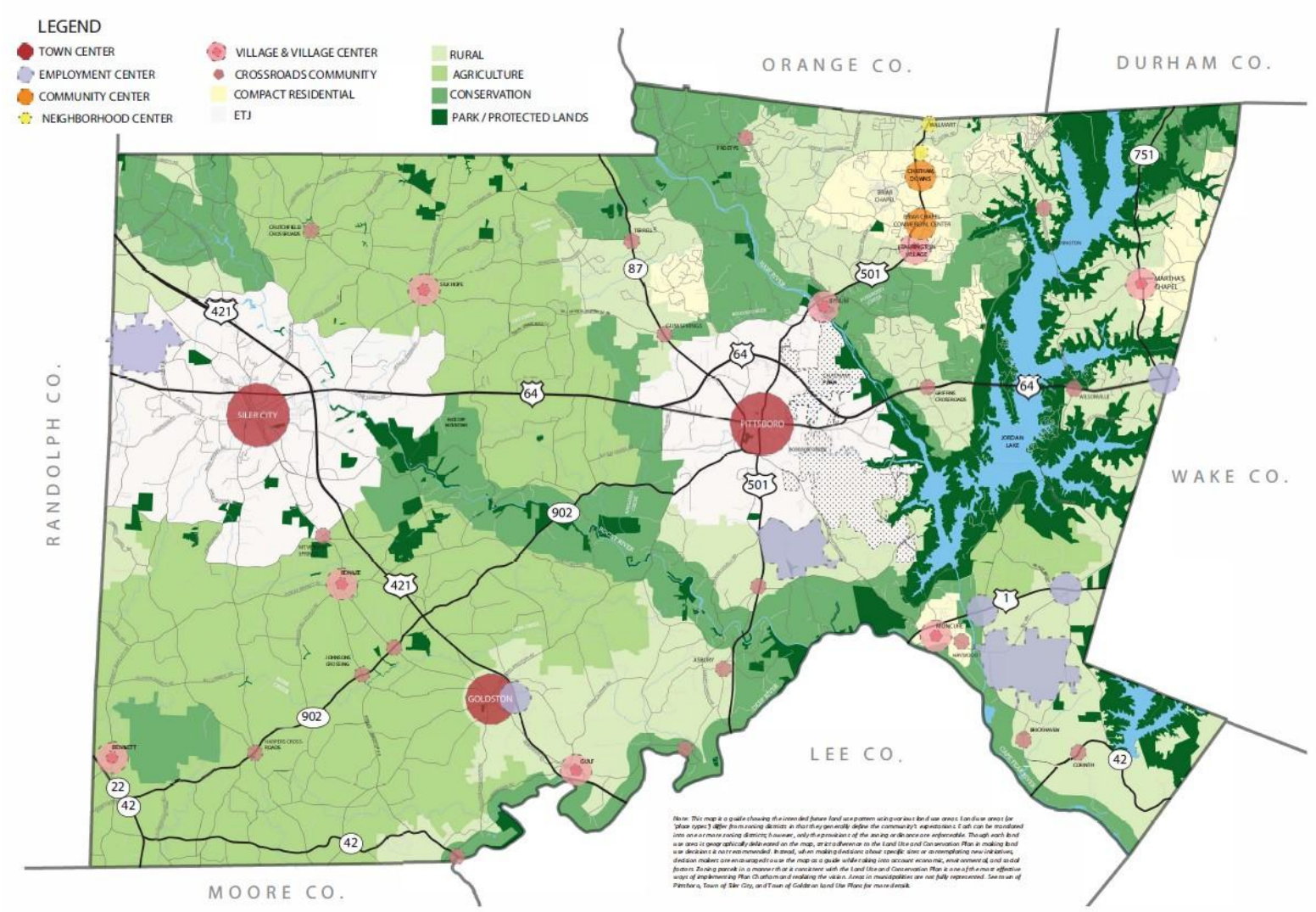


***Figure 3-38**: Chatham County Land Use Map*[19]

[19] Chatham Future Land Use and Conservation Map. (n.d.). Chatham County, NC. https://www.chathamcountync.gov/government/departments-programs-i-z/planning/conservation/conservation-tools

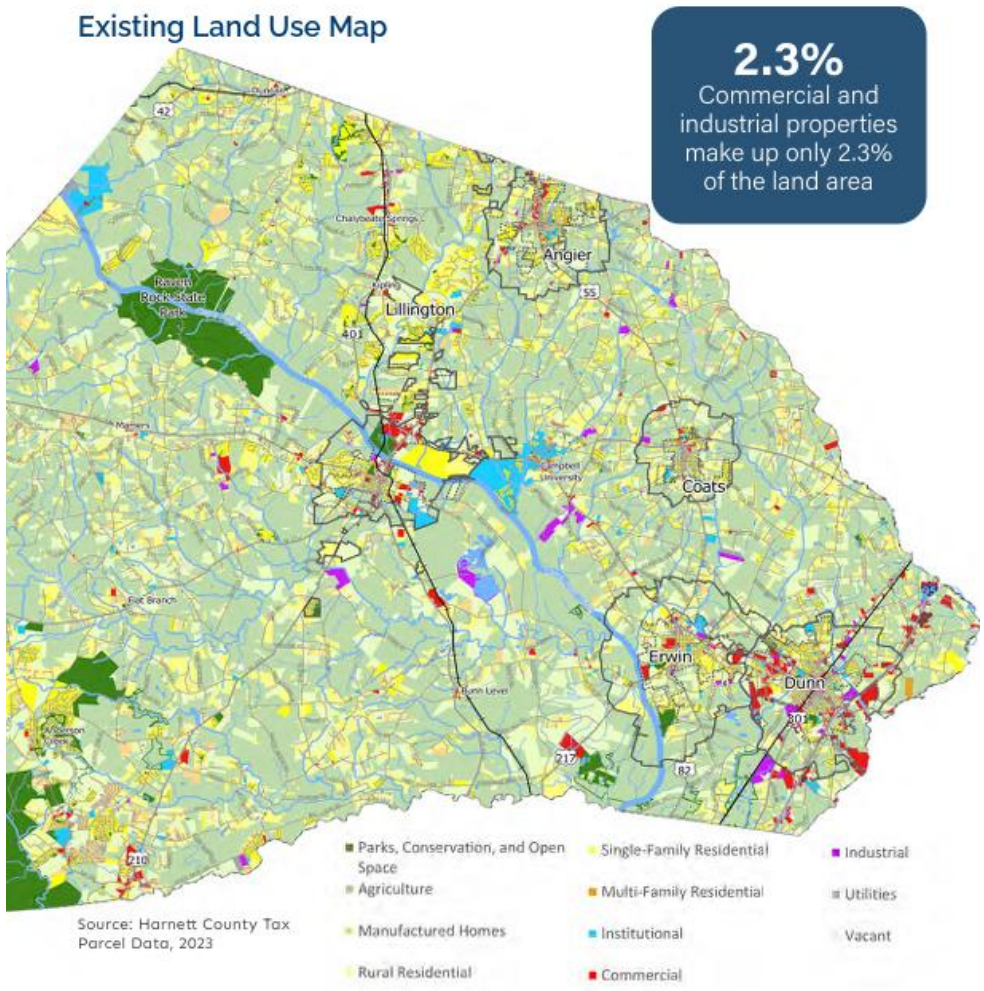


Figure 3-*39: Harnett County Existing Land Use Map from the Harnett Horizons 2040 Comprehensive Land Use Plan*[20]

[20] Stewart, City Collective, & LJB. (2025). Harnett Horizons 2040 Comprehensive Land Use Plan. In Harnett County, Harnett County North Carolina. Retrieved September 23, 2025, from https://www.harnett.org/planning/long-range-planning-.asp

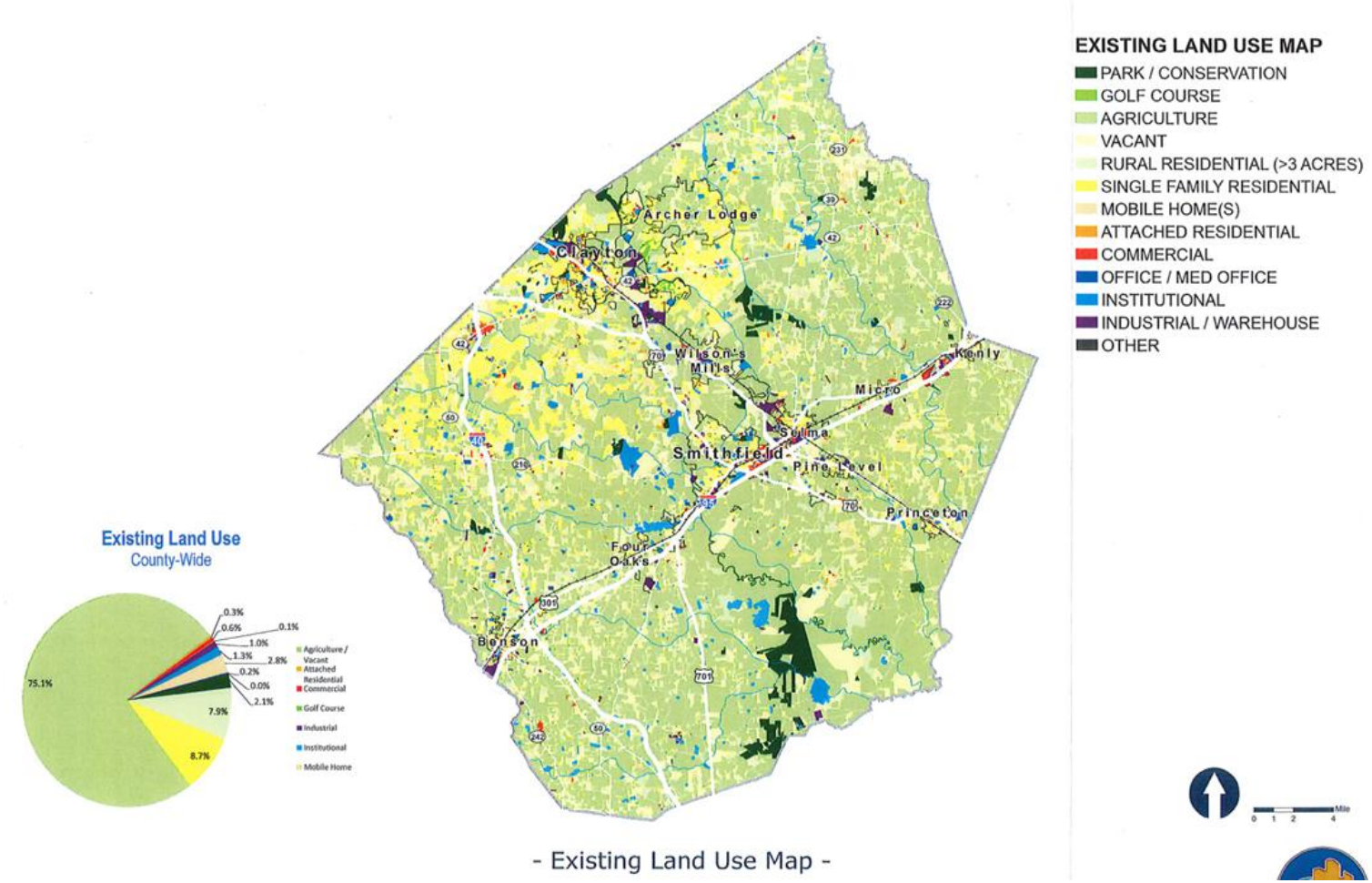


***Figure 3-40**: Johnston Comprehensive Land Use Plan Existing Land Use Map*[21]

[21] Johnston County. (2023). Comprehensive Land Use Plan: Appendix B. In Johnston County Planning. Retrieved September 23, 2025, from https://www.johnstonnc.gov/planning/content.cfm?pageid=47

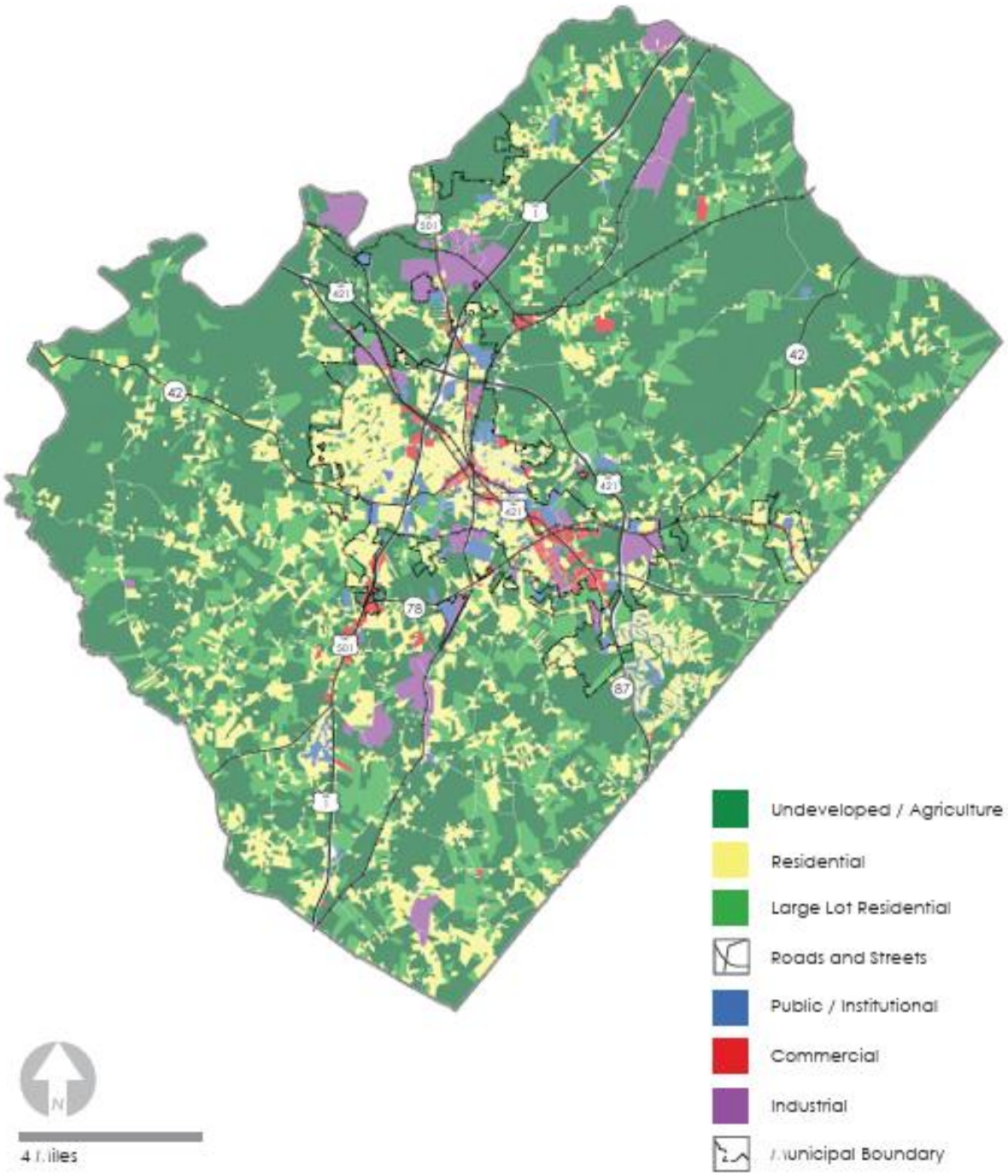


Figure 3-41: Lee County zoning map from the SanLee Land Use Plan[22]

[22] Benchmark Planning. (2018). Plan SanLee: Land Use Plan (By City of Sanford, Lee County, & Town of Broadway). Retrieved September 23, 2025, from https://sanfordnc.net/819/Land-Use-Plan

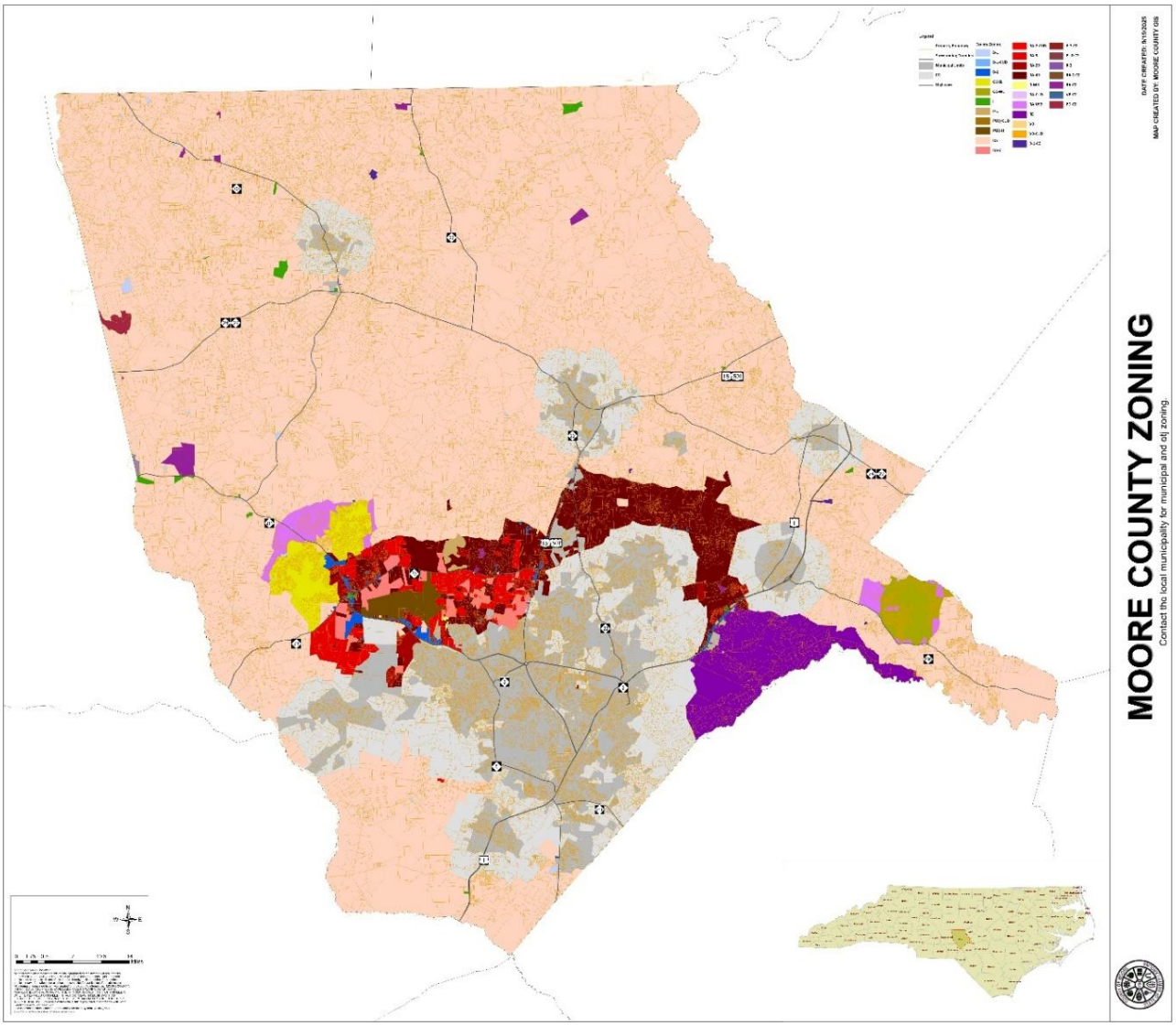


Figure 3-42: Moore County Zoning Map[23]

[23] Zoning map. (n.d.). Moore County, NC. Retrieved September 23, 2025, from https://www.moorecountync.gov/284/GIS-Maps

3.4 Employment and Industry

The Cape Fear Region's proximity to the Triangle and Triad continues to promote population and economic growth, especially in the northwestern portion of Johnston County and the northern and eastern parts of Chatham County. However, despite the region's urban growth, agriculture continues to play a critical role in the local economy. The largest employment sectors in the planning area are healthcare and social assistance, manufacturing, accommodation and food services, and retail trade. Table 3-9 contains more details on the percentage of employees working in different employment sectors in 2024. The top employers in the planning area are Chatham County Schools, Harnett County Schools, Johnston County Board of Education, Caterpillar Inc., and Firsthealth of the Carolinas Inc.

***Table 3-9**: Percent of employment in different employment sectors in the planning area for 2023* [24]

Employment Sector	Chatham County	Harnett County	Johnston County	Lee County	Moore County
Accommodation and Food Services	10.83%	13.59%	10.68%	8.55%	15.58%
Administrative and Support and Waste Management and Remediation Services	6.55%	5.50%	7.65%	5.77%	4.43%
Agriculture, Forestry, Fishing, and Hunting	0.00%	0.68%	0.84%	0.39%	0.00%
Arts, Entertainment, and Recreation	0.74%	1.43%	1.13%	0.83%	3.35%
Construction	10.45%	9.89%	9.51%	5.01%	4.78%
Educational Services	9.34%	0.00%	9.67%	7.51%	7.88%
Finance and Insurance	1.62%	1.66%	1.54%	1.47%	1.87%
Health Care and Social Assistance	16.00%	15.30%	12.39%	9.39%	25.29%
Information	0.46%	0.00%	0.38%	0.56%	0.79%
Management of Companies and Enterprises	0.14%	1.18%	0.00%	0.14%	0.80%
Manufacturing	9.25%	7.40%	13.59%	30.72%	4.41%
Mining, Quarrying, and Oil and Gas Extraction	0.00%	0.23%	0.11%	0.28%	0.00%
Other Services (except Public Administration)	4.45%	2.06%	2.30%	1.83%	3.80%
Professional, Scientific, and Technical Services	5.77%	3.35%	2.94%	3.10%	4.67%
Public Administration	7.08%	7.98%	5.26%	4.68%	5.06%
Real Estate and Rental and Leasing	1.25%	1.04%	0.95%	0.76%	0.90%
Retail Trade	10.37%	20.89%	13.12%	11.89%	12.71%
Transportation and Warehousing	2.74%	5.45%	4.16%	2.11%	1.66%
Unclassified	0.00%	0.00%	0.00%	0.00%	0.01%

[24] North Carolina Department of Commerce. (2023). Quarterly Census of Employment and Wages. Demand Driven Data Delivery (D4). Retrieved June 18, 2025, from https://d4.nccommerce.com/?q=3OL7

Employment Sector	Chatham County	Harnett County	Johnston County	Lee County	Moore County
Utilities	0.20%	0.52%	0.00%	0.42%	0.25%
Wholesale Trade	2.76%	1.84%	3.79%	4.61%	1.76%

***Table 3-10**: Top 10 industries and employers for each county in the planning area in 2024*[25]

Employment Rank	Chatham County			Harnett County			Johnston County			Lee County			Moore County		
	Employer	Industry	Range of Employees	Employer	Industry	Range of Employees	Employer	Industry	Range of Employees	Employer	Industry	Range of Employees	Employer	Industry	Range of Employees
1	Chatham County Schools	Educational Services	500-999	Harnett County Schools	Educational Services	1000+	Johnston County Board of Education	Educational Services	1000+	Caterpillar Inc	Manufacturing	1000+	Firsthealth of the Carolinas Inc	Health Care and Social Assistance	1000+
2	County of Chatham	Public Administration	250-499	Campbell University	Educational Services	1000+	Novo Nordisk Pharmaceutical Industry	Manufacturing	1000+	Wyeth Holdings LLC	Manufacturing	1000+	Moore County Schools	Educational Services	1000+
3	Carolina Meadows Inc	Health Care and Social Assistance	250-499	Food Lion	Retail Trade	1000+	Rex Healthcare Inc	Health Care and Social Assistance	1000+	Lee County Schools	Educational Services	1000+	Pinehurst LLC	Accommodation and Food Services	1000+
4	Mountaire Farms Inc	Agriculture, Forestry, Fishing and Hunting	250-499	County of Harnett	Public Administration	1000+	County of Johnston	Public Administration	1000+	Pilgrim's Pride Corporation	Manufacturing	1000+	County of Moore	Public Administration	500-999
5	Galloway Ridge Inc	Health Care and Social Assistance	250-499	Cumberland County Hospital Systems	Health Care and Social Assistance	500-999	Grifols Therapeutics Inc	Manufacturing	1000+	Central Carolina Community College	Educational Services	500-999	Pinehurst Medical Clinic Inc	Health Care and Social Assistance	500-999
6	Ace Electric Inc	Construction	250-499	Wal-Mart Associates Inc	Retail Trade	500-999	Asplundh Tree Expert LLC	Administrative and Support and Waste Management and Remediation Services	1000+	County Of Lee	Public Administration	500-999	Sandhills Community College	Educational Services	500-999
7	Wal-Mart Associates Inc	Retail Trade	100-249	Food Lion LLC	Retail Trade	250-499	Caterpillar Inc	Manufacturing	500-999	Pentair Water Pool & Spa Inc	Manufacturing	500-999	Harris Teeter LLC	Retail Trade	250-499
8	Rex Healthcare Inc	Health Care and Social Assistance	100-249	Carlie C's Operation Center Inc	Retail Trade	250-499	Wal-Mart Associates Inc	Retail Trade	500-999	Tyson Mexican Original Inc	Manufacturing	250-499	Pinehurst Surgical Clinic P A	Health Care and Social Assistance	250-499

[25] N.C. Department of Commerce. (2024). Quarterly Census of Employment and Wages. Demand Driven Data Delivery. Retrieved June 20, 2025, from https://d4.nccommerce.com/QCEWLargestEmployers.aspx

Employment Rank	Chatham County			Harnett County			Johnston County			Lee County			Moore County		
	Employer	Industry	Range of Employees	Employer	Industry	Range of Employees	Employer	Industry	Range of Employees	Employer	Industry	Range of Employees	Employer	Industry	Range of Employees
9	Old Dominion Insulation Inc	Construction	100-249	Rooms To Go Furniture Corp of Georgia	Retail Trade	250-499	Food Lion	Retail Trade	500-999	Gildan Yarns LLC	Manufacturing	250-499	Lee Electrical Construction Inc	Construction	250-499
10	Flakeboard America Limited	Manufacturing	500-999	Wellons Construction Inc	Construction	100-249	Johnston Community College	Educational Services	500-999	City Of Sanford	Public Administration	250-499	Burfords Tree LLC	Administrative and Support and Waste Management and Remediation Services	250-499

SECTION 4: HAZARD IDENTIFICATION

This section describes how the planning committee identified the hazards to be included in this plan. It consists of the following five subsections:

- 4.1 Overview
- 4.2 Description of Full Range of Hazards
- 4.3 Disaster Declarations
- 4.4 Hazard Identification Results

4.1 Overview

The Cape Fear Region is vulnerable to a wide range of natural and human-caused hazards that threaten life and property. Current Federal Emergency Management Agency (FEMA) regulations and guidance under the Disaster Mitigation Act of 2000 (DMA 2000) require, at a minimum, an evaluation of a full range of natural hazards. An evaluation of human-caused hazards (e.g., technological hazards, terrorism, etc.) is encouraged, though not required, for plan approval. The Cape Fear Region has included a comprehensive assessment of both types of hazards.

Upon a review of the full range of natural hazards outlined in FEMA planning guidance, the participating counties in the Cape Fear Region (Chatham, Harnett, Johnston, Lee, and Moore) have identified several hazards to be addressed in their Regional Hazard Mitigation Plan. These hazards were identified through an extensive process that utilized input from the Cape Fear Regional Hazard Mitigation Planning Committee members, research of past disaster declarations in the participating counties, and review of the North Carolina State Hazard Mitigation Plan. Readily available information from reputable sources (such as federal and state agencies) was also evaluated to supplement information from these key sources.

Table 4-1 lists the full range of natural hazards initially identified for inclusion in the Plan and provides a brief description for each. This table includes 18 individual hazards. Some of these hazards are interrelated or cascading, but for preliminary hazard identification purposes, these individual hazards are broken out separately.

Next, Table 4-2 lists the disaster declarations in the Cape Fear Region

Next, Table 4-3 documents the evaluation process used for determining which of the initially identified hazards are considered significant enough to warrant further evaluation in the risk assessment. For each hazard considered, the table indicates whether the hazard was identified as a significant hazard to be further assessed, how this determination was made, and why this determination was made. The table summarizes not only the hazards that *were* identified (and why) but also those that *were not* identified (and why not). Hazard events not identified for inclusion at this time may be addressed during future evaluations and updates of the risk assessment if deemed necessary by the Regional Hazard Mitigation Planning Committee during the plan update process.

Lastly, Table 4-3 provides a summary of the hazard identification and evaluation process, noting that 13 identified hazards are considered significant enough for further evaluation through this Plan's risk assessment.

4.2 Description of Full Range of Hazards

The North Carolina Enhanced Hazard Mitigation Plan (2023) identifies a comprehensive range of hazards that may impact communities statewide, including both natural hazards, such as flooding, hurricanes, severe winter weather, and wildfires, and technological or human-caused hazards, such as hazardous materials incidents, radiological emergencies, terrorism, and cyber events. The State's identification process considers historical occurrences, scientific data, spatial extent, severity, and potential future conditions to assess risk and vulnerability across all hazards. The table below reflects the full range of hazards identified at the state level, which served as the foundation for the Planning Committee's evaluation of which hazards to prioritize in the Cape Fear Region.

***Table 4-1**: Descriptions of the Full Range of Initially Identified Hazards*

State of NC Enhanced HMP (2023) Hazard Identification	**Description**
Natural Hazards Identified	
Flooding	Flooding is a localized hazard that generally results from excessive precipitation within a drainage basin. Floods fall into two general categories: flash floods, which result from heavy, localized precipitation over a short period at a given location; and general floods, which occur over a more extended period within a particular river basin.
Hurricanes & Coastal Hazards	Hurricanes are cyclonic storms that originate in tropical ocean waters poleward of about 5 degrees latitude. Hurricanes are heat engines, fueled by the latent heat released during the condensation of warm water. Their formation requires several elements, including a low-pressure disturbance, a sufficiently warm sea surface temperature, rotational force from Earth's rotation, and the absence of wind shear in the lowest 50,000 feet of the atmosphere. Hurricanes can produce a range of hazardous conditions, including storm surge, high winds, torrential rain, and tornadoes.
Severe Winter Weather	The winter storms that typically impact North Carolina generally form in the Gulf of Mexico or off the southeast Atlantic Coast. The entire state has a likelihood of experiencing severe winter weather. The threat varies by location and storm type. Coastal areas typically face their greatest weather threat from nor'easters and other severe winter coastal storms. These storms can contain strong waves and often result in extensive beach erosion and flooding. Freezing rain and ice storms typically occur once every several years at coastal locations, and severe snowstorms have been recorded occasionally in coastal areas. Rising global temperatures may reduce the number of frozen precipitation events in North Carolina but may also increase the likelihood of non-freezing storm events in the winter months.
Excessive Heat	Excessive heat is a dangerous and deadly occurrence in North Carolina. According to the National Weather Service, heat is one of the leading weather-related causes of loss of life in the United States. The Centers for

State of NC Enhanced HMP (2023) Hazard Identification	Description
Natural Hazards Identified	
	Disease Control and Prevention (CDC) indicates that 618 people on average in the United States are killed by extreme heat every year. That number represents more deaths than hurricanes, lightning, tornadoes, earthquakes, and floods combined. The CDC defines extreme heat as "summertime temperatures that are much hotter and/or more humid than average." The National Weather Service defines a heat wave as "a period of abnormally and uncomfortably hot and unusually humid weather, typically lasting two or more days." The North Carolina Department of Environmental Quality (NCDEQ) 2020 Climate Science Report suggests that the average number of high-heat/humidity days in North Carolina will increase over the coming decades, placing additional stress on populations, certain industries, infrastructure, and healthcare systems.
Earthquakes	An earthquake is a vibration or shaking of Earth's surface due to an underground release of energy. Various conditions, such as sudden movements along geological faults or volcanic activity, can cause them. Earthquake magnitudes, or severity, are recorded on the Richter scale with seismographs. Some may be so small as to go virtually unnoticed, while others can destroy entire cities. Seismology, the study of earthquakes, helps scientists understand which areas are more prone to earthquakes, such as along the Ring of Fire around the Pacific Ocean; however, earthquakes are generally unpredictable. According to the United States Geological Survey (USGS), about 500,000 earthquakes are reported each year, but only about 100,000 are strong enough to be felt.
Wildfire	Wildfires are uncontrolled fires in grasslands, brush, or woodlands. The potential for wildfire depends on surface fuel characteristics, recent and current climate conditions, and fire behavior. Hot, dry summers and dry vegetation increase the risk of fire in the fall, a particularly dangerous time of year for wildfires.
Dam Failures	Dams store water in reservoirs during periods of excess flow, so it can be released during periods when natural flows are inadequate to meet water users' needs. Dams can pose risks to communities if not properly designed, operated, and maintained. In the event of a dam failure, the energy of the water stored behind even a small dam can cause loss of life and considerable property damage downstream. Many dam failures have resulted from design flaws that have prevented the safe passage of flood flows. Failures caused by hydrologic conditions can range from sudden (complete breaching or collapse) to gradual (progressive erosion and partial breaching). The most common modes of failure associated with hydrologic conditions include overtopping, the erosion of earth spillways, and overstressing the dam or its structural components.
Drought	Drought refers to an extended period of below-average rainfall relative to the region's long-term average. Drought can be defined according to meteorological, hydrological, and agricultural criteria. Meteorological drought uses long-term precipitation data to measure current precipitation relative to

State of NC Enhanced HMP (2023) Hazard Identification	Description
Natural Hazards Identified	
	normal precipitation. Hydrological drought is defined by deficiencies in the surface and subsurface water supply, as reflected in streamflow, lake and reservoir levels, and groundwater levels. Agricultural drought occurs when there is insufficient soil moisture to satisfy the water budget of a specific crop, leading to destroyed or underdeveloped crops with greatly depleted yields.
Tornadoes/Thunderstorms	A tornado is a violently rotating column of air in contact with the ground and extending from the base of a thunderstorm. A condensation funnel does not need to reach the ground for a tornado to be present; a debris cloud beneath a thunderstorm is all that is needed to confirm the presence of a tornado, even in the total absence of a condensation funnel. Thunderstorms can produce a variety of accompanying hazards, including wind, hail, and lightning. Although thunderstorms generally affect a small area, they are very dangerous and may cause substantial property damage.
Geological	In North Carolina, the primary geological hazards are landslides, sinkholes, and coastal erosion, which can cause property damage and loss of life. Other geological hazards not included in this plan: ground collapse caused by old mines and prospects; rippable vs. non-rippable earth materials; expansive soils (shrink-swell clays); acid-producing rock; radon in air and groundwater (linked to geology); arsenic in groundwater (linked to geology). A landslide is a downward movement of earth or rock driven by gravity. Natural or man-made factors, such as heavy rains, earthquakes, rapid snowmelt, erosion, or slope modification, can trigger landslides. According to the USGS, a sinkhole is an area of ground with no natural surface drainage. When it rains, all the water stays inside the sinkhole and typically drains into the subsurface. Sinkholes can vary in size from a few feet to hundreds of acres, and from less than 1 to more than 100 feet deep. Some are shaped like shallow bowls or saucers, whereas others have vertical or concave walls. Coastal or beach erosion is the wearing away of the beach and dune sediments due to winds, tidal currents, or wave action. Erosion is typically event-driven and tends to happen during periods of strong winds, high tides, and waves, such as a storm; however, continued erosion wears away the coastal profile and can create imbalance on shorelines. An eroding beach may lose feet of sand per year.
Infectious Disease	Communicable, or infectious, diseases are conditions that result in clinically evident illnesses, which are transmissible directly from one person to another or indirectly through vectors such as insects, air, water, blood, or other objects. The impact of communicable disease can range from the mild effects of the common cold to the extreme lethality of pneumonic plague or anthrax. The public health system in the United States was developed in large part to address the often urgent need to prevent or respond to outbreaks of communicable diseases. Through public health methods of disease reporting, vaccinations, vector control, and effective treatments, most communicable diseases are well controlled in the United States and

State of NC Enhanced HMP (2023) Hazard Identification	Description
Natural Hazards Identified	
	across North Carolina. However, control systems can fail, and when people from outside the state come together, outbreaks can occur, even in the most modern of communities.
Technological Hazards Identified	
Hazardous Substances	North Carolina Emergency Management (NCEM) defines a hazardous substance as any element, chemical, substance, compound, mixture, agent, solution or substance that an accidental or deliberate release of may cause disease or harm to human health and the environment. Hazardous substances may have one or more of the following intrinsic properties: explosiveness, flammability, ability to oxidize (or accelerate a fire), human toxicity, or corrosiveness. Hazardous materials are found in many different forms and quantities that can potentially cause property damage, injuries, long-lasting health effects, and death. Many of these materials are used and stored daily in homes and businesses, and transported through major highways, waterways, pipelines, and railways. Each hazard has a different threshold level and can be naturally occurring, creating many risks in the event of an accidental or intentional incident.
Radiological Emergencies	The International Atomic Energy Agency defines a nuclear and radiation accident as “an event that has led to significant consequences to people, the environment, or the facility.” Often, this type of incident results from damage to the reactor core of a nuclear power plant, caused by a range of proximate factors, which can release radioactivity into the environment. The degree of exposure from nuclear accidents has varied from serious to catastrophic.
Terrorism	Terrorism is defined in the United States by the Code of Federal Regulations as “the unlawful use of force or violence against persons or property to intimidate or coerce a government, civilian population, or any segment thereof, in furtherance of political or social objectives.” Terrorist acts may include assassinations, kidnappings, hijackings, bombings, small arms attacks, vehicle ramming attacks, edged weapon attacks, incendiary attacks, cyber-attacks (computer-based), and the use of chemical, biological, nuclear, and radiological weapons of mass destruction (WMD).
Civil Disturbance	Civil disruption is a term that generally refers to groups of people deliberately choosing not to comply with a law, regulation, or rule, often to draw attention to a cause, concern, or agenda. In North Carolina, state statutes differentiate between public disturbances and riots based on the presence of disorderly or violent conduct. A public disturbance is defined as “Any annoying, disturbing, or alarming act or condition exceeding the bounds of social toleration normal for the time and place in question which occurs in a public place or which occurs in, affects persons in, or is likely to affect persons in a place to which the public or a substantial group has access,” whereas a riot is defined as “the public assemblage of three or more persons which by disorderly and violent conduct, or the imminent threat of disorderly and violent conduct, results in injury or damage to persons or property or creates a clear and present danger of injury or

State of NC Enhanced HMP (2023) Hazard Identification	Description
Natural Hazards Identified	
	damage to persons or property" (G.S. §14- 288.2).
Cyber	Cyberattacks are deliberate attempts to gain unauthorized access to a computer or system, or to cause damage. As the world becomes more technologically advanced and dependent upon computer systems, the threat of cyberattacks is becoming increasingly prevalent. Also known as computer network attacks, cyberattacks are difficult to detect and often use malicious code to alter data or steal information.
Electromagnetic Pulse	The United States Department of Energy defines electromagnetic pulses (EMPs) as "intense pulses of electromagnetic energy resulting from solar-caused effects or man-made nuclear and pulse power devices." EMPs can be naturally occurring or human-caused hazards. Examples of natural electromagnetic pulse events include lightning electromagnetic pulses, electrostatic discharges, meteoric electromagnetic pulses, and coronal mass ejections, also known as solar electromagnetic pulses.
Food Emergency	A food emergency refers to the adulteration and/or contamination, threatened or actual, of food that impacts or may impact human health or the safety or availability of the state's food supply (National Food and Agriculture Incident Annex to the Response and Recovery Federal Interagency Operations Plans, August 2019). A food emergency could result from a natural hazard, such as hurricanes, floods, severe weather, or from associated power outages, leading to food loss due to contamination or spoilage. A food emergency may also be human-caused, including unintentional or deliberate contamination or adulteration that poses a public health threat or triggers a foodborne disease outbreak. For example, improper processing or production of a food product, or deliberate contamination or adulteration of food, could cause harm to the public or to the United States economy.

4.3 Disaster Declarations

Disaster declarations provide initial insight into the hazards that may impact the Cape Fear Regional planning area. Since 1968, nine presidential disaster declarations have been reported in the Cape Fear Region. This includes four events related to winter storms, four storms related to hurricanes and tropical storms, and one event related to tornadoes and severe storms.

***Table 4-2**: Cape Fear Region Disaster Declarations*

Year	Disaster Number	Description	Chatham County	Harnett County	Johnston County	Lee County	Moore County
1968	234	Severe Ice Storm	–	X	X	X	X
1996	1087	Blizzard Of 96	X	X	X	X	X
1996	1134	Hurricane Fran	X	X	X	X	X
1999	1292	Hurricane Floyd	X	X	X	X	X

Year	Disaster Number	Description	Chatham County	Harnett County	Johnston County	Lee County	Moore County
2000	1312	Severe Winter Storm	X	X	X	X	X
2002	1448	Severe Ice Storm	X	X	X	X	X
2003	1490	Hurricane Isabel	–	X	X	–	–
2011	1969	Severe Storms, Tornadoes, And Flooding	–	X	X	X	–
2011	4019	Hurricane Irene	–	–	X	–	–
2016	4285	Hurricane Matthew	X	X	X	X	X
2018	4393	Hurricane Florence	X	X	X	X	X
2019	4285	Tropical Storm Michael	X	–	–	–	–
2019	3423	Hurricane Dorian	X	X	X	X	X
2020	4487 / 3471	Covid-19 Pandemic	X	X	X	X	X
2020	3534	Hurricane Isaias	X	X	X	X	X
2022	3586	Hurricane Ian	X	X	X	X	X
2024	3608	Tropical Storm Debbie	X	X	X	X	X
2024	4827	Tropical Storm Helene	–	–	–	X	–
2024	3617	Hurricane Helene	X	X	X	X	X

4.4 Hazard Identification Results

The State of North Carolina's Enhanced Hazard Mitigation Plan (2023) identifies a broad range of natural and human-caused hazards that could affect communities statewide; however, not all these hazards pose the same level of risk across regions. As part of the Hazard Identification process, the Cape Fear Region's Planning Committee reviewed the state-identified hazards. The group evaluated their relevance based on documented historical occurrences, potential impacts to people and infrastructure, and local vulnerability conditions. Through this process, the Committee prioritized only those hazards that pose the greatest risk and have the most significant potential consequences for the Cape Fear Region, while deprioritizing hazards that are either unlikely to occur locally, have limited potential impacts, or are already managed through other established systems and protocols.

***Table 4-3**: Summary of Hazard Identification and Prioritization*

State of NC Enhanced HMP (2023) Identified Hazards	Prioritized Hazards for the Cape Fear Plan	Why?
Flooding	Yes	The frequency and severity of the natural hazard can have significant impacts on the planning area.
Hurricanes & Coastal Hazards	Yes	The frequency and severity of the natural hazard can have significant impacts on the planning area (excluding Coastal Hazards). This is labeled Hurricane and Tropical Storm in Cape Fear's Plan.
Severe Winter Weather	Yes	The frequency and severity of the natural hazard can have significant impacts on the planning area. This is labeled Winter Storm in Cape Fear's Plan.
Excessive Heat	Yes	The frequency and severity of the natural hazard can have significant impacts on the planning area.
Earthquakes	Yes	The natural hazard can have a significant impact on the planning area.
Wildfire	Yes	The frequency and severity of the natural hazard can have significant impacts on the planning area.
Dam Failures	Yes	The hazard can have a significant impact on the planning area. Cape Fear's Plan expands this hazard to encompass Levee Failure.
Drought	Yes	The frequency and severity of the natural hazard can have significant impacts on the planning area.
Tornadoes/Thunderstorms	Yes	The frequency and severity of the natural hazard can have significant impacts on the planning area. This hazard is separated into two individual hazards in Cape Fear's Plan: Severe Weather & Tornado.
Geological	No	The terrain in the Cape Fear Region is not significantly vulnerable to geological hazards such as landslides, sinkholes, or coastal erosion.
Infectious Disease	No	The Cape Fear Region did not prioritize infectious disease as a hazard because existing public health systems and response protocols already address these risks, and local stakeholders determined that other hazards pose a more significant and direct threat to community safety and infrastructure.
Hazardous Substances	Yes	The hazard can have a significant impact on the planning area. This hazard is labeled Hazardous Materials Incidents in Cape Fear's Plan.
Radiological Emergencies	Yes	Almost the entire planning area is vulnerable to a radiological emergency due to the Shearon Harris Nuclear Station. This hazard is labeled Nuclear Accident in Cape Fear's Plan.
Terrorism	Yes	The hazard can have a significant impact on the planning area. This hazard is labeled Terror Threat in Cape Fear's Plan.

State of NC Enhanced HMP (2023) Identified Hazards	Prioritized Hazards for the Cape Fear Plan	Why?
Civil Disturbance	No	Civil disturbance was not prioritized because it is not considered a significant or recurring threat in the Cape Fear Region.
Cyber	No	Cyber hazards were not prioritized because they are primarily managed through existing internet technology security measures and are not viewed as a leading threat to life safety or critical community operations in the region.
Electromagnetic Pulse	No	An electromagnetic pulse was not prioritized because it is considered highly unlikely to occur and does not represent a significant, locally relevant risk for the region.
Food Emergency	No	Food emergency was not prioritized because it is not considered a likely or locally significant hazard relative to other, more pressing regional risks.

SECTION 5: HAZARD PROFILES

This section includes detailed hazard profiles for each hazard identified in the previous section (Hazard Identification) that are deemed significant enough for further evaluation in the Cape Fear Regional Hazard Mitigation Plan. It contains the following subsections:

- 5.1 Overview
- 5.2 Study Area
- 5.3 Drought
- 5.4 Extreme Heat
- 5.5 Hurricane and Tropical Storm
- 5.6 Severe Weather
- 5.7 Tornado
- 5.8 Winter Storm
- 5.9 Earthquake
- 5.10 Dam and Levee Failure
- 5.11 Flood
- 5.12 Hazardous Materials Incidents
- 5.13 Wildfire
- 5.14 Nuclear Accident
- 5.15 Terror Threat
- 5.16 Conclusions on Hazard Risk

5.1 Overview

This section includes detailed hazard profiles for each hazard identified in the previous section (Hazard Identification) that are significant enough for further evaluation in the Cape Fear Region hazard risk assessment. Each hazard profile includes a general description of the hazard, its location and extent, notable historical occurrences, and the probability of future occurrences. Each profile also includes specific items noted by members of the Cape Fear Regional Hazard Mitigation Planning Team (Planning Team) regarding unique historical or anecdotal hazard information for the counties in the Cape Fear Region or participating municipalities within them. The following hazards were identified:

- Atmospheric
  - Drought
  - Extreme Heat
  - Hurricane and Tropical Storm
  - Severe Weather
  - Tornado
  - Winter Storm
- Geologic
  - Earthquake
- Hydrologic
  - Dam and Levee Failure
  - Flood
- Other
  - Hazardous Materials Incident
  - Wildfire
  - Nuclear Accident
  - Terror Threat

5.2 Study Area

The Cape Fear Region includes five counties: Chatham, Harnett, Johnston, Lee, and Moore. Table 5-1 provides a summary table of the participating jurisdictions within each county. In addition, Figure 5-1 provides a base map, for reference, of the Cape Fear Region.

__Table 5-1__: Participating Jurisdictions in the Cape Fear Regional Hazard Mitigation Plan

Chatham County	
Goldston	Siler City
Pittsboro	
Harnett County	
Angier	Erwin
Coats	Lillington
Dunn	
Johnston County	
Archer Lodge	Pine Level
Benson	Princeton
Clayton	Selma
Four Oaks	Smithfield
Kenly	Wilson's Mills
Micro	
Lee County	
Broadway	Sanford
Moore County	
Aberdeen	Robbins
Cameron	Southern Pines
Carthage	Taylortown
Foxfire Village	Vass
Pinebluff	Whispering Pines
Pinehurst	

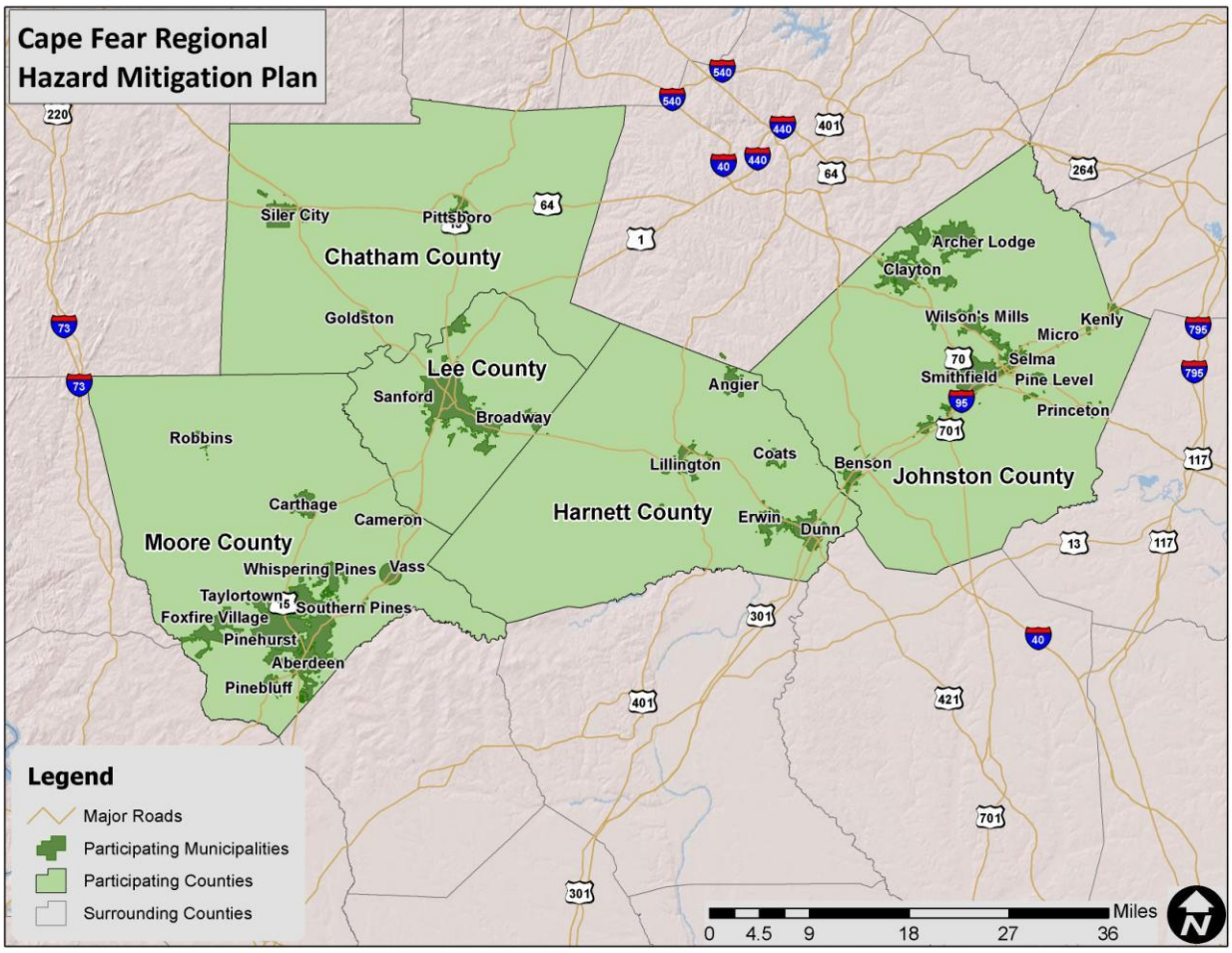


***Figure 5-1**: Cape Fear Region Base Map*

Section 4 lists each significant hazard for the Cape Fear Region and identifies whether it has been determined to be a specific hazard of concern for the thirty-two municipal jurisdictions and each of the five counties' unincorporated areas. This is based on the best available data and information from the Planning Team.

A risk assessment is performed to determine the potential impacts of hazards on people, the built and natural environments, and the economy of a given planning area. The Risk Assessment provides the foundation for the rest of the mitigation planning process, which focuses on identifying and prioritizing actions to reduce risk from hazards. In addition to informing the Mitigation Strategy, the Risk Assessment can also be used to establish emergency preparedness and response priorities, for land use and comprehensive planning, and for decision-making by elected officials, city and county departments, businesses, and organizations in the community.

A typical risk assessment consists of three primary components. Some hazard identification process must take place, followed by detailed profiling of the hazards addressed in the plan. Then the profiled hazards are assessed to determine the planning area's vulnerability to each addressed hazard. It is also important to document key details regarding the methodologies and assumptions used to perform the risk assessment, the asset inventories used, and the

conclusions on hazard risk. The conclusions on hazard risk consist of a prioritized ranking of hazards of concern.

This section gauges the likelihood of future occurrences based on past events and existing data. National Risk Index (NRI) data were used alongside other data sources where available. This was to provide a wide range of vulnerability analyses and a standardized comparison with other communities across the United States to assess levels of vulnerability. Because some of the hazards within this plan represent multiple types of precipitation or weather within an overall hazard category (such as winter storms and freezing events, which may encompass ice, snow, snowstorms, etc.), the hazard names in the NRI data may vary. The NRI hazard names are listed as indicated in the NRI data to distinguish between multiple data sets that may fall under the same hazard category included in this plan. See Section 3 for a more detailed look at census tracts in the planning area. The jurisdictional probability summary was developed by identifying census tracts that overlap with jurisdictional boundaries, as jurisdictional-level data is not available for NRI datasets.

Table 5-2: *How jurisdictional NRI data was calculated based on census tracts for each natural hazard probability summary*

Jurisdiction	Expected Annual Frequency	Expected Annual Loss (EAL)			Risk Score	
		Value	Score	Rating	Score	Rating
Based on the North Carolina Department of Transportation (NCDOT) city boundaries[1] and census tracts that overlap the boundaries of each jurisdiction	Average of expected annual frequency for all census tracts that overlap the jurisdictional boundaries	Sum of EAL for each census tract that overlaps the boundaries of the jurisdiction	Average of EAL scores for all census tracts that overlap the jurisdictional boundaries	Percentile score based on risk rating percentile groupings and descriptions	Average of the national percentile risk score of all census tracts that overlap the jurisdictional boundaries	Percentile score based on risk rating percentile groupings and descriptions

5.2.1 NRI Overview

Each natural hazard in the FEMA National Risk Index has associated risk values, risk scores, and risk ratings that represent a county or census tract's vulnerability to that hazard relative to other communities at the same level. To represent the risk more thoroughly of natural hazards that a community has compared to other communities at the same level, the NRI will be used to represent a community-based risk comparison outlined with risk values, ratings, and scores, which are listed in Table 5-3. For more information about NRI Calculations and methodology, please refer to the NRI Technical Documentation[2].

[1] N.C. Department of Transportation [NCDOT]. (2024). NCDOT City Boundaries (By NC OneMap) [Dataset]. NCDOT.gov. https://www.nconemap.gov/maps/ee098aeaf28d44138d63446fbdaac1ee/about

[2] Casey Zuzak et al., "National Risk Index: Technical Documentation" (Washington, DC: Federal Emergency Management Agency, March 2023), https://www.fema.gov/sites/default/files/documents/fema_national-risk-index_technical-documentation.pdf.

Table 5-3: NRI Overview from the NRI Technical Documentation

Term	Definition or Equation	
Annualized Frequency	Number of Recorded Events / Period of Record	
Historic Loss Ratio	**LRB** = Loss / Exposure	
	Loss	Loss, by consequence type (Building, population, or agriculture), experienced from each hazard occurrence documented in the data source
	Exposure	The total value, by consequence type (Building, population number, or agriculture), is estimated to be exposed to the hazard occurrence in USD, or in population number, or Population equivalent for population exposure.
Social Vulnerability	The susceptibility of social Groups to the adverse impacts of natural hazards, including disproportionate death, injury, loss, or disruption of livelihood	
	Data Source	Center for Disease Control and Prevention (CDC) / Agency for Toxic Substances and Disease Registry (ATSDR) Social Vulnerability Index (SVI)
Community Resilience	The ability of a community to prepare for anticipated natural hazards, adapt to changing conditions, withstand and recover rapidly from disruptions.	
	Data Source	University of South Carolina's Hazards and Vulnerability Research Institute (HVRI)'s Baseline Resilience Indicators for Communities (HVRI BRIC)
Expected Annual Loss	Represents the average economic loss in dollars resulting from natural hazards each year. It is calculated for each hazard type and quantifies loss for relevant consequence types: buildings, people, and agriculture	
	Equation	Exposure X Annualized Frequency X Historic Loss Ratio
	Score	Percentile of EAL when compared to other communities and labeled based on Risk Rating Percentile Descriptions below.
Risk Value	Values for Risk and EAL in dollars, representing the community's average economic loss from natural hazards each year.	
Risk Score	Scores represent the national percentile ranking of the community's component value compared to all other communities at the same level, at the county or census tract level.	
Risk Rating	Ratings are in one of five qualitative categories that describe the community's component value relative to all other communities at the same level. These range from "Very Low" to "Very High."	
	Very High	80th to 100th percentile
	Relatively High	60th to 80th percentile
	Relatively Moderate	40th to 60th percentile
	Relatively Low	20th to 40th percentile
	Very Low	0th to 20th percentile

Table 5-4: NRI EAL, Social Vulnerability, and Community Resilience Score

County	Risk Index EAL		Risk Index Social Vulnerability		Risk Index Community Resilience	
	Rating	Score	Rating	Score	Rating	Score
Chatham	Relatively Moderate	43.09	Relatively Moderate	43.87	Relatively Low	36.04
Harnett	Relatively High	62.96	Relatively High	65.30	Relatively Low	23.19
Johnston	Relatively Moderate	46.04	Relatively Moderate	51.33	Relatively Moderate	40.56
Lee	Relatively Moderate	56.44	Relatively High	67.54	Relatively Low	27.95
Moore	Relatively Moderate	57.25	Relatively Moderate	41.29	Relatively Low	37.54

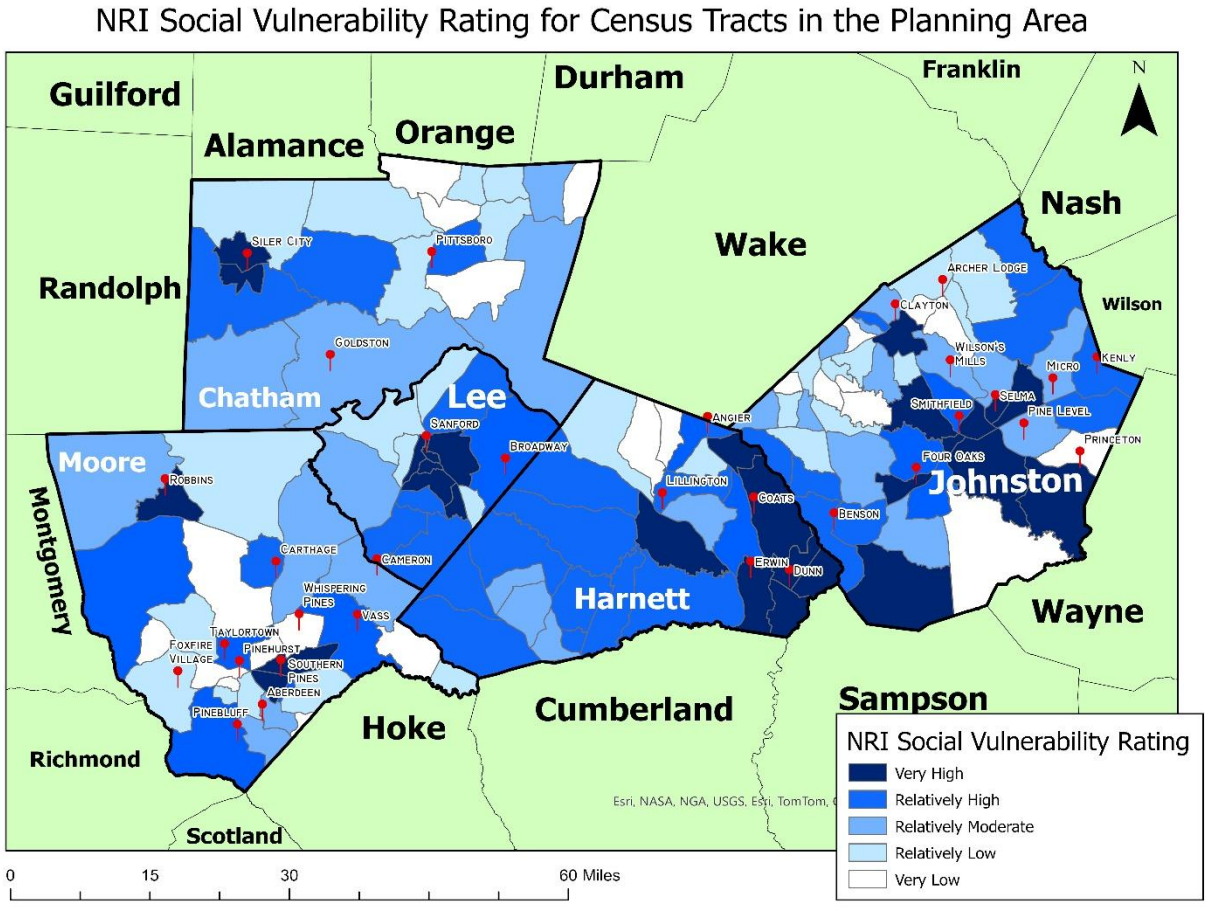


Figure 5-2: NRI Social Vulnerability Rating for Census Tracts in the Planning Area

Table 5-5: NRI Jurisdictional Summary Overall Hazard Impacts

NRI Jurisdictional Summary							
Jurisdiction	EAL Total					Resilience Score	Social Vulnerability Score
	Value	National Percentile		State Percentile			
		Score	Rating	Score	Rating		
Chatham County	**$8,293,256.08**	**36.48**	**Relatively Low**	**54.09**	**Relatively Moderate**	**36.04**	**43.87**
Goldston	$742,920.64	41.27	Relatively Moderate	75.49	Relatively High	36.04	57.72
Pittsboro	$939,096.38	32.03	Relatively Low	41.78	Relatively Moderate	36.04	35.22
Siler City	$1,353,532.19	37.64	Relatively Low	58.82	Relatively Moderate	36.04	90.34
Area outside Jurisdictional Boundaries	$5,257,706.87	36.90	Relatively Low	54.20	Relatively Moderate	36.04	33.26
Harnett County	**$22,756,634.60**	**60.98**	**Relatively High**	**71.66**	**Relatively High**	**23.19**	**65.3**
Angier	$1,691,218.77	56.31	Relatively Moderate	56.93	Relatively Moderate	23.19	67.84
Coats	$1,759,936.04	64.10	Relatively High	77.89	Relatively High	23.19	75.17
Dunn	$4,485,995.08	63.91	Relatively High	80.70	Very High	23.19	89.47
Erwin	$4,275,480.71	66.14	Relatively High	80.08	Very High	23.19	76.68
Lillington	$5,331,571.63	60.68	Relatively High	66.37	Relatively High	23.19	53.09
Area outside Jurisdictional Boundaries	$7,239,150.44	59.38	Relatively Moderate	75.00	Relatively High	23.19	59.9
Johnston County	**$26,124,364.55**	**48.93**	**Relatively Moderate**	**56.81**	**Relatively Moderate**	**40.56**	**51.33**
Archer Lodge	$3,536,134.70	46.18	Relatively Moderate	64.74	Relatively High	40.56	22.74
Benson	$2,400,289.62	53.73	Relatively Moderate	59.42	Relatively Moderate	36.22	70.55
Clayton	$7,032,168.17	42.83	Relatively Moderate	58.20	Relatively Moderate	40.56	39.1
Four Oaks	$1,568,515.55	51.95	Relatively Moderate	52.32	Relatively Moderate	40.56	71.04
Kenly	$855,284.69	57.84	Relatively Moderate	58.14	Relatively Moderate	40.56	66.33
Micro	$1,404,679.59	63.57	Relatively High	56.52	Relatively Moderate	40.56	77.08
Pine Level	$1,293,012.00	52.86	Relatively Moderate	71.79	Relatively High	40.56	76.29

NRI Jurisdictional Summary							
Jurisdiction	EAL Total					Resilience Score	Social Vulnerability Score
	Value	National Percentile		State Percentile			
		Score	Rating	Score	Rating		
Princeton	$969,362.56	58.41	Relatively Moderate	58.65	Relatively Moderate	40.56	54.06
Selma	$4,616,568.18	53.26	Relatively Moderate	66.84	Relatively High	40.56	76.91
Smithfield	$4,399,983.09	56.65	Relatively Moderate	66.73	Relatively High	40.56	83.47
Wilson's Mill	$2,674,082.86	50.27	Relatively Moderate	64.77	Relatively High	40.56	61.3
Area outside Jurisdictional Boundaries	$6,852,322.72	46.17	Relatively Moderate	51.42	Relatively Moderate	40.56	34.54
Lee County	**$10,193,392.32**	**53.58**	**Relatively Moderate**	**66.73**	**Relatively High**	**27.95**	**67.54**
Broadway	$1,384,690.56	62.79	Relatively High	72.97	Relatively High	25.57	68.25
Sanford	$9,021,317.20	53.21	Relatively Moderate	66.44	Relatively High	27.95	66.57
Areas Outside Jurisdictional Boundaries	$1,172,075.12	56.13	Relatively Moderate	68.82	Relatively High	27.95	74.39
Moore County	**$19,161,134.70**	**55.08**	**Relatively Moderate**	**66.76**	**Relatively High**	**37.54**	**41.29**
Aberdeen	$5,147,350.97	53.61	Relatively Moderate	63.78	Relatively High	37.54	40.13
Cameron	$667,084.85	58.00	Relatively Moderate	72.59	Relatively High	37.54	53.73
Carthage	$4,567,297.70	54.83	Relatively Moderate	70.70	Relatively High	37.54	49.03
Foxfire Village	$2,045,369.63	54.70	Relatively Moderate	68.51	Relatively High	37.54	33.78
Pinebluff	$1,382,152.96	55.36	Relatively Moderate	72.95	Relatively High	37.54	54.42
Pinehurst	$7,344,511.13	52.95	Relatively Moderate	72.37	Relatively High	37.54	44.59
Robbins	$2,077,304.35	54.29	Relatively Moderate	70.26	Relatively High	37.54	68.52
Southern Pines	$7,165,528.72	52.25	Relatively Moderate	67.79	Relatively High	37.54	44.14
Taylortown	$1,476,844.25	53.05	Relatively Moderate	74.81	Relatively High	37.54	45.11
Vass	$859,874.12	56.00	Relatively Moderate	77.93	Relatively High	37.54	69.06

NRI Jurisdictional Summary							
Jurisdiction	EAL Total					Resilience Score	Social Vulnerability Score
	Value	National Percentile		State Percentile			
		Score	Rating	Score	Rating		
Whispering Pines	$915,580.04	53.16	Relatively Moderate	78.98	Relatively High	37.54	8.94
Areas Outside Jurisdictional Boundaries	$2,262,484.06	63.18	Relatively High	55.67	Relatively Moderate	37.54	19.56

***Table 5-6**: Census tracts that overlap jurisdictional boundaries in the planning area that are used to derive jurisdictional-level NRI data*

County	Municipality	Overlapping Census Tracts
Chatham	Goldston	37037020600
	Pittsboro	37037020801, 37037020802, 37037020803
	Siler City	37037020300, 37037020401, 37037020402
	Outside of Municipal Boundaries	37037020103, 37037020104, 37037020105, 37037020107, 37037020108, 37037020201, 37037020202, 37037020203, 37037020500, 37037020704
Harnett	Angier	37085070901, 37085070902, 37085070903, 37085070904
	Benson	37085070402
	Broadway	37085071101
	Coats	37085070401, 37085070402
	Dunn	37085070100, 37085070200, 37085070300, 37085070500
	Erwin	37085070100, 37085070401, 37085070500, 37085070600
	Lillington	37085070700, 37085070801, 37085070802, 37085070903, 37085070904, 37085071003, 37085071004, 37085071201
	Spring Lake	37085071203, 37085071402
	Outside of Municipal Boundaries	37085071002, 37085071102, 37085071202, 37085071204, 37085071301, 37085071302, 37085071303, 37085071401
Johnston	Archer Lodge	37101040205, 37101040207, 37101040208, 37101040209, 37101040210
	Benson	37101041401, 37101041402, 37101041510
	Clayton	37101040207, 37101040209, 37101040210, 37101040903, 37101040906, 37101041001, 37101041003, 37101041004, 37101041005, 37101041104, 37101041105, 37101041110
	Four Oaks	37101041204, 37101041205, 37101041206, 37101041505
	Kenly	37101040101, 37101040102
	Micro	37101040102, 37101040103, 37101040301
	Pine Level	37101040400, 37101040600
	Princeton	37101040501, 37101040502
	Selma	37101040301, 37101040303, 37101040304, 37101040400, 37101040600, 37101040700, 37101040903

County	Municipality	Overlapping Census Tracts
	Smithfield	37101040600, 37101040700, 37101040800, 37101040904, 37101040905, 37101041204, 37101041206
	Wendell	37101040205
	Wilson's Mills	37101040903, 37101040904, 37101040905, 37101040906
	Zebulon	37101040204
	Outside of Municipal Boundaries	37101040206, 37101041106, 37101041107, 37101041108, 37101041109, 37101041111, 37101041112, 37101041113, 37101041203, 37101041301, 37101041302, 37101041504, 37101041506, 37101041507, 37101041508, 37101041509, 37101041511
Lee	Broadway	37105030702
	Sanford	37105030101, 37105030102, 37105030200, 37105030300, 37105030401, 37105030402, 37105030502, 37105030506, 37105030507, 37105030601, 37105030602, 37105030702, 37105030703, 37105030704
	Outside of Municipal Boundaries	37105030504, 37105030505
Moore	Aberdeen	37125950702, 37125950703, 37125950900, 37125951001, 37125951002, 37125951101, 37125951102, 37125951200
	Cameron	37125950503
	Candor	37125950304
	Carthage	37125950402, 37125950403, 37125950404, 37125950503, 37125950507, 37125950603, 37125950604
	Foxfire Village	37125950306, 37125950601, 37125951200
	Pinebluff	37125951101, 37125951200
	Pinehurst	37125950601, 37125950603, 37125950604, 37125950702, 37125950703, 37125950704, 37125950801, 37125950802, 37125951102, 37125951200
	Robbins	37125950201, 37125950202, 37125950304
	Southern Pines	37125950506, 37125950603, 37125950604, 37125950702, 37125950801, 37125950802, 37125950900, 37125951001, 37125951002, 37125951102
	Taylortown	37125950305, 37125950603
	Vass	37125950507
	Whispering Pines	37125950506
	Outside of Municipal Boundaries	37125950100, 37125950303, 37125950504, 37125950505

ATMOSPHERIC HAZARDS

5.3 Drought

5.3.1 Hazard Description and Background

Drought is a normal part of virtually all climatic regions, including areas with high and low average rainfall. Drought is the consequence of a natural reduction in the amount of precipitation expected over an extended period of time, usually a season or more in length. High temperatures, high winds, and low humidity can exacerbate drought conditions. In addition, human actions and demands for water resources can hasten drought-related impacts. Drought may also lead to more severe wildfires.

Droughts are typically classified into one of four types: 1) meteorological, 2) hydrologic, 3) agricultural, or 4) socioeconomic.

Table **5-7** presents definitions for these types of drought.

***Table 5-7**: Drought Classification Definitions*

Meteorological Drought	The degree of dryness or departure of actual precipitation from an expected average or normal amount based on monthly, seasonal, or annual time scales.
Hydrologic Drought	The effects of precipitation shortfalls on stream flows and reservoir, lake, and groundwater levels.
Agricultural Drought	Soil moisture deficiencies are relative to the water demands of plant life, usually crops.
Socioeconomic Drought	The effect of demands for water exceeding the supply as a result of a weather-related supply shortfall.

Source: Multi-Hazard Identification and Risk Assessment: A Cornerstone of the National Mitigation Strategy, FEMA

Droughts are slow-onset hazards, but, over time, can have very damaging effects on crops, municipal water supplies, recreational uses, and wildlife. If drought conditions persist for several years, the direct and indirect economic impacts can be significant.

The Palmer Drought Severity Index (PDSI) is based on observed drought conditions and ranges from -0.5 (incipient dry spell) to -4.0 (extreme drought). Evident in Figure 5-3, the Palmer Drought Severity Index Summary Map for the United States, drought affects most areas of the United States, but is less severe in the Eastern United States.

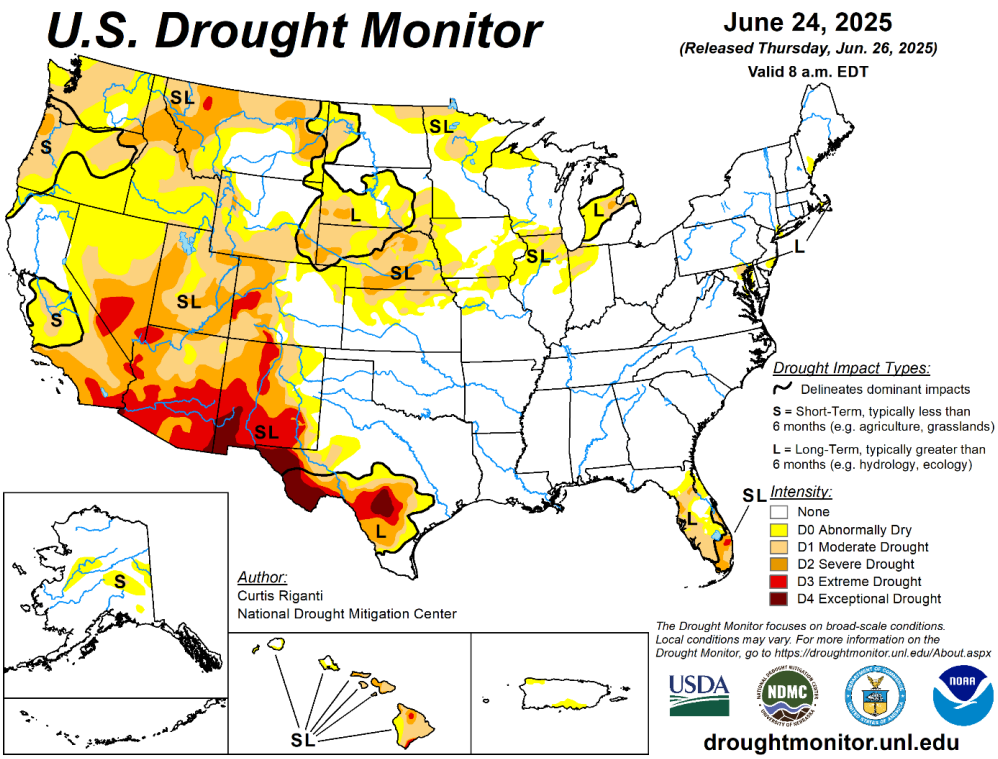


***Figure 5-3**: Palmer Drought Severity Index Summary Map for the United States*[3]

5.3.2 Location and Spatial Extent

Drought typically covers a large area and cannot be confined to any geographic or political boundaries. According to the Palmer Drought Severity Index (Figure 5-3), Central North Carolina has a relatively low risk for drought hazards. However, local areas may experience much more severe and/or more frequent drought events than are represented on the Palmer Drought Severity Index map. Furthermore, it is assumed that the Cape Fear Region would be uniformly exposed to drought, potentially resulting in a widespread spatial extent. It is also notable that drought conditions typically do not cause significant damage to the built environment. The United States Drought Monitor reports data on North Carolina drought conditions from 2000 to 2025. It classifies drought by County on a scale of D0 to D4, where:

***Table 5-8**: Drought classification descriptions and impacts*

Category	Rating	Impact
D0	Abnormally Dry	Pastures are dry; mild crop stress is noted; irrigation increases
		Lawns are brown
D1	Moderate Drought	Crop stress increases
		Hay production is reduced; producers feed hay to cattle early

[3] U.S. Drought Monitor [USDM]. (2025, June 26). Current Map. U.S. Drought Monitor. Retrieved June 30, 2025, from https://droughtmonitor.unl.edu/CurrentMap.aspx

Category	Rating	Impact
		Wildfire danger is higher than the seasonal normal
		Increased signs of wildlife; trees and landscape are drought-stressed
		Streamflow is reduced; lake and reservoir levels decline
		Voluntary water conservation begins
D2	Severe Drought	Dryland crop yields are low
		Wildfires are difficult to extinguish
		Swimming areas and boat ramps begin to close
		Voluntary and mandatory water use restrictions are implemented; people are asked to refrain from nonessential water use
D3	Extreme Drought	Hay is scarce, producers are purchasing outside of the state; nitrate levels in forage are high
		Outdoor burn bans are implemented; wildfires are widespread
		Landscaping and greenhouse businesses lose revenue
		Aquatic wildlife is dying; fewer trout are being stocked
		Hydropower generation decreases
		Voluntary conservation is requested even in sufficient water level areas; mandatory restrictions become more severe, and fines are given to violators; stream levels are extremely low
D4	Exceptional Drought.	Producers sell cattle; hay shortages and crop loss occur; farmers are stressed
		Daily life is affected by all citizens; people pray for rain; drought education seminars increase
		Epizootic hemorrhagic disease is widespread in deer
		Reservoirs are low; officials are counting the days of remaining water supply; well water is low; residents are hauling water

The probability of future drought is represented by the U.S. Drought Monitor and the University of Nebraska-Lincoln National Drought Mitigation Center (NDMC), which represents the drought occurrences on a weekly basis since 2000. The Drought Monitor uses multiple indices and indicators to classify drought severity and relies on local condition reports from expert observers. The NRI drought risk rating, demonstrated in the maps below, shows the relative risk of drought compared to the rest of the US.

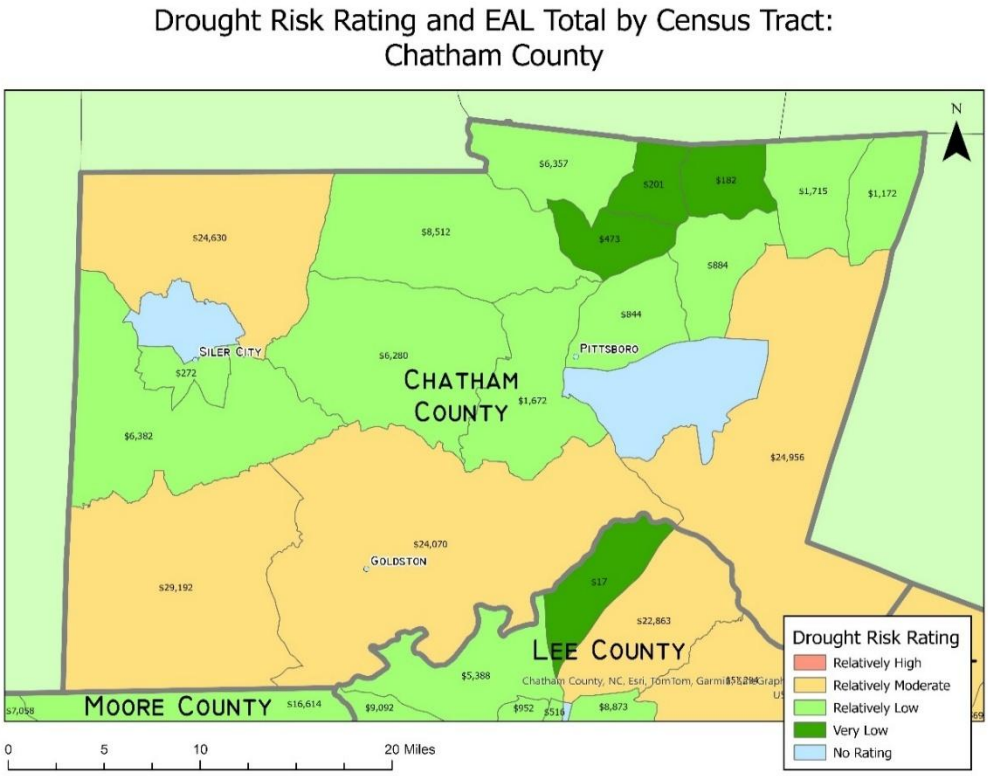


***Figure 5-4**: NRI Drought Risk Rating and EAL Total by Census Tract for Chatham County*

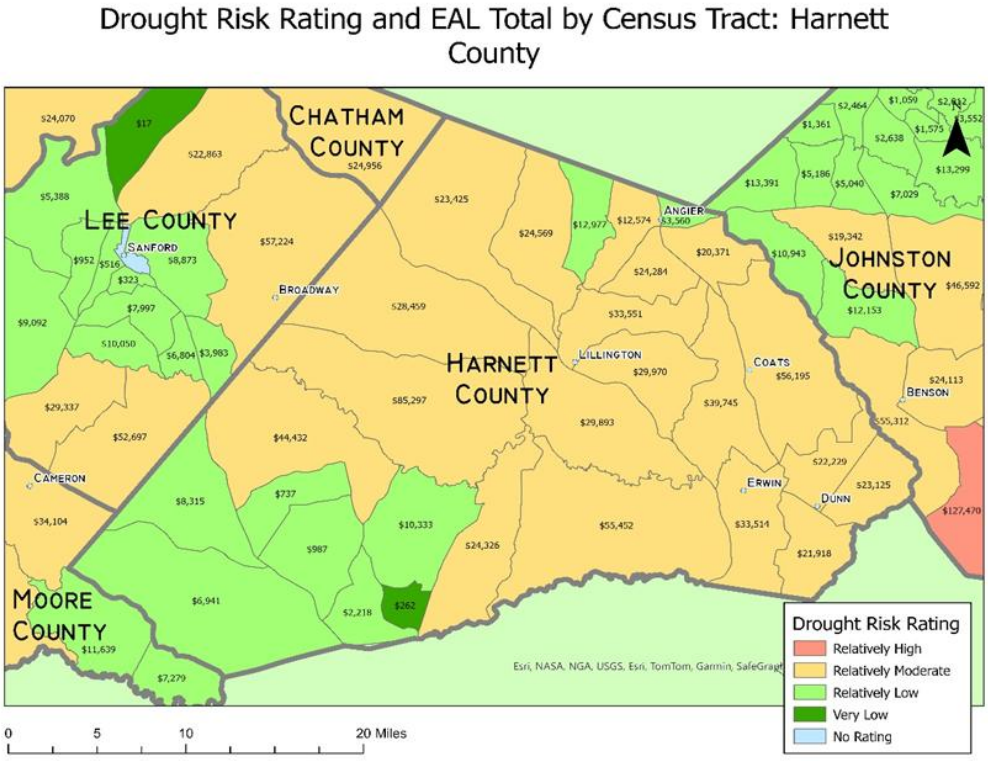


***Figure 5-5**: NRI Drought Risk Rating and EAL Total by Census Tract for Harnett County*

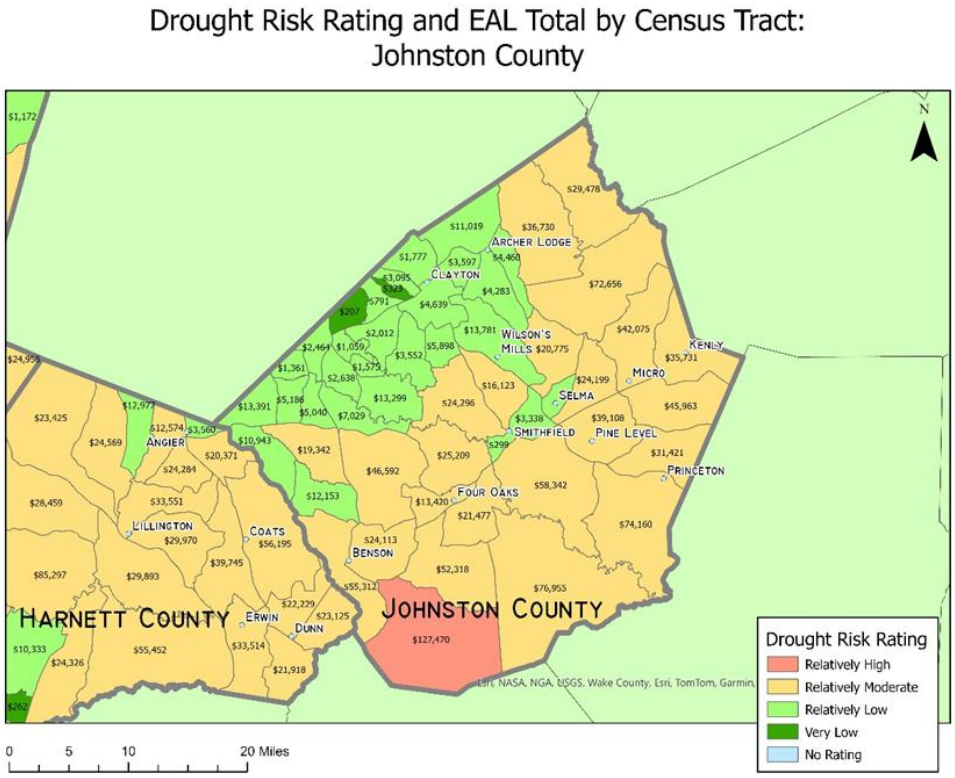


***Figure 5-6**: NRI Drought Risk Rating and EAL Total by Census Tract for Johnston County*

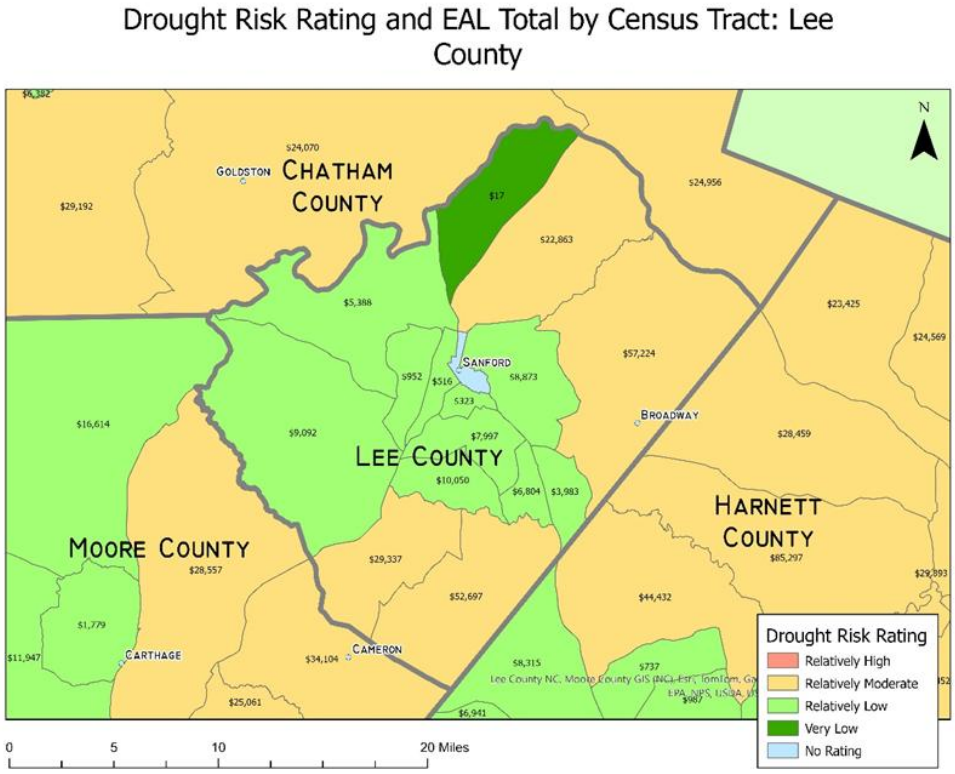


***Figure 5-7**: NRI Drought Risk Rating and EAL Total by Census Tract for Lee County*

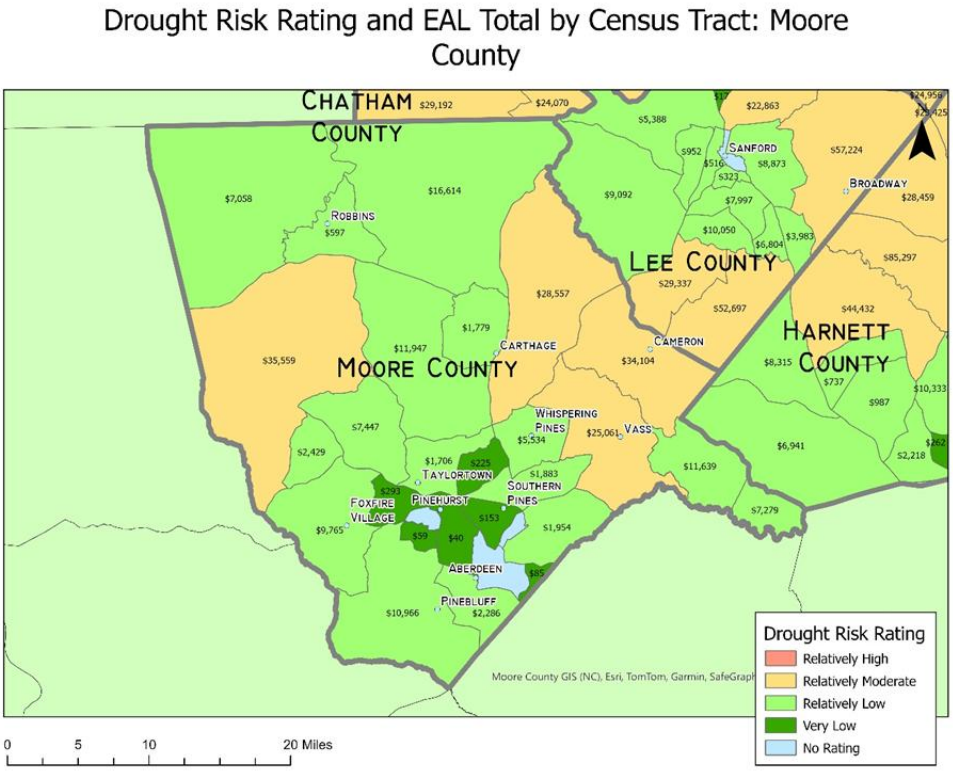


***Figure 5-8**: NRI Drought Risk Rating and EAL Total by Census Tract for Moore County*

5.3.3 Extent

Since the last plan update, no exceptional droughts have been recorded. It should be noted that the North Carolina Drought Monitor also estimates the percentage of the county in each drought severity classification. For example, the most severe classification reported may be exceptional, but a majority of the county may be in a less severe condition. Table 5-9 and Table 5-10 show the percentage of days in NC and the counties in the planning area where drought classification was the highest reported drought condition.

***Table 5-9**: Percentage of Days in Drought in North Carolina where the Drought Category was the highest level of drought reported 6/28/2005 to 6/30/2025*[4]

Drought Category	Sum of Days
D0	26.34%
D1	27.01%
D2	17.24%
D3	6.70%
D4	5.65%
None	17.05%
Grand Total	100.00%

[4] U.S. Drought Monitor, National Drought Mitigation Center at the University of Nebraska-Lincoln, United States Department of Agriculture [USDA], & National Oceanic and Atmospheric Administration [NOAA]. (2025). Cumulative Statistics [Dataset]. In U.S. Drought Monitor. U.S. Drought Monitor. https://droughtmonitor.unl.edu/DmData/DataDownload/ComprehensiveStatistics.aspx

__Table 5-10__: Percentage of days where the drought classification was at or above the drought class from 6/28/2005 to 6/30/2025[5]

County	D0	D1	D2	D3	D4	None
Chatham County	27.01%	18.68%	3.83%	1.25%	1.92%	47.32%
Harnett County	28.64%	18.39%	3.83%	1.25%	1.92%	45.98%
Johnston County	32.57%	15.33%	4.89%	1.05%	1.92%	44.25%
Lee County	24.90%	20.59%	3.26%	1.25%	1.92%	48.08%
Moore County	28.83%	18.49%	4.31%	1.25%	1.92%	45.21%

[5] U.S. Drought Monitor, National Drought Mitigation Center at the University of Nebraska-Lincoln, United States Department of Agriculture [USDA], & National Oceanic and Atmospheric Administration [NOAA]. (2025). Comprehensive Statistics [Dataset]. In U.S. Drought Monitor. U.S. Drought Monitor. https://droughtmonitor.unl.edu/DmData/DataDownload/ComprehensiveStatistics.aspx

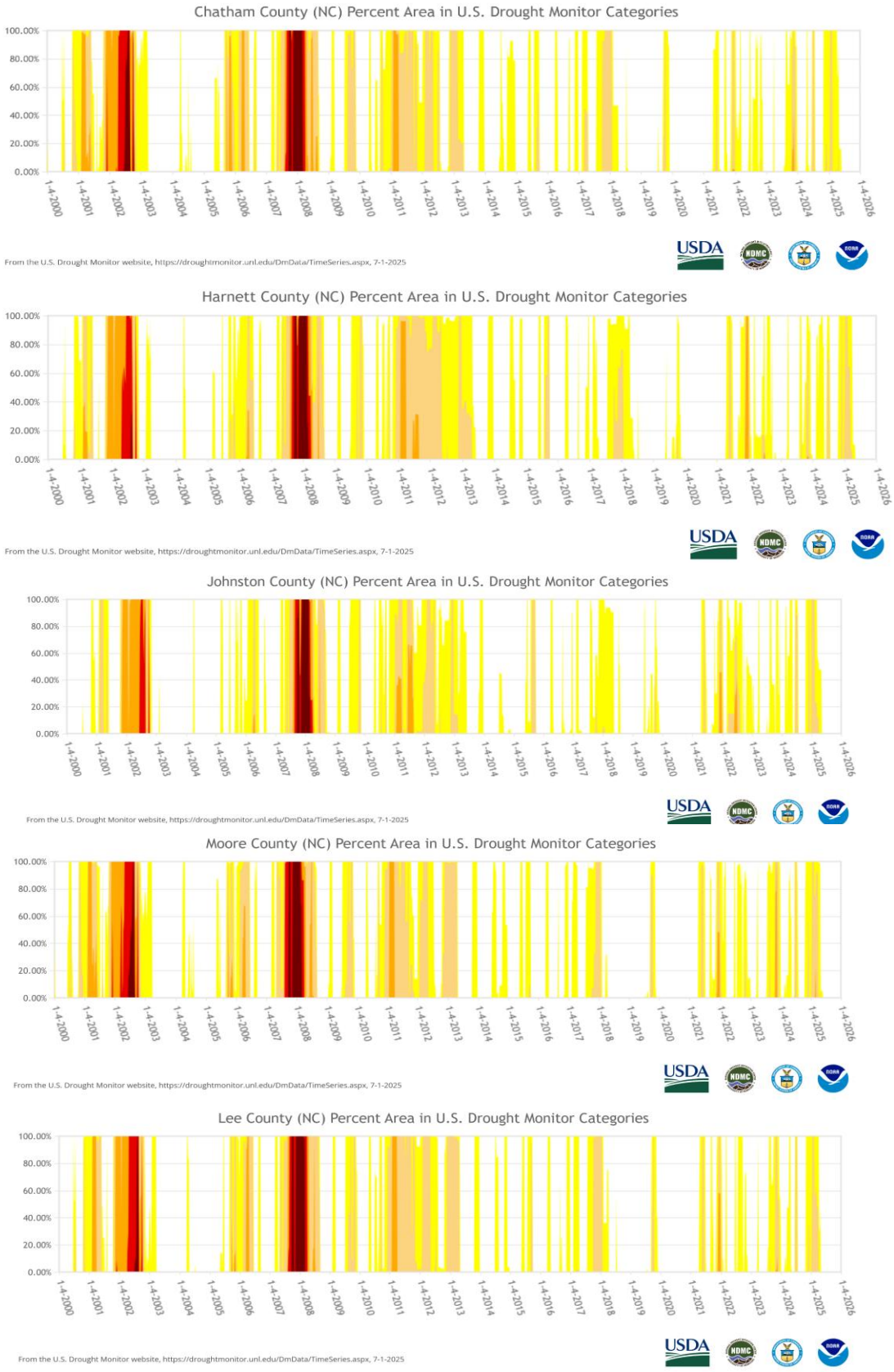


***Figure 5-9**: Percent Area in Drought from the U.S. Drought Monitor*

5.3.4 Historical Occurrences

The U.S. National Drought Monitor is produced through a partnership with the National Drought Mitigation Center at the University of Nebraska-Lincoln, the United States Department of Agriculture, and the National Oceanic and Atmospheric Administration. The drought monitor considers many different factors such as precipitation, reservoir levels, temperature, evaporative demand, soil moisture, and vegetation health. The USDM uses these indicators to provide insight into drought conditions using physical indicators, observations, and local insight from experts. According to the U.S. Drought Monitor, all the counties in the Cape Fear Region experienced drought over the past 20 years. Over this time period, only 17.05% of the days showed that there was no drought in any area of the state. Across the state, D0 was the highest level of drought on 26.34% of the days, followed by D1 on 27.01% of the days, D2 on 17.24%, D3 on 6.7%, and D4 on 5.65%.

The highest level of drought for each county in the planning area was D4 drought, which represented the highest level of drought on 1.92% of the days. The number of days that no drought conditions were reported in each county was 47.32% in Chatham County, 45.98% in Harnett County, 44.25% in Johnston County, 48.08% in Lee County, and 45.21% in Moore County. Table 5-9 shows the number of days where the drought classification was the highest level of drought reported across each county.

5.3.5 Probability of Future Occurrences

The probability of future drought is represented by the U.S. Drought Monitor and the University of Nebraska-Lincoln National Drought Mitigation Center (NDMC), which represents the drought occurrences on a weekly basis since 2000. The Drought Monitor uses multiple indices and indicators to classify drought severity and relies on local condition reports from expert observers.

The average hazard risk index score and EAL Rate National Percentile for jurisdictions and counties in the planning area range from Very High to Relatively Moderate. Chatham County has an average EAL National Percentile rate of 74.50, a relatively high rating, and an average hazard risk index score of 78.12, also a relatively high rating. The total EAL for the census tracts within Chatham County attributed to drought is $137,793, the annualized frequency is 17.28 events per year, and the sum of the impacted area is 716.09 mi². The jurisdiction in Chatham County with the highest EAL, average EAL Rate National Percentile, and average Hazard Risk Index Score is Goldston County, with an EAL of $24,069, a National EAL score of 84.94, and an average Hazard Risk Index score of 94.98. The areas outside of jurisdictional boundaries in Chatham County had the highest expected EAL of $104,553.72, with an average EAL rate national percentile of 85.92 and an average hazard risk score of 88.07.

Census tract areas within Harnett County have an expected sum of impacted area of 803.68 mi^2, have an average annualized frequency of 12.49, a total drought EAL of $1,156,027, an average national percentile EAL Rate of 90.64, and an average hazard risk index score of 91.58. The highest EALs of jurisdictions and the overlapping census tracts in the county are Lillington, Erwin, and Dunn, with total EALs of $192,143, $110,884.05, and $100,786.86, respectively. Each jurisdiction in Harnett County has an Average National Percentile EAL rate and Average Hazard Risk Index Score that are rated as very high. The areas outside of

jurisdictional boundaries had a total impacted area of 202.74 mi^2, an annualized frequency of 15.47 events per year, an EAL total of $173,788.12, and an EAL Rating National Percentile and Hazard Risk Index score that is rated very high.

In Johnston County, the expected area of drought impact is 803.68 mi², the annualized frequency of drought expected is 12.49 events per year, the total EAL is $1,156,027.97, the average EAL rate national percentile is 90.64, and the average hazard risk rating is 91.58. All jurisdictions in Johnston County are rated as having a very high drought EAL national percentile rating and hazard risk index score. Selma had the highest total EAL at $163,095.93, followed by Smithfield and Micro, which had a total EAL of $149,084.87 and $112,237.65, respectively. Areas outside of jurisdictional boundaries had an expected drought area of impact of 276.25 mi^2, an average annualized frequency of 12.97, and a total EAL of $412,933.10.

Lee County had an expected area of impact of 261.82 mi², an average annualized frequency of 16.35 events per year, a total EAL of $216,113.52, an average EAL rate national percentile of 84.41, and an average hazard risk index score of 84.21. All the jurisdictions in Lee County had an average EAL National Percentile Rating and an average Hazard Risk Index Score that are rated as Very High. The jurisdiction with the highest total EAL across the census tract is Selma, with census tracts that had a total drought EAL of $134,078.97, followed by Broadway and areas outside of jurisdictional boundaries, which had total EALs of $85,682.58 and $82,034.55, respectively.

Moore County had an expected total drought area of 712.80 mi², an average drought annualized frequency of 17.51, a drought EAL of $225,018.01, the average EAL rate national percentile is 77.74, and the average hazard risk index score is 78.21. Census tract areas within Carthage jurisdictional boundaries had the highest total EAL of $103,379.39, followed by Robbins and Cameron, which had total EALs of $43,213.39 and $34,104.08, respectively. Carthage had the highest total impacted area of 209.38 mi^2, followed by Robbins and Pinehurst, which had a total impacted area of 187.86 mi^2 and 107.56 mi^2, respectively.

The probability of future Drought is shown in the table below, by jurisdiction.

***Table 5-11**: NRI Drought Sum of Impacted Area, Annualized Frequency, EAL Total, EAL Rate National Percentile, and Average Hazard Risk Index Risk Score based on census tracts that overlap with the jurisdictions in the planning area.*

Jurisdiction	Sum of Impacted Area (Mi^2)	Drought Annualized Frequency	Drought EAL Total	Average EAL Rate National Percentile	Average EAL National Percentile Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Chatham County	**716.09**	**17.45**	**$137,793.50**	**72.86**	**Relatively High**	**71.81**	**Relatively High**
Goldston	119.25	17.82	$24,069.52	84.94	Very High	94.98	Very High
Pittsboro	76.52	17.18	$2,516.34	54.74	Relatively Moderate	56.62	Relatively Moderate

Jurisdiction	Sum of Impacted Area (Mi^2)	Drought Annualized Frequency	Drought EAL Total	Average EAL Rate National Percentile	Average EAL National Percentile Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Siler City	74.33	17.5	$6,653.92	52.30	Relatively Moderate	57.58	Relatively Moderate
Area outside Jurisdictional Boundaries	446.00	17.07	$104,553.72	85.92	Very High	88.07	Very High
Harnett County	**607.29**	**14.77**	**$679,659**	**91.28**	**Very High**	**93.31**	**Very High**
Angier	29.88	14.32	$60,788.23	91.35	Very High	93.25	Very High
Coats	54.66	13.36	$95,940.33	91.56	Very High	96.98	Very High
Dunn	51.50	11.45	$100,786.86	94.01	Very High	95.84	Very High
Erwin	81.28	12.25	$110,884.05	92.87	Very High	96.59	Very High
Lillington	131.97	15.01	$192,143.65	92.18	Very High	94.49	Very High
Area outside Jurisdictional Boundaries	202.74	15.47	$173,788.12	86.04	Very High	90.27	Very High
Johnston County	**803.68**	**12.08**	**$1,156,028**	**96.06**	**Very High**	**96.21**	**Very High**
Archer Lodge	70.21	13.36	$60,087.92	89.27	Very High	91.20	Very High
Benson	47.19	11.88	$91,577.77	92.56	Very High	95.15	Very High
Clayton	100.30	13.36	$54,767.69	87.02	Very High	87.77	Very High
Four Oaks	69.18	11.69	$106,698.71	92.26	Very High	95.25	Very High
Kenly	41.33	11.61	$77,806.85	94.10	Very High	96.39	Very High
Micro	55.16	11.56	$112,237.65	94.00	Very High	96.43	Very High
Pine Level	55.72	11.14	$97,450.75	93.85	Very High	96.96	Very High
Princeton	56.46	10.18	$105,581.17	94.06	Very High	96.33	Very High
Selma	109.58	11.77	$163,095.93	92.13	Very High	93.95	Very High
Smithfield	109.35	11.59	$149,084.87	92.19	Very High	92.73	Very High
Wilson's Mill	53.56	12.73	$60,098.84	90.41	Very High	93.32	Very High
Area outside Jurisdictional Boundaries	276.25	12.97	$412,933.10	90.64	Very High	90.34	Very High

Jurisdiction	Sum of Impacted Area (Mi^2)	Drought Annualized Frequency	Drought EAL Total	Average EAL Rate National Percentile	Average EAL National Percentile Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Lee County	**261.8**	**16.68**	**$216,114**	**78.66**	**Relatively High**	**80.53**	**Very High**
Broadway	90.53	15.91	$85,682.58	90.26	Very High	96.46	Very High
Sanford	217.00	16.32	$134,078.97	83.03	Very High	82.45	Very High
Areas Outside Jurisdictional Boundaries	44.82	16.55	$82,034.55	94.11	Very High	96.54	Very High
Moore County	**712.80**	**18.14**	**$225,018**	**79.09**	**Relatively High**	**78.46**	**Relatively High**
Aberdeen	94.85	16.94	$15,389.86	63.89	Relatively High	61.19	Relatively High
Cameron	34.96	16.55	$34,104.08	90.71	Very High	95.82	Very High
Carthage	209.38	17.50	$103,379.39	87.18	Very High	90.00	Very High
Foxfire Village	85.08	18.14	$21,023.98	88.95	Very High	87.79	Very High
Pinebluff	57.78	16.86	$13,252.58	90.47	Very High	89.98	Very High
Pinehurst	107.56	17.40	$15,325.07	67.48	Relatively High	65.19	Relatively High
Robbins	187.86	19.20	$43,213.39	81.16	Very High	90.34	Very High
Southern Pines	81.64	17.09	$11,579.97	68.37	Relatively High	65.50	Relatively High
Taylortown	33.66	18.14	$9,152.42	88.82	Very High	88.66	Very High
Vass	35.76	16.55	$25,061.25	91.89	Very High	95.32	Very High
Whispering Pines	12.26	16.86	$5,533.97	89.16	Very High	88.91	Very High
Areas Outside Jurisdictional Boundaries	128.92	17.18	$37,960.29	89.93	Very High	90.27	Very High

5.3.6 Impact

5.3.6.1 People

Drought can affect people's health and safety in all jurisdictions in the planning area. Examples of drought impacts on society include anxiety or depression about economic losses, conflicts when there is not enough water, reduced incomes, fewer recreational activities, higher incidents of heat stroke, and even loss of human life. All the jurisdictions are vulnerable in this respect. As a result of drought, there may be less water available for the residents in the planning area, which could result in water shutoffs and boil-water advisories in the event of lower water quality water sources used, leading to dehydration and heat-related illnesses, if accompanied by prolonged or excessive heat.

Without access to adequate hydration and cooling, heat-related illnesses can become more common. Drought events often correspond with an increase of heat-related illness incidents resulting in EMS response, hospitalization, or death, especially with individuals with disabilities (Chatham County 11.8%, Harnett County 15.5%, Johnston County 13%, Lee County 17.7%, and Moore County 14.0% of residents in each county) and individuals with an independent living difficulty (Chatham County 4.8%, Harnett County 6.4%, Johnston County 5.1%, Lee County 6.4%, and Moore County 5.9% of residents in each county) who may require assistance to reach cooling centers, seek medical care for heat related illnesses, or other activities to prevent severe, heat related illnesses. Individuals who have an independent living difficulty, who have a disability, or who do not have a vehicle available in their household (Chatham County 2.9%, Harnett County 3.8%, Johnston County 3.8%, Lee County 4.3%, and Moore County 4.1% of household units in the counties) may require assistance to reach cooling centers, travel to receive medical care for heat related illnesses, or travel to purchase water.

As technology becomes increasingly relied upon for conducting public outreach and awareness, it is important that the planning area develops educational materials in multiple languages and formats to ensure that all residents have the opportunity to be aware of drought risks, understand how to prepare for drought impacts, and mitigate the negative impacts of drought on their households. Residents in the planning area without telephone service (Chatham County 0.5%, Harnett County 0.4%, Johnston County 1.1%, Lee County 0.9%, and Moore County, 0.9% of housing units) may have limited access to any emergency alerts sent with reverse-911 systems or SMS and therefore have a limited capacity to prepare for drought impacts. Residents in housing units without computing devices (Chatham County 5%, Harnett County 6.1%, Johnston County 4.9%, Lee County 5.1%, and Moore County 5.3% of housing units) or without internet subscriptions (Chatham County 13.2%, Harnett County 16.3%, Johnston County 13.7%, Lee County 23.8%, and Moore County 10.2% of housing units) may also have a limited capacity to access resources that assist residents in preparing and responding to drought conditions.

- To reduce disproportionate impacts of drought, the planning area should consider developing public outreach that highlights the risks of drought and ways to mitigate drought impacts. This should include ensuring that all residents are able to receive emergency notifications in a timely manner and in a way that takes into account residents with different abilities, limited telephone access, and limited internet access.

5.3.6.2 Changes in Development or Housing Characteristics

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. When drought conditions persist with no relief, local or State governments must often institute water restrictions. As the planning area population continues to increase— increasing by 23.33% in Chatham County, 19.03% in Harnett County, 34.19% in Johnston County, 11.58% in Lee County, and 16.54% in Moore County from 2010 to 2023– there will likely be more demand for water, which could lead to worsened or more frequent drought conditions.

- To reduce the impacts of drought on the planning area, the planning area should consider implementing drought mitigation actions that warn residents of impending drought conditions, take measures to encourage reduced water consumption to prevent drought, and consider drought mitigation actions.

5.3.6.3 Economy

Examples of economic impacts include farmers who lose money because drought destroyed their crops or who may have to spend more money to feed and water their animals. Businesses that depend on farming, like companies that make tractors and food, may lose business when drought damages crops or livestock. Extreme drought also has the potential to impact local businesses such as landscaping, recreation and tourism, and public utilities. Businesses that sell boats and fishing equipment may not be able to sell some of their goods because drought has dried up lakes and other water sources.

- To reduce the economic impacts of drought in the planning area, the planning area should consider implementing programs to educate those who rely on a consistent water supply and water quality for their businesses to operate about drought prevention, drought impacts, and drought impact mitigation.

5.3.6.4 Natural Environment

Plants and animals depend on water, just as people do. Drought can shrink their food supplies and damage their habitats. Sometimes this damage is only temporary, and other times it is irreversible. 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.

- The planning area should consider mitigation actions that aim to improve the quality of the ecosystem to support retention of soil moisture, promote natural groundwater recharge, and prevent degradation of the ecosystem, which would hinder the environment's ability to reduce drought impacts.

5.3.6.5 First Responders

The overall effect on first responders would be relatively limited when compared to other hazards. Exceptional drought conditions may impact the amount of water immediately available to respond to wildfires and may lead to increased frequency of wildfires in the planning area.

- First responders in the planning area should consider mitigation actions that address preparedness for drought conditions, which could include decreased water supply and increased wildfire occurrences.

5.3.6.6 Future Conditions

According to the North Carolina Climate Science Report (NCCSR)[6], major droughts are likely to become more frequent and more severe because of climate change due to higher temperatures and increased evaporation rates. As a result, the planning area will likely experience more frequent, severe, or persistent drought conditions in the future.

5.4 Extreme Heat

5.4.1 Hazard Description and Background

Extreme heat, like drought, poses little risk to property. However, extreme heat can have devastating effects on health. Extreme heat is often referred to as a "heat wave." According to the National Weather Service, there is no universal definition for a heat wave, but the standard U.S. definition is any event lasting at least three days where temperatures reach ninety degrees Fahrenheit or higher. However, it may also be defined as an event at least three days long where temperatures are ten degrees greater than the normal temperature for the affected area. Heat waves are typically accompanied by humidity, but may also be very dry. These conditions can pose serious health threats, with 20 heat related deaths[7] and 248 hospitalizations for heat related illness (HRI) in NC in 2022[8].

The National Weather Service devised the Heat Index as a mechanism to better inform the public of heat dangers. The Heat Index Chart, shown in Figure 5-10, uses air temperature and humidity to determine the heat index or apparent temperature. Table 5-12 shows the dangers associated with different heat index temperatures. Some populations, such as the elderly and young, are more susceptible to heat danger than other segments of the population.

[6] North Carolina Institute for Climate Studies [NCICS]. (2020). North Carolina Climate Science Report. NCICS. Retrieved January 29, 2025, from https://ncics.org/wp-content/uploads/2020/10/NC_Climate_Science_Report_FullReport_Final_revised_September2020.pdf

[7] Centers for Disease Control and Prevention [CDC]. (2022). Heat & Heat-Related Illness (HRI): Mortality From HRI And Annual Number Of Heat-Related Deaths. National Environmental Public Health Tracking Network. Retrieved July 16, 2025, from https://ephtracking.cdc.gov/DataExplorer/?query=e89ff823-2b59-43a1-ac38-d9f731d26858

[8] Centers for Disease Control and Prevention [CDC]. (2022). Heat & Heat-Related Illness (HRI): Hospitalizations for HRI and Annual Number of Hospitalizations for HRI. National Environmental Public Health Tracking Network. Retrieved July 16, 2025, https://ephtracking.cdc.gov/DataExplorer/?query=6fc06266-3c78-4fd6-8bf3-bd3b3e6b39a8

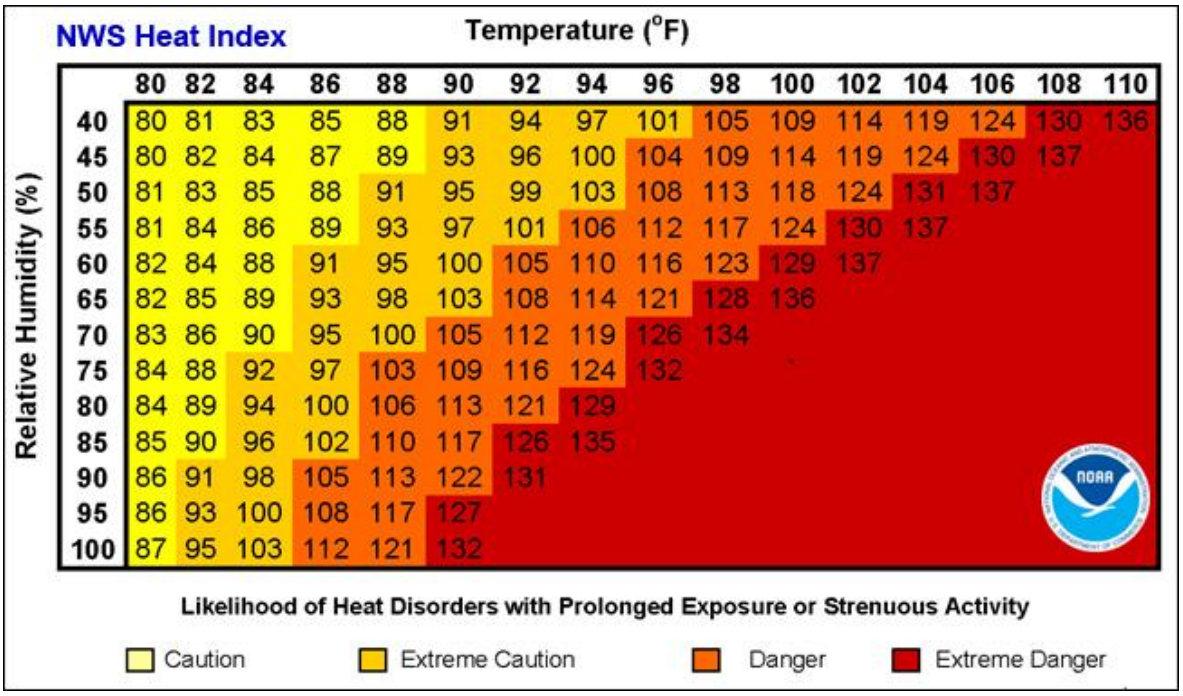


***Figure 5-10**: Heat Index Chart*[9]

***Table 5-12**: Heat Disorders Associated with Heat Index Temperature*[10]

Heat Index Temperature (Fahrenheit)	Description of Risks
80°- 90°	Fatigue is possible with prolonged exposure and/or physical activity
90°- 105°	Sunstroke, heat cramps, and heat exhaustion are possible with prolonged exposure and/or physical activity
105°- 130°	Sunstroke, heat cramps, and heat exhaustion are likely, and heatstroke is possible with prolonged exposure and/or physical activity
130° or higher	Heatstroke or sunstroke is highly likely with continued exposure

In addition, NOAA has seventeen metropolitan areas participating in the Heat HealthWatch / Warning System to better inform and warn the public of heat dangers. A Heat HealthWatch is issued when conditions are favorable for an excessive heat event in the next 12 to 48 hours. A Heat Warning is issued when an excessive heat event is expected in the next 36 hours. Furthermore, a warning is issued when the conditions are occurring, imminent, or have a high likelihood of occurrence. Urban areas participate in the Heat Health Watch/Warning System because urban areas are at greater risk of heat effects. Stagnant atmospheric conditions trap pollutants, thus adding unhealthy air to excessively hot temperatures. In addition, the “urban

[9] NOAA’s National Weather Service. (n.d.-j). What is the heat index? https://www.weather.gov/ama/heatindex
[10] NOAA’s National Weather Service. (n.d.-f). Heat Index Statistics. https://www.weather.gov/tbw/heat

heat island effect" can produce significantly higher nighttime temperatures because asphalt and concrete (which store heat longer) gradually release heat at night.

5.4.2 Location and Spatial Extent

Excessive heat typically impacts a large area and cannot be confined to any geographic or political boundaries. The entire Cape Fear Region is susceptible to extreme heat conditions. The NRI defines a Heat Wave as a period of abnormal heat and humidity lasting 2 days or more, with temperatures outside the historical averages for a given area. Temperatures classified as heat wave events depend on location and on how the National Weather Service (NWS) weather forecast office defines a heat wave event.[11] The following maps represent the risk rating and EAL total of heat wave events in the planning area by census tract:

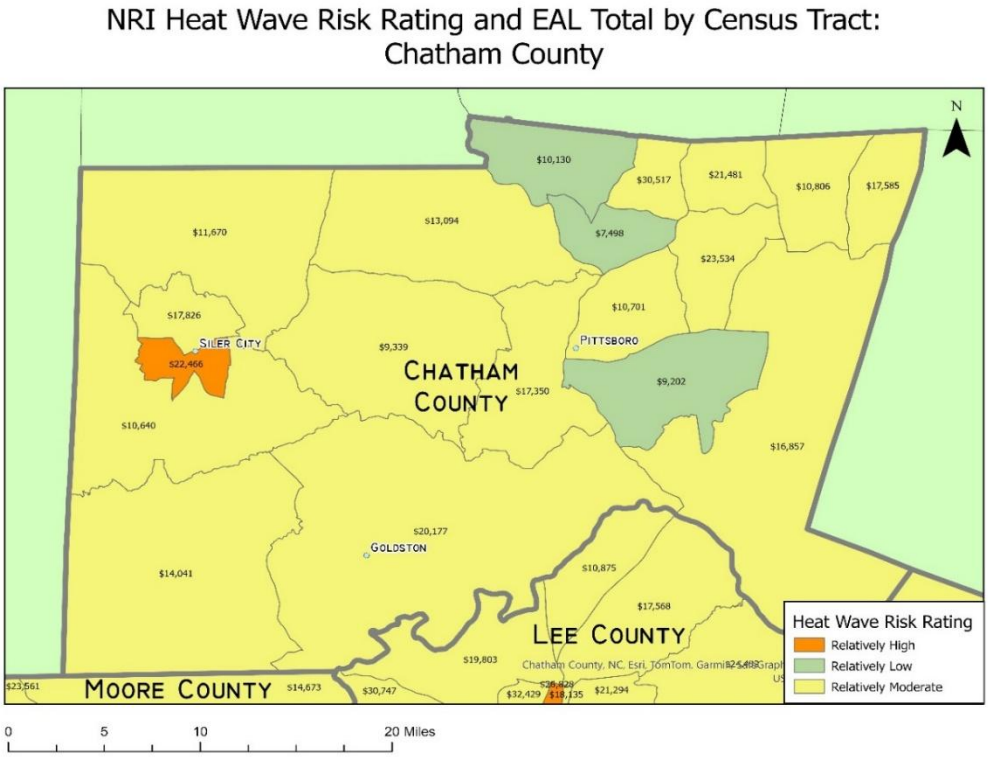


***Figure 5-11**: NRI Heat Wave Risk Rating and EAL Total in Chatham County*

[11] Zuzak, C., Sheehan, A., Goodenough, E., McDougall, A., Stanton, C., McGuire, P., Mowrer, M., Roberts, B., & Rozelle, J. (2023). National Risk Index: Technical Documentation. In Federal Emergency Management Agency, FEMA.gov. Retrieved May 28, 2024, from https://www.fema.gov/sites/default/files/documents/fema_national-risk-index_technical-documentation.pdf

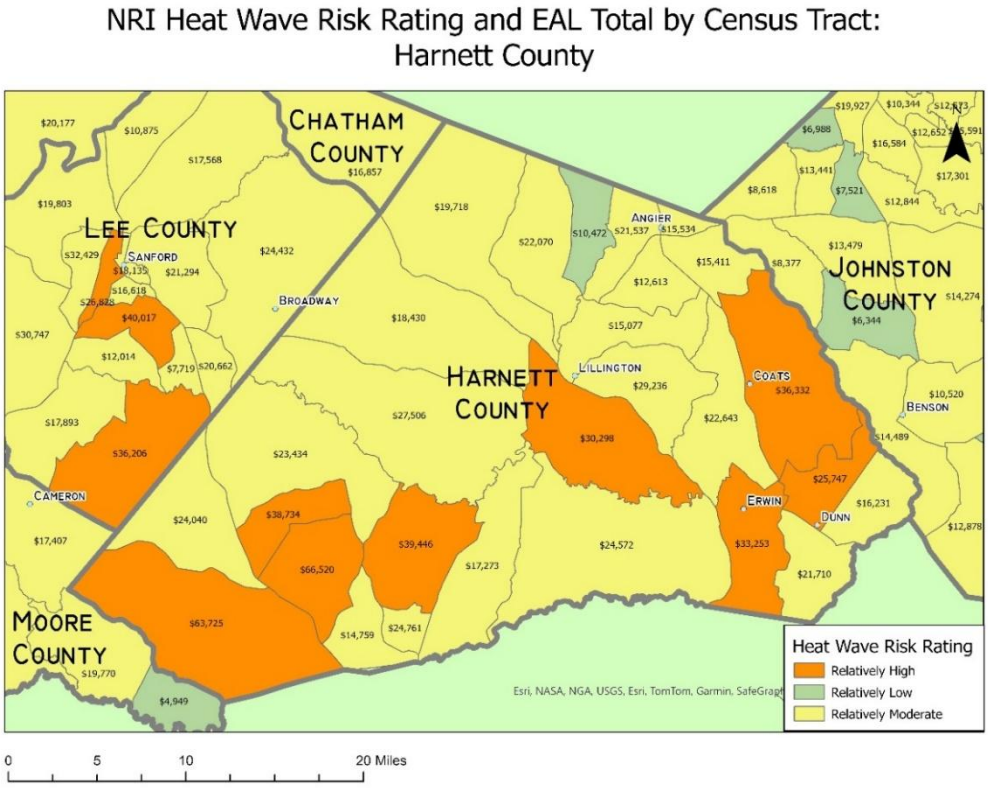


***Figure 5-12**: NRI Heat Wave Risk Rating and EAL Total by Census Tract for Harnett County*

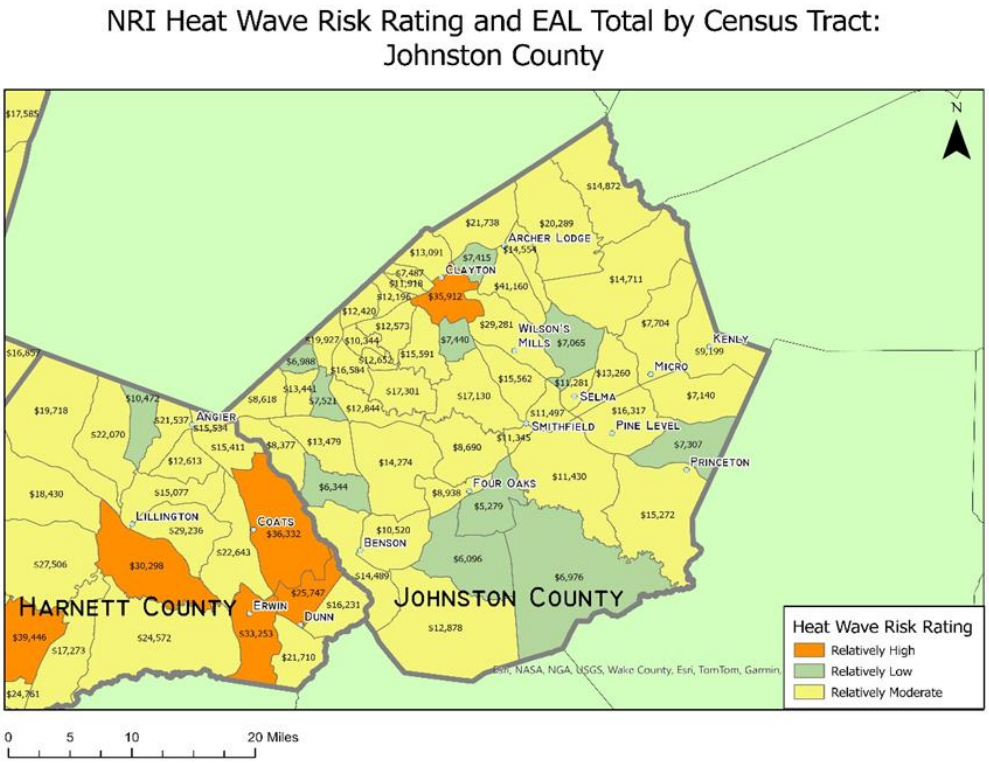


***Figure 5-13**: NRI Heat Wave Risk Rating and EAL Total by Census Tract for Johnston County*

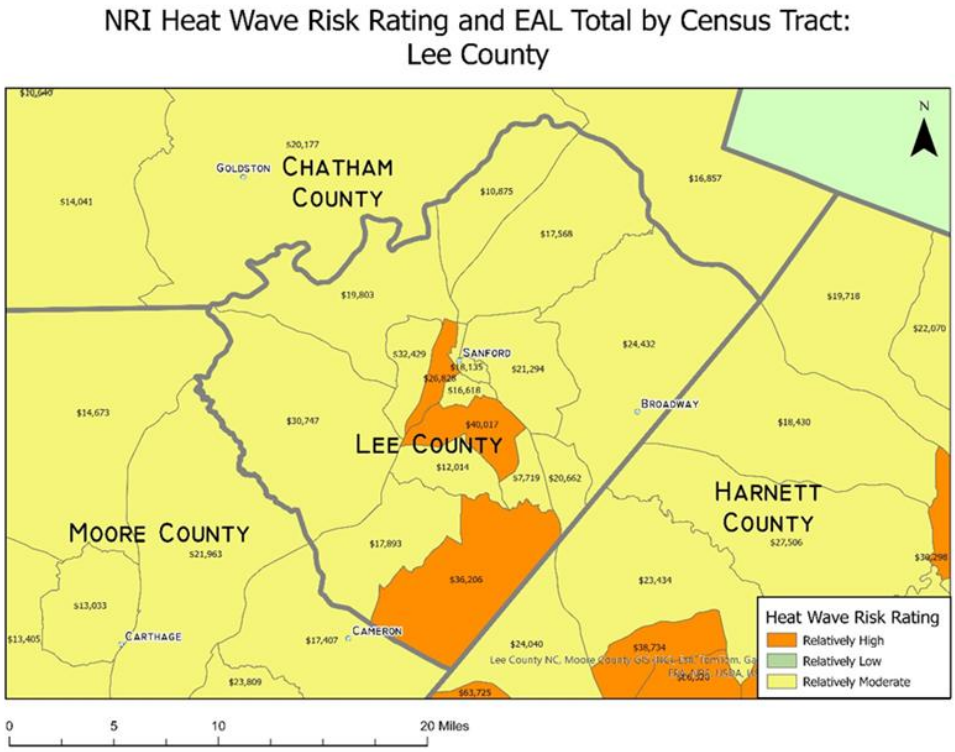


***Figure 5-14**: NRI Heat Wave Risk Rating and EAL Total by Census Tract for Lee County*

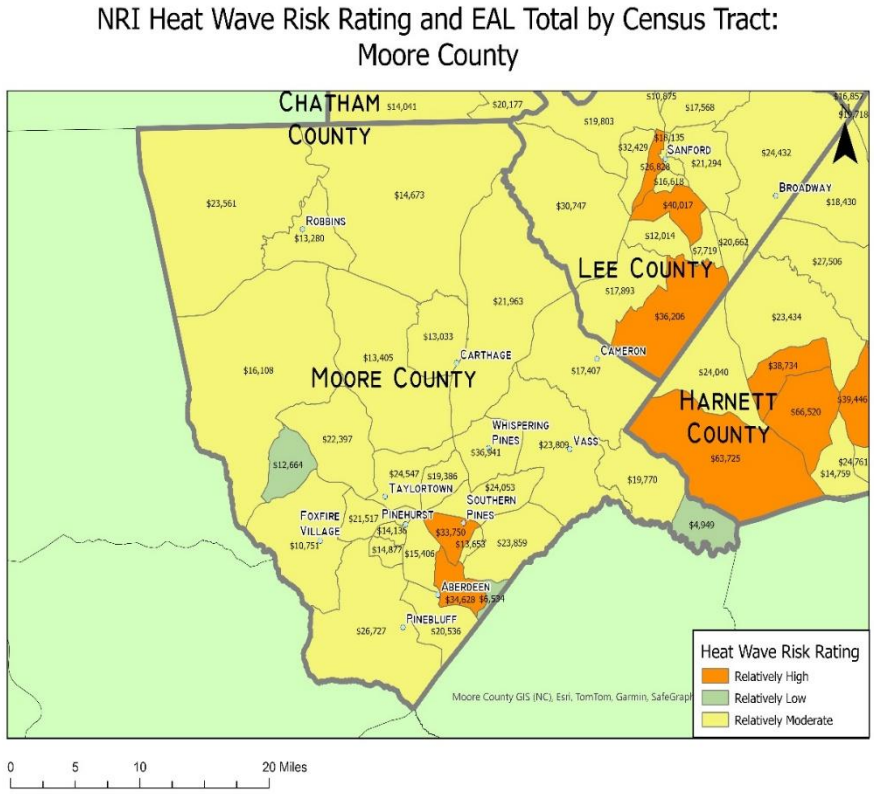


***Figure 5-15**: NRI Heat Wave Risk Rating and EAL Total by Census Tract for Moore County*

5.4.3 Extent

The extent of extreme heat can be defined by the maximum temperature reached. The highest temperature recorded in the Cape Fear Region is 108 degrees Fahrenheit (reported on July 27, 1940) in Chatham County.

Table 5-13: Extreme heat events reported by the NCEI Storm Events Database[12]

Area Reported	Event Date	Direct Deaths	Direct Injuries	Event Narrative
Moore	7/22/1998	0	0	Excessive heat plagued central North Carolina from July 22 to July 23. Maximum temperatures reached the 98-to-103-degree range, combined with dew points in the 78-to-80-degree range, with little wind, resulting in heat index values of around 110 degrees for several hours each afternoon. To make matters worse, the minimum temperatures did not fall below 80 °F at several locations, and those that did achieve that feat for only an hour or two. Strong thunderstorms ended the 2-day excessive heat ordeal on the evening of the 23rd when rain cooled the environment enough to send temperatures into the lower 70s at most locations.
Johnston	7/22/1998	0	0	Excessive heat plagued central North Carolina from July 22 to July 23. Maximum temperatures reached the 98-to-103-degree range, combined with dew points in the 78-to-80-degree range, with little wind to give heat index values of around 110 degrees for several hours each afternoon. To make matters worse, the minimum temperatures did not fall below 80 °F at several locations, and those that did achieve that feat for only an hour or two. Strong thunderstorms ended the 2-day excessive heat ordeal on the evening of the 23rd when rain cooled the environment enough to send temperatures into the lower 70s at most locations.
Harnett	7/22/1998	0	0	Excessive heat plagued central North Carolina from July 22 to July 23. Maximum temperatures reached the 98-to-103-degree range, combined with dew points in the 78-to-80-degree range, with little wind to give heat index values of around 110 degrees for several hours each afternoon. To make matters worse, the minimum temperatures did not fall below 80 °F at several locations, and those that did achieve that feat for only an hour or two. Strong thunderstorms ended the 2-day excessive heat ordeal on the evening of the 23rd when rain cooled the environment enough to send temperatures into the lower 70s at most locations.
Lee	7/22/1998	0	0	Excessive heat plagued central North Carolina from July 22 to July 23. Maximum temperatures reached the 98-to-103-degree range, combined with dew points in the 78-to-80-degree range, with little wind to give heat index values of around 110 degrees for several hours each afternoon. To make matters worse, the minimum temperatures did not fall below 80 °F at several locations, and

[12] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

Area Reported	Event Date	Direct Deaths	Direct Injuries	Event Narrative
				those that did achieve that feat for only an hour or two. Strong thunderstorms ended the 2-day excessive heat ordeal on the evening of the 23rd when rain cooled the environment enough to send temperatures into the lower 70s at most locations.
Chatham	7/22/1998	0	0	Excessive heat plagued central North Carolina from July 22 to July 23. Maximum temperatures reached the 98-to-103-degree range, combined with dew points in the 78-to-80-degree range, with little wind to give heat index values of around 110 degrees for several hours each afternoon. To make matters worse, the minimum temperatures did not fall below 80 °F at several locations, and those that did achieve that feat for only an hour or two. Strong thunderstorms ended the 2-day excessive heat ordeal on the evening of the 23rd when rain cooled the environment enough to send temperatures into the lower 70s at most locations.
Johnston	7/23/1999	1	0	A farm worker was overcome by heat exhaustion. He was taken to the local hospital, where his body temperature was measured at 108. A 3-year-old boy died after he apparently got into his parents' car and could not get out.
Harnett	7/20/2005	1	0	A migrant worker collapsed and died from heat stroke in , atnear Erwin. The man collapsed on a tobacco farm and was transported to UNC Hospital, where he later died.

In addition, information from the North Carolina State Climate Office was reviewed to obtain historical temperature records for the region. Temperature information has been reported since 1940. The recorded maximum for each county can be found below in Table 5-14.

***Table 5-14**: Maximum temperatures reported in the planning area from the NC State Climate Office*[13]

Location	Date	Temperature (°F)
Chatham County	7/29/1952	107
Harnett County	8/22/1983	108
Johnston County	8/18/1988	107
Lee County	8/18/1988	107
Moore County	6/23/1981	107
Cape Fear Region Maximum	**--**	**108**

5.4.4 Historical Occurrences

Data from the National Climatic Data Center was used to determine historical extreme heat and heat wave events in the Cape Fear Region. Although there have been only seven reports in the NCEI Storm events database about extreme heat, these are only the ones that have been

[13] N.C. State Climate Office. (n.d.). Weather Extremes (By N.C. State University). Retrieved July 2, 2025, from https://products.climate.ncsu.edu/extremes/

recorded. The NC State Climate Office reports instances where the heat index exceeds 100, and each report represents a heat index value within a specified range. According to the NC State Climate Office, there were 8 recorded hours with the heat index exceeding 115, 112 recorded hours of the heat index between 110 and 114, 854 recorded hours of the heat index between 105-109, and 4,258 recorded hours of the heat index between 100-104 between 2015 and 2025. Over the past 10 years, there have been 670 reports of the heat index exceeding 100 in Chatham County, 744 in Harnett County, 2612 in Johnston County, 366 in Lee County, and 840 in Moore County. But it should be noted that these records may contain numerous duplicated reports that reflect the same extreme heat event.

Table 5-15 shows the hourly reports where the heat index was within a certain range, and the average percentage of the year represents the percentage of hours that the heat index fell within a certain range between 2015 and 2020. Johnston County had the highest average percentage of the year with reports of the heat index exceeding 100, followed by Moore County, Harnett County, Lee County, and Chatham County, which reported an average of 0.87%, 0.77%, 0.38%, and 0.35% hours of the year with reports of the heat index exceeding 100, respectively. The average percentage of hours in the year with reports of the heat index exceeding 100 in the planning area was 0.68%, meaning that, on average, the heat index exceeded 100 for approximately 60 hours per year.

***Table 5-15**: Count of reports or hours where the heat index was reported above 100 from the NC State Climate Office between 2015 and 2025.*[14]

Weather Station Location	Heat Index Range (total hourly reports)				
	100-104	105-109	110-114	≥115	Above 100
Chatham County	597	63	7	3	670
Siler City	282	21	0	0	303
Siler City Airport (SILR)	315	42	7	3	367
Chatham County Average % of Year	0.31%	0.06%	0.04%	0.03%	0.35%
Harnett County	563	155	26	0	744
Harnett County Airport (KHRJ)	563	155	26	0	744
Harnett County Average % of the year	0.58%	0.22%	0.07%	0%	0.77%
Johnston	2020	516	71	5	2612
Central Crops Research Center, Clayton	405	56	7	0	468
DAQ Clayton Profiler (CLA2)	825	196	40	2	1063
Johnston County Airport (KJNX)	790	264	24	3	1081
Johnston County Average % of Year	0.70%	0.22%	0.05%	0.01%	0.90%
Lee	346	20	0	0	366
Sanford-Lee County Regional Airport (KTTA)	346	20	0	0	366

[14] NC State Climate Office & NC State University [NCSU]. (n.d.). Heat Index Climatology. North Carolina State Climate Office. Retrieved July 17, 2025, from https://products.climate.ncsu.edu/climate/heat-index/

Weather Station Location	Heat Index Range (total hourly reports)				
	100-104	105-109	110-114	≥115	Above 100
Lee County Average % of Year	0.36%	0.05%	0%	0%	0.38%
Moore	732	100	8	0	840
Moore County Airport (KSOP)	732	100	8	0	840
Moore County Average % of Year	0.76%	0.11%	0.03%	0%	0.87%
Planning Area Average	**0.55%**	**0.16%**	**0.05%**	**0.02%**	**0.68%**

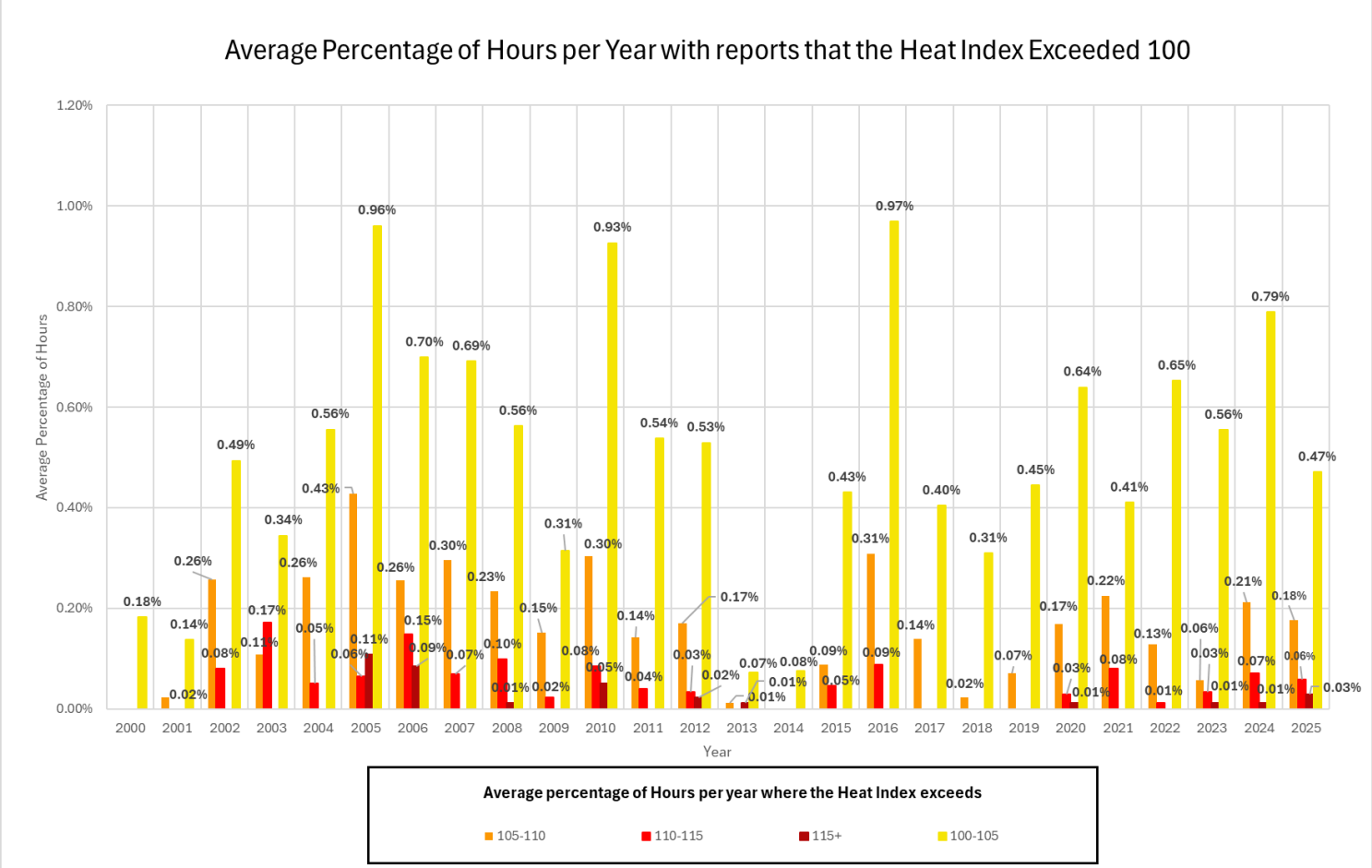


***Figure 5-16**: Average percentage of hours where the heat index exceeded 100, 105, 110, and 115 from the NC State Climate Office*[15]

[15] NC State Climate Office & NC State University [NCSU]. (n.d.). Heat Index Climatology. North Carolina State Climate Office. Retrieved July 17, 2025, from https://products.climate.ncsu.edu/climate/heat-index/

5.4.5 Probability of Future Occurrences

The NRI defines a Heat Wave as a period of abnormal heat and humidity lasting 2 days or more, with temperatures outside the historical averages for a given area. Temperatures classified as heat wave events depend on location and on how the NWS weather forecast office defines a heat wave event.[16] To utilize NRI risk data, EAL data, and risk index data, NRI heat wave data will be used to understand the impact of extreme heat in the planning area.

The counties in the planning area with the highest expected annualized frequency are Harnett County (1.11) and Johnston County (1.11), followed by Lee County (0.8), Moore County (0.8), and Chatham County (0.56). The county with the highest EAL is Harnett County with an EAL of $731,079.70, followed by Johnston County ($696,715.91), Moore County ($558,319.82), Lee County ($353,239.52), and Chatham County ($294,914.16). Harnett, Moore, Lee, and Chatham County all have an average hazard risk score that is considered Relatively High, but Johnston County has an average hazard risk index of Relatively Moderate.

However, these annualized frequencies incorporate only events that are reported as two days or more with temperatures outside of historical averages for the area. Between 2015 and 2025, an average of 0.68% of the hours in the year had a reported heat index of 100 or higher, or approximately 60 hours per year. Although instances of extreme heat with a heat index of 100 or higher may not meet the NRI definition of a Heat Wave, heat indices of 100 or higher have been reported in all counties in the planning area every year between 2015 and 2025.

The probability of future Extreme Heat is shown in the table below, by jurisdiction.

***Table 5-16**: NRI Heat Wave Annualized Frequency, EAL, EAL Rate Percentile, and Hazard Risk Index Score.*

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Rate National Percentile	Average EAL National Percentile Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Chatham County	**0.56**	**$294,914.16**	**59.66**	**Relatively Moderate**	**61.64**	**Relatively High**
Goldston	0.56	$20,177.08	59.91	Relatively Moderate	68.48	Relatively High
Pittsboro	0.56	$37,252.74	59.66	Relatively Moderate	57.75	Relatively Moderate
Siler City	0.56	$50,931.75	59.62	Relatively Moderate	63.98	Relatively High
Area outside Jurisdictional Boundaries	0.56	$186,552.59	59.66	Relatively Moderate	61.46	Relatively High
Harnett County	**1.11**	**$731,079.70**	**66.32**	**Relatively High**	**71.37**	**Relatively High**
Angier	1.11	$65,094.03	66.26	Relatively High	63.77	Relatively High

[16] Zuzak, C., Sheehan, A., Goodenough, E., McDougall, A., Stanton, C., McGuire, P., Mowrer, M., Roberts, B., & Rozelle, J. (2023). National Risk Index: Technical Documentation. In Federal Emergency Management Agency, FEMA.gov. Retrieved May 28, 2024, from https://www.fema.gov/sites/default/files/documents/fema_national-risk-index_technical-documentation.pdf

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Rate National Percentile	Average EAL National Percentile Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Coats	1.11	$58,975.46	66.23	Relatively High	75.37	Relatively High
Dunn	1.11	$96,939.70	66.64	Relatively High	71.41	Relatively High
Erwin	1.11	$102,177.66	66.45	Relatively High	72.82	Relatively High
Lillington	1.11	$158,575.36	66.35	Relatively High	66.76	Relatively High
Area outside Jurisdictional Boundaries	1.11	$264,158.45	66.22	Relatively High	76.36	Relatively High
Johnston County	**1.11**	**$696,715.91**	**56.91**	**Relatively Moderate**	**57.77**	**Relatively Moderate**
Archer Lodge	1.11	$105,155.11	56.78	Relatively Moderate	66.23	Relatively High
Benson	1.11	$67,685.25	59.28	Relatively Moderate	60.63	Relatively High
Clayton	1.11	$215,800.97	56.91	Relatively Moderate	62.55	Relatively High
Four Oaks	1.11	$37,180.48	57.09	Relatively Moderate	51.82	Relatively Moderate
Kenly	1.11	$16,903.46	57.07	Relatively Moderate	50.63	Relatively Moderate
Micro	1.11	$28,103.90	56.79	Relatively Moderate	52.17	Relatively Moderate
Pine Level	1.11	$27,747.29	57.11	Relatively Moderate	60.55	Relatively High
Princeton	1.11	$22,578.48	56.71	Relatively Moderate	55.46	Relatively Moderate
Selma	1.11	$100,131.56	57.18	Relatively Moderate	59.66	Relatively Moderate
Smithfield	1.11	$80,932.89	57.34	Relatively Moderate	56.13	Relatively Moderate
Wilson's Mill	1.11	$69,414.14	56.89	Relatively Moderate	63.18	Relatively High
Area outside Jurisdictional Boundaries	1.11	$201,156.97	56.82	Relatively Moderate	56.55	Relatively Moderate
Lee County	**0.80**	**$353,239.52**	**66.66**	**Relatively High**	**68.41**	**Relatively High**
Broadway	0.96	$42,861.36	66.40	Relatively High	69.46	Relatively High
Sanford	0.80	$299,141.51	66.70	Relatively High	67.75	Relatively High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Rate National Percentile	Average EAL National Percentile Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Areas Outside Jurisdictional Boundaries	0.80	$54,098.01	66.38	Relatively High	73.01	Relatively High
Moore County	**0.80**	**$558,319.82**	**66.75**	**Relatively High**	**65.78**	**Relatively High**
Aberdeen	0.80	$156,219.99	66.73	Relatively High	65.73	Relatively High
Cameron	0.80	$17,407.44	66.81	Relatively High	65.60	Relatively High
Carthage	0.80	$133,549.86	66.76	Relatively High	66.76	Relatively High
Foxfire Village	0.80	$58,994.99	66.81	Relatively High	66.41	Relatively High
Pinebluff	0.80	$47,262.53	66.62	Relatively High	71.40	Relatively High
Pinehurst	0.80	$229,027.95	66.76	Relatively High	70.02	Relatively High
Robbins	0.80	$52,948.57	66.87	Relatively High	65.20	Relatively High
Southern Pines	0.80	$232,758.55	66.73	Relatively High	69.15	Relatively High
Taylortown	0.80	$46,943.86	66.73	Relatively High	71.44	Relatively High
Vass	0.80	$23,808.73	66.81	Relatively High	71.75	Relatively High
Whispering Pines	0.80	$36,940.75	66.61	Relatively High	80.31	Very High
Areas Outside Jurisdictional Boundaries	0.80	$52,055.89	66.65	Relatively High	57.73	Relatively Moderate

5.4.6 Impact

5.4.6.1 People

Extreme heat can affect people's health, leading to increased heat stroke cases and even loss of human life. Staying hydrated and avoiding strenuous outdoor exercise during extreme heat can help prevent adverse health risks. Individuals with underlying health issues or those located in rural areas may be vulnerable due to medical access issues. Individuals with disabilities (11.8% in Chatham County, 15.5% in Harnett County, 13% in Johnston County, 17.7% in Lee County, and 14% in Moore County[17]) and individuals with an independent living difficulty (4.8% in Chatham County, 6.4% in Harnett County, 5.1% in Johnston County, 6.4% in Lee County, and 5.9% in Moore County[18]) may be at an increased risk of negative health impacts due to extreme heat, which could lead to heat related illnesses (HRI), hospitalization, and death. With

[17] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810
[18] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810

limited mobility, due to disability or an independent living difficulty, residents would require assistance to mitigate negative health impacts related to extreme heat.

Due to increased strain on the power supply during extreme heat events, residents may experience power outages and a loss of the ability to adequately power cooling devices. As the planning area increases in population (16.54% increase in Moore County, 11.58% in Lee County, 34.19% in Johnston County, 19.03% in Harnett County, and 23.33% in Chatham County between 2010 and 2023[19]), there may be increased strain on power during extreme heat events and on emergency services while responding to HRI emergencies.

Though technology has become an important tool to communicate extreme heat warnings, distribute extreme heat preparedness information, and communicate with friends, family, neighbors, or emergency services, some residents in the planning area do not have telephone service within their housing unit (0.5% of housing units in Chatham County, 0.8% in Harnett County, 1.1% in Johnston County, 0.6% in Lee County, and 0.9% in Moore County estimated in 2023[20]). Computing devices and the internet have also been critical tools for informing residents about hazard risk, preparedness, and impact mitigation. But, a large number of housing units are estimated not to have access to a computing device (5% of housing units in Chatham County, 6.1% in Harnett County, 3.2% in Johnston County, 5.1% in Lee County, and 5.3% in Moore County estimated in 2023[21]) in their household and not have an internet subscription (13.2% of housing units in Chatham County, 16.3% in Harnett County, 13.7% in Johnston County, 23.8% in Lee County, and 10.2% in Moore County in 2023[22]) in their household. Additionally, a significant number of households are estimated to be “Limited English-Speaking Households” (2.9% in Chatham County, 1.4% in Harnett County, 2.0% in Johnston County, 3.5% in Lee County, and 2.1% in Moore County[23]). Not having internet access, not having a computing device, and not preparing hazard mitigation information in multiple languages can prevent residents from using communication and education resources aimed at reducing negative hazard impacts in the planning area. This can act as a barrier to accessing important information about cooling centers, preventing negative health impacts, and preparedness for extreme heat events to reduce the disproportionate impacts on vulnerable populations.

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[19] U.S. Census Bureau. (n.d.). TOTAL POPULATION. Decennial Census, DEC Summary File 1, Table P1. Retrieved June 16, 2025, from https://data.census.gov/table/DECENNIALSF12010.P1
U.S. Census Bureau, U.S. Department of Commerce. (n.d.). ACS Demographic and Housing Estimates. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP05. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP05

[20] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[21] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[22] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[23] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Limited English Speaking Households. *American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1602*. Retrieved June 16, 2025, from https://data.census.gov/table/ACSST5Y2023.S1602

- Ensure all residents have a way to receive emergency alerts and to contact emergency services from their housing unit during extreme heat events.
- Ensure all residents can access emergency preparedness communications to prevent negative impacts of extreme heat events.

5.4.6.2 Changes in Development or Housing Characteristics

All counties in the planning area have experienced an increase in housing units between 2013 and 2023, with Chatham County up 20.8%, Harnett County up 14.08%, Johnston County up 29.87%, Lee County up 11.35%, Moore County up 11.92%, and the planning area up 19.3% overall. An increase in housing units can lead to more frequent power outages during extreme heat events as residents utilize more power for cooling devices. Increased development can lead to higher concentrations of infrastructure that absorb heat, creating the heat island effect, which can form under many conditions, including in small cities, large cities, and suburban areas. This is due to reduced natural landscapes, which normally provide natural cooling, shade, and moisture to mitigate extreme heat impacts; increased absorption of solar energy by human-made materials; and heat generated by human activities.[24]

- Updating building codes and landscape best management practices can increase energy efficiency during extreme heat events and reduce strain on power supplies.
- Local governments could provide public drinking fountains, cooling shelters, and swimming pools to keep individuals cool.

5.4.6.3 Economy

All major industries in the planning area require power availability and would be impacted by an extreme heat event that causes power interruptions or outages. Increasing power demand can also raise power costs during peak periods, negatively impacting businesses in the planning area by increasing utility costs. Additionally, individuals working outdoors during extreme heat events in professions such as construction, landscaping, agriculture, and public safety face an increased risk of heat-related illnesses. To reduce the economic impact of extreme heat events, the planning area should consider:

- Provide education to residents in the planning area about the risk of HRI among outdoor workers and how to prevent it.
- Evaluate the current grid capacity and upgrade capacity to handle increased power strain from extreme heat impacts.
- Promote energy-efficient building upgrades and appliances

5.4.6.4 Natural Environment

Extreme heat can impact the environment in the planning area by damaging sensitive vegetation. When trees are replaced with impervious surfaces and materials in urban areas it contributes to the heat island effect. Urban forests (street trees and wooded areas) can mitigate

[24] US Environmental Protection Agency. (2025, April 3). What are heat islands? US EPA. Retrieved July 17, 2025, from https://www.epa.gov/heatislands/what-are-heat-islands

heat islands, reducing local air temperatures by up to 9°Farenheit.[25] As development increases in the planning area, the natural environment and the urban heat island effect are likely to be affected.

5.4.6.5 First Responders

Extreme heat events may lead to increased wildfire occurrence, which could impact the first responders in the planning area by increasing the instances of wildfire events and putting first responders at a greater risk of HRI.

5.4.6.6 Future Conditions

According to the NCCSR[26], the years between 2009 and 2018 have been the warmest 10-year period in North Carolina (NC), with an average of 0.6°F warmer than the warmest decade of the 20th century, which was 1930 to 1939. The NCCSR also states that temperatures in NC are very likely to increase across all seasons, with projected increases of 6-10°F (higher scenario) and 2-6°F (lower scenario). Other notable projections show that the number of warm nights (nighttime minimum temperature of 70°F or higher) and very warm nights (nighttime minimum temperature of 75°F or higher) is very likely to increase. The NCCSR reports that it is very likely that summer heat index values and humidity will increase, and that the number of hot (daytime maximum temperature of 90°F or higher) and very hot (daytime maximum temperature of 95°F or higher) days will likely increase.

[25]U.S. Department of Health and Human Services Centers for Disease Control and Prevention. Extreme Heat Can Impact Our Health in Many Ways. Retrieved from: https://www.cdc.gov/climateandhealth/pubs/EXTREME-HEAT-Final_508.pdf

[26] North Carolina Institute for Climate Studies [NCICS]. (2020). North Carolina Climate Science Report. NCICS Retrieved January 29, 2025, from https://ncics.org/wp-content/uploads/2020/10/NC_Climate_Science_Report_FullReport_Final_revised_September2020.pdf

5.5 Hurricane and Tropical Storm

5.5.1 Hazard Description and Background

Hurricanes and tropical storms are classified as cyclones. They are characterized by a closed circulation around a low-pressure center, with winds rotating counterclockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere), and a diameter of 10 to 30 miles. 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 poleward 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. Most hurricanes and tropical storms form in the Atlantic Ocean, the Caribbean Sea, and the Gulf of Mexico during the official Atlantic hurricane season, which runs from 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 closely monitored by the National Hurricane Center in Miami, Florida. When sustained winds reach or exceed 74 miles per hour, the storm is deemed a hurricane. Hurricane intensity is further classified by the Saffir-Simpson Scale (Table 5-17), which rates hurricane intensity on a scale of 1 to 5, with 5 being the most intense.

***Table 5-17**: Saffir-Simpson Scale*

Category	Maximum Sustained Wind Speed (MPH)	Minimum Surface Pressure (Millibars)
1	74–95	Greater than 980
2	96–110	979–965
3	111–129	964–945
4	130–156	944–920
5	157 +	Less than 920

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 5-18 describes the damage that could be expected for each category of hurricane. Damage during hurricanes may also result from spawned tornadoes, storm surge, and inland flooding associated with heavy rainfall that usually accompanies these storms.

***Table 5-18**: 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 crafts 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 the lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.	

Source: National Hurricane Center; Federal Emergency Management Agency

5.5.2 Location and Spatial Extent

Hurricanes and tropical storms threaten the entire Atlantic and Gulf seaboard of the United States. While coastal areas are most directly exposed to the brunt of landfalling storms, their impact is often felt hundreds of miles inland, including the Cape Fear Region. All areas in the Cape Fear Region are equally susceptible to hurricanes and tropical storms. The NRI utilizes

NOAA's National Centers for Environmental Prediction HURDAT2 Best Track Data Archive[27] from 1851 to 2020 to calculate the risk values and related risk data, which includes the EAL displayed by census track in the maps below. The maps below also include the International Best Track Archive for Climate Stewardship (IBTRACS),[28] which represent the location, intensity, and path of tropical cyclones from the 1840s to the present in 3-hour intervals, if available. Other data parameters may also be included in the records, but it depends on the source data agency.

[27] National Oceanic and Atmospheric Association [NOAA] & National Hurricane Center [NHC]. (2021). HURDAT2 Best Track Data Archive [Dataset]. In NHC.NOAA.gov. https://www.nhc.noaa.gov/data/

[28] Gahtan, J., Knapp, K., Schreck, C., Diamond, H., Kossin, J., & Kruk, M. (2025). International Best Track Archive for Climate Stewardship (IBTRACS) Project [Dataset]. In National Oceanic and Atmospheric Administration [NOAA], National Centers for Environmental Information (NCEI). NCEI. https://doi.org/10.25921/82ty-9e16

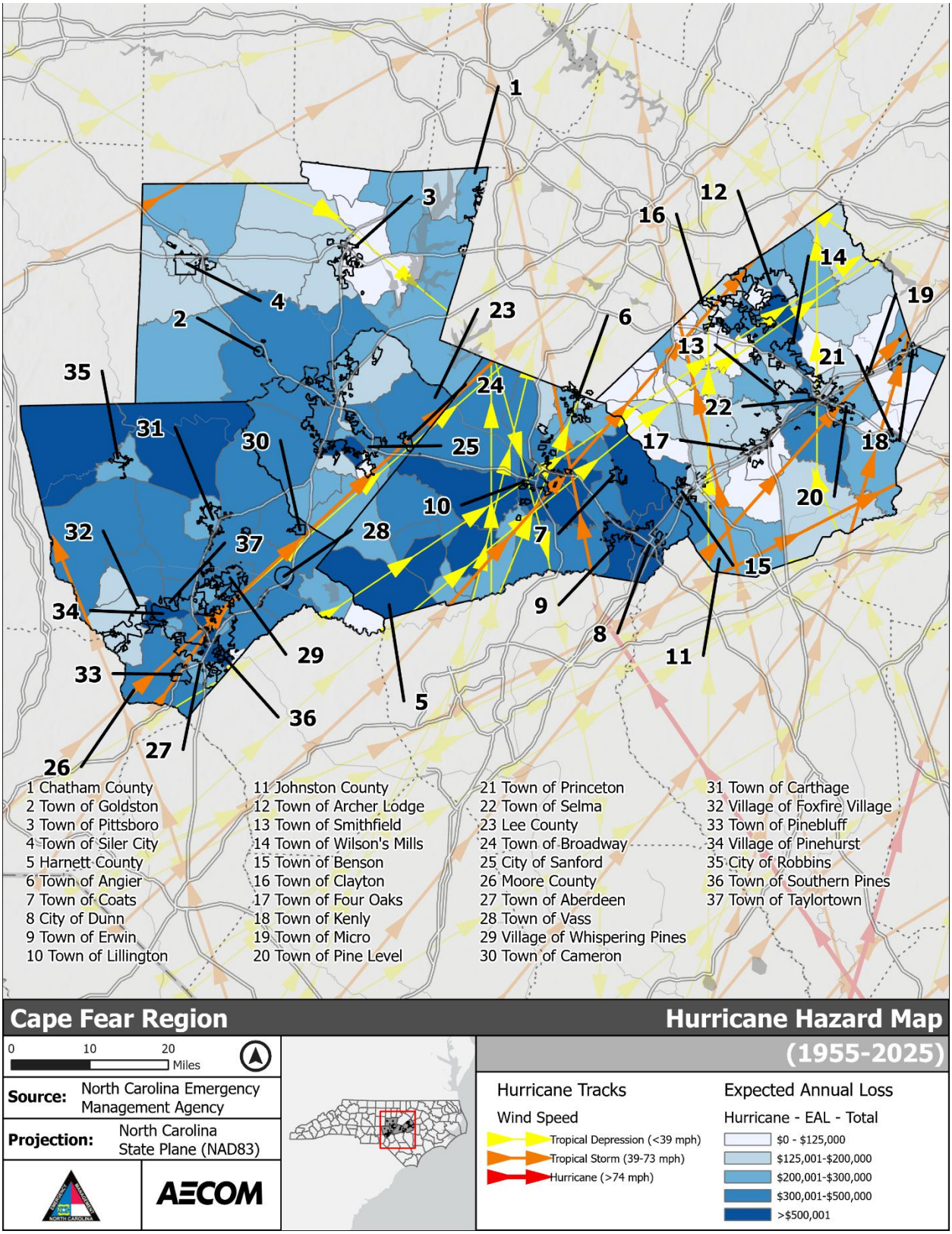

***Figure 5-17**: Hurricane Hazard Area - Regional*

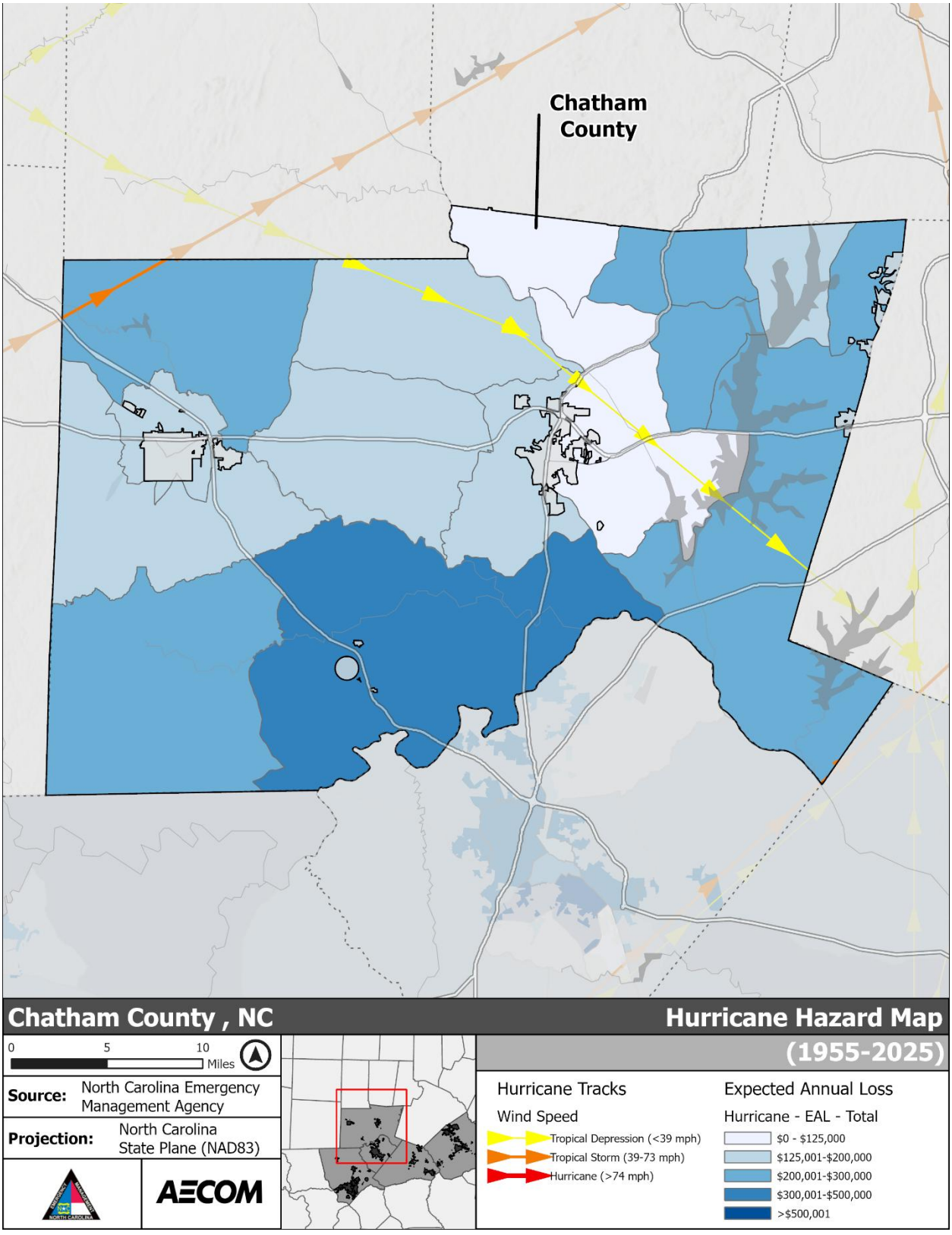

***Figure 5-18**: Hurricane Hazard Area – Chatham County*

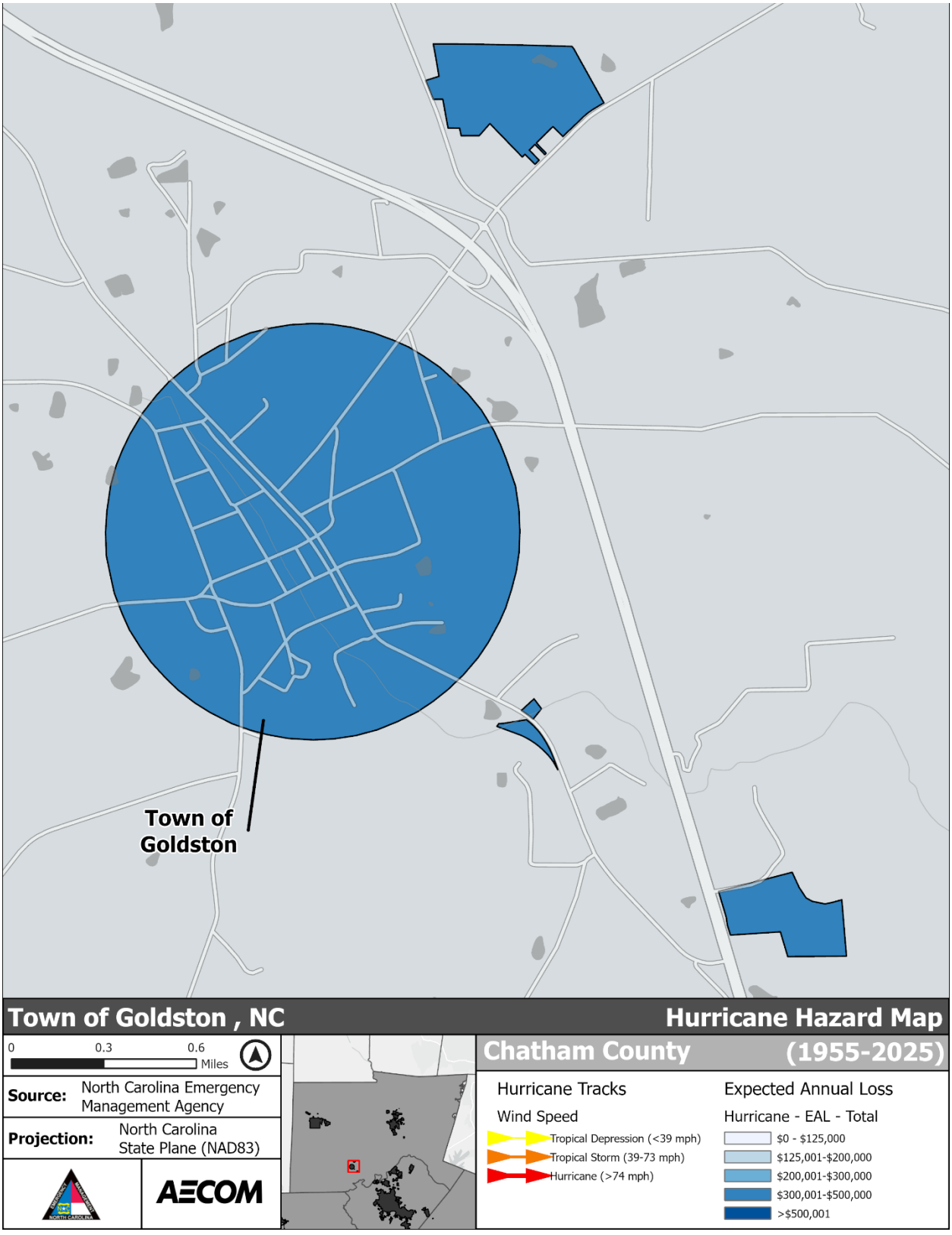

***Figure 5-19**: Hurricane Hazard Area – Town of Goldston*

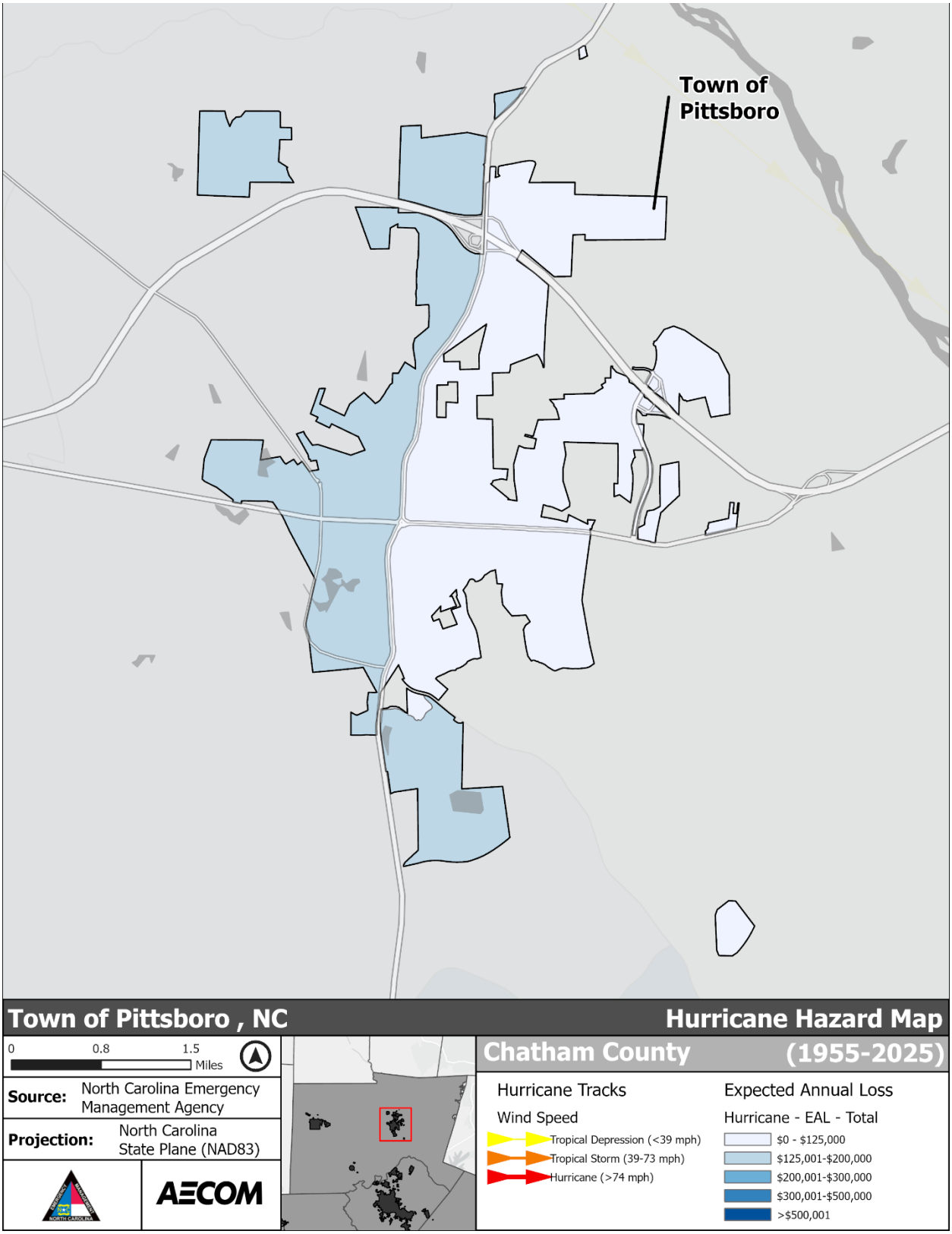

***Figure 5-20**: Hurricane Hazard Area – Town of Pittsboro*

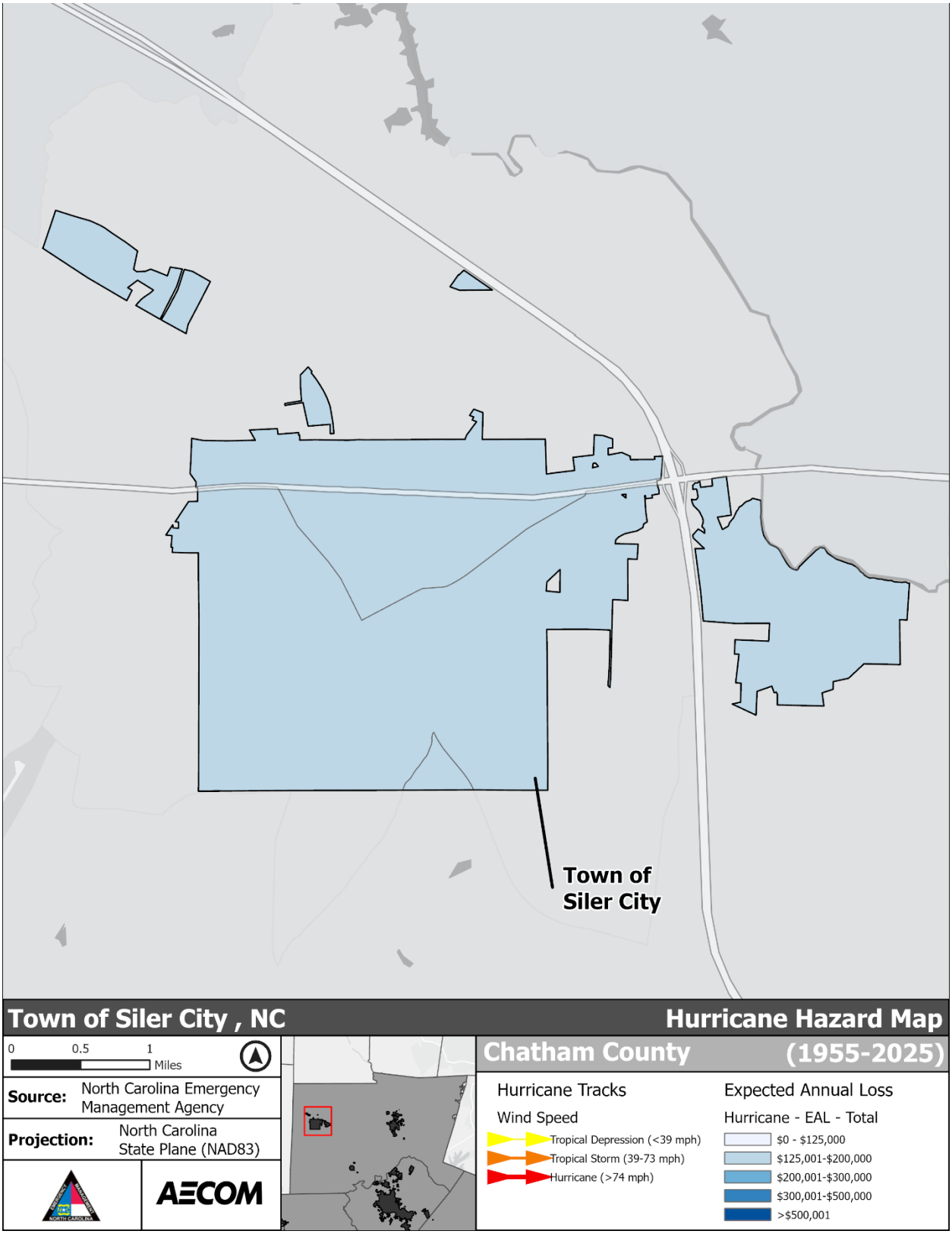

***Figure 5-21**: Hurricane Hazard Area – Town of Siler City*

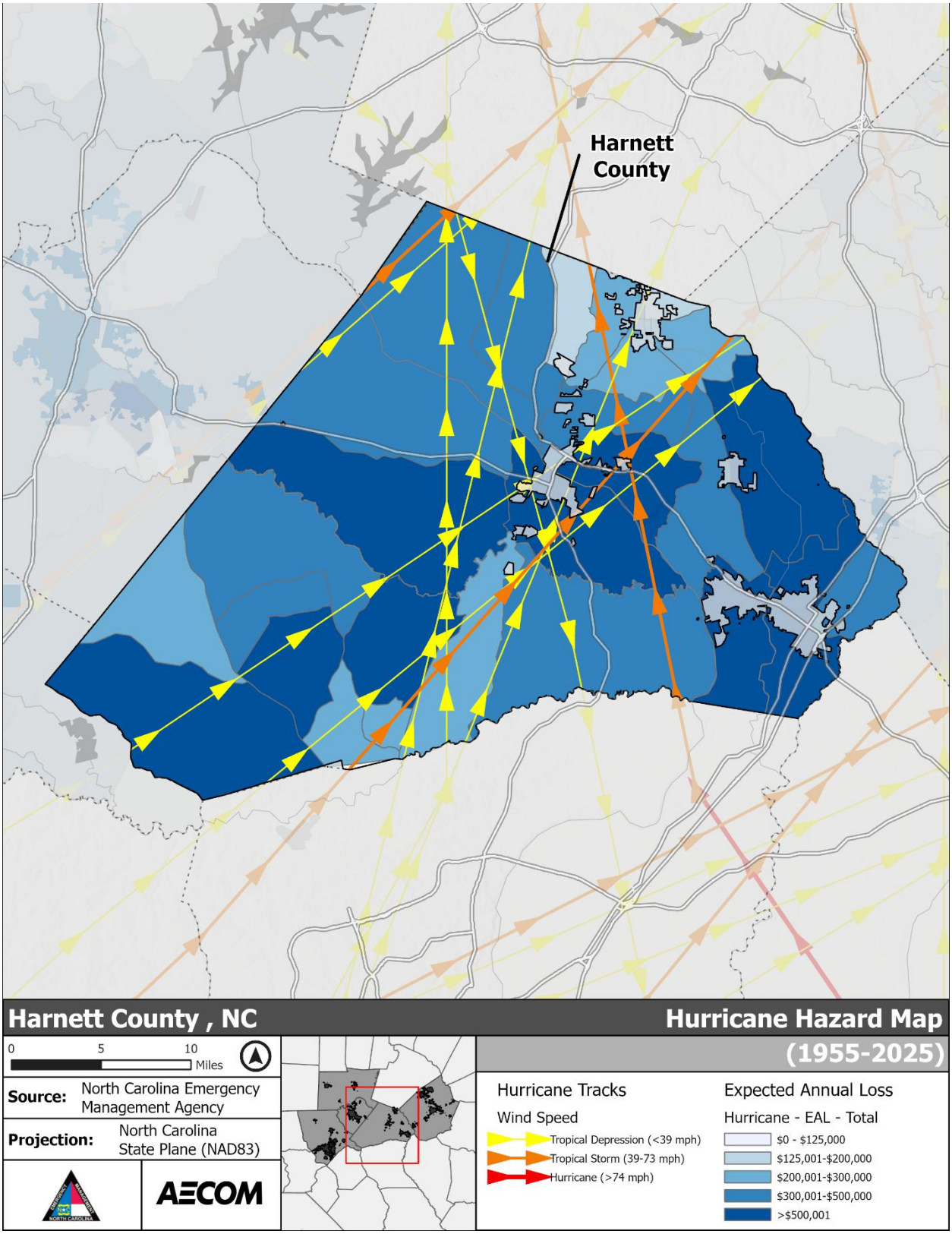

***Figure 5-22**: Hurricane Hazard Area – Harnett County*

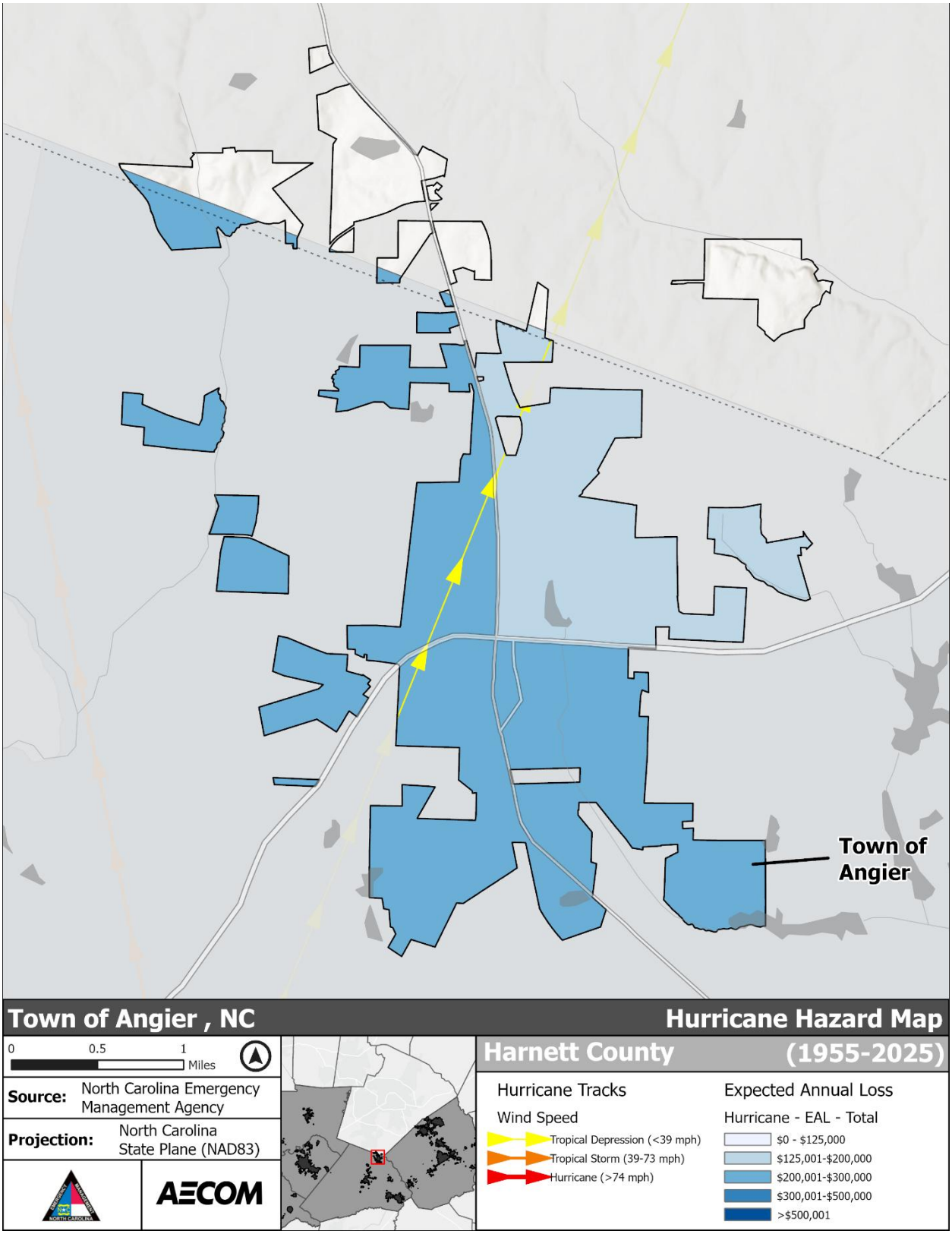

***Figure 5-23**: Hurricane Hazard Area – Town of Angier*

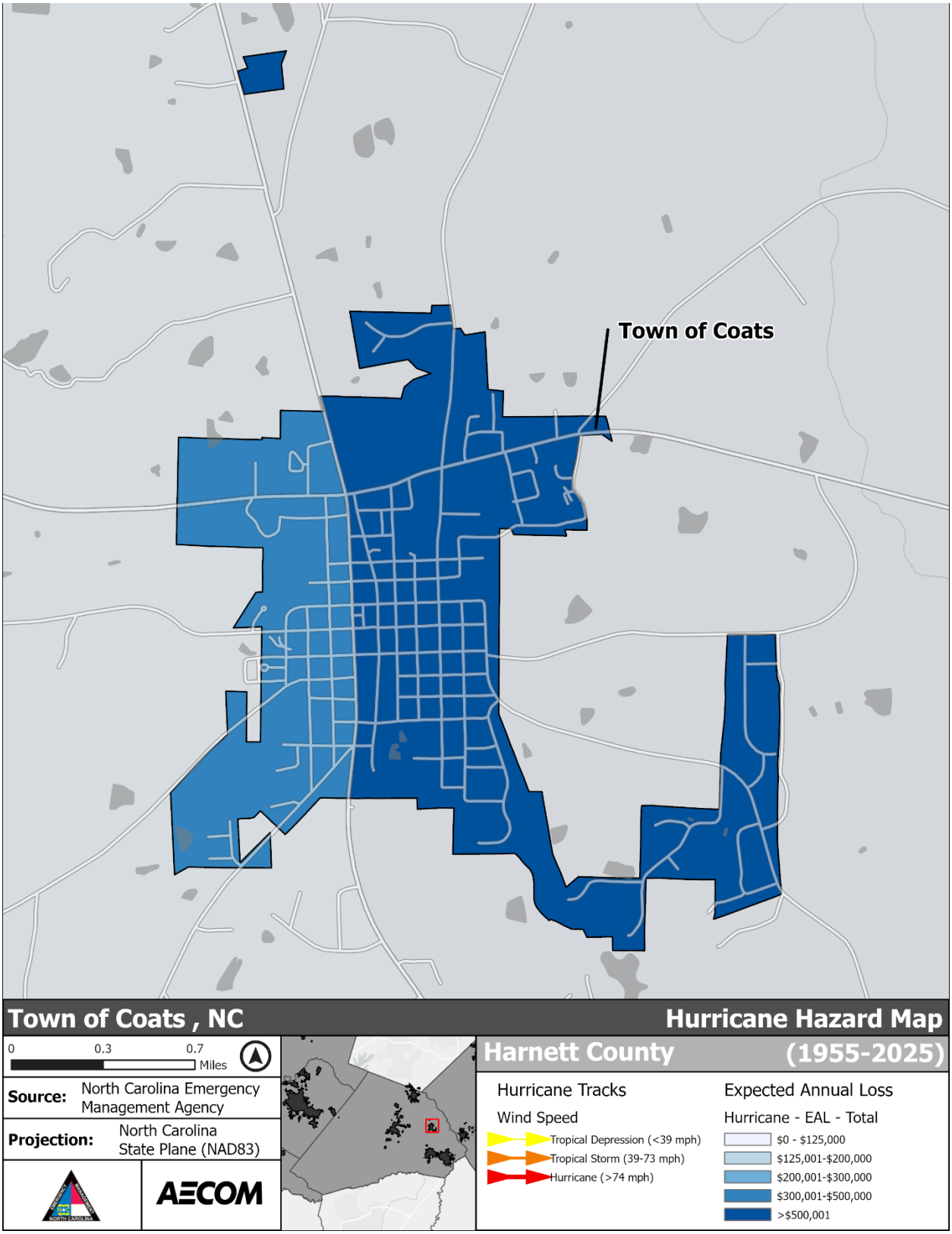

***Figure 5-24**: Hurricane Hazard Area – Town of Coats*

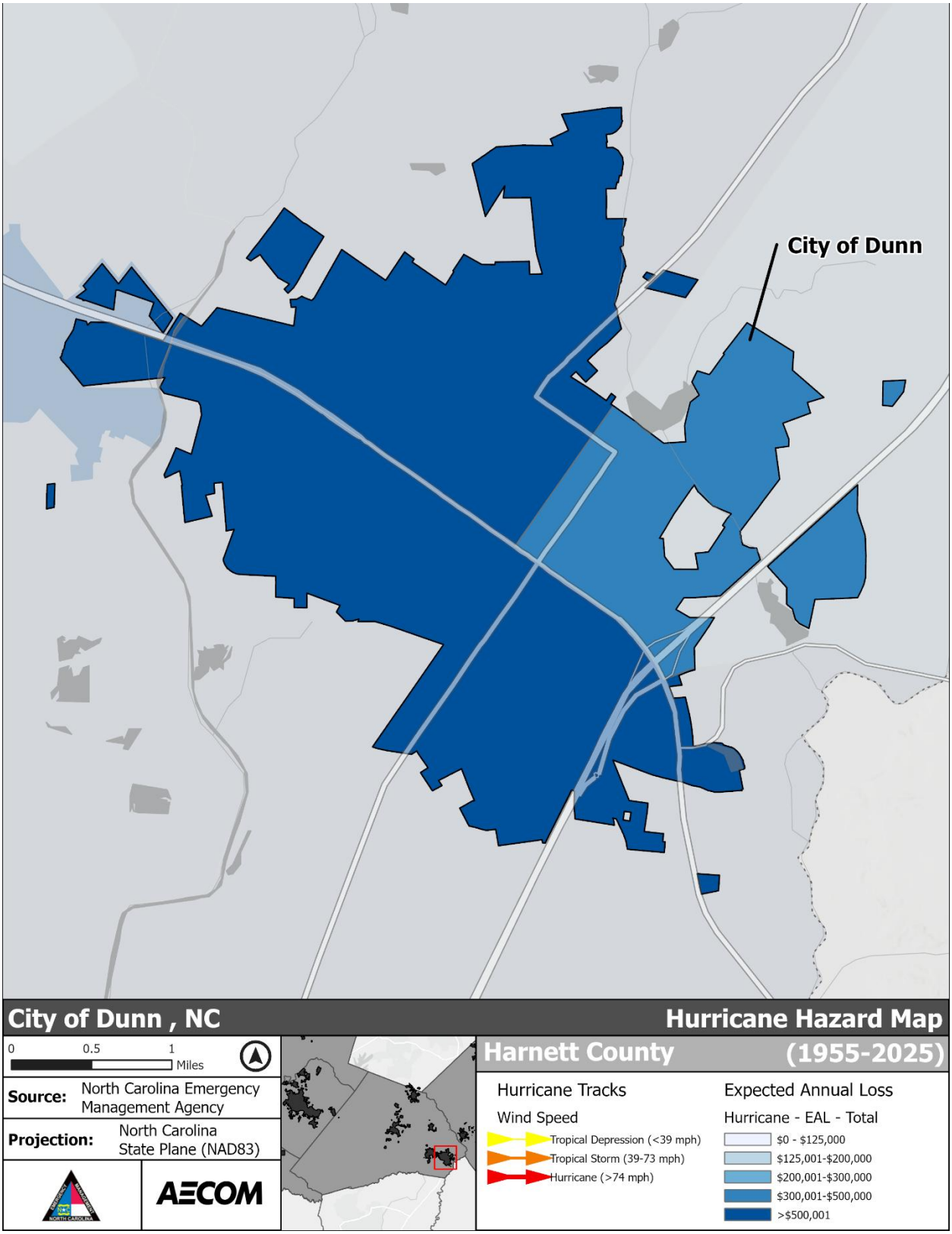

***Figure 5-25**: Hurricane Hazard Area – City of Dunn*

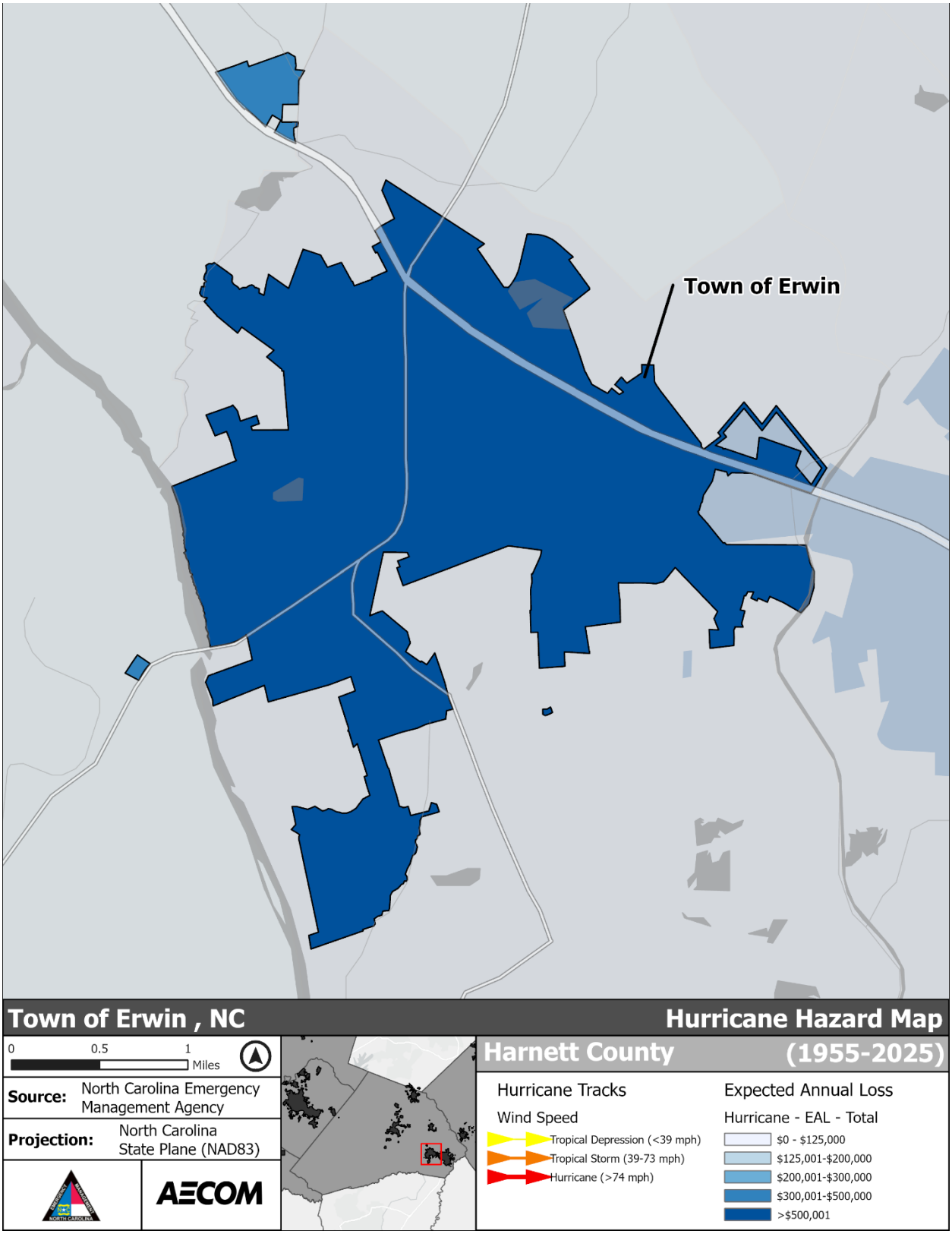

***Figure 5-26**: Hurricane Hazard Area – Town of Erwin*

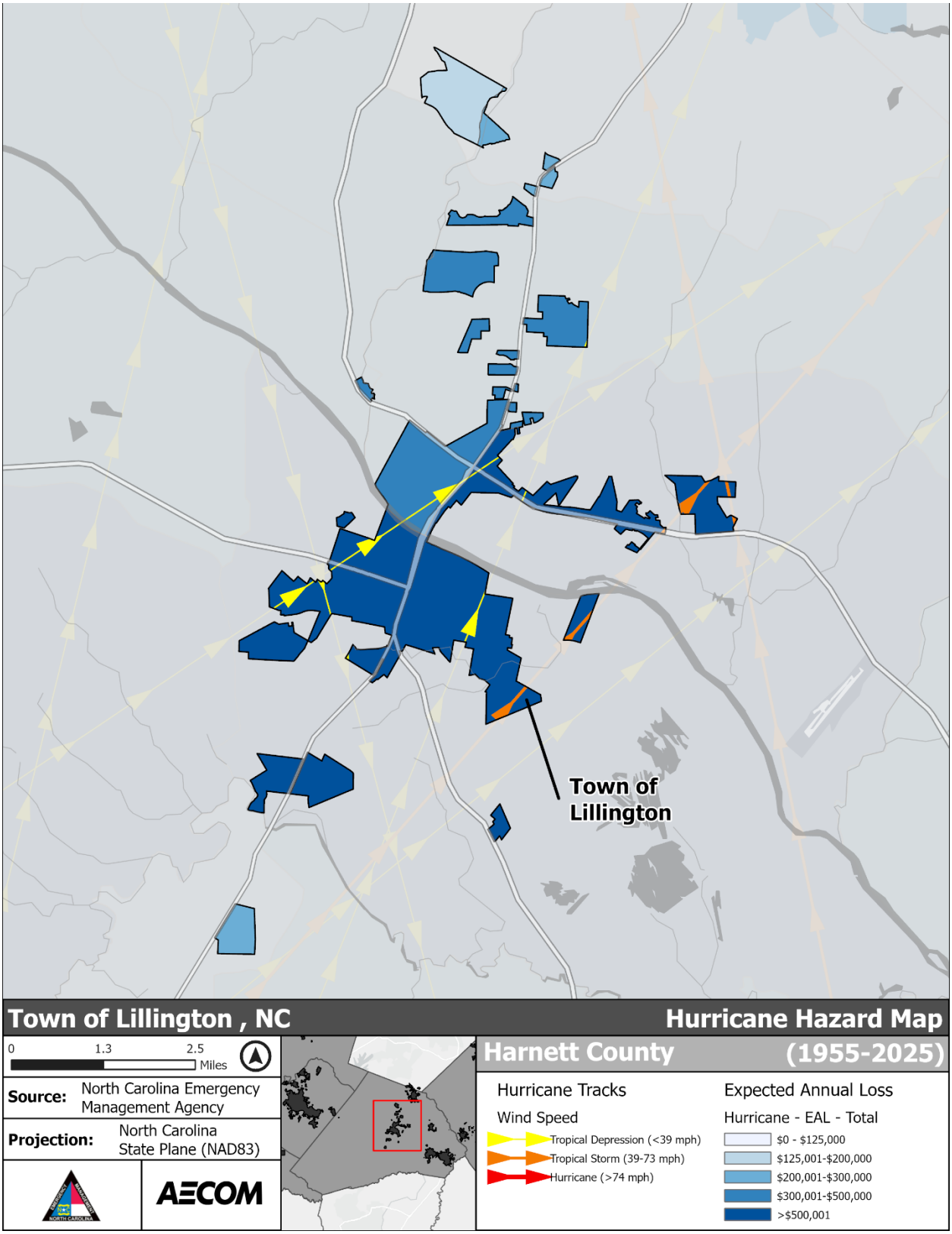

***Figure 5-27**: Hurricane Hazard Area – Town of Lillington*

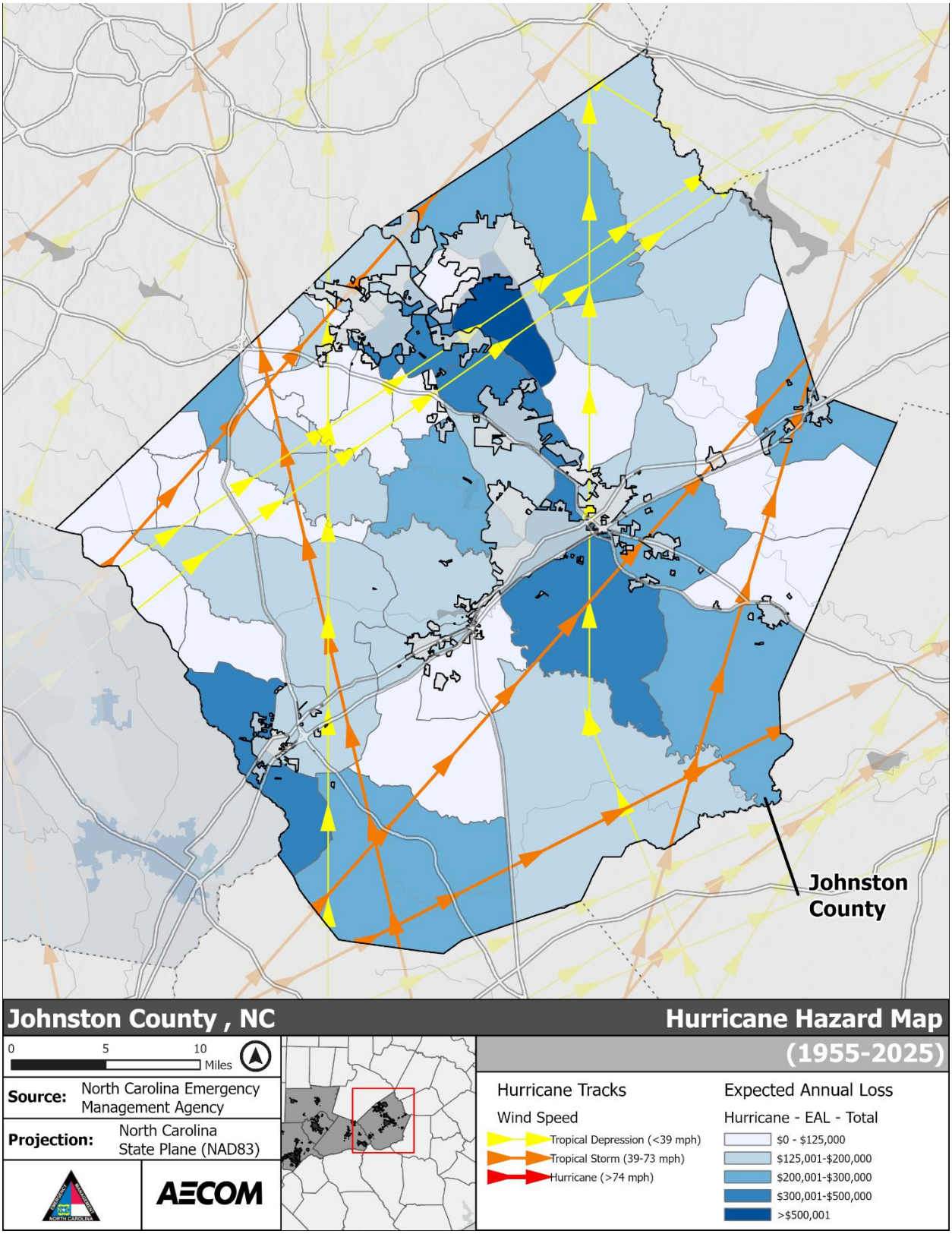

***Figure 5-28**: Hurricane Hazard Area - Johnston County*

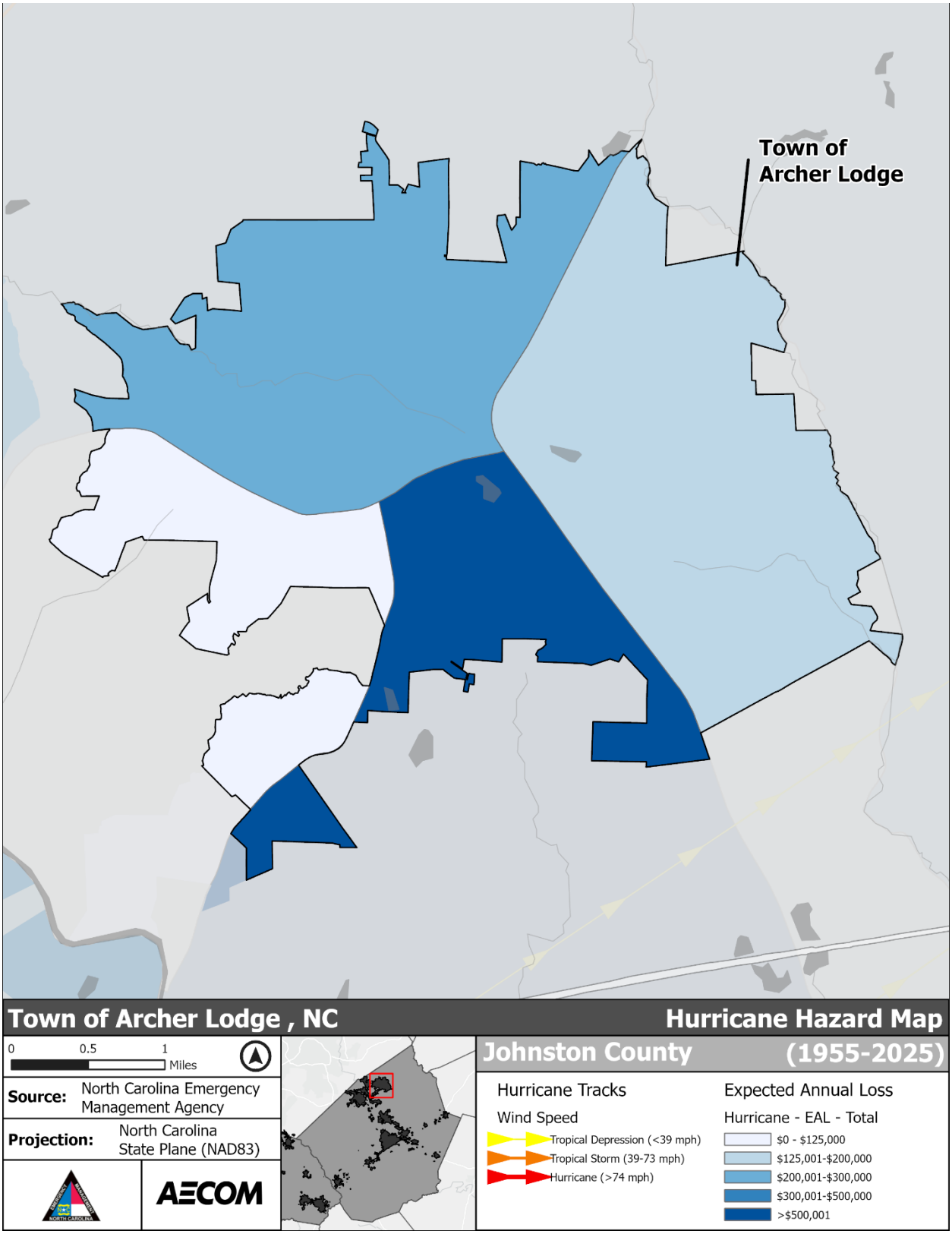

***Figure 5-29**: Hurricane Hazard Area – Town of Archer Lodge*

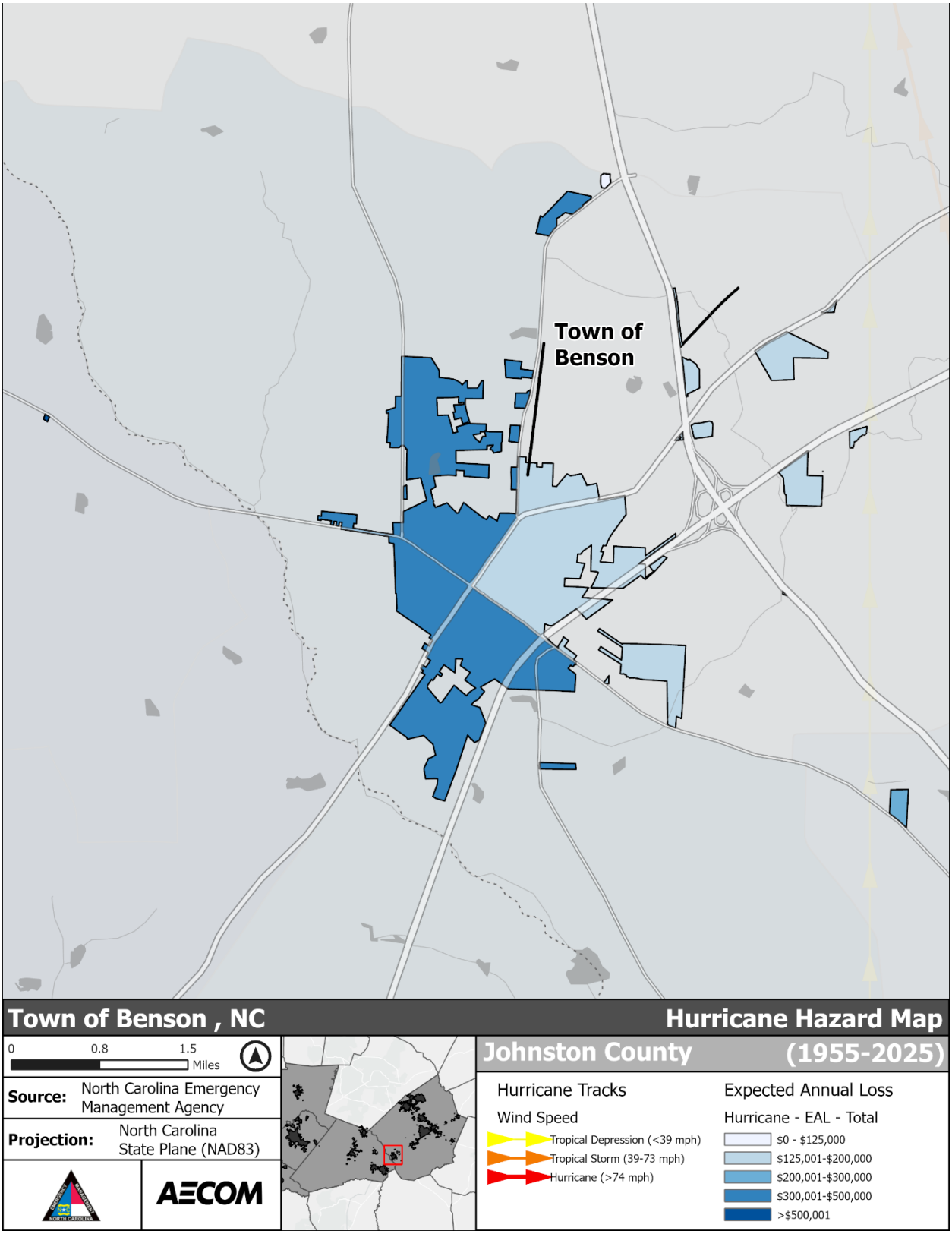

***Figure 5-30**: Hurricane Hazard Area - Town of Benson*

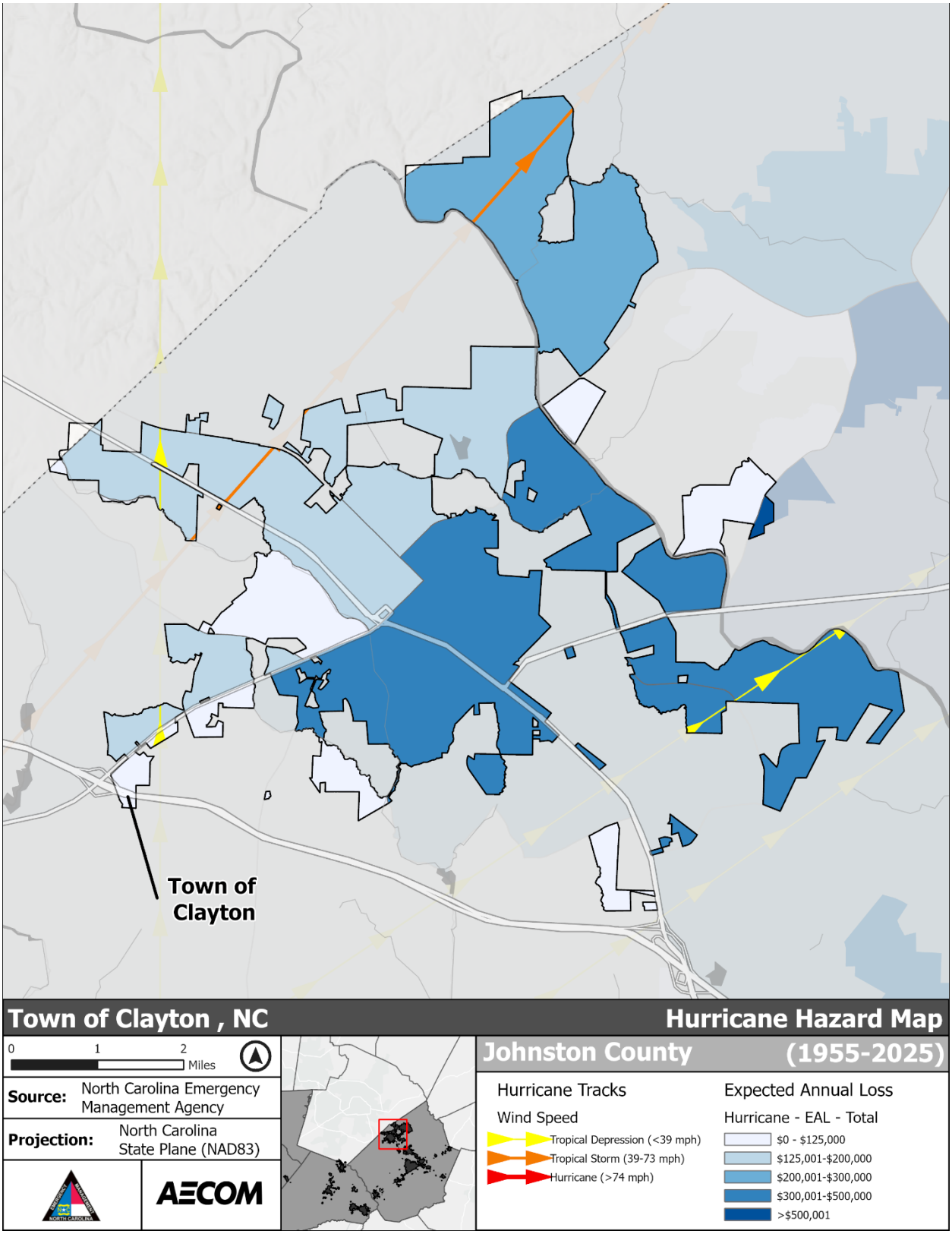

***Figure 5-31**: Hurricane Hazard Area – Town of Clayton*

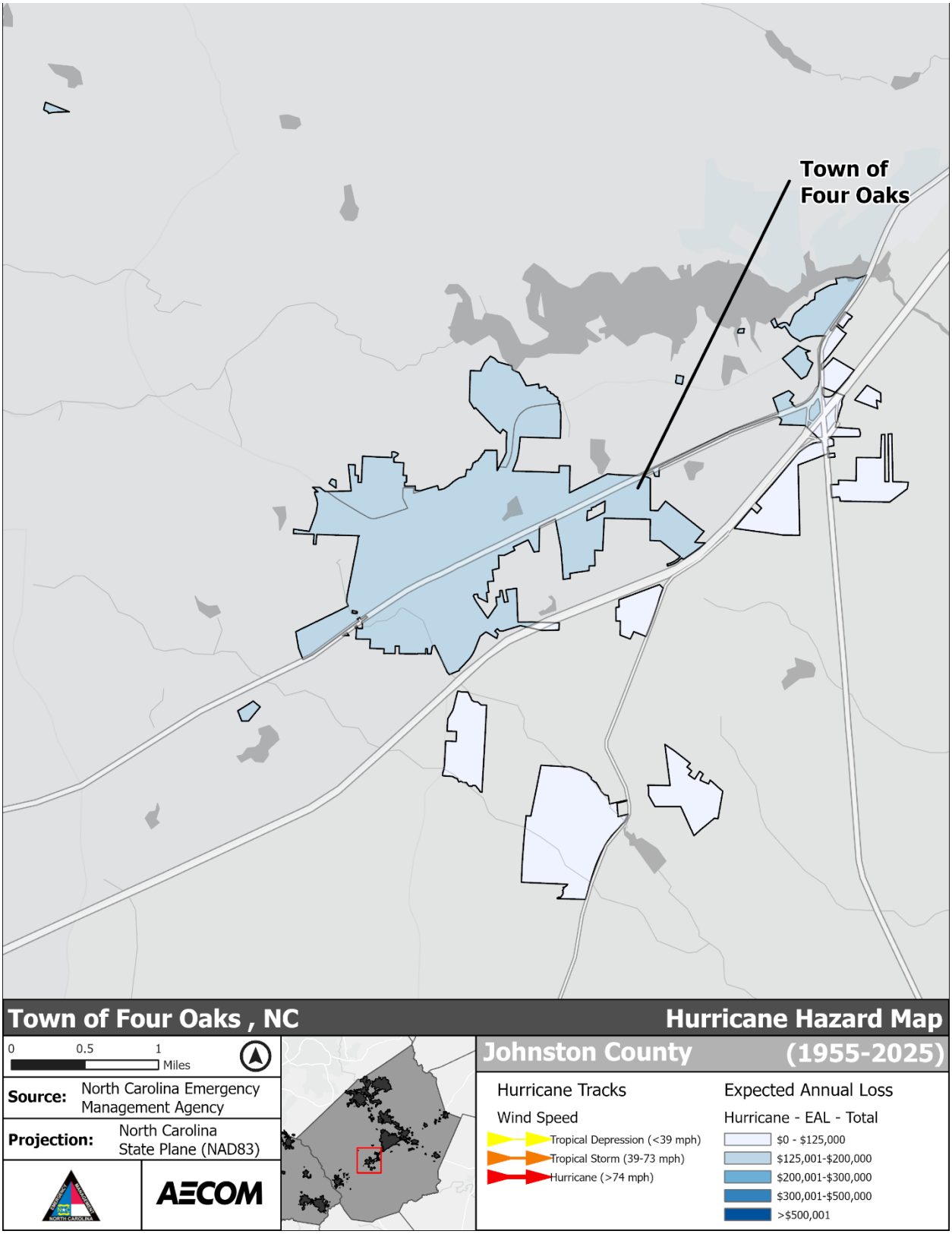

***Figure 5-32**: Hurricane Hazard Area – Town of Four Oaks*

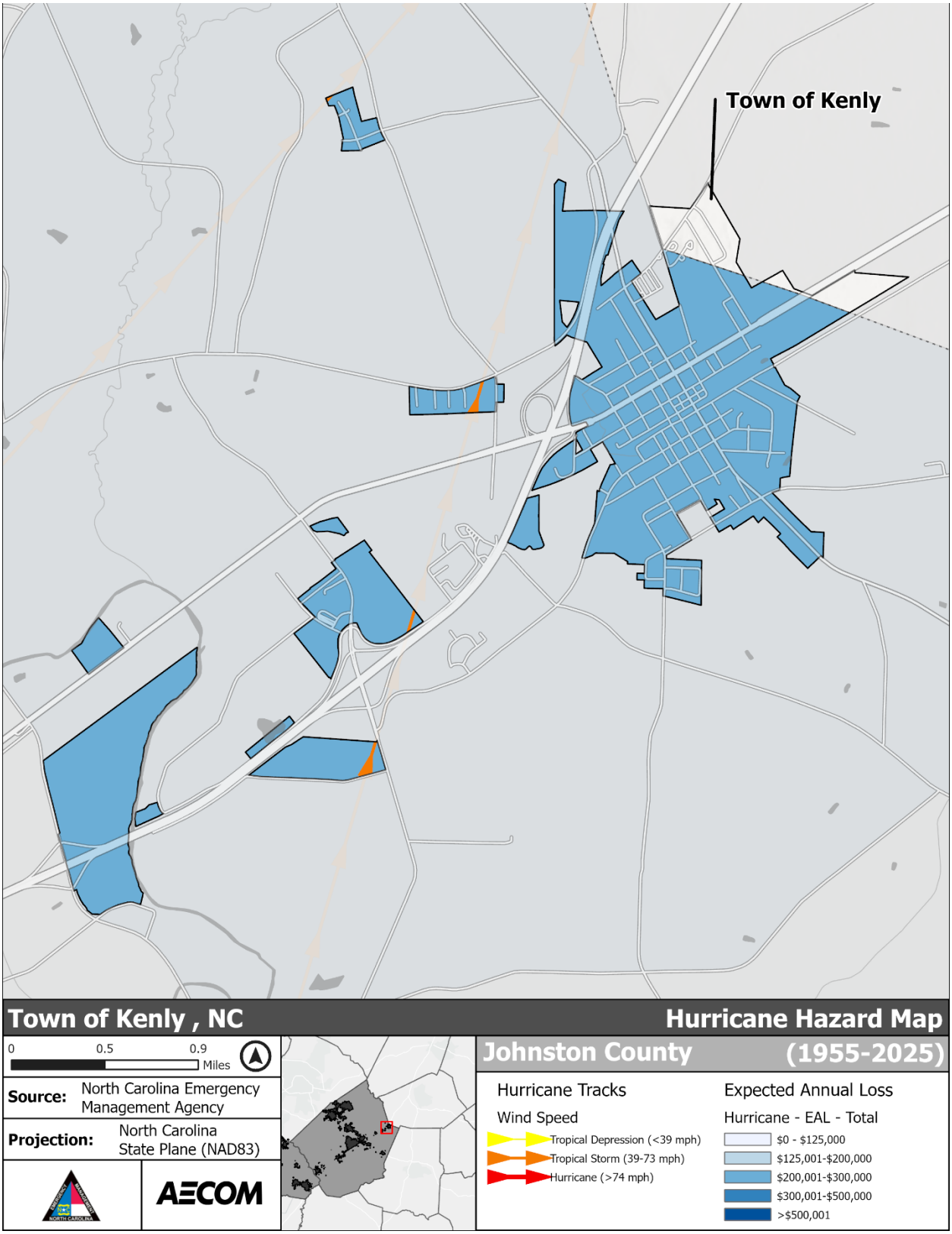

***Figure 5-33**: Hurricane Hazard Area – Town of Kenly*

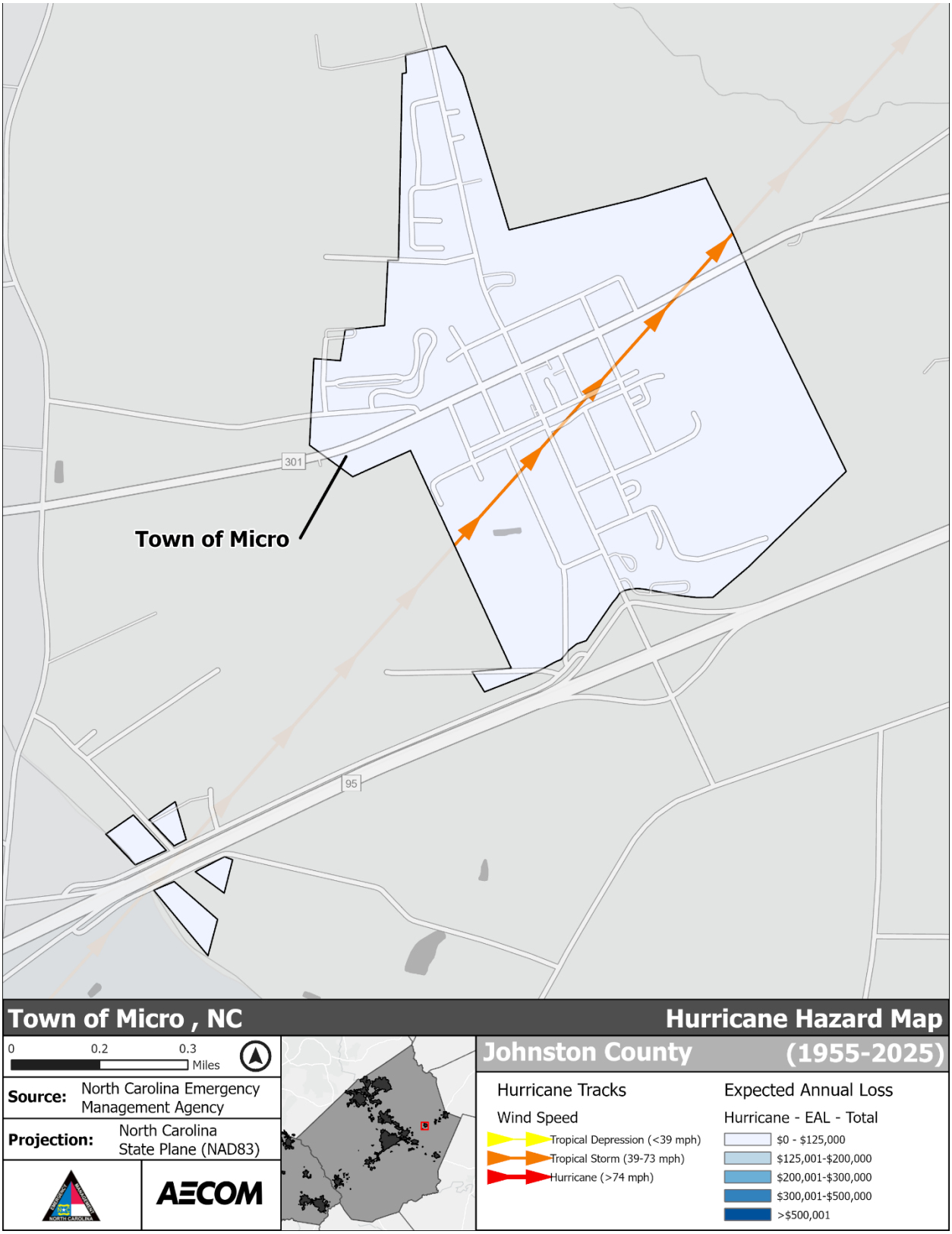

***Figure 5-34**: Hurricane Hazard Area – Town of Micro*

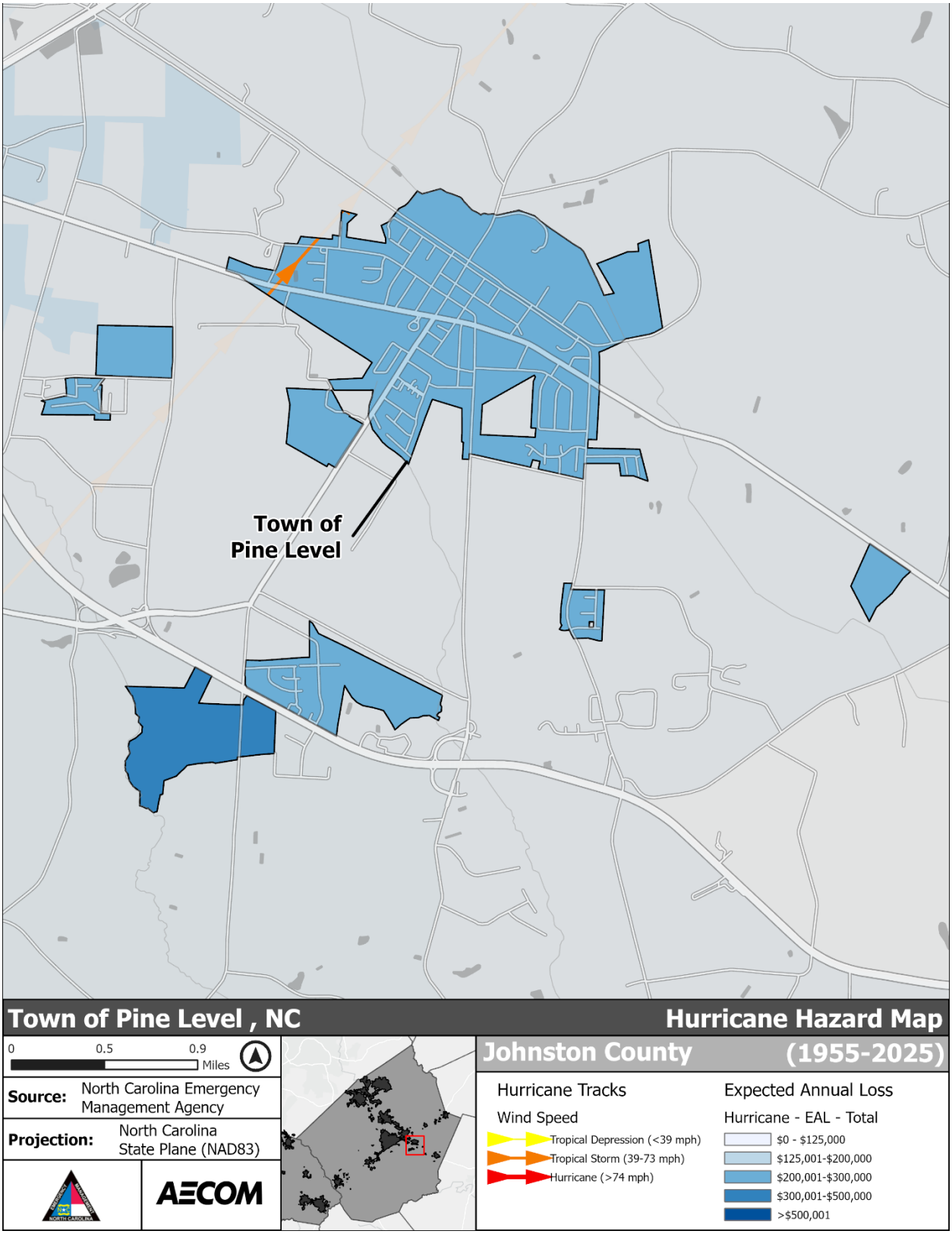

***Figure 5-35**: Hurricane Hazard Area – Town of Pine Level*

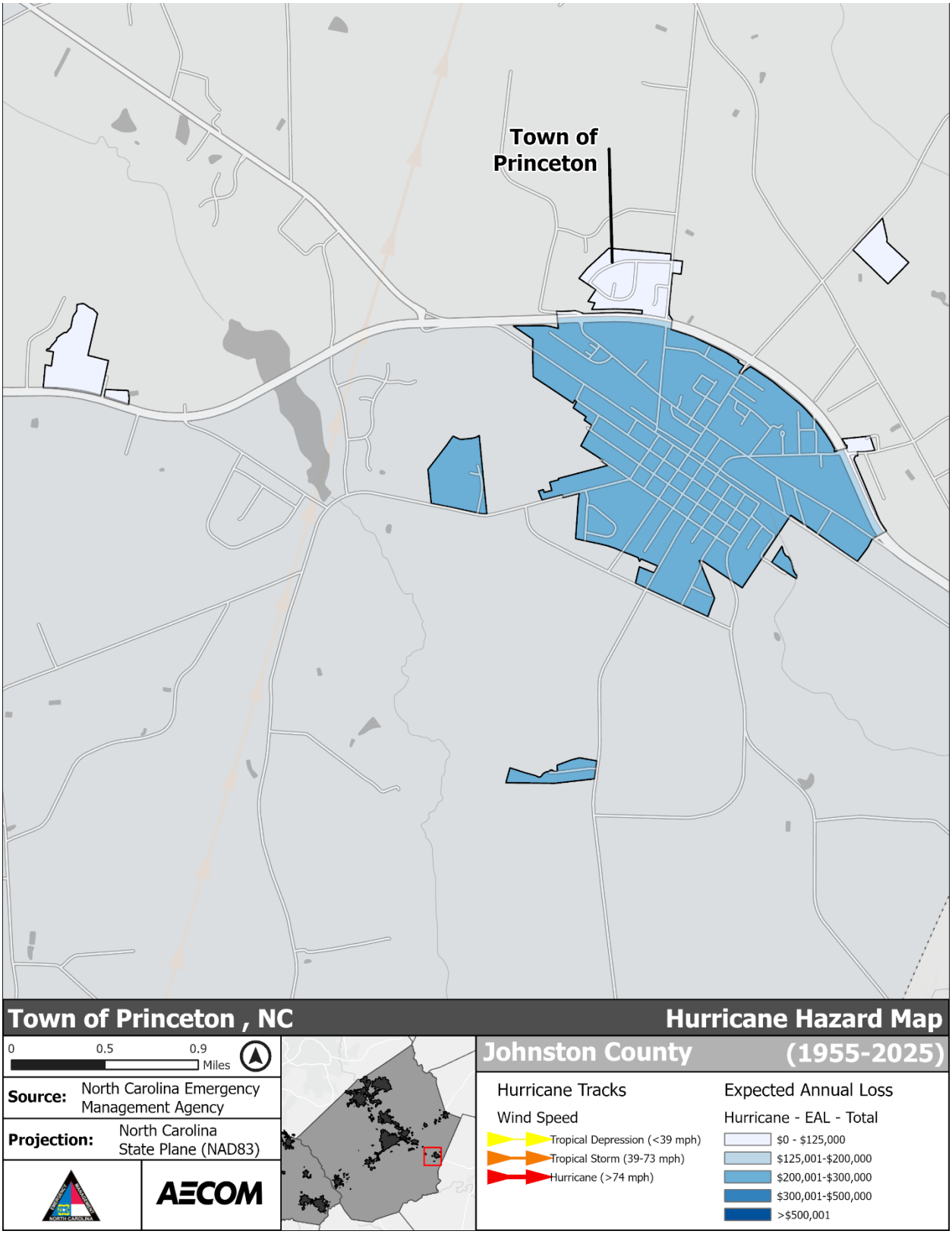

***Figure 5-36**: Hurricane Hazard Area - Town of Princeton*

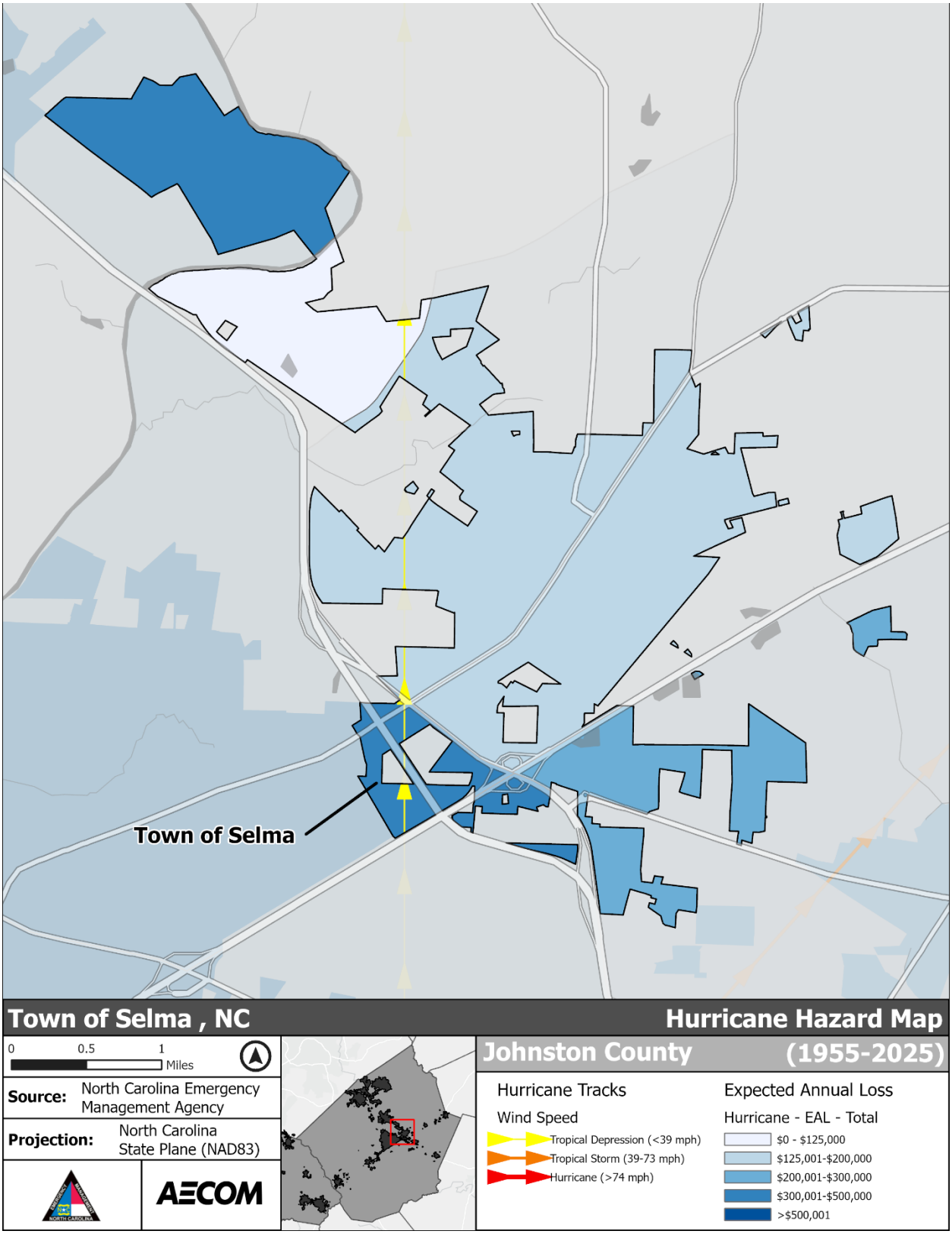

***Figure 5-37**: Hurricane Hazard Area – Town of Selma*

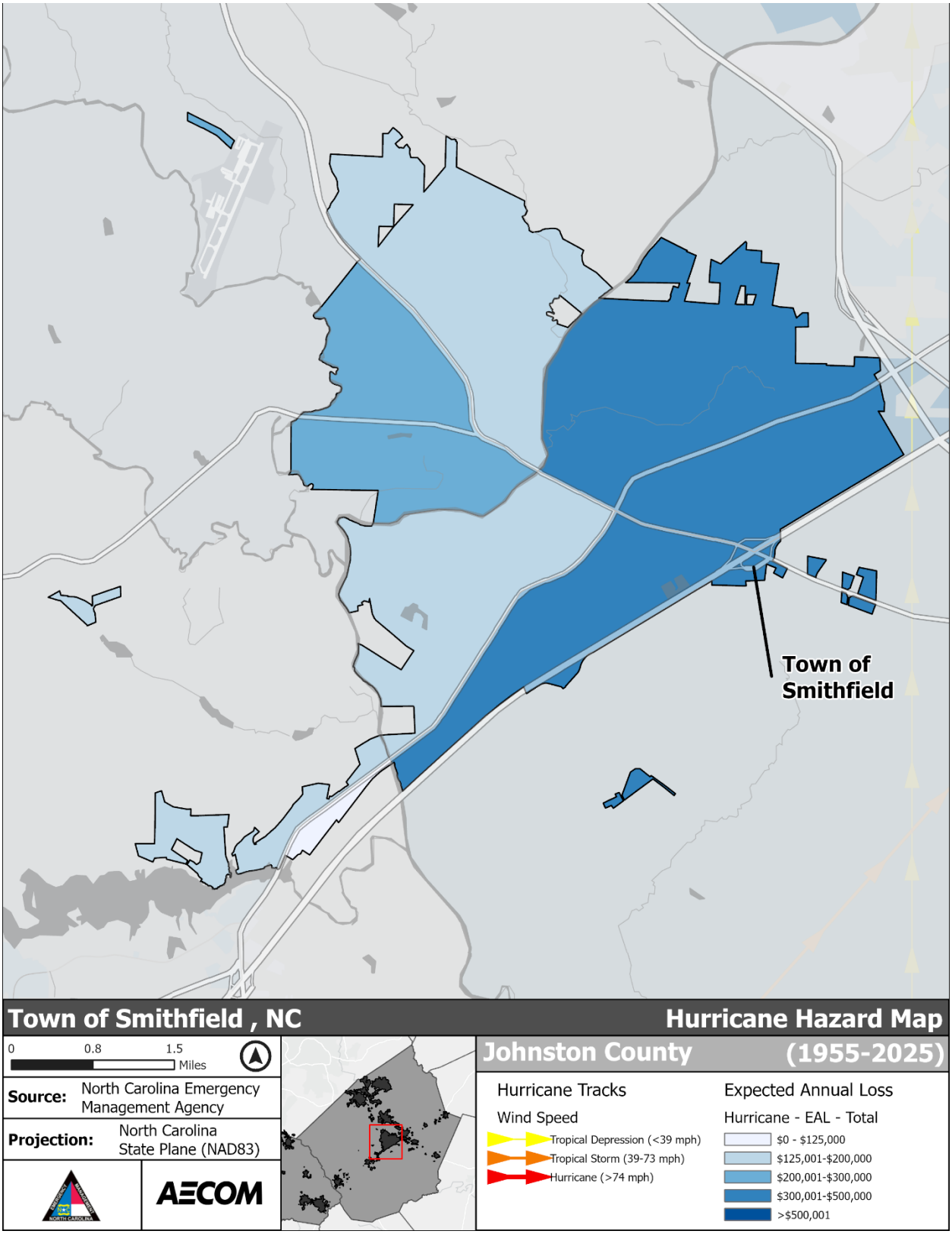

***Figure 5-38**: Hurricane Hazard Area – Town of Smithfield*

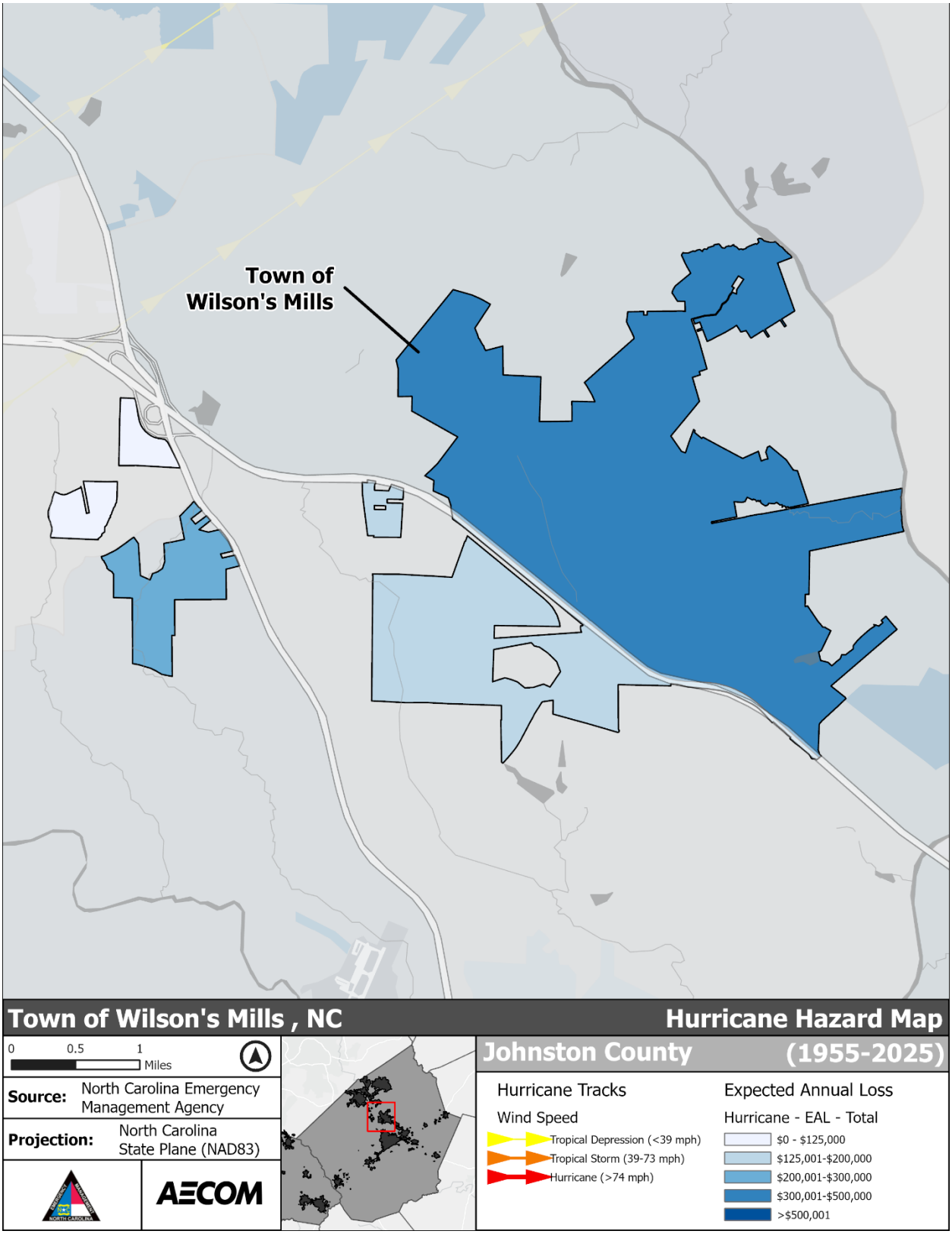

***Figure 5-39**: Hurricane Hazard Area – Town of Wilson's Mills*

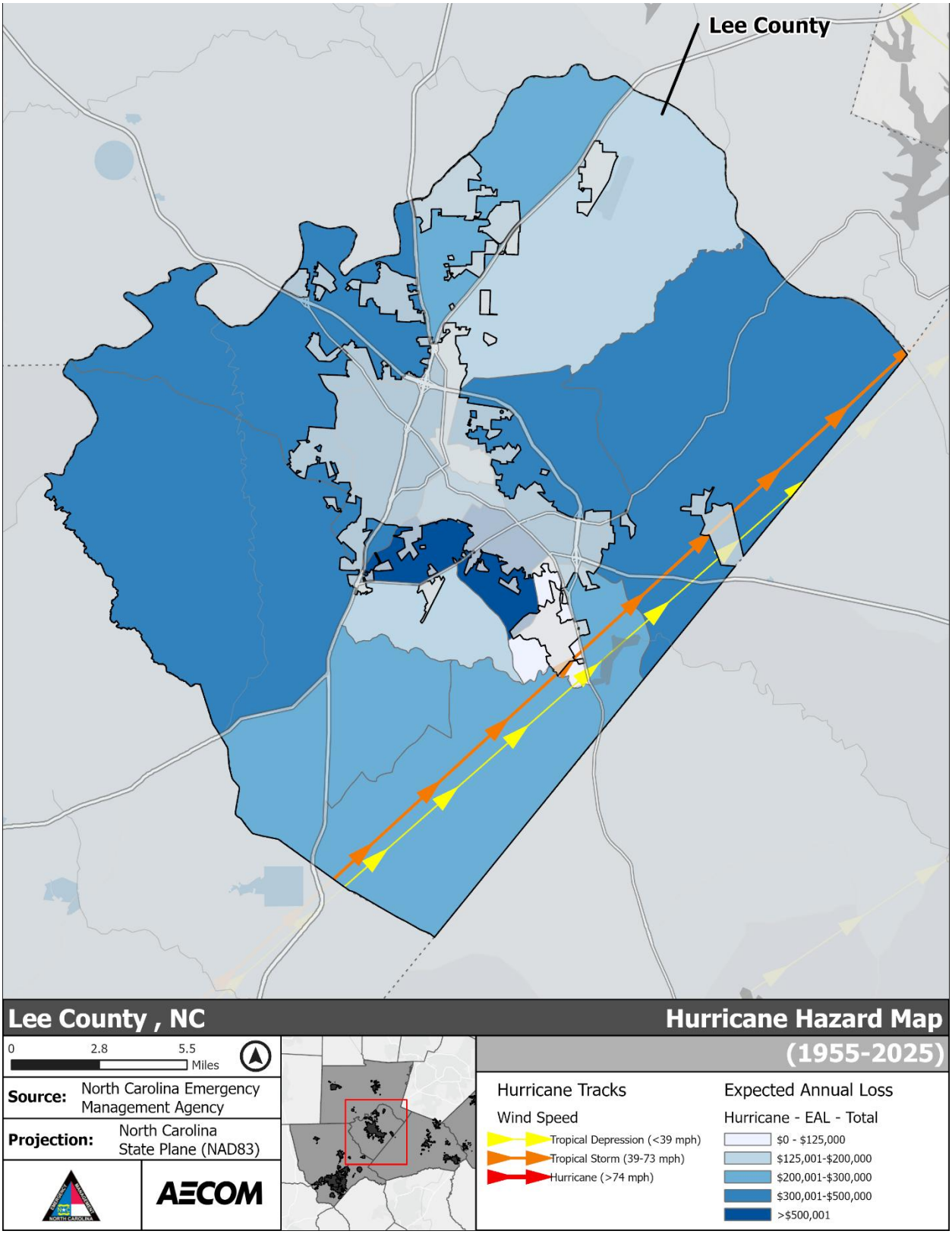

***Figure 5-40**: Hurricane Hazard Area – Lee County*

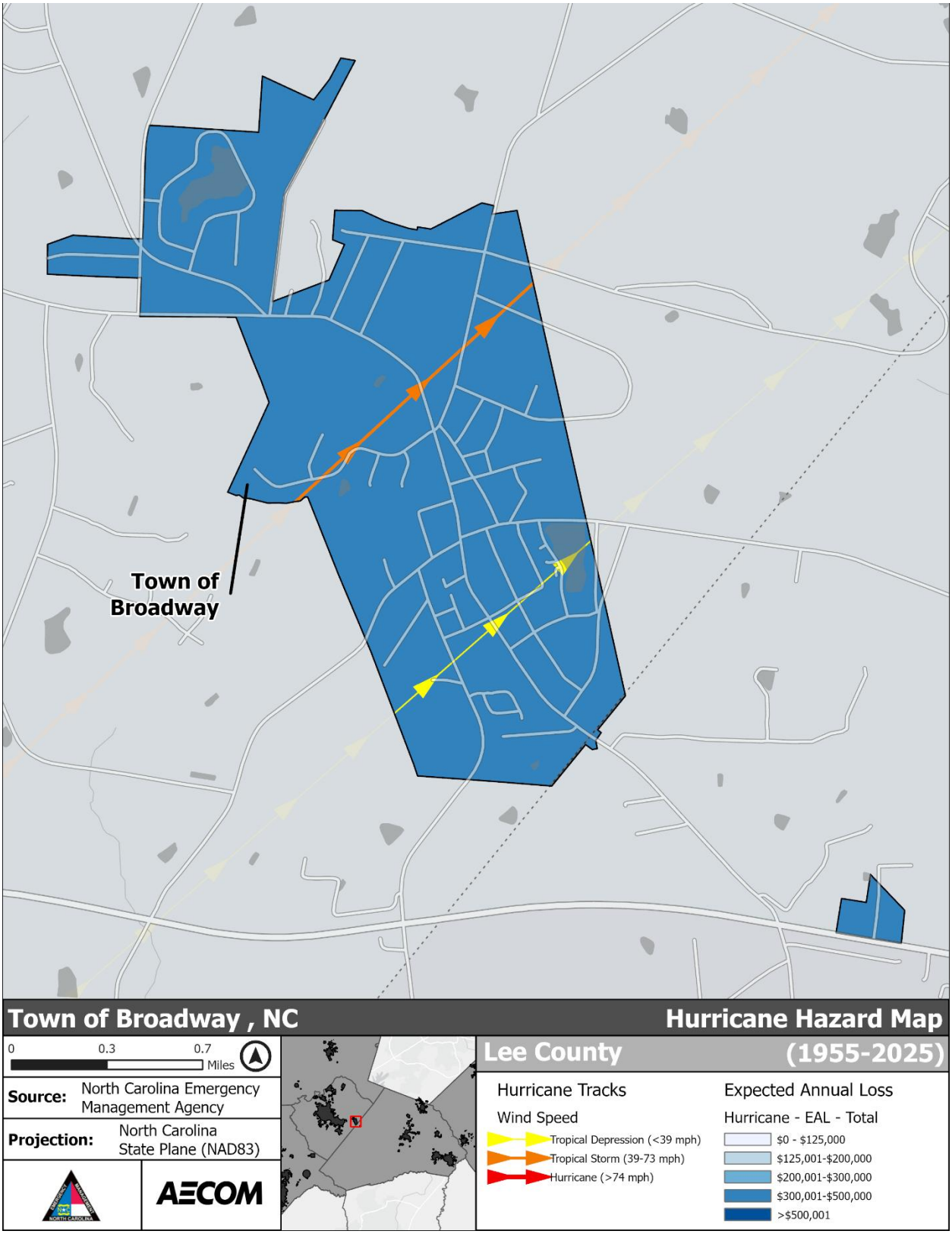

***Figure 5-41**: Hurricane Hazard Area – Town of Broadway*

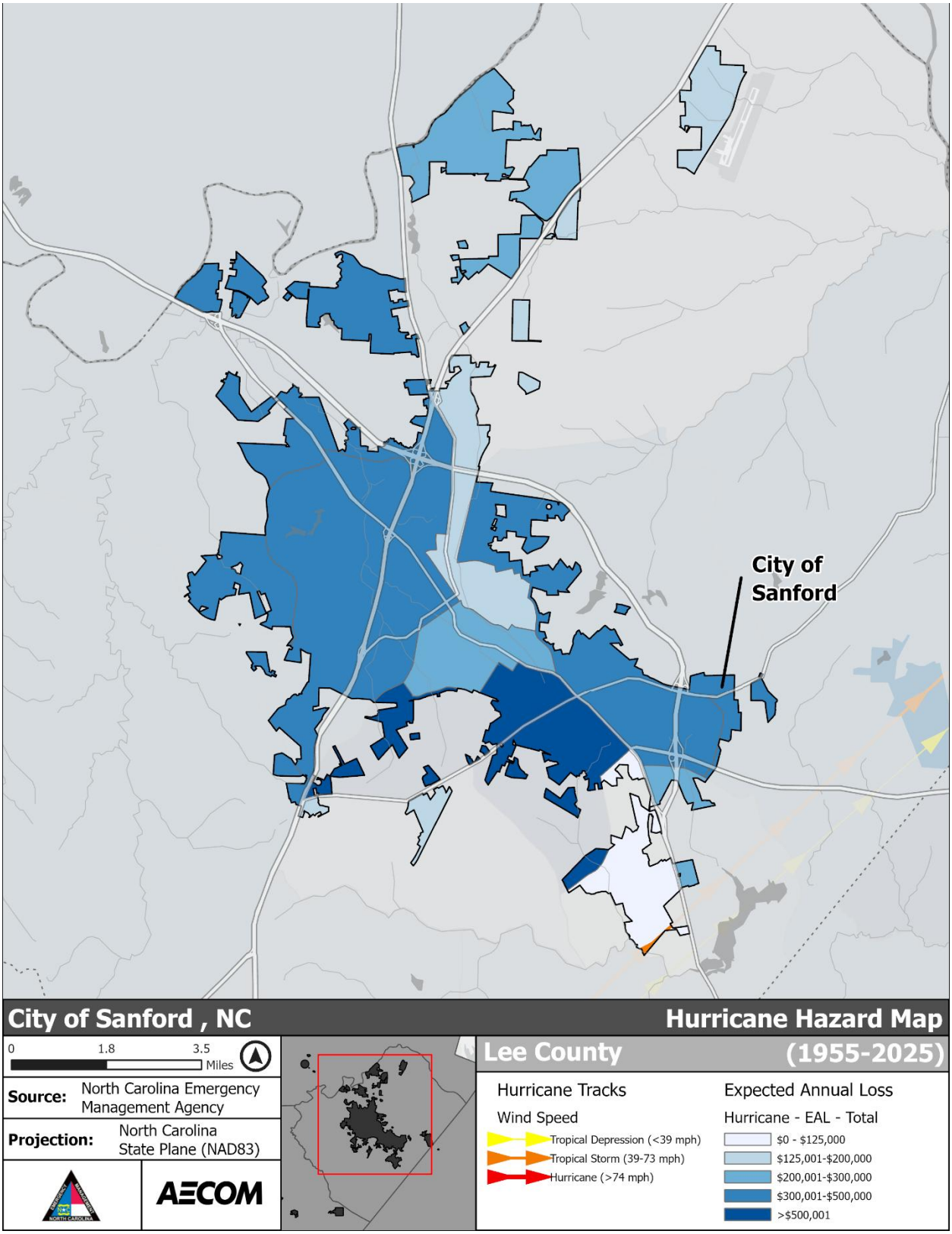

***Figure 5-42**: Hurricane Hazard Area – City of Sanford*

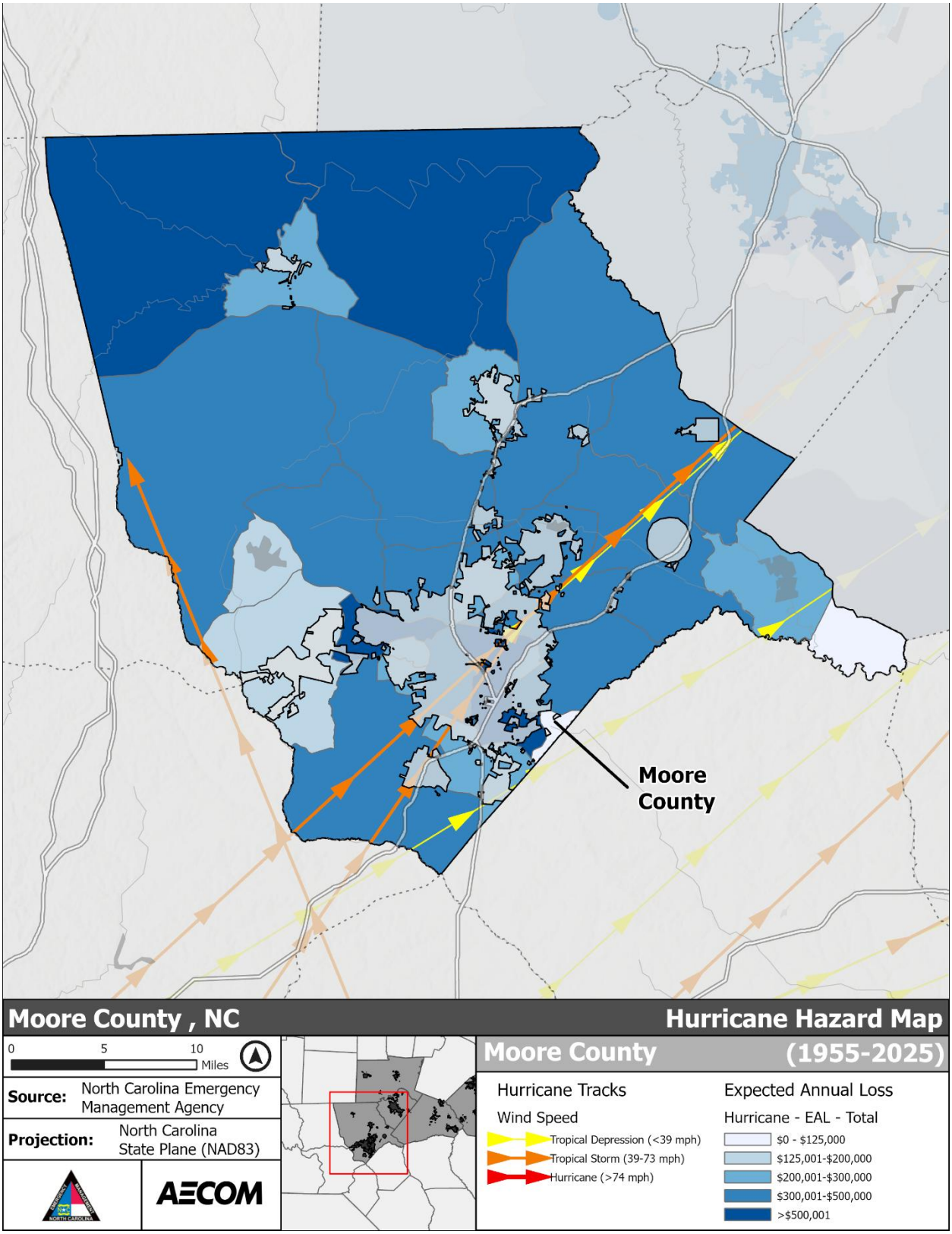

***Figure 5-43**: Hurricane Hazard Area – Moore County*

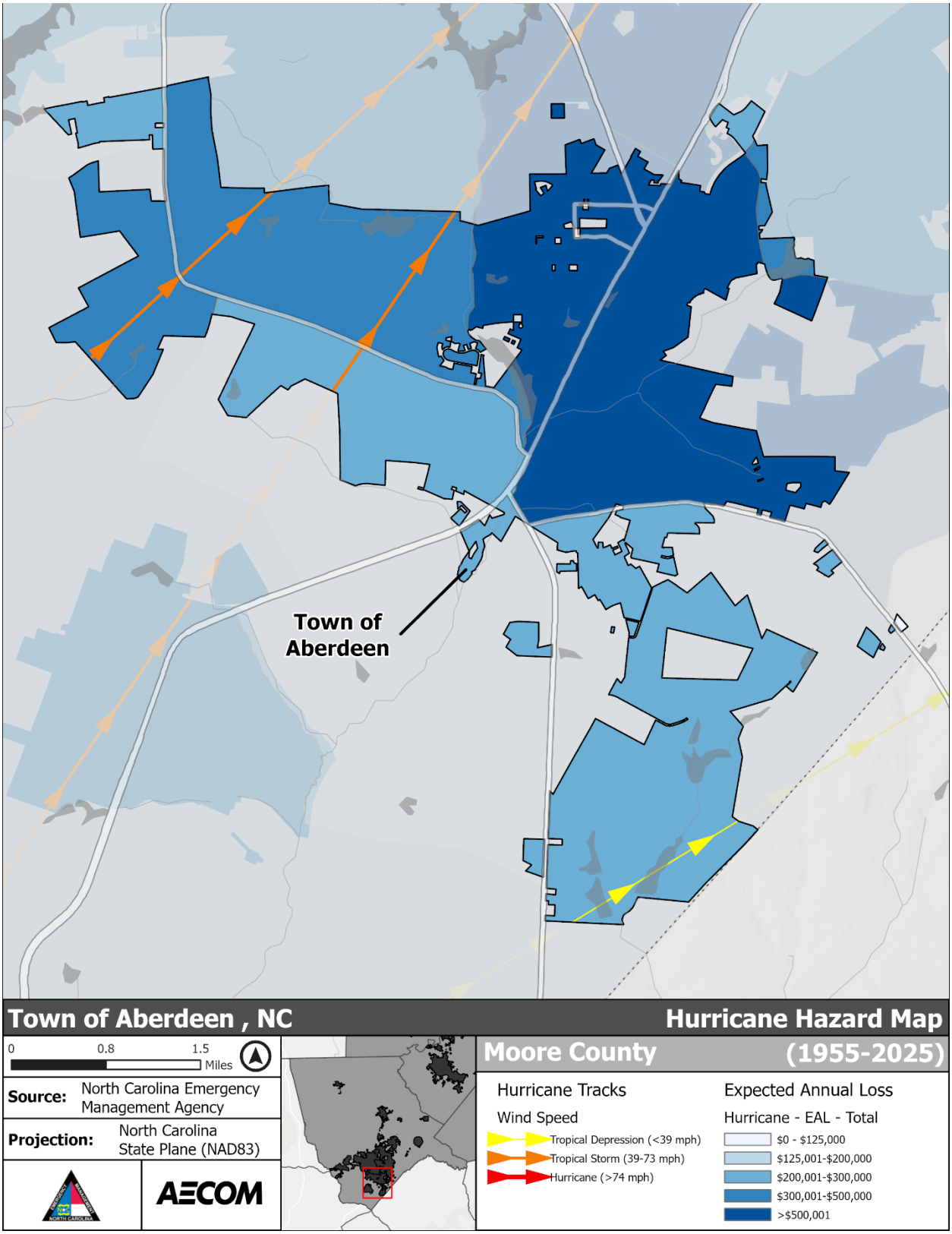

***Figure 5-44**: Hurricane Hazard Area – Town of Aberdeen*

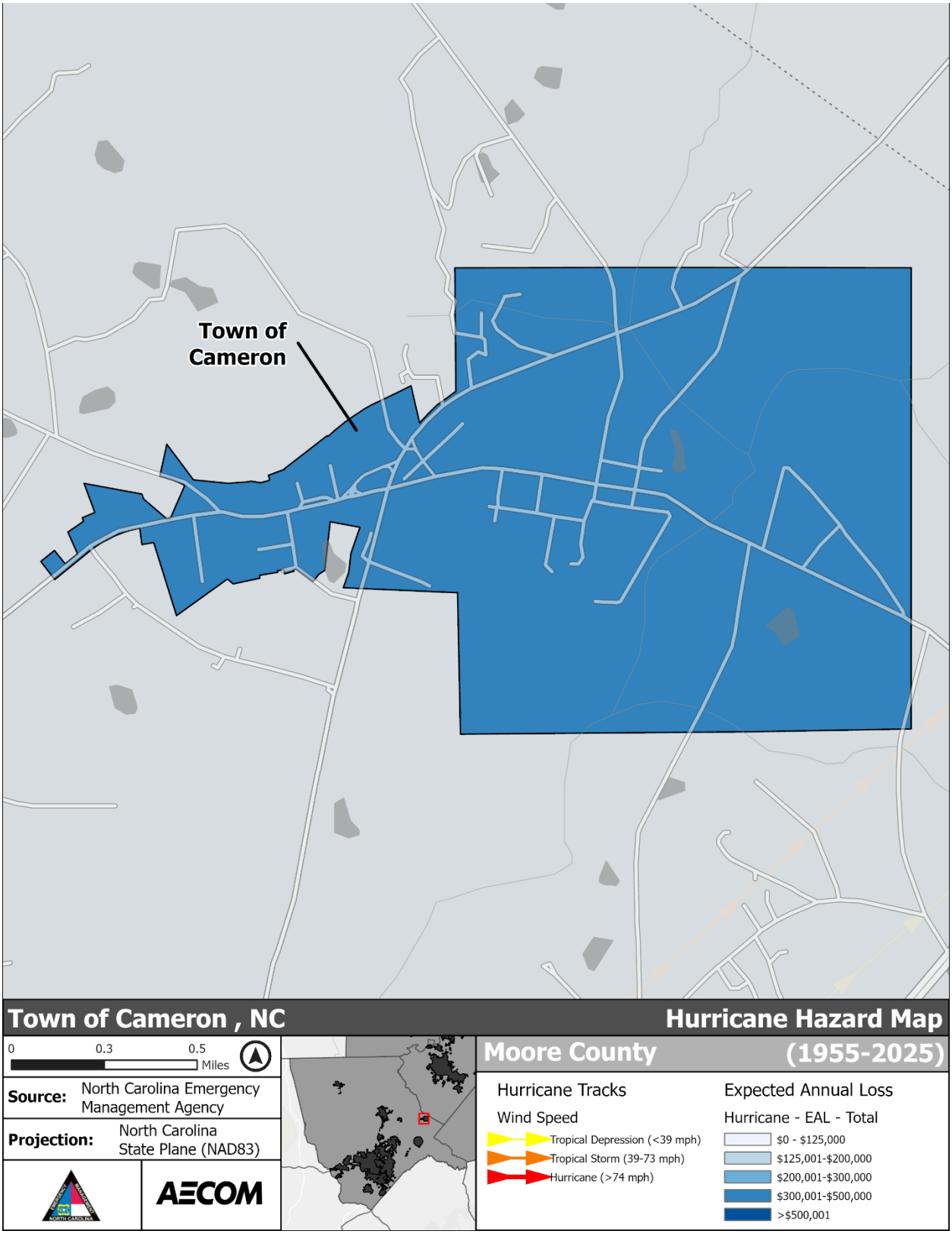

***Figure 5-45**: Hurricane Hazard Area – Town of Cameron*

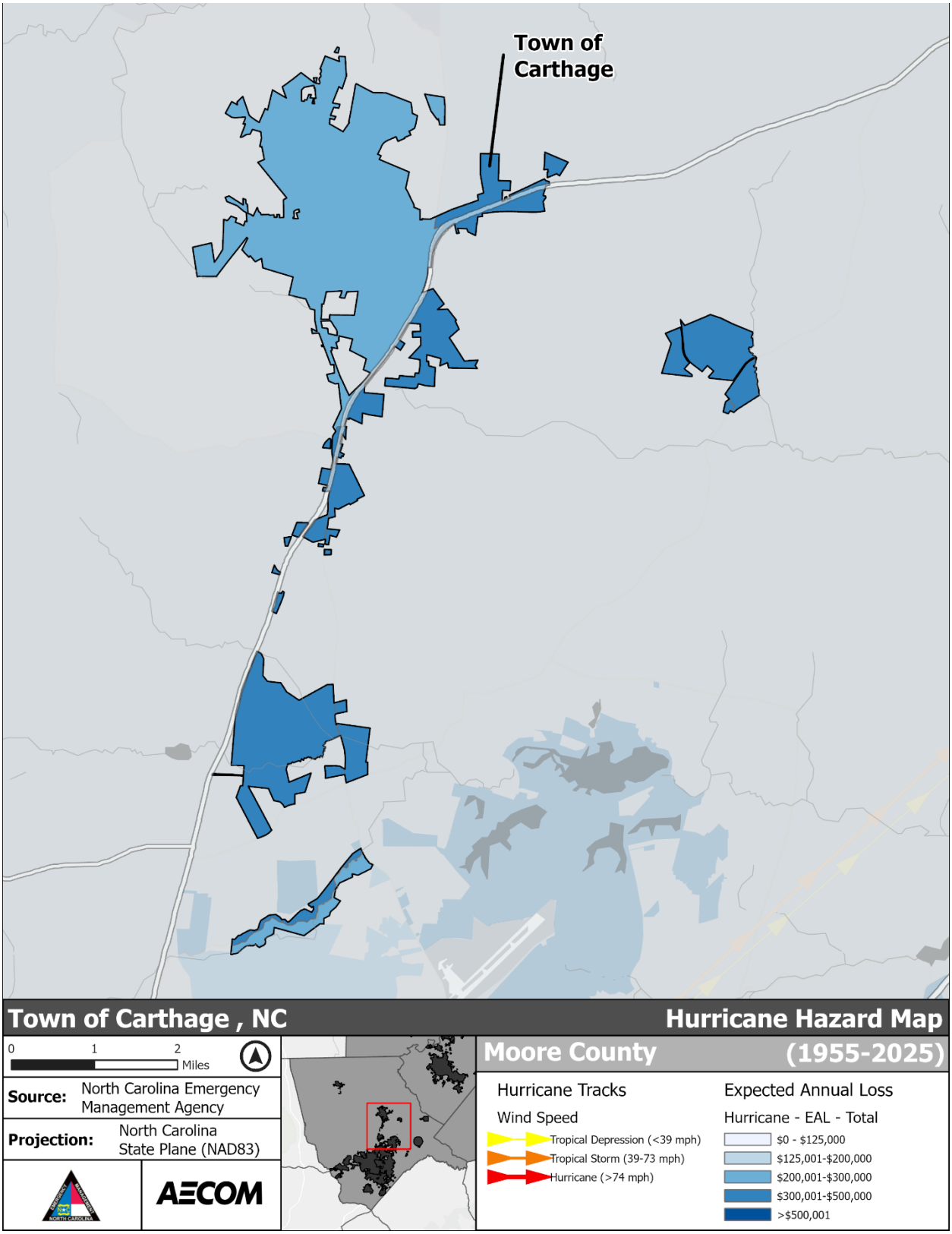

***Figure 5-46**: Hurricane Hazard Area – Town of Carthage*

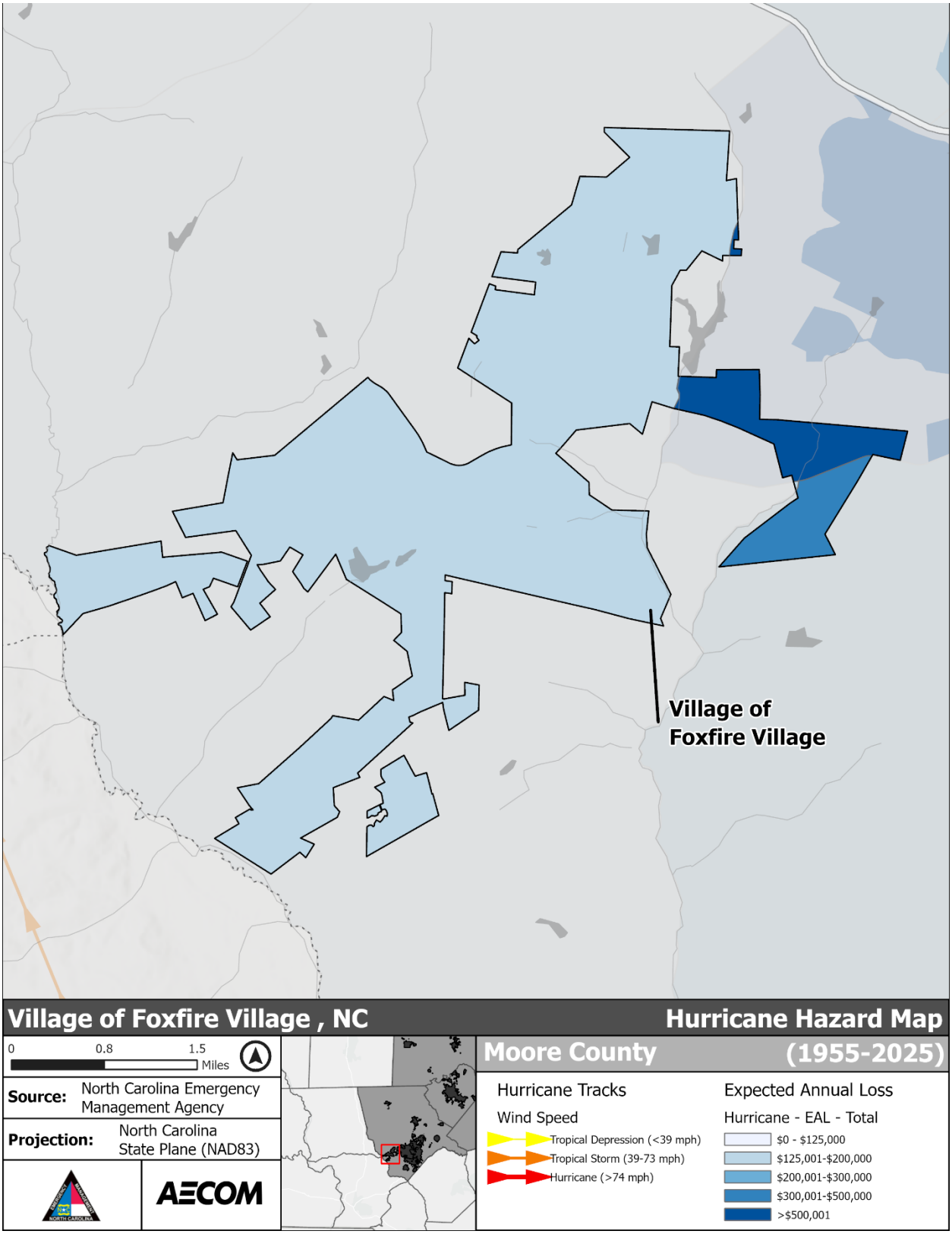

***Figure 5-47**: Hurricane Hazard Area – Village of Foxfire*

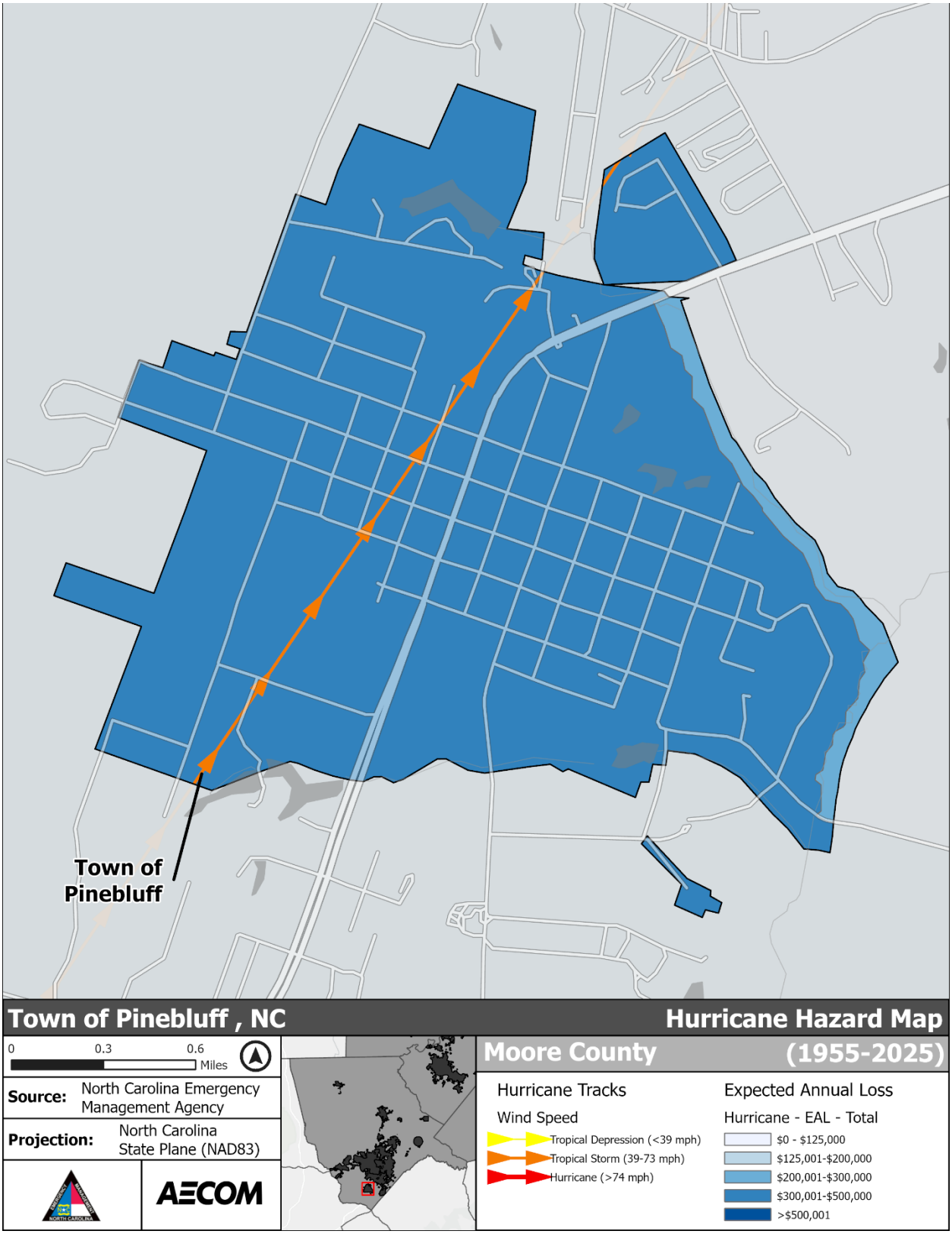

***Figure 5-48**: Hurricane Hazard Area – Town of Pinebluff*

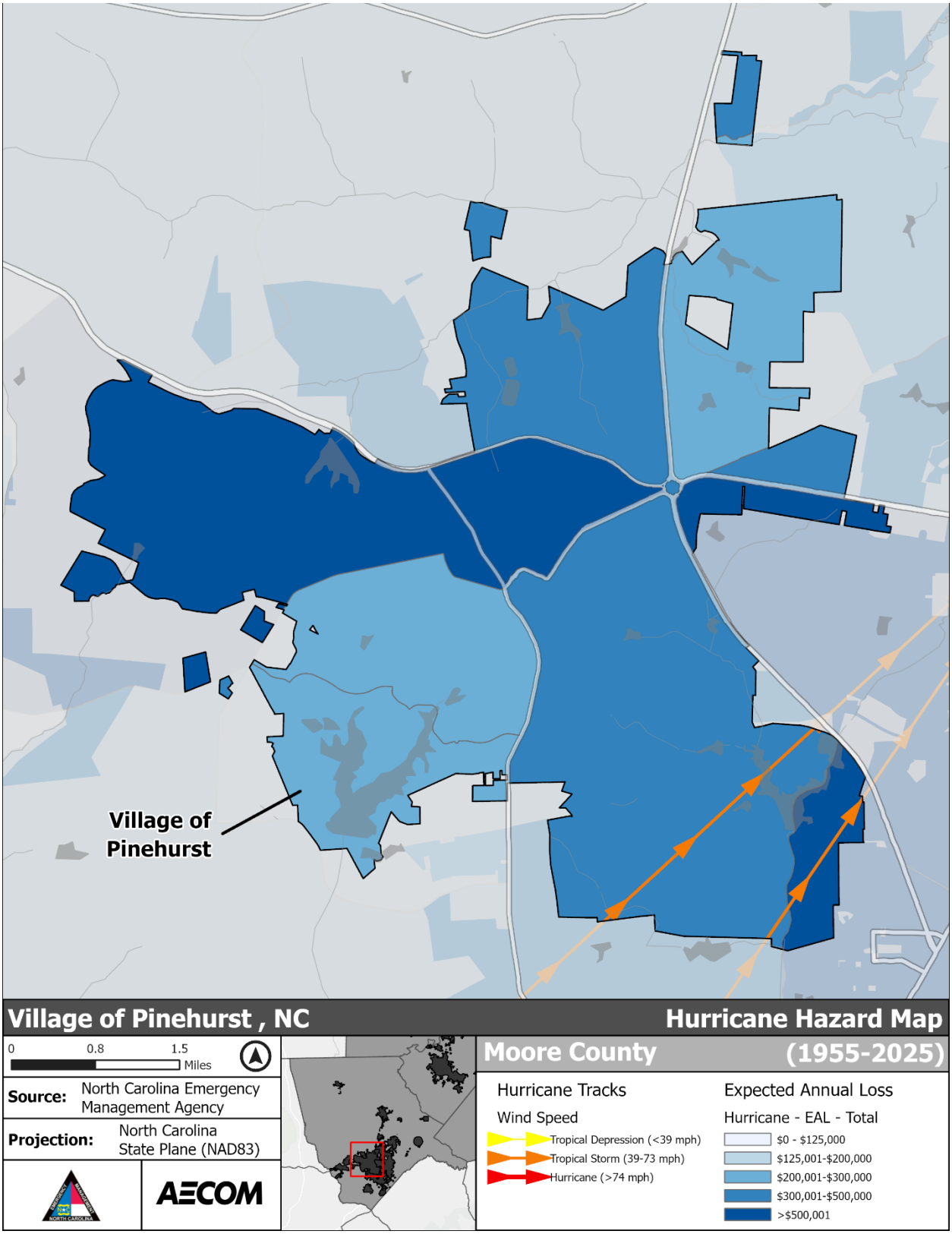

***Figure 5-49**: Hurricane Hazard Area – Village of Pinehurst*

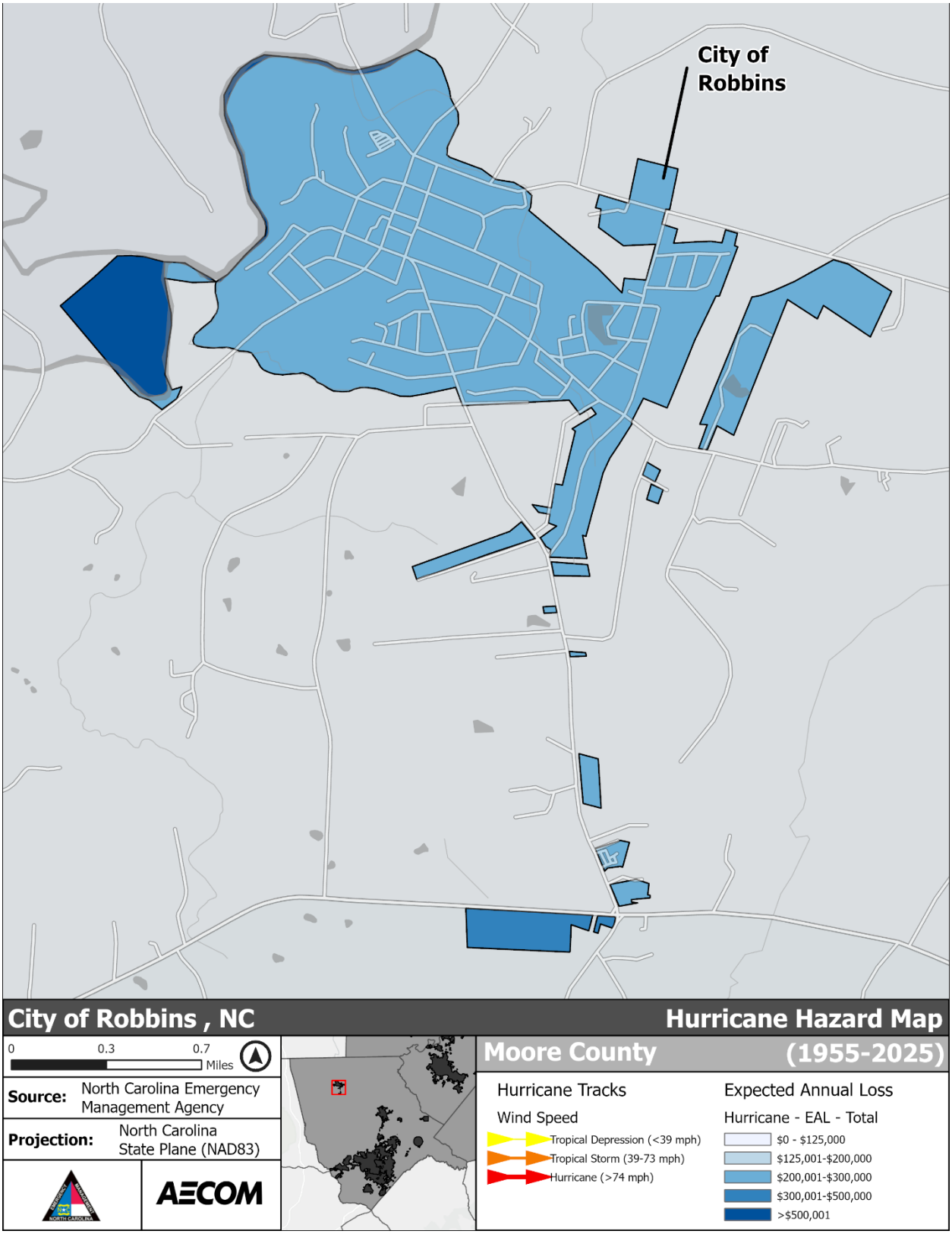

***Figure 5-50**: Hurricane Hazard Area – City of Robbins*

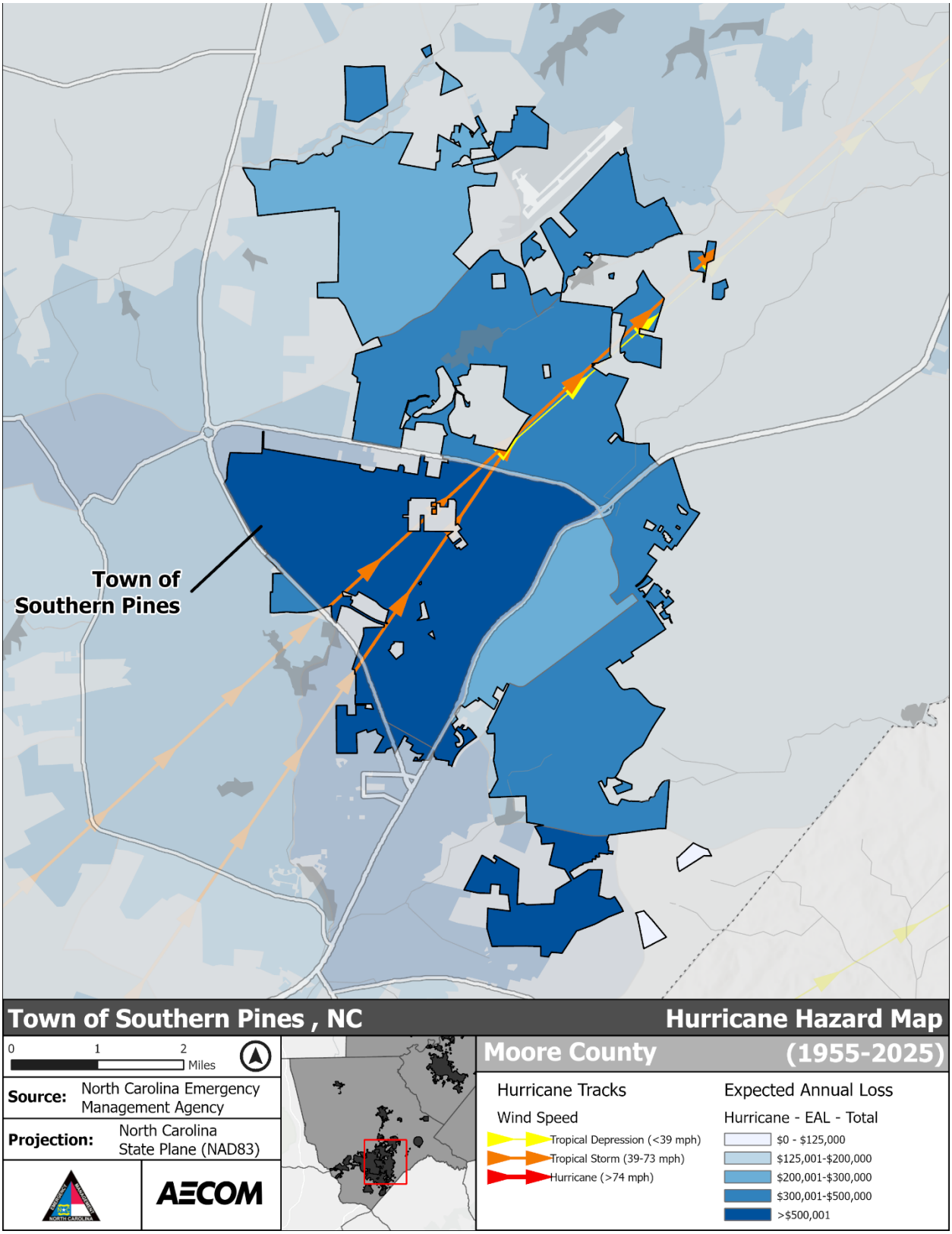

***Figure 5-51**: Hurricane Hazard Area – Town of Southern Pines*

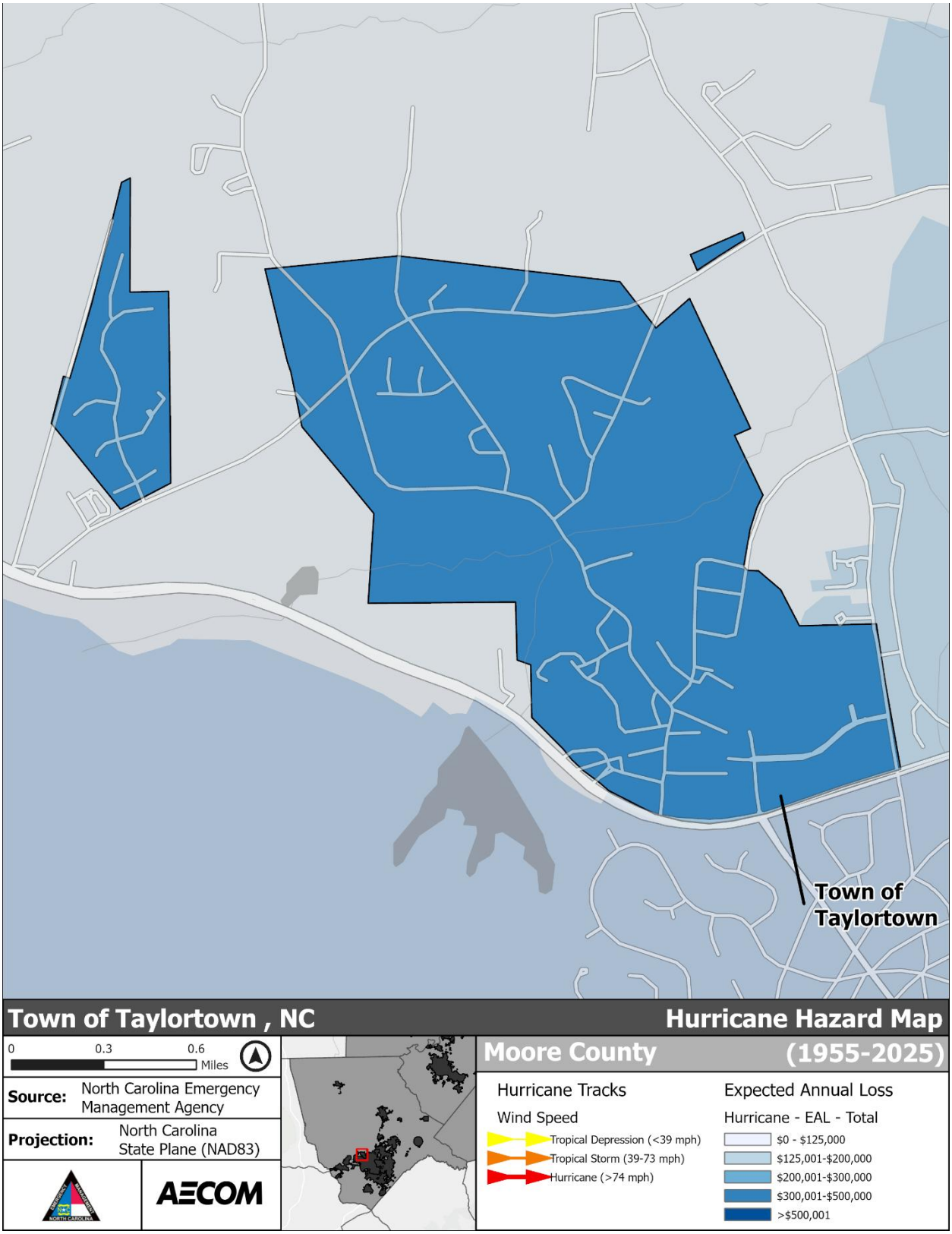

***Figure 5-52**: Hurricane Hazard Area – Town of Taylortown*

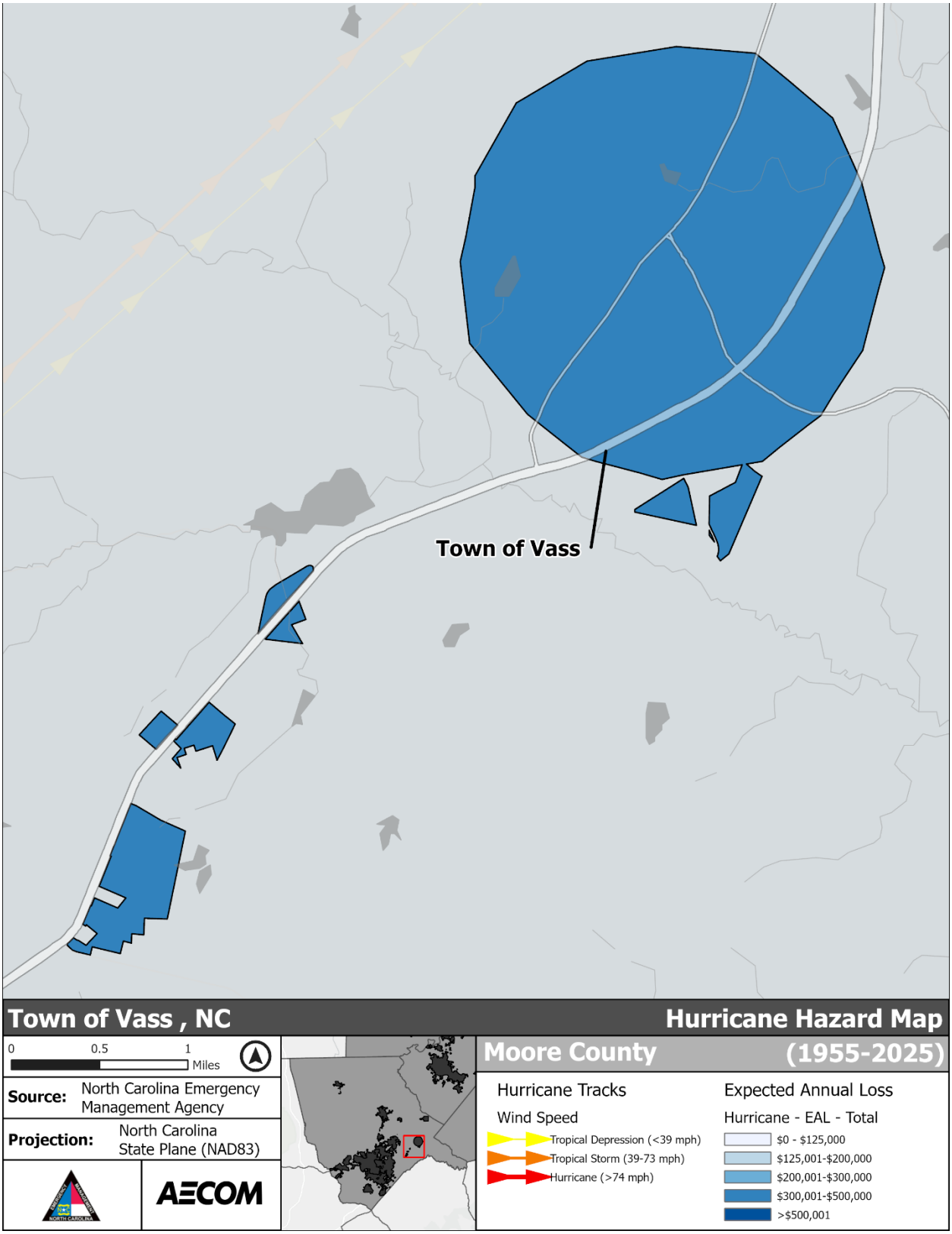

***Figure 5-53**: Hurricane Hazard Area – Town of Vass*

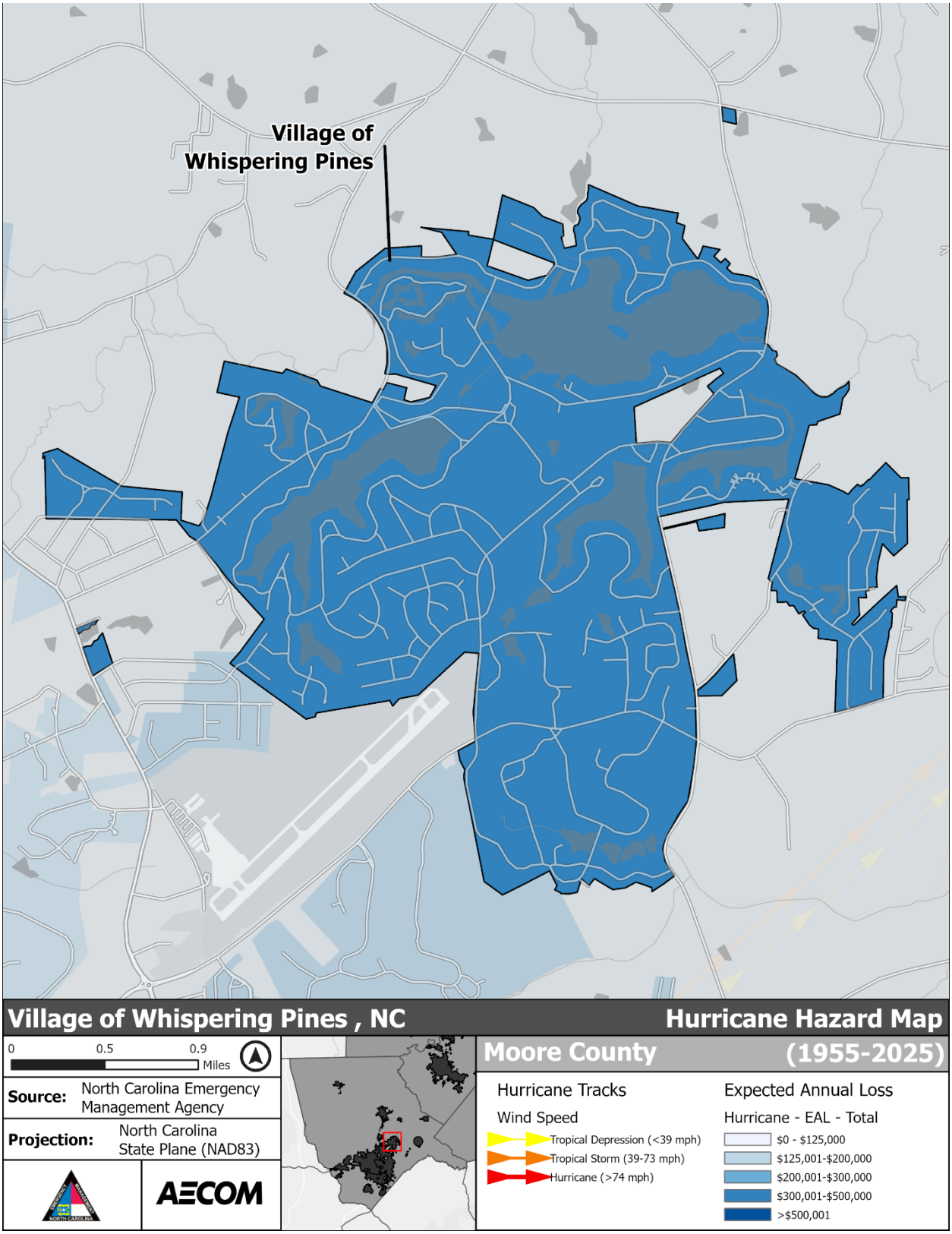

***Figure 5-54**: Hurricane Hazard Area – Village of Whispering Pines*

5.5.3 Extent

Hurricane extent is defined by the Saffir-Simpson Scale, which classifies hurricanes into Category 1 through Category 5. The greatest classification of hurricanes to traverse directly through the Cape Fear Region was an Unnamed Category 3 storm, which reached a maximum wind speed of 70 knots in the Region in 1893. The following lists the greatest extent of hurricane winds passing through the area, though it should be noted that the strongest storms could impact the region without a direct hit:

- **Chatham County:** Unnamed 1896 Storm, Category 3 Hurricane (62 knots)
- **Harnett County:** Unnamed 1893 Storm, Category 3 Hurricane (70 knots)
- **Johnston County:** Unnamed 1893 Storm, Category 3 Hurricane (70 knots)
- **Lee County:** Unnamed 1896 Storm, Category 3 Hurricane (62 knots)
- **Moore County:** Unnamed 1896 Storm, Category 3 Hurricane (62 knots)

5.5.4 Historical Occurrences

According to the National Hurricane Center's historical storm track records, 68 hurricane or tropical storm tracks have passed within 75 miles of the Cape Fear Region since 1851.[29] This includes 43 hurricanes, 14 tropical storms, and 10 tropical depressions (based on the storm's maximum category). Table 5-19 provides the date of occurrence, name (if applicable), maximum wind speed (as recorded within 75 miles of the Cape Fear Region), and Maximum Category of the storm (based on the Saffir-Simpson Scale) for each event.

***Table 5-19**: Tropical storms, hurricanes, tropical depressions, and related storms that have been tracked within 25 miles of the planning area between 1851 and 2024.[30]*

Hurricane Season	Date and Time	Name	Saffir-Simpson Hurricane Scale Rating	Maximum Sustained Wind (Kts)
1851	08/25/1851 06:00	Unnamed	Tropical Storm	40
1851	08/25/1851 09:00	Unnamed	Tropical Storm	40
1852	08/28/1852 15:00	Unnamed	Unknown	0
1852	08/28/1852 18:00	Unnamed	Unknown	0
1852	08/28/1852 21:00	Unnamed	Unknown	0
1852	08/29/1852 24:00	Unnamed	Unknown	0
1852	10/10/1852 18:00	Unnamed	Tropical Storm	50
1854	09/10/1854 06:00	Unnamed	Unknown	0
1854	09/10/1854 09:00	Unnamed	Unknown	0
1854	09/09/1854 21:00	Unnamed	Tropical Storm	45
1854	09/10/1854 00:00	Unnamed	Tropical Storm	40
1859	09/17/1859 03:00	Unnamed	Tropical Storm	40
1859	09/17/1859 06:00	Unnamed	Tropical Storm	40
1861	11/02/1861 09:00	Unnamed	Unknown	0

[29] These storm track statistics do not include extra-tropical storms. Though these related hazard events are less severe in intensity, they may cause significant local impact in terms of rainfall and high winds.

[30] Gahtan, J., Knapp, K., Schreck, C., Diamond, H., Kossin, J., & Kruk, M. (2025). International Best Track Archive for Climate Stewardship (IBTRACS) Project [Dataset]. In National Oceanic and Atmospheric Administration [NOAA], National Centers for Environmental Information (NCEI). NCEI. https://doi.org/10.25921/82ty-9e16

Hurricane Season	Date and Time	Name	Saffir-Simpson Hurricane Scale Rating	Maximum Sustained Wind (Kts)
1861	11/02/1861 12:00	Unnamed	Unknown	0
1861	09/27/1861 15:00	Unnamed	Unknown	0
1861	09/27/1861 18:00	Unnamed	Unknown	0
1863	10/02/1863 12:00	Unnamed	Unknown	0
1863	10/02/1863 15:00	Unnamed	Unknown	0
1867	08/15/1867 09:00	Unnamed	Unknown	0
1867	08/15/1867 12:00	Unnamed	Unknown	0
1867	06/23/1867 09:00	Unnamed	Tropical Storm	40
1867	06/23/1867 12:00	Unnamed	Tropical Storm	40
1867	06/23/1867 15:00	Unnamed	Tropical Storm	40
1874	09/29/1874 06:00	Unnamed	Tropical Storm	60
1874	09/29/1874 03:00	Unnamed	Category 1	65
1877	10/04/1877 12:00	Unnamed	Post-tropical	50
1877	10/04/1877 15:00	Unnamed	Post-tropical	50
1877	10/04/1877 09:00	Unnamed	Tropical Storm	45
1878	09/12/1878 18:00	Unnamed	Tropical Storm	60
1878	09/12/1878 21:00	Unnamed	Tropical Storm	55
1881	09/10/1881 00:00	Unnamed	Tropical Storm	60
1881	09/09/1881 21:00	Unnamed	Category 1	70
1882	09/11/1882 12:00	Unnamed	Tropical Storm	40
1882	09/11/1882 15:00	Unnamed	Tropical Storm	40
1883	09/11/1883 21:00	Unnamed	Tropical Storm	60
1883	09/12/1883 00:00	Unnamed	Tropical Storm	50
1883	09/12/1883 03:00	Unnamed	Tropical Storm	50
1883	09/12/1883 06:00	Unnamed	Tropical Storm	50
1883	09/12/1883 09:00	Unnamed	Tropical Storm	45
1883	09/12/1883 12:00	Unnamed	Tropical Storm	40
1885	10/13/1885 00:00	Unnamed	Tropical Storm	40
1885	10/13/1885 03:00	Unnamed	Tropical Storm	40
1885	10/13/1885 06:00	Unnamed	Tropical Storm	40
1886	07/01/1886 21:00	Unnamed	Tropical Storm	43
1886	07/02/1886 00:00	Unnamed	Tropical Storm	40
1886	07/02/1886 03:00	Unnamed	Tropical Storm	38
1886	07/02/1886 06:00	Unnamed	Tropical Storm	35
1887	10/20/1887 15:00	Unnamed	Tropical Depression	30
1887	10/20/1887 18:00	Unnamed	Tropical Depression	30
1887	10/20/1887 21:00	Unnamed	Tropical Depression	33
1888	09/10/1888 09:00	Unnamed	Tropical Storm	35
1888	09/10/1888 12:00	Unnamed	Tropical Storm	35
1888	09/10/1888 15:00	Unnamed	Tropical Storm	35
1888	09/10/1888 18:00	Unnamed	Tropical Storm	35
1888	09/10/1888 21:00	Unnamed	Tropical Storm	35
1889	09/24/1889 09:00	Unnamed	Tropical Storm	43

Hurricane Season	Date and Time	Name	Saffir-Simpson Hurricane Scale Rating	Maximum Sustained Wind (Kts)
1889	09/24/1889 12:00	Unnamed	Tropical Storm	40
1893	10/04/1893 09:00	Unnamed	Tropical Storm	38
1893	10/04/1893 12:00	Unnamed	Tropical Storm	35
1893	10/13/1893 18:00	Unnamed	Category 1	80
1893	10/13/1893 15:00	Unnamed	Category 2	95
1895	06/11/1895 21:00	Unnamed	Unknown	0
1895	06/12/1895 00:00	Unnamed	Unknown	0
1895	06/12/1895 03:00	Unnamed	Unknown	0
1895	06/12/1895 06:00	Unnamed	Unknown	0
1895	06/12/1895 09:00	Unnamed	Unknown	0
1896	09/29/1896 21:00	Unnamed	Category 1	78
1896	09/30/1896 00:00	Unnamed	Category 1	70
1899	10/31/1899 12:00	Unnamed	Category 1	75
1899	10/31/1899 15:00	Unnamed	Category 1	65
1902	06/16/1902 03:00	Unnamed	Tropical Storm	35
1902	06/16/1902 06:00	Unnamed	Tropical Storm	35
1902	06/16/1902 09:00	Unnamed	Tropical Storm	38
1904	09/14/1904 18:00	Unnamed	Tropical Storm	60
1904	09/14/1904 21:00	Unnamed	Tropical Storm	58
1911	08/31/1911 09:00	Unnamed	Post-tropical	23
1912	06/14/1912 12:00	Unnamed	Post-tropical	35
1912	06/14/1912 15:00	Unnamed	Post-tropical	35
1912	06/14/1912 18:00	Unnamed	Post-tropical	35
1913	09/04/1913 00:00	Unnamed	Tropical Depression	30
1913	09/03/1913 15:00	Unnamed	Tropical Storm	48
1913	09/03/1913 18:00	Unnamed	Tropical Storm	40
1913	09/03/1913 21:00	Unnamed	Tropical Storm	35
1916	09/06/1916 15:00	Unnamed	Tropical Depression	33
1916	05/16/1916 15:00	Unnamed	Tropical Storm	35
1916	05/16/1916 18:00	Unnamed	Tropical Storm	35
1916	09/06/1916 09:00	Unnamed	Tropical Storm	40
1916	09/06/1916 12:00	Unnamed	Tropical Storm	35
1920	09/23/1920 15:00	Unnamed	Tropical Depression	33
1920	09/23/1920 12:00	Unnamed	Tropical Storm	35
1924	09/30/1924 12:00	Unnamed	Post-tropical	60
1928	09/19/1928 06:00	Unnamed	Tropical Storm	60
1928	09/19/1928 09:00	Unnamed	Category 1	65
1929	10/02/1929 03:00	Unnamed	Post-tropical	50
1929	10/02/1929 06:00	Unnamed	Post-tropical	50
1929	10/02/1929 09:00	Unnamed	Post-tropical	50
1935	09/06/1935 00:00	Unnamed	Tropical Storm	45
1935	09/06/1935 03:00	Unnamed	Tropical Storm	48
1944	10/20/1944 15:00	Unnamed	Post-tropical	48

Hurricane Season	Date and Time	Name	Saffir-Simpson Hurricane Scale Rating	Maximum Sustained Wind (Kts)
1944	10/20/1944 18:00	Unnamed	Post-tropical	45
1944	08/02/1944 03:00	Unnamed	Tropical Storm	53
1944	08/02/1944 06:00	Unnamed	Tropical Storm	45
1945	09/18/1945 00:00	Unnamed	Tropical Storm	50
1945	09/18/1945 03:00	Unnamed	Tropical Storm	48
1945	09/18/1945 06:00	Unnamed	Tropical Storm	45
1945	09/18/1945 09:00	Unnamed	Tropical Storm	43
1947	09/25/1947 00:00	Unnamed	Post-tropical	35
1947	09/25/1947 03:00	Unnamed	Post-tropical	35
1949	09/13/1949 21:00	Unnamed	Tropical Depression	25
1949	09/14/1949 00:00	Unnamed	Tropical Depression	25
1949	09/14/1949 03:00	Unnamed	Tropical Depression	25
1949	09/14/1949 06:00	Unnamed	Tropical Depression	25
1949	09/14/1949 09:00	Unnamed	Tropical Depression	25
1949	09/14/1949 12:00	Unnamed	Tropical Depression	25
1954	10/15/1954 18:00	Hazel	Post-tropical	80
1954	10/15/1954 15:30		Category 4	115
1955	08/17/1955 15:00	Diane	Tropical Storm	58
1955	08/17/1955 18:00		Tropical Storm	55
1955	08/17/1955 21:00		Tropical Storm	53
1959	07/10/1959 00:00	Cindy	Tropical Depression	30
1959	07/10/1959 03:00		Tropical Depression	30
1959	07/10/1959 06:00		Tropical Depression	30
1959	07/10/1959 09:00		Tropical Depression	33
1959	07/10/1959 12:00		Tropical Storm	35
1964	07/23/1964 12:00	Unnamed	Tropical Depression	20
1964	07/23/1964 15:00	Unnamed	Tropical Depression	20
1964	08/31/1964 06:00	Cleo	Tropical Depression	25
1964	08/31/1964 09:00		Tropical Depression	25
1964	08/31/1964 12:00		Tropical Depression	25
1964	08/31/1964 15:00		Tropical Depression	28
1965	06/16/1965 03:00	Unnamed	Post-tropical	35
1965	06/16/1965 06:00	Unnamed	Post-tropical	35
1967	06/18/1967 12:00	Unnamed	Tropical Depression	30
1967	06/18/1967 15:00	Unnamed	Tropical Depression	30
1967	06/18/1967 18:00	Unnamed	Tropical Depression	30
1968	06/10/1968 00:00	Abby	Miscellaneous Disturbances	25
1968	06/10/1968 03:00		Miscellaneous Disturbances	25
1968	06/10/1968 06:00		Miscellaneous Disturbances	25
1968	06/10/1968 09:00		Miscellaneous Disturbances	25
1968	06/10/1968 12:00		Miscellaneous Disturbances	25
1968	06/09/1968 21:00		Tropical Depression	25
1970	05/26/1970 12:00	Alma	Tropical Storm	40

Hurricane Season	Date and Time	Name	Saffir-Simpson Hurricane Scale Rating	Maximum Sustained Wind (Kts)
1970	05/26/1970 15:00		Tropical Storm	38
1970	05/26/1970 18:00		Tropical Storm	35
1971	10/01/1971 18:00	Ginger	Tropical Depression	30
1971	10/01/1971 21:00		Tropical Depression	30
1971	10/02/1971 00:00		Tropical Depression	30
1971	10/02/1971 03:00		Tropical Depression	30
1971	10/01/1971 12:00		Tropical Storm	45
1971	10/01/1971 15:00		Tropical Storm	38
1976	09/15/1976 18:00	Unnamed	Subtropical	30
1976	09/15/1976 21:00		Subtropical	30
1976	09/16/1976 00:00		Subtropical	30
1976	09/16/1976 03:00		Subtropical	28
1976	09/16/1976 06:00		Subtropical	25
1976	09/16/1976 09:00		Subtropical	23
1976	09/16/1976 12:00		Subtropical	20
1985	08/18/1985 15:00	Danny	Tropical Depression	25
1996	09/06/1996 09:00	Fran	Tropical Storm	53
1996	09/06/1996 06:00		Category 1	65
1996	09/06/1996 03:00		Category 2	84
1997	07/24/1997 09:00	Danny	Tropical Depression	25
1997	07/24/1997 12:00		Tropical Depression	30
1997	07/24/1997 15:00		Tropical Storm	35
1998	09/04/1998 06:00	Earl	Post-tropical	50
1998	09/04/1998 09:00		Post-tropical	50
1999	09/05/1999 12:00	Dennis	Tropical Depression	30
1999	09/05/1999 15:00		Tropical Depression	28
1999	09/05/1999 18:00		Tropical Depression	25
1999	09/05/1999 09:00		Tropical Depression	33
1999	09/05/1999 06:00		Tropical Storm	35
2000	09/19/2000 03:00	Gordon	Post-tropical	23
2000	09/19/2000 06:00		Post-tropical	20
2000	09/19/2000 09:00		Post-tropical	20
2000	09/23/2000 12:00	Helene	Tropical Depression	25
2000	09/23/2000 15:00		Tropical Depression	30
2000	09/23/2000 18:00		Tropical Storm	35
2004	08/30/2004 03:00	Gaston	Tropical Depression	30
2004	08/30/2004 06:00		Tropical Depression	30
2004	08/30/2004 09:00		Tropical Depression	28
2004	08/30/2004 12:00		Tropical Depression	25
2004	08/30/2004 15:00		Tropical Depression	28
2006	06/14/2006 12:00	Alberto	Post-tropical	35
2006	06/14/2006 15:00		Post-tropical	35
2008	09/06/2008 09:00	Hanna	Tropical Storm	54

Hurricane Season	Date and Time	Name	Saffir-Simpson Hurricane Scale Rating	Maximum Sustained Wind (Kts)
2008	09/06/2008 12:00		Tropical Storm	45
2013	06/07/2013 18:00	Andrea	Post-tropical	40
2013	06/07/2013 15:00		Tropical Storm	40
2015	05/11/2015 00:00	Ana	Tropical Depression	30
2015	05/11/2015 03:00		Tropical Depression	30
2015	05/11/2015 06:00		Tropical Depression	30
2018	10/11/2018 15:00	Michael	Tropical Storm	45
2018	10/11/2018 18:00		Tropical Storm	45
2018	10/11/2018 21:00		Tropical Storm	48
2019	10/20/2019 09:00	Nestor	Post-tropical	40
2019	10/20/2019 12:00		Post-tropical	40
2020	08/04/2020 06:00	Isaias	Tropical Storm	60
2020	08/04/2020 03:10		Category 1	80
2021	06/21/2021 03:00	Claudette	Tropical Storm	35
2021	06/21/2021 06:00		Tropical Storm	40
2021	06/21/2021 09:00		Tropical Storm	40
2021	07/08/2021 12:00	Elsa	Tropical Storm	40
2021	07/08/2021 15:00		Tropical Storm	43
2021	07/08/2021 18:00		Tropical Storm	45
2021	07/08/2021 21:00		Tropical Storm	45
2022	10/01/2022 00:00	Ian	Post-tropical	50
2022	10/01/2022 03:00		Post-tropical	40
2024	08/09/2024 00:00	Debby	Post-tropical	30
2024	08/08/2024 21:00		Subtropical	35
2025	07/06/2025 18:00	Chantal	Tropical Depression	25
2025	07/06/2025 21:00		Tropical Depression	25
2025	07/07/2025 00:00		Tropical Depression	25
2025	07/07/2025 03:00		Tropical Depression	25

Federal records also indicate that eleven disaster declarations were made in 1996 (Hurricane Fran), 1999 (Hurricane Floyd), 2003 (Hurricane Isabel), 2011 (Hurricane Irene), 2018 (Hurricane Michael), 2019 (Hurricane Matthew and Hurricane Dorian), 2020 (Hurricane Isaias), 2022 (Hurricane Ian), and 2024 (Tropical Storm Debbie, Tropical Storm/Hurricane Helene) for the Region.[31]

Flooding and high winds are both hazards of concern during hurricane and tropical storm events in the Cape Fear region, as evidenced by the differences in impacts from Hurricanes Fran and Floyd. Whereas Floyd's effects were primarily due to flooding, Fran's high winds caused damage throughout the county in conjunction with flooding impacts. Some anecdotal information is available for the major storms that have impacted the area, as found below:

[31] A complete listing of historical disaster declarations can be found in Section 4: Hazard Identification.

***Table 5-20**: Hurricane, tropical depression, or tropical storm events recorded by the NCEI between 2000 and 2024[32].*

Event Location	Event Name	Date	Property Damage	Event Narrative	Event Description
Johnston	Tropical Depression Gaston	8/30/2004	$0	Wind gusts from Tropical Depression Gaston blew down a 45-year-old maple tree in Clayton, which fell onto a home, causing damage to the roof. Outside of Selma, a tree fell on top of a car.	No injuries, deaths, or property damage were reported.
Chatham				Several trees were blown down countywide because of Tropical Depression Gaston. The Gulf Post Office sustained damage when a tree fell on it and damaging a section of the roof and the building's back porch.	
Harnett	Tropical Storm Ernesto	9/1/2006	$0	Tropical Storm Ernesto produced high winds county-wide. Emergency officials reported numerous trees and large tree limbs down.	No injuries, deaths, or property damage were reported.
Johnston				Tropical Storm Ernesto produced high winds county-wide. Emergency officials reported approximately 50 downed trees and 4,400 customers without power.	
Lee	Tropical Storm Hermine	9/2/2016	$10,000	Multiple trees were reported down across the county.	Tropical Storm Hermine tracked along the Southeast United States coastline and across coastal portions of the Carolinas. Tropical Storm Hermine produced heavy rain across portions of central North Carolina. However, due to dry antecedent conditions, no flooding occurred despite rainfall of 3 to 5 inches across the southeastern portions of central North Carolina. Given the rain and gusty winds associated with Hermine, there were numerous reports of downed trees and wind damage, resulting in power outages. No injuries, deaths, or property damage were reported.
Moore			$10,000	Trees were reported down throughout the county.	

[32] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

Event Location	Event Name	Date	Property Damage	Event Narrative	Event Description
Harnett	Hurricane Florence	9/13/2018	$1,000,000	Frequent wind gusts of 40 to 60 mph resulted in numerous trees down across Harnett County, including homes, cars, power lines, and damage to structures. Numerous customers lost power in Harnett County as a result of the tropical storm-force winds.	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, inundating cities such as Fayetteville, Smithfield, Goldsboro, Durham, and Chapel Hill, and causing 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. There were three direct and six indirect deaths attributed to the storm with the WFO RAH CWA.
Johnston			$1,000,000	Frequent wind gusts of 40 to 60 mph resulted in numerous trees down across Johnston County, including on homes, cars, power lines, and damage to structures. Numerous customers lost power in Johnston County as a result of the tropical storm-force winds.	
Lee			$1,000,000	Frequent wind gusts of 40 to 60 mph resulted in numerous trees down across Lee County, including homes, cars, power lines, and damage to structures. Numerous customers lost power in Lee County as a result of the tropical storm-force winds.	
Moore			$1,000,000	Frequent wind gusts of 40 to 60 mph resulted in numerous trees down across Moore County, including on homes, cars, power lines, and damage to structures. Numerous customers lost power in Moore County as a result of the tropical storm-force winds.	
Chatham			$1,000,000	Frequent wind gusts of 30 to 50 mph resulted in numerous trees down across Chatham County, including on homes, cars, power lines, and damage to structures. Numerous customers lost power in Chatham County as a result of the tropical storm-force winds.	

Event Location	Event Name	Date	Property Damage	Event Narrative	Event Description
Moore	Tropical Storm Michael	10/11/2018	$100,000	Tropical storm wind gusts downed numerous trees, caused widespread power outages, and produced a variety of damage to homes and structures across the county. At the peak of the storm, the total peak outages were around 5,000 customers.	Tropical Storm Michael moved through North Carolina on Thursday, October 11th. Michael brought heavy rain and strong, damaging winds to central North Carolina. While heavy rainfall of 3 to 6 inches produced minor flash flooding across the area, there were high wind gusts of 40 to 60 mph that caused the biggest problems, knocking down scores of trees, leading to blocked roadways and thousands without power.
Chatham			$500,000	Tropical storm wind gusts downed more than 300 trees, caused widespread power outages, and produced a variety of damage to approximately 23 structures across the county. At the peak of the storm, the total peak outages were around 17,000 customers.	
Lee			$100,000	Tropical storm wind gusts downed multiple trees, caused scattered power outages, and produced minor damage to homes throughout the county.	
Harnett			$100,000	Tropical storm wind gusts downed multiple trees, caused scattered power outages, and produced minor damage to homes throughout the county.	
Johnston			$100,000	Tropical storm wind gusts downed multiple trees, caused scattered power outages, and produced minor damage to homes throughout the county.	

Event Location	Event Name	Date	Property Damage	Event Narrative	Event Description
Johnston	Hurricane Dorian	9/5/2019	$5,000	A large tree fell on power lines near Holly Grove Rode, Jumping Road. A large tree fell across a road near Benson. A vehicle struck a tree, which resulted in minor injuries to the individuals in the vehicle. Two indirect injuries were reported in Johnston County.	Hurricane Dorian moved north and northeastward near and along the coast of North Carolina on September 5th and 6th, with Dorian making landfall along the Outer Banks of North Carolina during the morning of September 6th. Meanwhile, heavy rain and strong damaging winds spread inland and across eastern central North Carolina. Heavy rainfall of 3 to 7 inches produced flash flooding across portions of the Coastal Plain of central North Carolina, generally along and east of the Interstate 95 corridor. Strong damaging winds of 35 to 55 mph spread inland across the Coastal Plain and eastern Sandhills of central North Carolina. This resulted in numerous power outages and trees down in these locations. Several weak tornadoes occurred during the afternoon of September 5th as multiple rain bands shifted eastward and into central North Carolina during peak heating.
			$500,000	Frequent wind gusts of 30 to 50 mph resulted in scattered numerous trees and power lines down across Johnston County, including some on homes. Numerous customers lost power in Johnston County as a result of the tropical storm-force winds.	
Harnett			$500,000	Frequent wind gusts of 30 to 50 mph resulted in numerous trees and power lines down across Harnett County, including some on homes. Numerous customers lost power in Harnett County as a result of the tropical storm-force winds.	
Johnston (Zone)	Hurricane Isaias	8/3/2020	$500,000	Frequent wind gusts of 30 to 45 mph resulted in scattered trees and power lines down across Johnston County, including some on homes. Numerous customers lost power in Johnston County as a result of the tropical storm-force winds.	Hurricane Isaias made landfall in southeast North Carolina, then moved north through coastal North Carolina. Significant rain fell across the Coastal Plain, Sandhills, and eastern Piedmont of North Carolina as Isaias moved

Event Location	Event Name	Date	Property Damage	Event Narrative	Event Description
Harnett (Zone)			$500,000	Frequent wind gusts of 30 to 45 mph resulted in scattered trees and power lines down across Harnett County, including some on homes. Numerous customers lost power in Harnett County as a result of the tropical storm-force winds.	northward through the state along with gusty winds up to 50 to 60 miles per hour. Isaias produced two to five inches of rain across much of eastern NC, resulting in flash flooding, as well as minor flooding along the Neuse River.
Moore (Zone)	Hurricane Ian	9/30/2022	$750,000	Frequent wind gusts of 40 to 60 mph resulted in scattered numerous trees and power lines down across Moore County, including some on homes. Numerous customers lost power in Moore County as a result of the tropical storm-force wind gusts. A 24-year-old male died when the car hydroplaned and ran off the road, and struck a tree.	Hurricane Ian made landfall along the South Carolina coast near Georgetown during the early afternoon hours of September 30, 2022. Widespread wind gusts over tropical storm force and heavy rainfall occurred across much of central North Carolina through the afternoon and evening hours. There were numerous reports of wind damage and power outages as a result of the storm.
Harnett (Zone)			$750,000	Frequent wind gusts of 40 to 60 mph resulted in numerous trees scattered and power lines down across Harnett County, including some on homes. Numerous customers lost power in Harnett County as a result of the tropical storm-force wind gusts.	
Johnston (Zone)			$1,000,000	Frequent wind gusts of 40 to 60 mph resulted in scattered to numerous trees and power lines down across Johnston County, including some on homes. Numerous customers lost power in Johnston County as a result of the tropical storm-force wind gusts. A 24-year-old woman died when she lost control of her car in wet conditions and struck a tree. A 65-year-old man died in Johnston County from carbon monoxide poisoning from a generator that he was running. A 25-year-old man died when his car hydroplaned and ran off the road, and struck a tree in Johnston County.	

Event Location	Event Name	Date	Property Damage	Event Narrative	Event Description
				There were two direct deaths and one direct injury reported in Johnston County.	
Lee (Zone)			$750,000	Frequent wind gusts of 40 to 60 mph resulted in scattered numerous trees and power lines down across Lee County, including some on homes. Numerous customers lost power in Lee County as a result of the tropical storm-force wind gusts.	
Chatham (Zone)			$750,000	Frequent wind gusts of 40 to 60 mph resulted in scattered numerous trees and power lines down across Chatham County, including some on homes. Numerous customers lost power in Chatham County as a result of the tropical storm-force wind gusts.	

5.5.5 Probability of Future Occurrences

The NRI utilizes NOAA's National Centers for Environmental Prediction HURDAT2 Best Track Data Archive from 1851 to 2020 to calculate the risk values. According to the NRI, the county with the highest EAL total is Harnett County, with $12,212,368.52 EAL, followed by Moore County ($10,019,815.72), Johnston County ($9,523,961.44), Lee County ($4,898,281.01), and Chatham County ($3,519,443.05). Chatham, Moore, Johnston, and Lee County are at a Relatively High average Hazard Risk Index rating, while Harnett County has a Very High average Hazard Risk Index rating, which is the same Hazard Risk Index rating for each county when compared to the average EAL National Percentile Rating and Average EAL Rating.

Harnett and Johnston County have an annualized frequency of 0.21 events per year, or around one event every five years. Chatham County has an expected annualized frequency of 0.14 (1 event every 7 years), Lee County has an annualized frequency of 0.16 (1 event every 6 years), and Moore County has an annualized frequency of 0.17 (1 event every 6 years). The annualized frequency of hurricane and tropical storm events from the NRI is listed below.

***Table 5-21**: NRI Hurricane and Tropical Storm Annualized Frequency, EAL total, national percentile EAL rating, EAL score, and Hazard Risk Index Score*

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Rate National Percentile	Average EAL National Percentile Rating	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Chatham County	**0.14**	**$3,519,443.05**	**67.36**	**Relatively High**	**70.44**	**Relatively High**	**71.22**	**Relatively High**
Goldston	0.14	$343,965.85	70.36	Relatively High	79.31	Relatively High	81.73	Very High
Pittsboro	0.13	$365,719.20	64.18	Relatively High	65.48	Relatively High	64.44	Relatively High
Siler City	0.13	$509,824.21	66.91	Relatively High	70.70	Relatively High	77.15	Relatively High
Area outside Jurisdictional Boundaries	0.14	$2,299,933.80	68.01	Relatively High	70.87	Relatively High	70.56	Relatively High
Harnett County	**0.21**	**$12,212,368.52**	**83.25**	**Very High**	**80.23**	**Very High**	**82.81**	**Very High**
Angier	0.18	$896,261.80	82.26	Very High	74.14	Relatively High	77.97	Relatively High
Coats	0.22	$991,065.76	85.27	Very High	82.92	Very High	85.90	Very High
Dunn	0.23	$2,506,926.32	82.11	Very High	84.91	Very High	88.82	Very High
Erwin	0.23	$2,300,384.29	83.87	Very High	83.99	Very High	87.11	Very High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Rate National Percentile	Average EAL National Percentile Rating	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Lillington	0.21	$2,943,013.51	82.90	Very High	78.20	Relatively High	79.59	Relatively High
Area outside Jurisdictional Boundaries	0.21	$3,782,959.11	83.18	Very High	81.11	Very High	83.44	Very High
Johnston County	**0.21**	**$9,523,961.44**	**71.31**	**Relatively High**	**69.38**	**Relatively High**	**70.44**	**Relatively High**
Archer Lodge	0.22	$1,388,448.28	72.63	Relatively High	73.83	Relatively High	71.83	Relatively High
Benson	0.22	$1,121,278.75	76.26	Relatively High	72.59	Relatively High	75.55	Relatively High
Clayton	0.20	$2,742,994.33	69.81	Relatively High	70.97	Relatively High	70.40	Relatively High
Four Oaks	0.22	$576,565.60	73.20	Relatively High	68.17	Relatively High	71.96	Relatively High
Kenly	0.23	$312,608.42	73.90	Relatively High	68.83	Relatively High	71.87	Relatively High
Micro	0.23	$397,901.64	74.22	Relatively High	66.38	Relatively High	70.57	Relatively High
Pine Level	0.23	$509,237.56	73.55	Relatively High	75.67	Relatively High	79.73	Relatively High
Princeton	0.23	$309,465.65	74.14	Relatively High	68.00	Relatively High	69.37	Relatively High
Selma	0.23	$1,793,648.69	73.19	Relatively High	74.13	Relatively High	78.25	Relatively High
Smithfield	0.23	$1,613,313.79	73.25	Relatively High	73.41	Relatively High	78.19	Relatively High
Wilson's Mill	0.22	$985,968.10	72.92	Relatively High	73.22	Relatively High	75.67	Relatively High
Area outside Jurisdictional Boundaries	0.20	$2,382,304.09	69.37	Relatively High	66.95	Relatively High	65.83	Relatively High
Lee County	**0.16**	**$4,898,281.01**	**77.20**	**Relatively High**	**76.50**	**Relatively High**	**79.85**	**Relatively High**
Broadway	0.19	$767,420.30	84.04	Very High	80.49	Very High	83.49	Very High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Rate National Percentile	Average EAL National Percentile Rating	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Sanford	0.16	$4,423,600.08	76.83	Relatively High	76.70	Relatively High	79.91	Relatively High
Areas Outside Jurisdictional Boundaries	0.17	$474,680.93	79.84	Relatively High	75.05	Relatively High	79.48	Relatively High
Moore County	**0.17**	**$10,019,815.72**	**79.06**	**Relatively High**	**77.64**	**Relatively High**	**77.90**	**Relatively High**
Aberdeen	0.18	$2,627,542.81	78.63	Relatively High	76.42	Relatively High	76.78	Relatively High
Cameron	0.17	$380,219.10	81.20	Very High	80.40	Very High	82.35	Very High
Carthage	0.17	$2,529,760.45	79.72	Relatively High	79.54	Relatively High	80.92	Very High
Foxfire Village	0.18	$1,119,667.06	79.56	Relatively High	78.95	Relatively High	78.76	Relatively High
Pinebluff	0.20	$682,669.57	80.30	Very High	79.14	Relatively High	81.17	Very High
Pinehurst	0.17	$3,828,302.82	78.30	Relatively High	79.74	Relatively High	80.30	Very High
Robbins	0.14	$1,150,762.98	78.45	Relatively High	79.56	Relatively High	82.81	Very High
Southern Pines	0.17	$3,699,950.58	78.13	Relatively High	78.23	Relatively High	78.76	Relatively High
Taylortown	0.17	$768,309.79	78.45	Relatively High	80.45	Very High	81.79	Very High
Vass	0.17	$455,831.50	79.63	Relatively High	82.33	Very High	84.84	Very High
Whispering Pines	0.17	$410,062.43	78.62	Relatively High	81.23	Very High	78.82	Relatively High
Areas Outside Jurisdictional Boundaries	0.17	$1,013,605.66	80.34	Very High	71.84	Relatively High	68.93	Relatively High

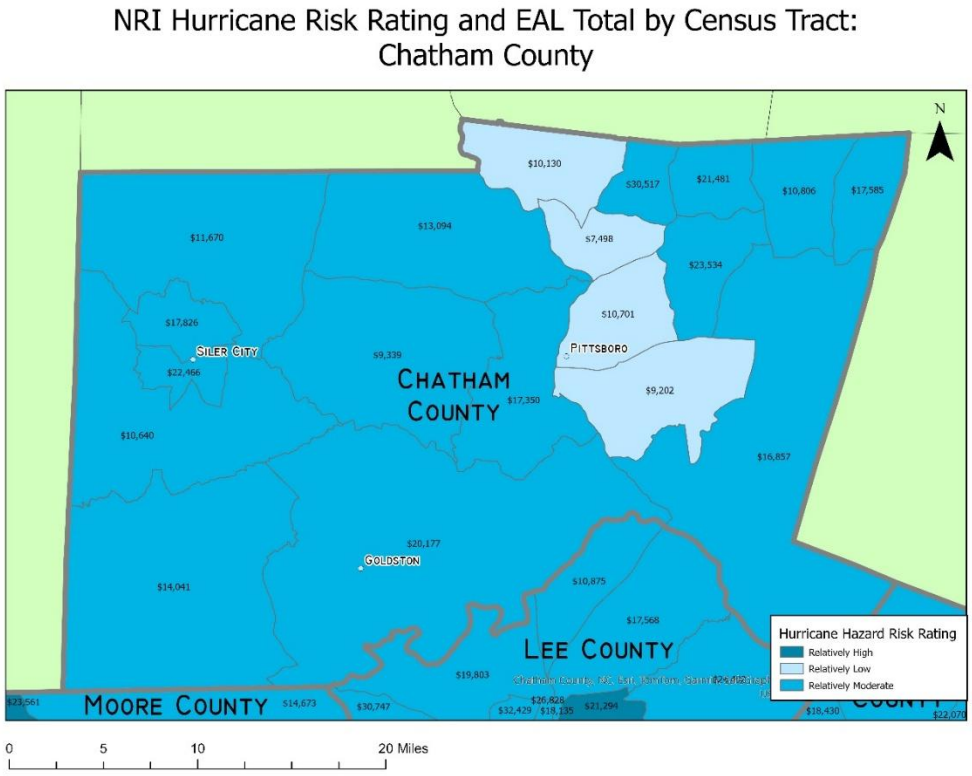

***Figure 5-55**: NRI Hurricane Risk Rating and EAL by Census Tract for Chatham County*

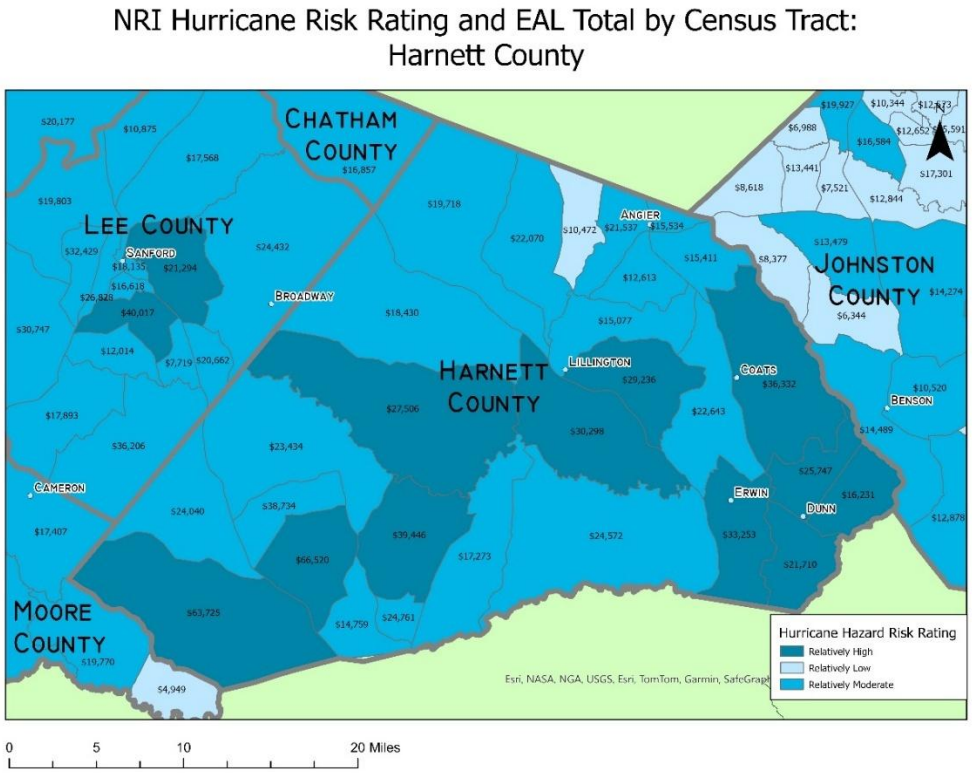

***Figure 5-56**: NRI Hurricane Risk Rating and EAL by Census Tract for Harnett County*

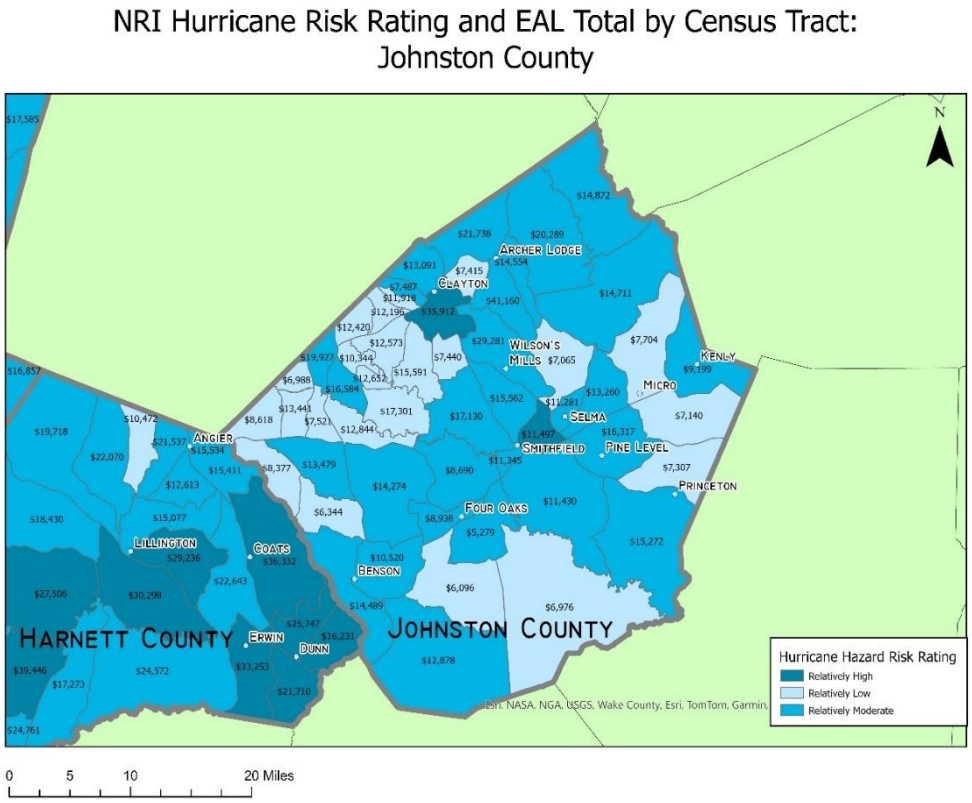

***Figure 5-57**: NRI Hurricane Risk Rating and EAL by Census Tract for Johnston County*

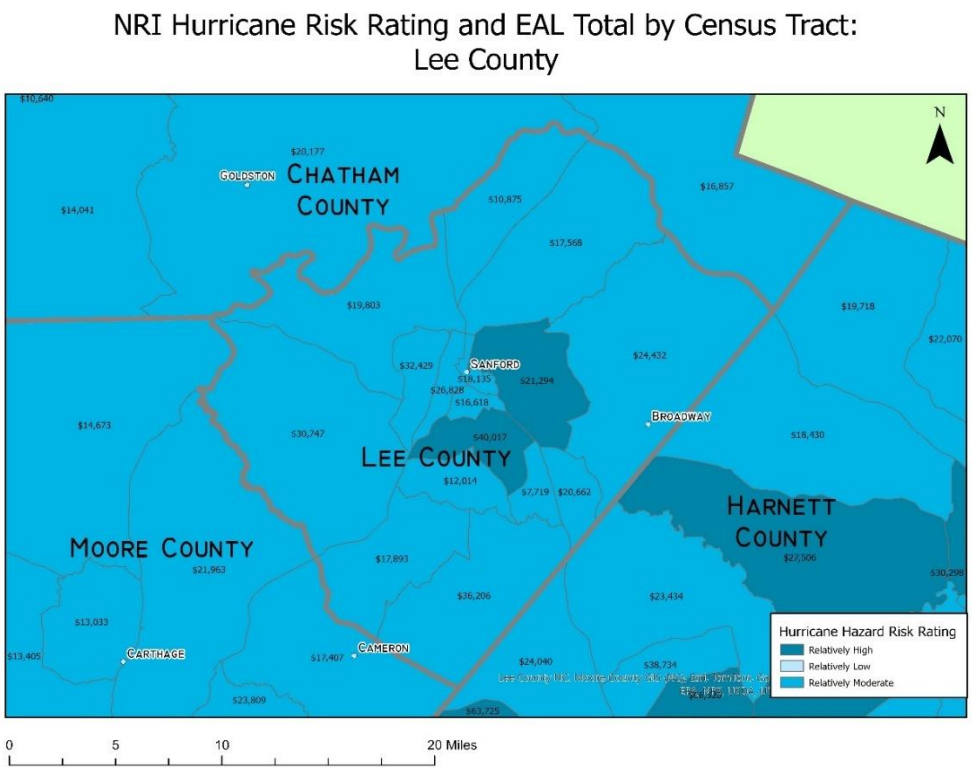

***Figure 5-58**: NRI Hurricane Risk Rating and EAL by Census Tract for Lee County*

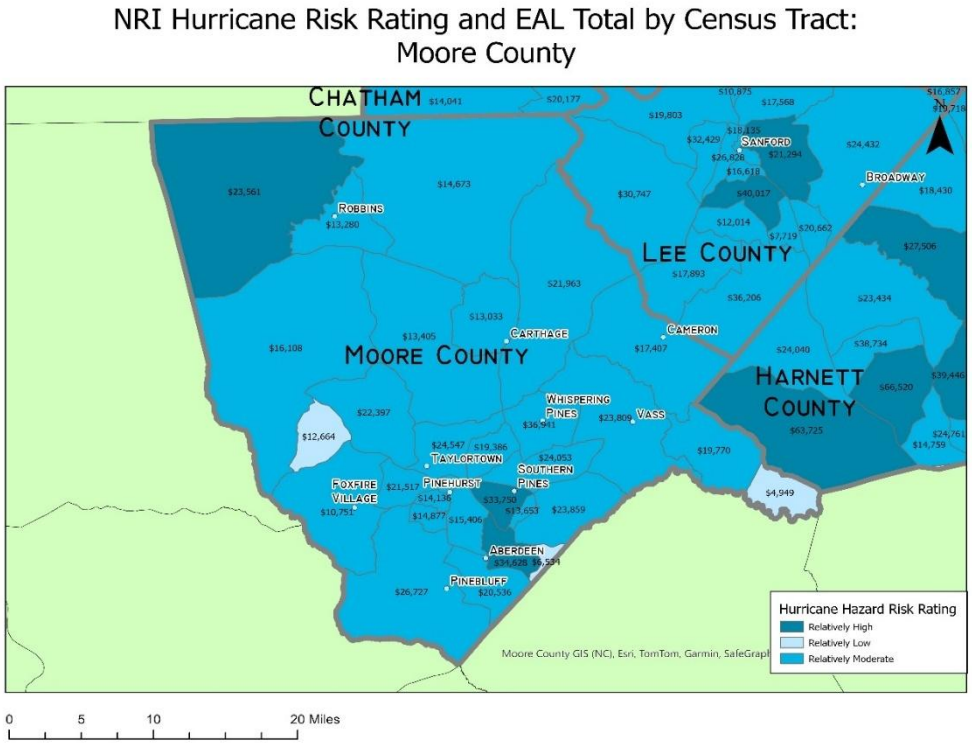

***Figure 5-59**: NRI Hurricane Risk Rating and EAL by Census Tract for Moore County*

5.5.6 Impact

5.5.6.1 People

Hurricanes may affect people in several ways, including causing deaths, injuries, property loss, outbreaks of disease, mental trauma, and the destruction of livelihoods. During a hurricane, residential, commercial, and public buildings, as well as critical infrastructure such as transportation, water, energy, and communication systems, may be damaged or destroyed by several hurricane impacts. The wind and flooding hazards associated with hurricanes can be tremendously destructive and deadly. Power outages and flooding are likely to displace people from their homes. The towns of Four Oaks, Selma, and Smithfield are more vulnerable due to the flood risk in their area. Furthermore, water can become polluted, making it undrinkable, and, if consumed, diseases and infections can spread easily.

Evacuations may occur due to hurricane or tropical storm impacts, which means that individuals who have limited mobility, lack transportation in their housing unit (2.9% in Chatham County, 3.8% in Harnett County, 3.8% in Johnston County, 4.3% in Lee County, and 4.1% in Moore County[33]), have a disability (11.8% in Chatham County, 15.5% in Harnett County, 13% in Johnston County, 17.7% in Lee County, and 14% in Moore County[34]), or have an independent

[33] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[34] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810

living difficulty (4.8% in Chatham County, 6.4% in Harnett County, 5.1% in Johnston County, 6.4% in Lee County, and 5.9% in Moore County[35]). To ensure that residents in the planning area can evacuate in a timely manner, emergency services should consider developing specialized evacuation plans to assist those with disabilities, those without access to vehicles in their housing units, and those with independent living difficulties.

Preparing for hurricane and tropical storm events can help residents avoid property loss, potential injuries, or loss of life. Many preparedness resources and alerts are issued through the internet, and while it is becoming increasingly more common to issue public safety alerts and preparedness information through internet resources many residents do not have access to computing devices (5% of housing units in Chatham County, 6.1% in Harnett County, 3.2% in Johnston County, 5.1% in Lee County, and 5.3% in Moore County estimated in 2023[36]) or have an internet subscription (13.2% of housing units in Chatham County, 16.3% in Harnett County, 13.7% in Johnston County, 23.8% in Lee County, and 10.2% in Moore County in 2023[37]) in their housing unit. To prepare residents for hurricane and tropical storm events, it is important that the planning area considers developing a wide range of preparedness and awareness materials to communicate hurricane and tropical storm risk. This includes using various media, such as radio ads, flyers, and newspaper ads.

Many emergency alerts are issued through reverse 911 systems and require a telephone service to receive them. However, several household units are estimated not to have telephone service (0.5% in Chatham County, 0.8% in Harnett County, 1.1% in Johnston County, 0.9% in Lee County, and 0.9% in Moore County)[38] which means that these residents may not have access to important, time-sensitive emergency alerts.

- Develop a plan to ensure that all residents can receive emergency alerts by delivering urgent, time-sensitive alerts through multiple channels, including radio, television, the internet, and text (reverse 911).
- Make a plan to ensure that all residents can evacuate in a timely manner if required and that individuals who require extra assistance evacuating are accounted for.

5.5.6.2 Changes in Development or Housing Characteristics

All counties in the planning area have experienced an increase in housing units between 2013 and 2023, increasing in Chatham County by 20.8%, Harnett County by 14.08%, Johnston County by 29.87%, Lee County by 11.35%, Moore County by 11.92%, and the planning area by 19.3% total. An increase in housing units alongside the increase in population (23.33% in

[35] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810
[36] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04
[37] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04
[38] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

Chatham County, 19.03% in Harnett County, 34.19% in Johnston County, 11.58% in Lee County, and 16.54% in Moore County between 2010 and 2023[39]) means that there may be more people in the planning area and more housing units that have the potential to be damaged from hurricane or tropical storm events.

Depending on the strength of a tropical storm or hurricane, structural damage to buildings may occur. A weak tropical storm may cause no damage whatsoever. Loss of electric power, potable water, telecommunications, wastewater, and other critical utilities is very possible during a hurricane. Some damage can be so severe that it may take days to weeks to restore. The most likely impact from a category one or greater hurricane is the loss of glass windows and doors due to high winds and debris. Loss of roof coverings, partial wall collapses, and other damage requiring significant repairs are possible in a major (category 3 to 5) hurricane. The level of damage is commensurate with the strength of the storm, as explained by the Saffir-Simpson Hurricane Wind Scale. Housing units such as mobile homes (13.0% in Chatham County, 18.5% in Harnett County, 14.0% in Johnston County, 14.3% in Lee County, and 11.0% in Moore County)[40] or boats, RVs, and Vans (0.1% in Chatham, Harnett, Johnston, and Moore County, and 0.2% in Lee County[41]) are at a higher risk of damage during hurricanes and tropical storms.

- Due to the large increase in housing units and increase in population between 2010 and 2023, the number of housing units will likely continue to increase. Residents in the planning area should be encouraged to use hurricane-resistant building materials and practices.
- Because a large share of housing units is more susceptible to damage than traditionally built homes, such as mobile homes or RVs, it is important to prioritize retrofitting in high-risk zones and to help homeowners in those areas prepare their housing units for natural hazards.

5.5.6.3 Economy

Economic damage includes property damage from wind, rain, and floods, as well as intangibles such as business interruption and additional living expenses. Damage to infrastructure utilities—including roads, water, and power, as well as municipal buildings—impacts all jurisdictions in the Region. Hurricanes or tropical storms may create a financial burden on those affected in the planning area due to repair costs, replacement of damaged items, displacement costs, and interruptions to normal day-to-day life.

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[39] U.S. Census Bureau. (n.d.). TOTAL POPULATION. Decennial Census, DEC Summary File 1, Table P1. Retrieved June 16, 2025, from https://data.census.gov/table/DECENNIALSF12010.P1
U.S. Census Bureau, U.S. Department of Commerce. (n.d.). ACS Demographic and Housing Estimates. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP05. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP05

[40] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[41] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Types of Computers and Internet Subscriptions. American Community Survey, ACS 5-Year Estimates Subject Tables, Table S2801. Retrieved June 16, 2025, from https://data.census.gov/table/ACSST5Y2023.S2801

5.5.6.4 First Responders

First responders responding to the impacts of a tropical storm or hurricane face many risks to their health and life safety. Responders face the risk of injury or death during a storm event, including flooding and high winds. Personnel or their families may be harmed, limiting their response capability. Downed trees, power lines, and flood waters may prevent access to areas in need, which prolongs response time. Furthermore, hurricanes typically affect a large area, thereby increasing the number of emergency responses required.

5.5.6.5 Natural Environment

Hurricanes can devastate wooded ecosystems, removing all foliage from forest canopies, and can change habitats so drastically that indigenous animal populations suffer. Specific foods can be taken away as high winds will often strip fruits, seeds, and berries from bushes and trees. Secondary impacts may occur as well. For example, high winds and debris may damage an above-ground fuel tank, leading to a significant chemical spill.

5.5.6.6 First Responders

First responders who respond during tropical storms or hurricane events are at a high risk of injury. These events can lead to flooding, high winds, downed trees, and downed powerlines, and prevent access to areas where residents require emergency services. Hurricanes generally affect a large area and increase the number of emergency calls requiring responses. Hurricanes can also significantly disrupt first responders' ability to communicate and travel during hurricane or tropical storm events, including reduced travel capacity, power outages, and damage to critical emergency facilities.

5.5.6.7 Future Conditions

According to the NCCSR[42], it is very likely that in the future, extreme or heavy precipitation associated with hurricanes will increase, along with the potential for flooding. This means that an increase in climate change impacts will likely correlate with an increase in the frequency and/or severity of hurricanes and tropical storm events in the future.

5.6 Severe Weather

5.6.1 Hazard Description and Background

Severe Weather can produce a variety of accompanying hazards, including wind, hail, and lightning. Although severe weather generally affects a small area, it can be very dangerous and cause substantial property damage.

Three conditions need to occur for a thunderstorm to form. First, it needs moisture to form clouds and rain. Second, it needs unstable air, such as warm air that can rise rapidly (often called the “engine” of the storm). Third, thunderstorms need lift, which comes from cold or warm fronts, sea breezes, mountains, or the sun’s heat. When these conditions occur simultaneously,

[42] North Carolina Institute for Climate Studies [NCICS]. (2020). North Carolina Climate Science Report. NCICS. Retrieved January 29, 2025, from https://ncics.org/wp-content/uploads/2020/10/NC_Climate_Science_Report_FullReport_Final_revised_September2020.pdf

air masses of different temperatures meet, and a thunderstorm forms. These storm events can occur singularly, in lines, or in clusters. Furthermore, they can move through an area very quickly or linger for several hours.

According to the National Weather Service, more than 100,000 thunderstorms occur each year, though only about 10 percent of these storms are classified as “severe.” A severe thunderstorm occurs when the storm produces at least one of these three elements: 1) hail at least one inch in diameter, 2) a tornado, or 3) winds of at least 58 miles per hour.

Thunderstorm events can produce straight-line winds that can cause severe damage to communities and threaten the safety of populations. Such wind events, sometimes separate from a thunderstorm event, are common throughout the Cape Fear Region. Therefore, high winds are also reported in this section.

High winds can form when the pressure on the Northeast coast combines with strong pressure moving through the Ohio Valley. This creates a tight pressure gradient across the region, resulting in high winds that increase with elevation. It is common for wind gusts of 30 to 60 miles per hour during the winter months.

Downbursts are also possible with thunderstorm events. Such events are wind bursts exceeding 125 miles per hour. They are often confused with tornadoes. Down drafts from the base of a convective thunderstorm cloud cause downbursts. It occurs when rain-cooled air within the cloud becomes heavier than its surroundings. Thus, air rushes towards the ground in a destructive yet isolated manner. There are two types of downbursts. Downbursts less than 2.5 miles wide, duration less than 5 minutes, and winds up to 168 miles per hour are called “microbursts.” Larger events greater than 2.5 miles at the surface and longer than 5 minutes with winds up to 130 miles per hour are referred to as “macrobursts.”

Hailstorms are a potentially damaging outgrowth of severe weather. Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to the rapid rising of warm air into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on ice crystals until they reach a sufficient weight and fall as precipitation. Hail typically takes the form of spheres or irregularly shaped masses greater than 0.75 inches in diameter. The size of hailstones is a direct function of the size and severity of the storm. High velocity updraft winds are required to keep hail in suspension in thunderclouds. The strength of the updraft is a function of the intensity of heating at the Earth’s surface. Higher temperature gradients with increasing elevation above the surface result in longer suspension times and larger hailstones. Table 5-22 shows the TORRO Hailstorm Intensity Scale, which measures hail severity.

***Table 5-22**: TORRO Hailstorm Intensity Scale*

	Intensity Category	Typical Hail Diameter (mm)*	Probable Kinetic Energy, J- m^2	mm to inch conversion (inches)	Typical Damage Impacts
H0	Hard Hail	5	0-20	0 - 0.2	No damage
H1	Potentially Damaging	5-15	>20	0.2 - 0.6	Slight general damage to plants, crops
H2	Significant	10-20	>100	0.4 - 0.8	Significant damage to fruit, crops, and vegetation
H3	Severe	20-30	>300	0.8 - 1.2	Severe damage to fruit and crops, damage to glass and plastic structures, paint, and wood, and scored
H4	Severe	25-40	>500	1.0 - 1.6	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50	>800	1.2 - 2.0	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60	-	1.6 - 2.4	Bodywork of grounded aircraft dented; brick walls pitted
H7	Destructive	50-75	-	2.0 - 3.0	Severe roof damage, risk of serious injuries
H8	Destructive	60-90	-	1.6 - 3.5	(Severest recorded in the British Isles) Severe damage to the aircraft's bodywork
H9	Super Hailstorms	75-100	-	3.0 - 3.9	Extensive structural damage. Risk of severe or even fatal injuries to people caught in the open
H10	Super Hailstorms	>100	-	-	Extensive structural damage. Risk of severe or even fatal injuries to people caught in the open

Source: https://www.torro.org.uk/research/hail/hscale

Lightning is an electrical discharge resulting from the buildup of positive and negative charges within a thunderstorm, creating a “bolt” when the buildup becomes strong enough. This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Lightning rapidly heats the sky as it flashes, but the surrounding air cools afterward. This rapid heating and cooling of the surrounding air causes thunder, which often accompanies lightning strikes. While most often affiliated with severe thunderstorms, lightning may also strike outside of heavy rain and might occur as far as 10 miles away from any rainfall.

Lightning strikes occur in very small, localized areas. For example, they may strike a building, an electrical transformer, or even a person. According to the National Center for Biotechnology Information, lightning injures an average of 400 people and kills 40 people each year in the United States. Direct lightning strikes can also cause significant damage to buildings, critical facilities, and infrastructure, often by igniting fires. Lightning also ignites wildfires that can cause widespread property damage.

Figure 5-60 shows a lightning flash density map for the years 2008-2017 based upon data provided by Vaisala's U.S. National Lightning Detection Network (NLDN®).

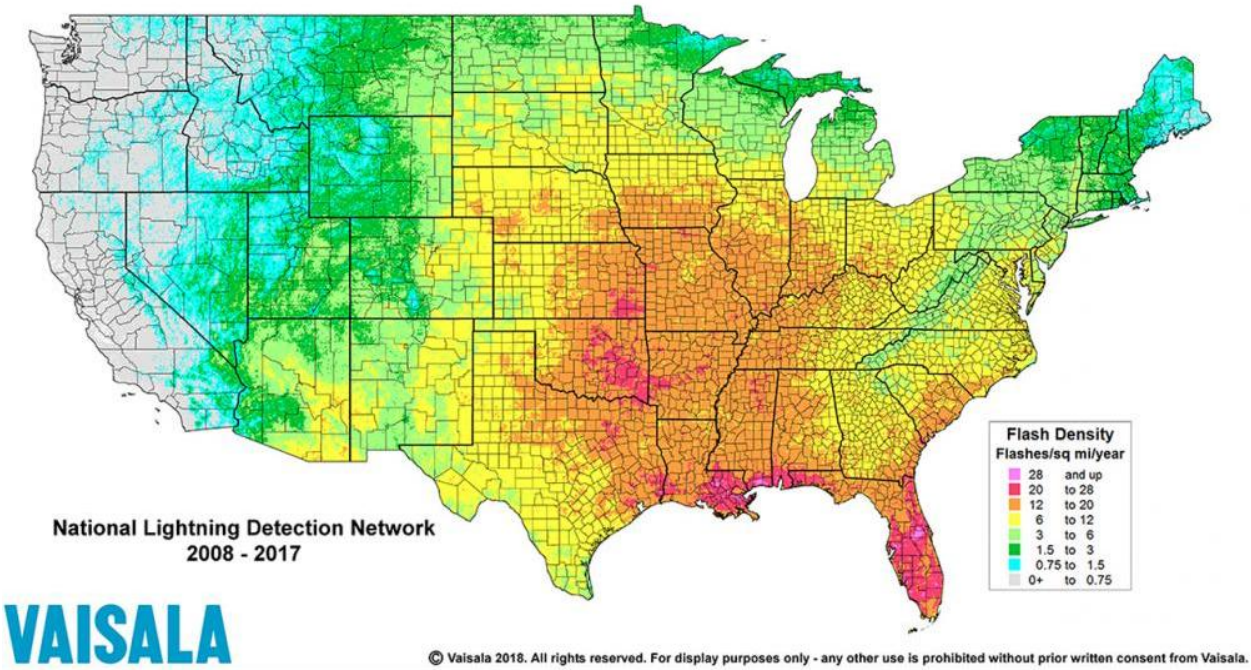

***Figure 5-60**: Lightning Flash Density in the United States*

5.6.2 Location and Spatial Extent

A wind event is an atmospheric hazard and thus has no geographic boundaries. It is typically a widespread event that can occur in all regions of the United States. However, thunderstorms are most common in the central and southern states because atmospheric conditions in those regions are favorable for their development. Also, the Cape Fear Region typically experiences several straight-line wind events each year. These wind events can and have caused significant damage. It is assumed that the Cape Fear Region has uniform exposure to severe weather events, and the spatial extent of the impact could be large. Hailstorms frequently accompany thunderstorms, so their locations and spatial extents coincide (maps provided below)

. It is assumed that the Cape Fear Region is uniformly exposed to severe thunderstorms; therefore, all areas of the region are equally exposed to hail, which such storms may produce. Lightning occurs randomly; therefore, it is impossible to predict where or how often it will strike. It is assumed that all of the Cape Fear Region is uniformly exposed to lightning. The figures below show the average annual cloud-to-ground lightning strikes in the Region, with "High" being greater than 100 strikes per year, "Medium" 99-50 strikes per year, and "Low" being less than 50 strikes per year. The figures below show the locations of recorded thunderstorms and lightning events, with data ranging from 1987 to the present. Per the National Weather Service Instruction 10-1605, a lightning event is defined as a sudden electrical discharge from a thunderstorm, resulting in a fatality, injury, and/or damage, so each point represented on the map for event type "lightning" records exact location of lightning strike/strikes that result in a fatality, injury, and/or damage. The same manual defines Thunderstorm Winds as winds arising from convection (occurring within 30 minutes of lightning being observed or detected), with

speeds of at least 50 knots (58 mph), or winds of any speed (non-severe thunderstorm winds below 50 knots) producing a fatality, injury, or damage.

The following maps represent the NWS SPC severe weather event reports, which include hail data from multiple sources such as public submissions, media sources, insurance sources, emergency managers, and trained spotters, and are reviewed, quality-checked, and compiled into the monthly storm data publications. The following maps represent the reported hail, wind, and lightning events that have been reported in the planning area between 2010 and 2025, including a heat map to demonstrate where severe weather events were sparsely or densely reported:

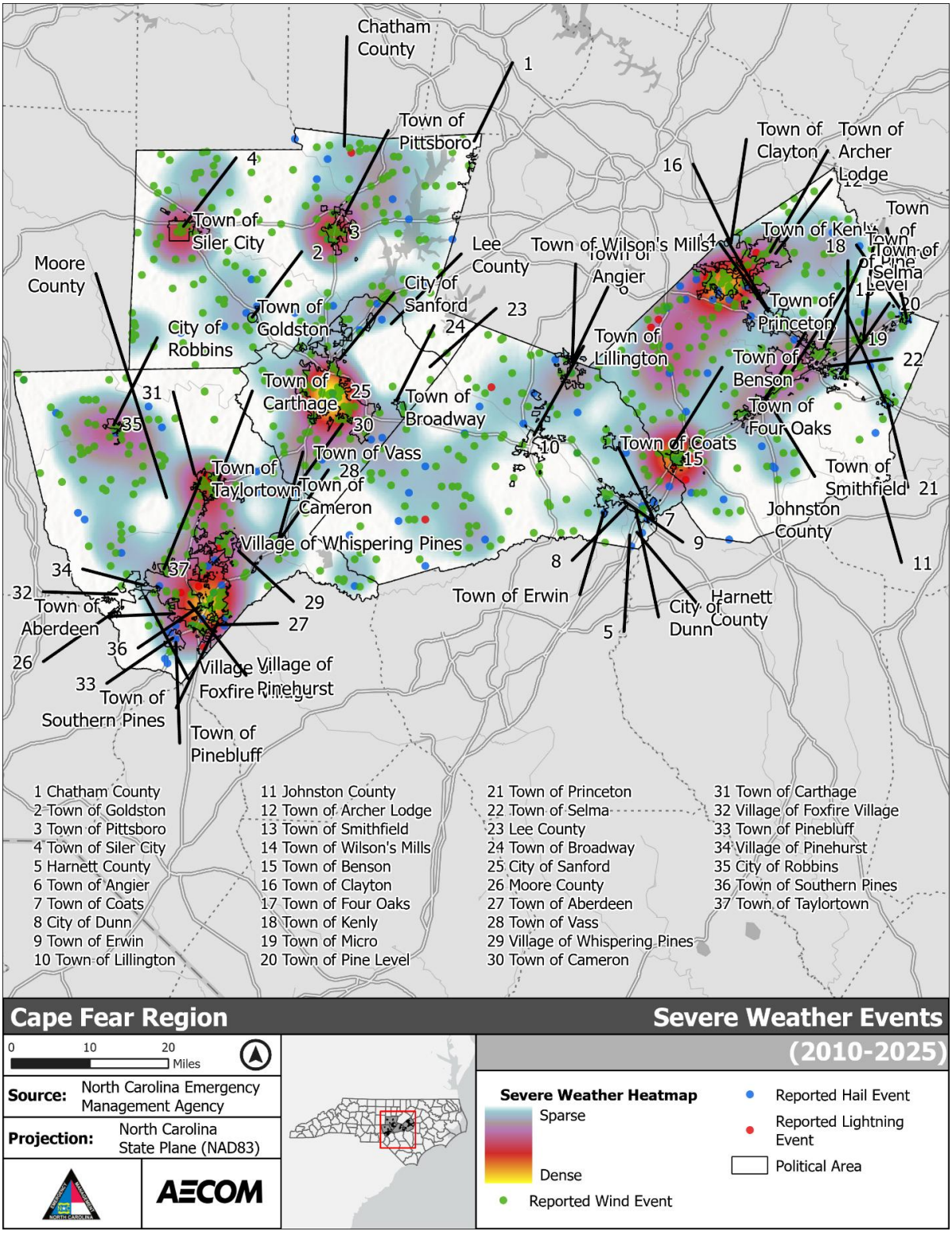

***Figure 5-61**: Severe Weather Areas – Cape Fear Region*

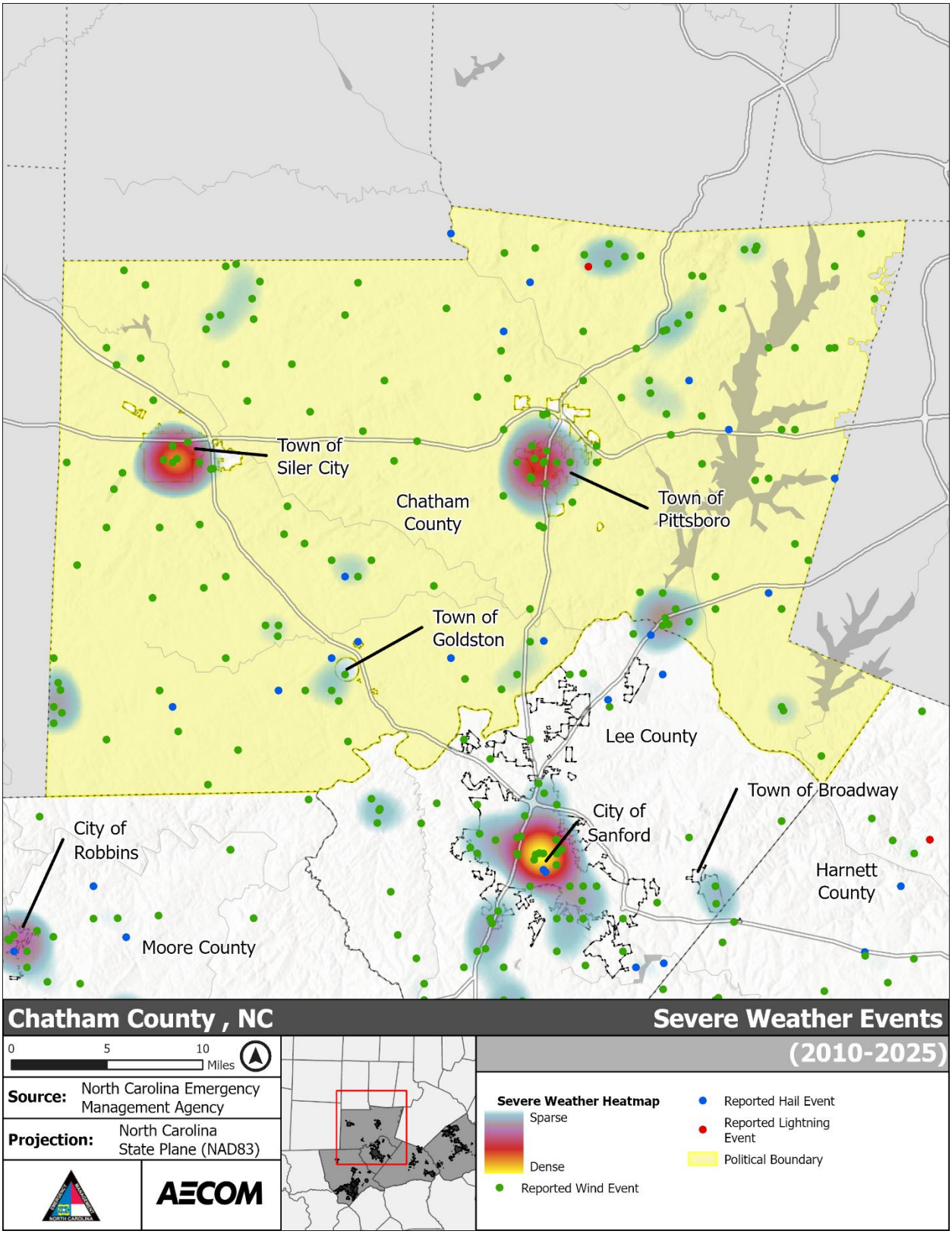

Figure 5-62: Severe Weather Area – Chatham County

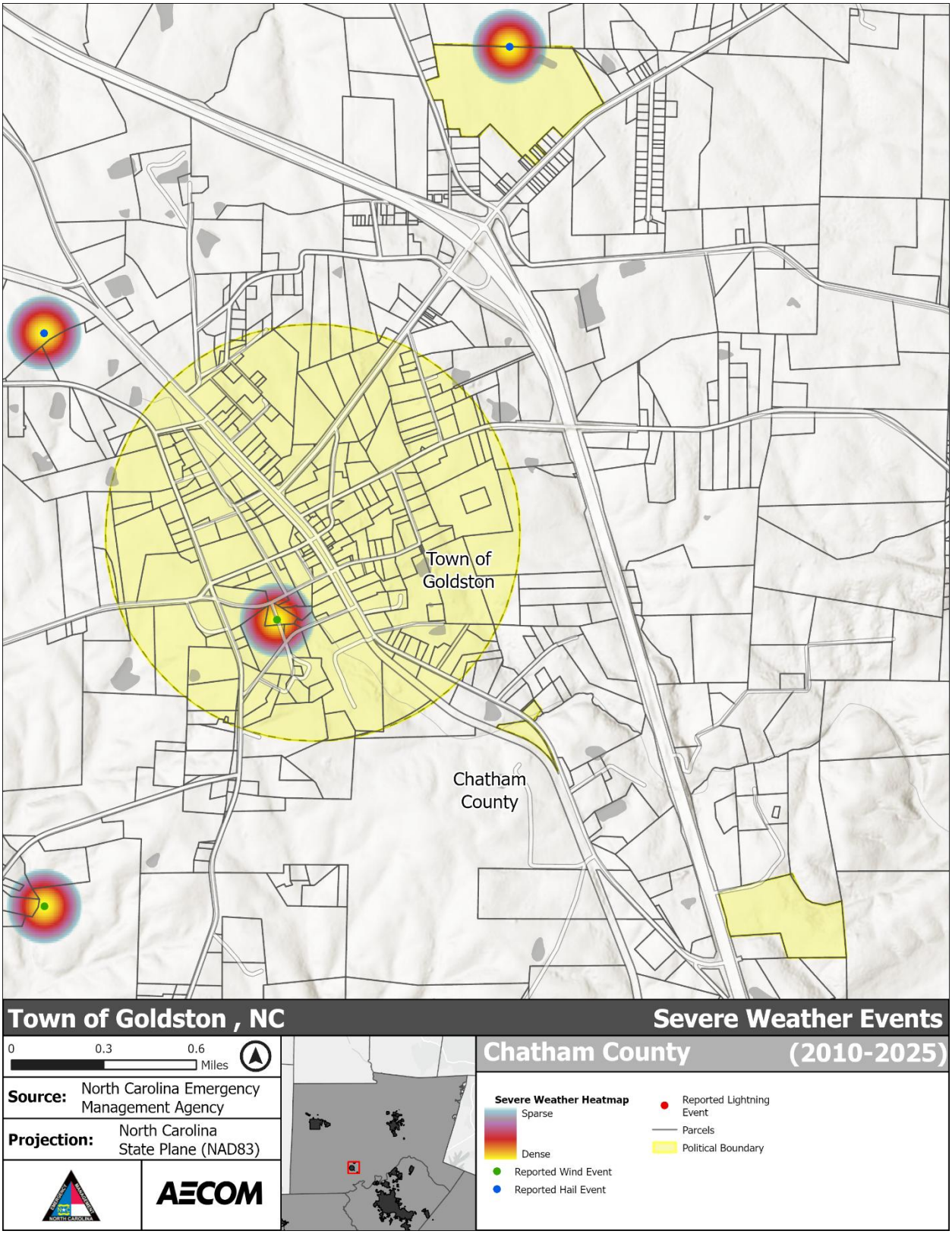

***Figure 5-63**: Severe Weather Area – Town of Goldston*

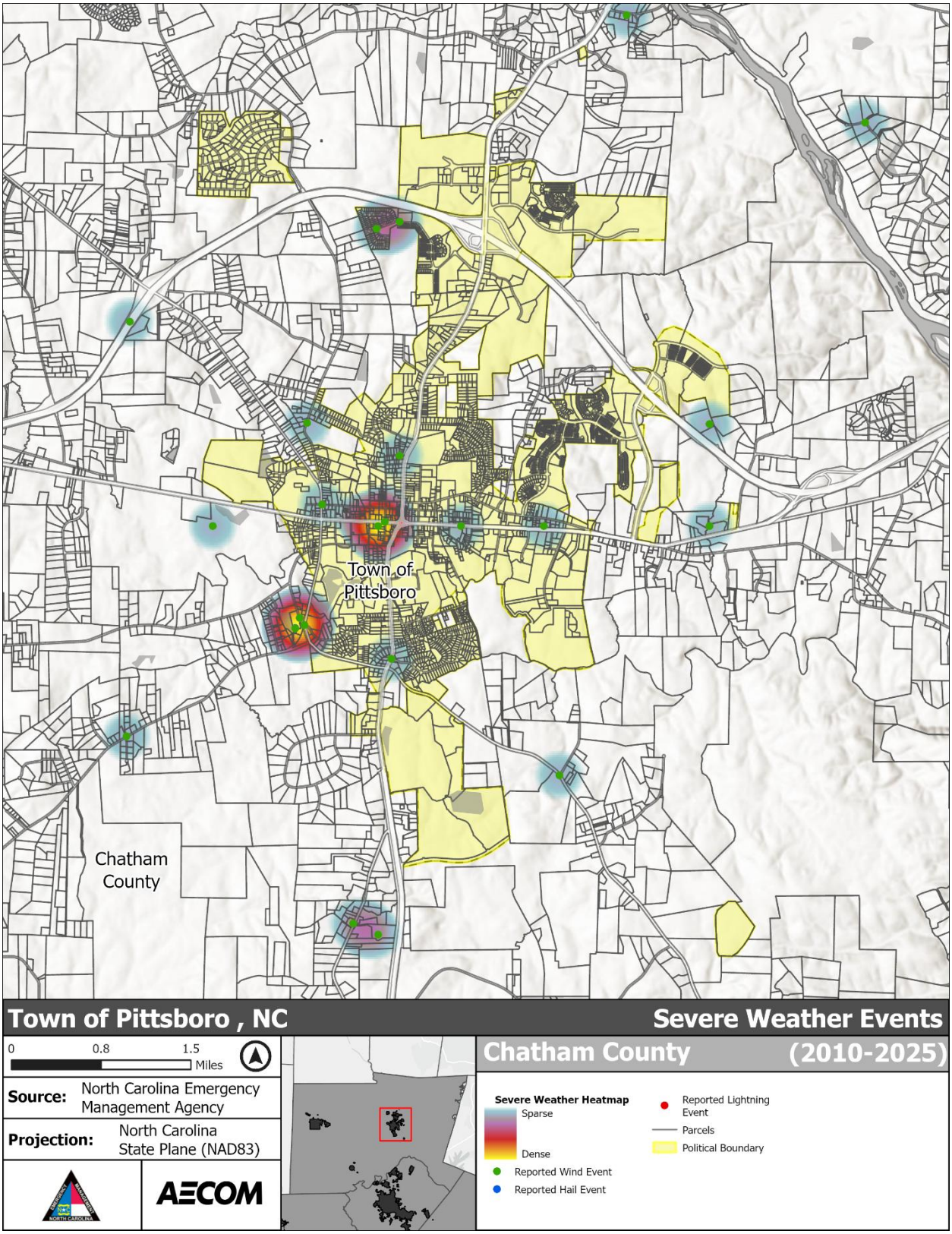

***Figure 5-64**: Severe Weather Area – Town of Pittsboro*

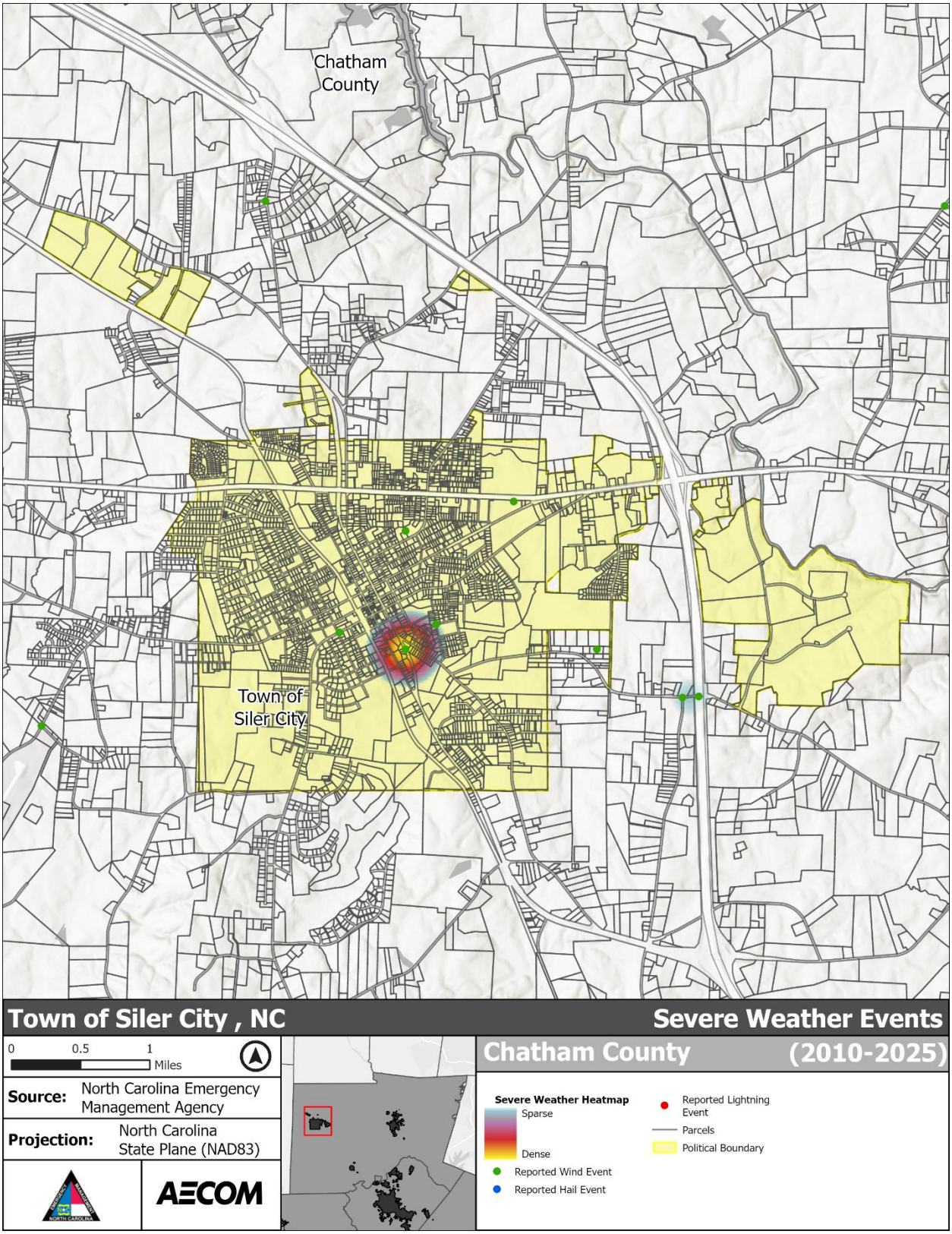

***Figure 5-65**: Severe Weather Area – Town of Siler City*

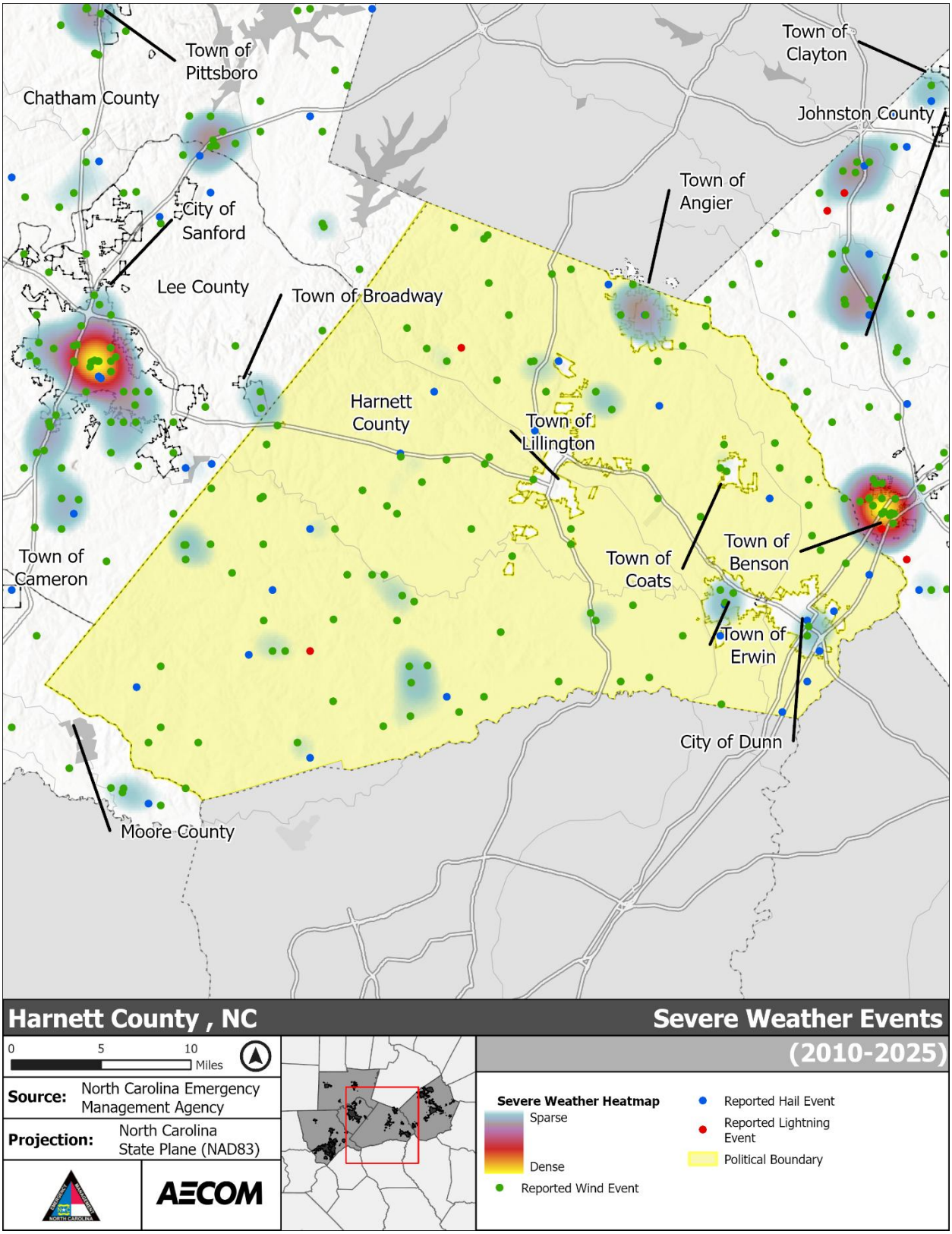

***Figure 5-66**: Severe Weather Area – Harnett County*

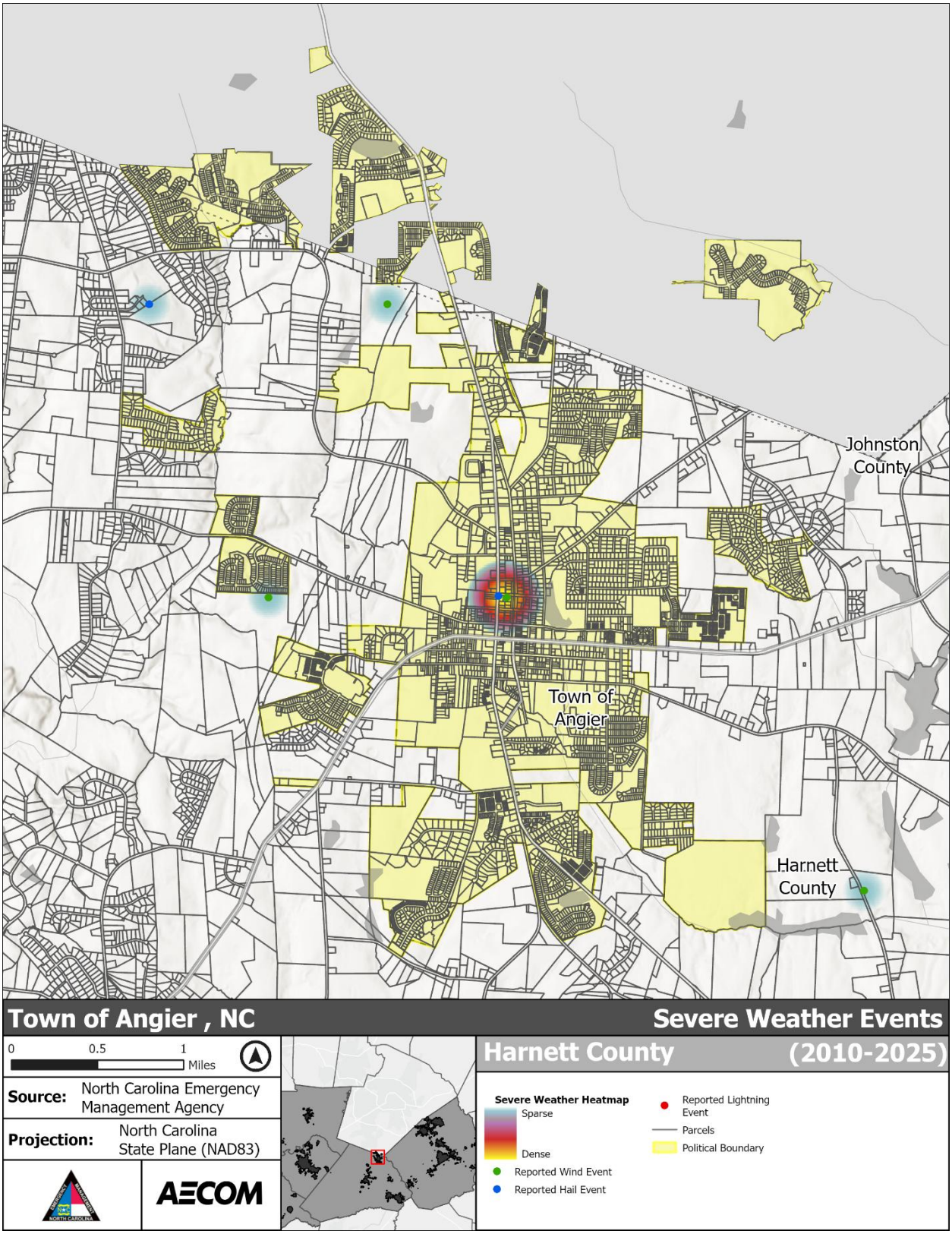

***Figure 5-67**: Severe Weather Area – Town of Angier*

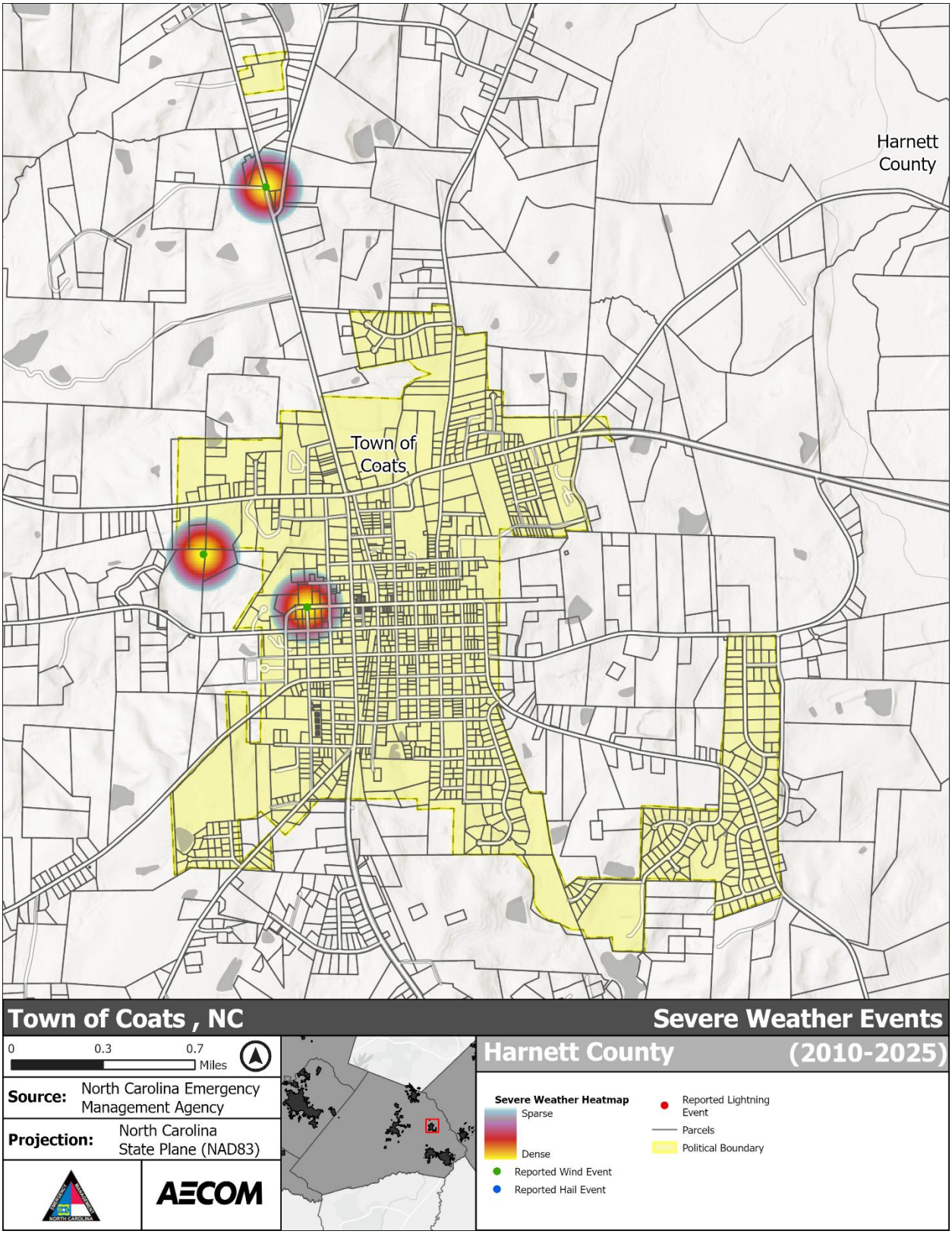

***Figure 5-68**: Severe Weather Area – Town of Coats*

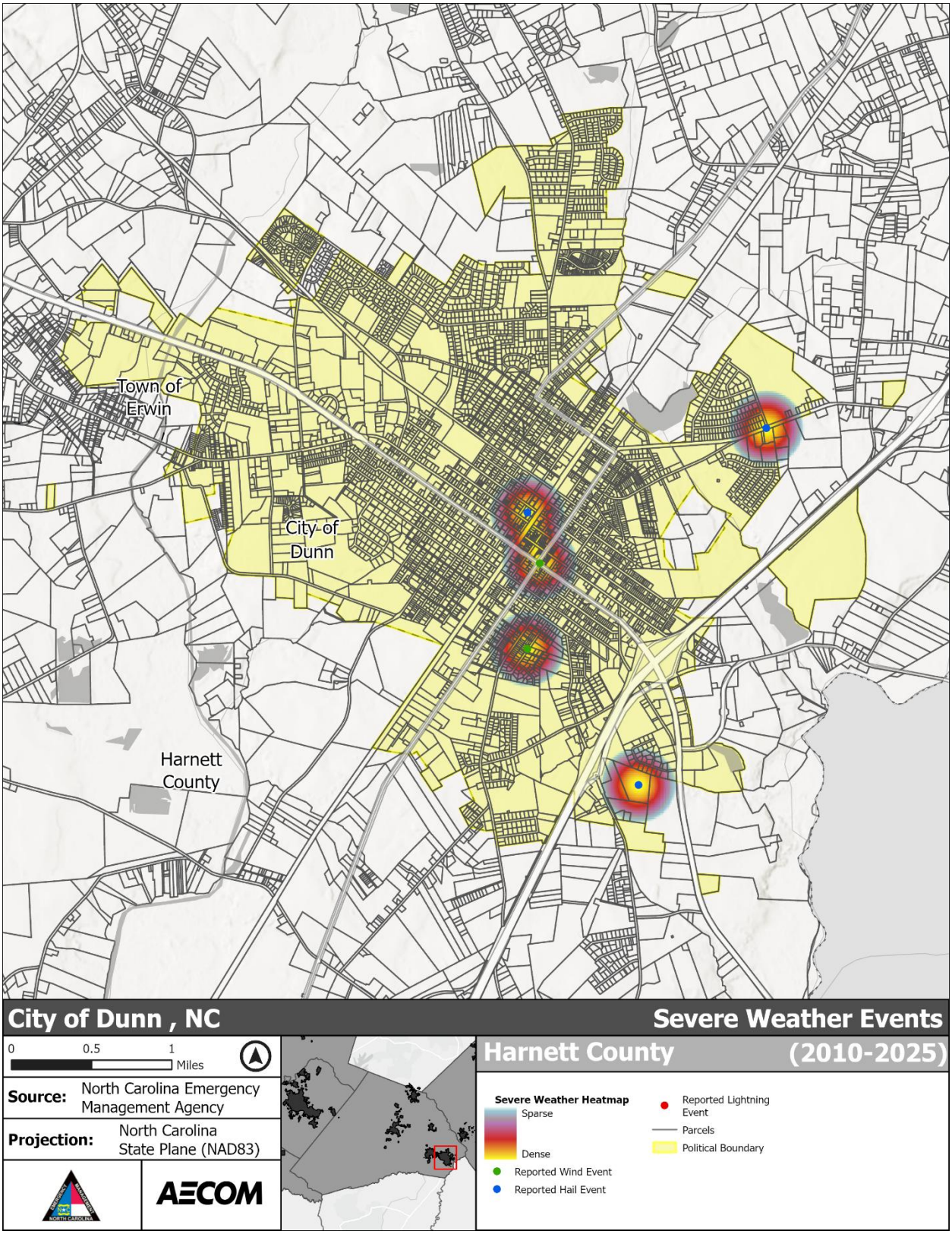

***Figure 5-69**: Severe Weather Area – City of Dunn*

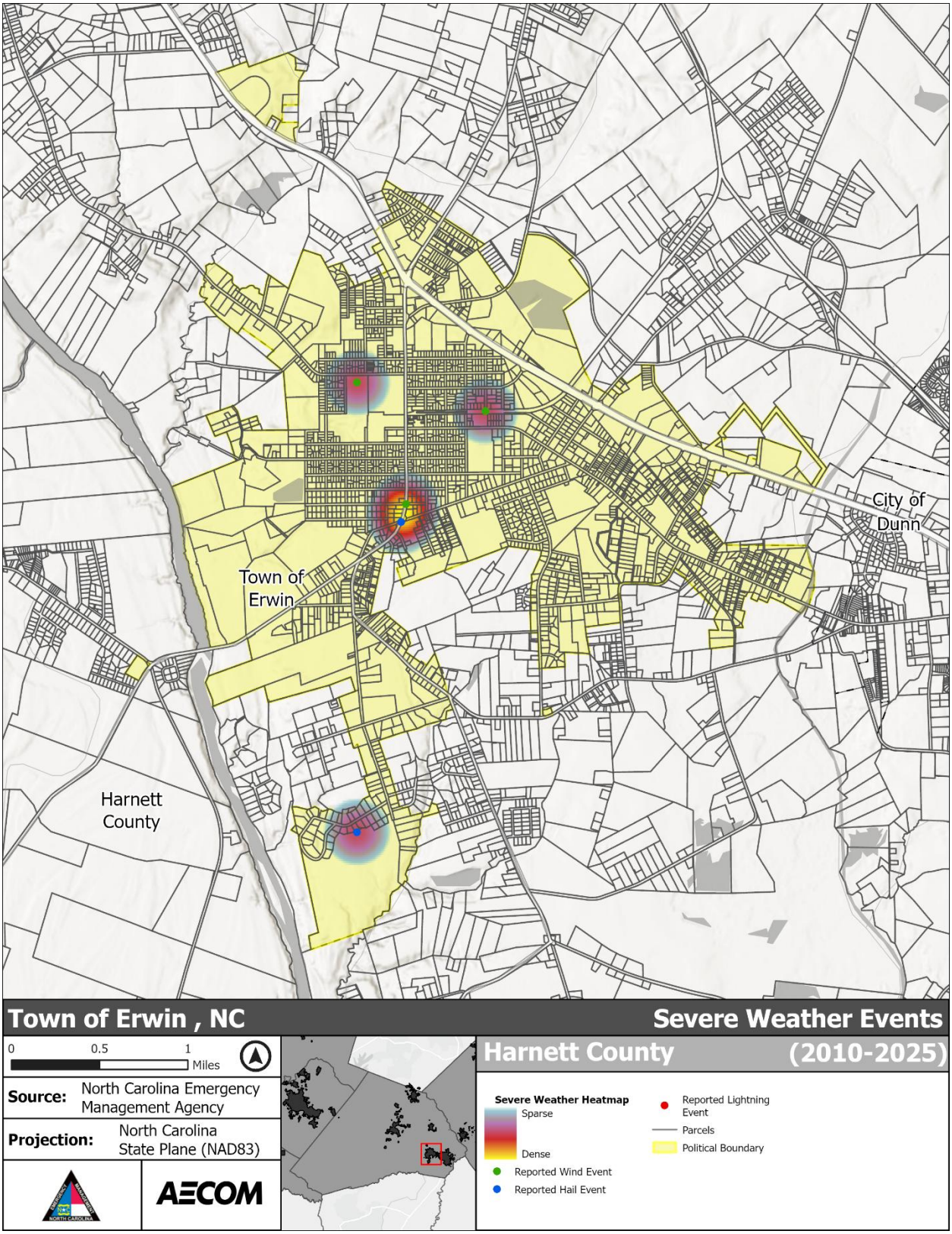

***Figure 5-70**: Severe Weather Area – Town of Erwin*

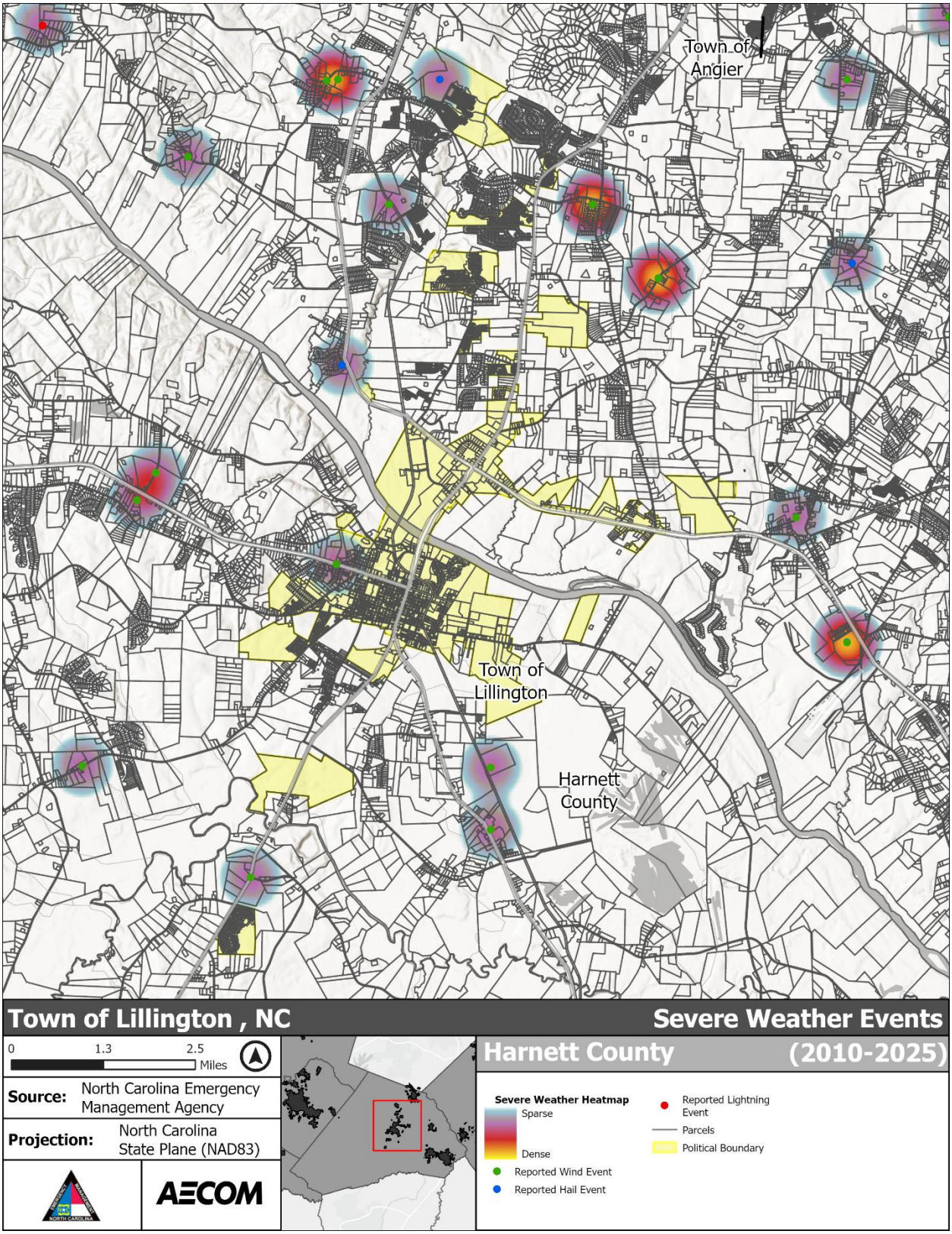

Figure 5-71: Severe Weather Area – Town of Lillington

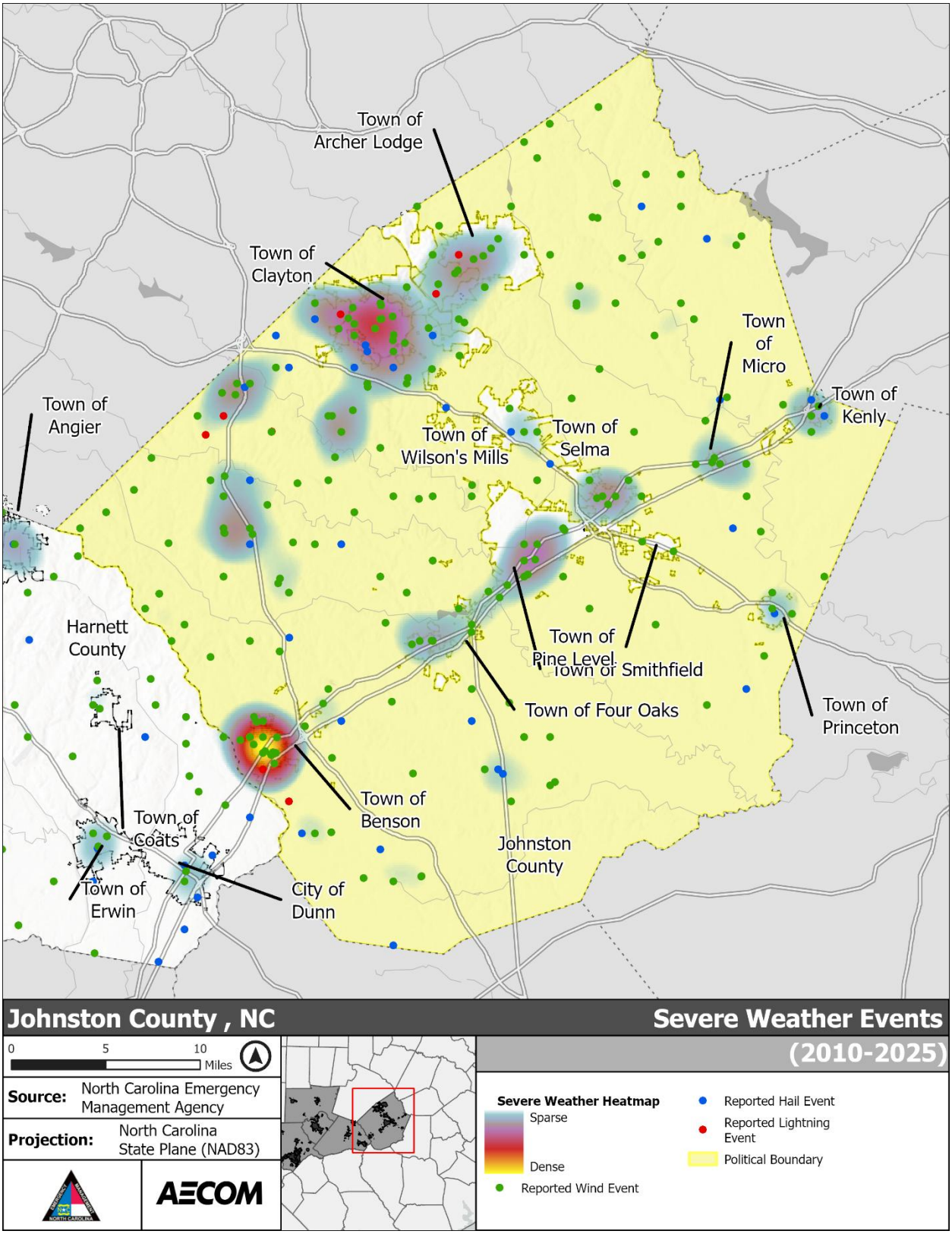

Figure 5-72: Severe Weather Area – Johnston County

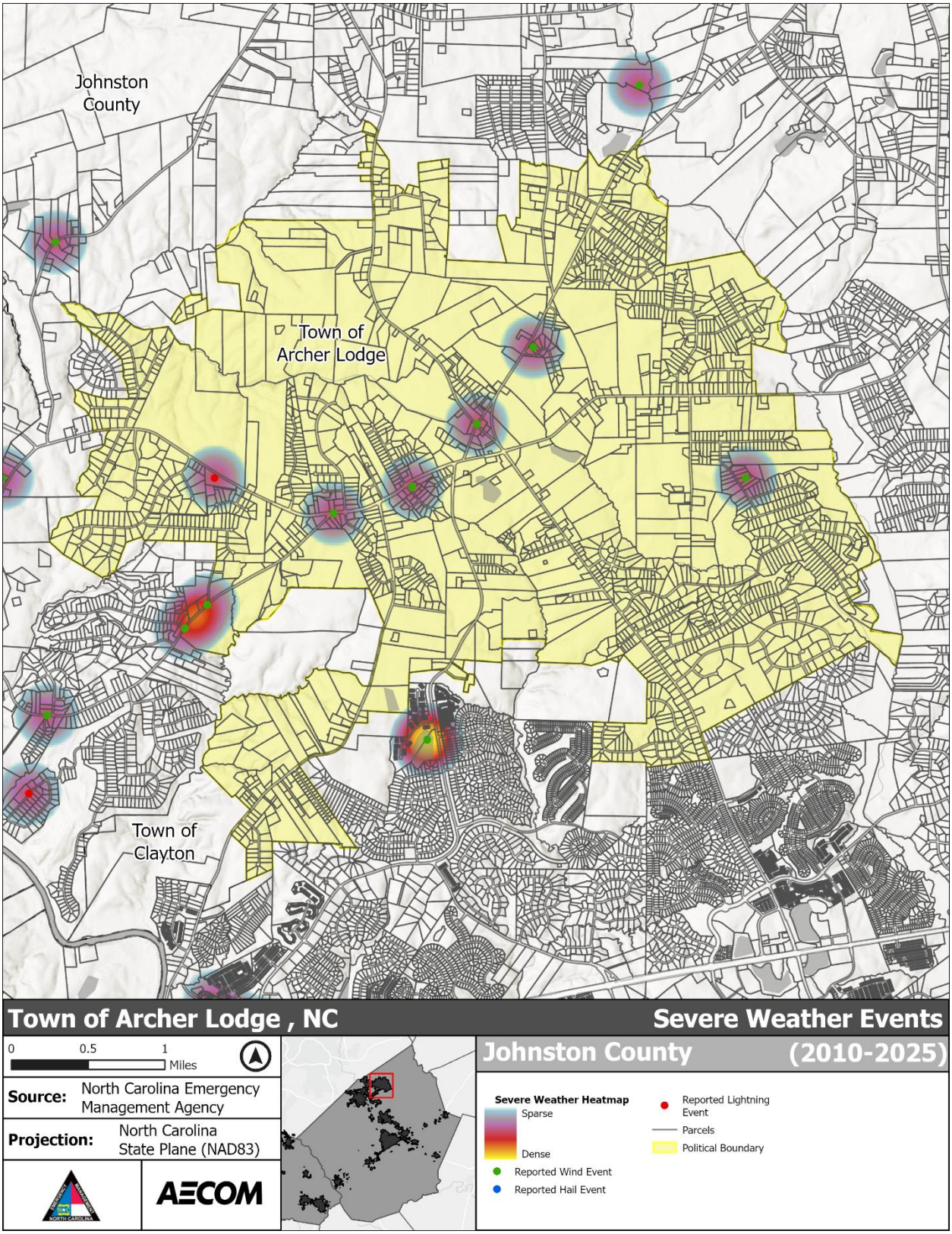

***Figure 5-73**: Severe Weather Area – Town of Archer Lodge*

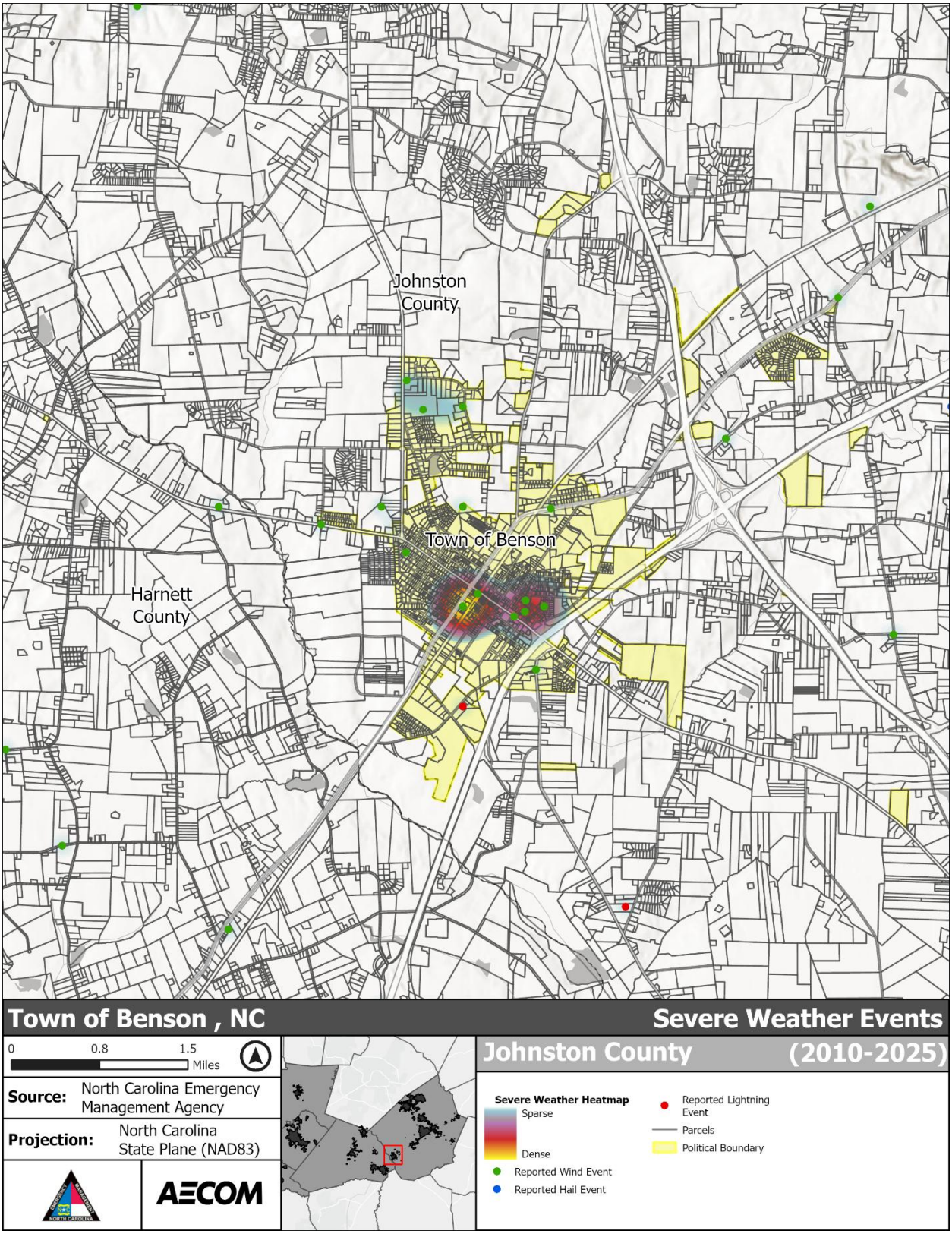

***Figure 5-74**: Severe Weather Area – Town of Benson*

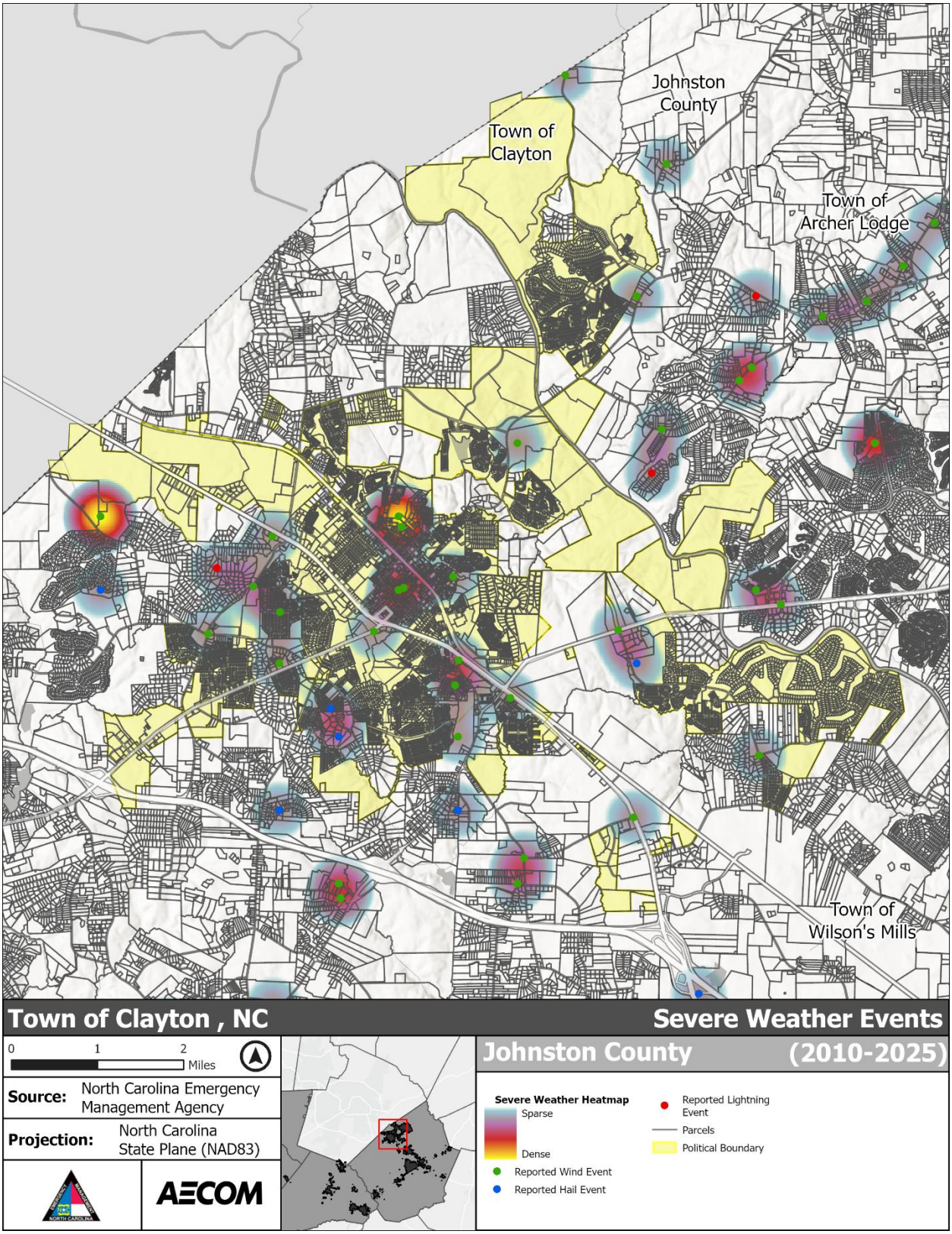

***Figure 5-75**: Severe Weather Area – Town of Clayton*

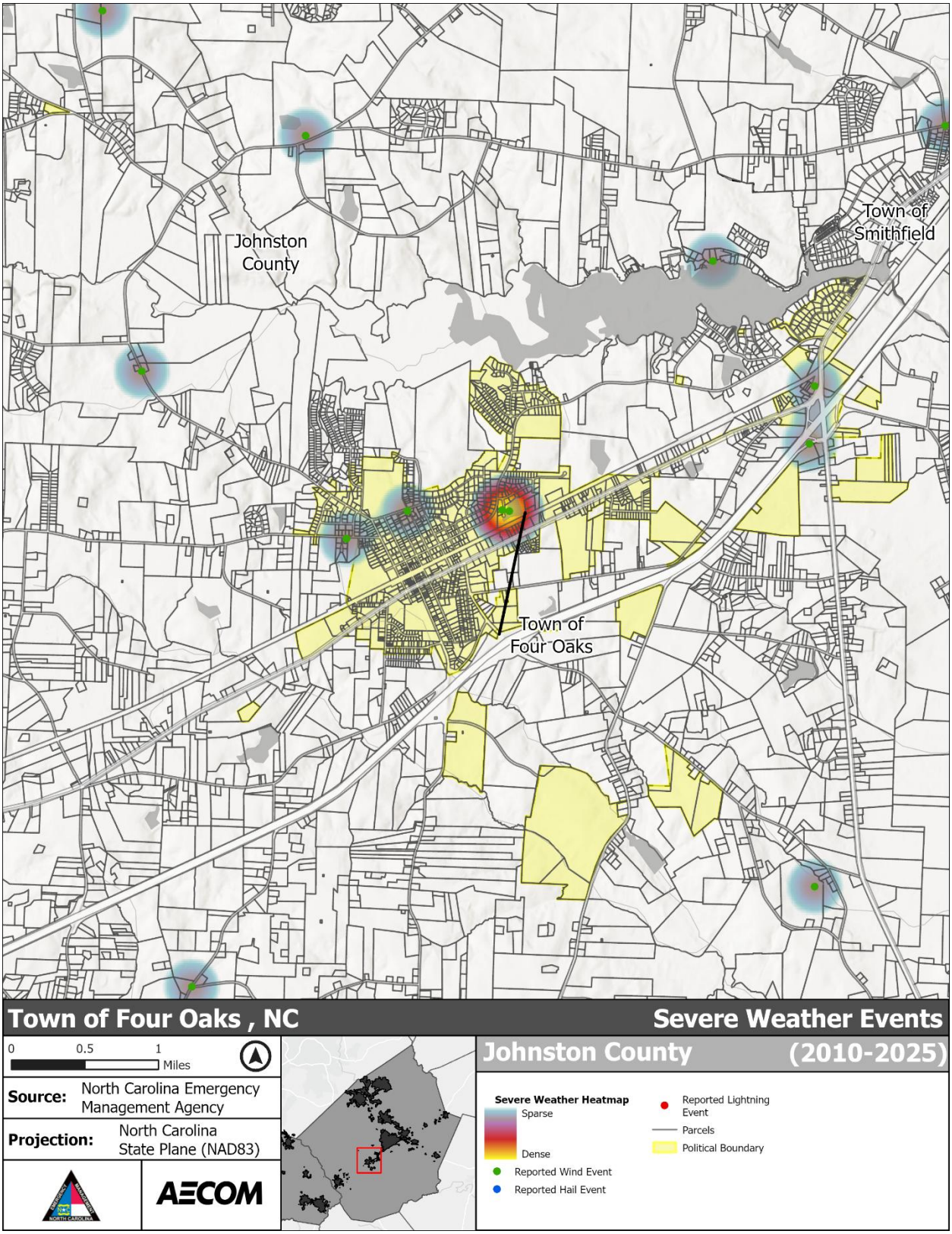

***Figure 5-76**: Severe Weather Area – Town of Four Oaks*

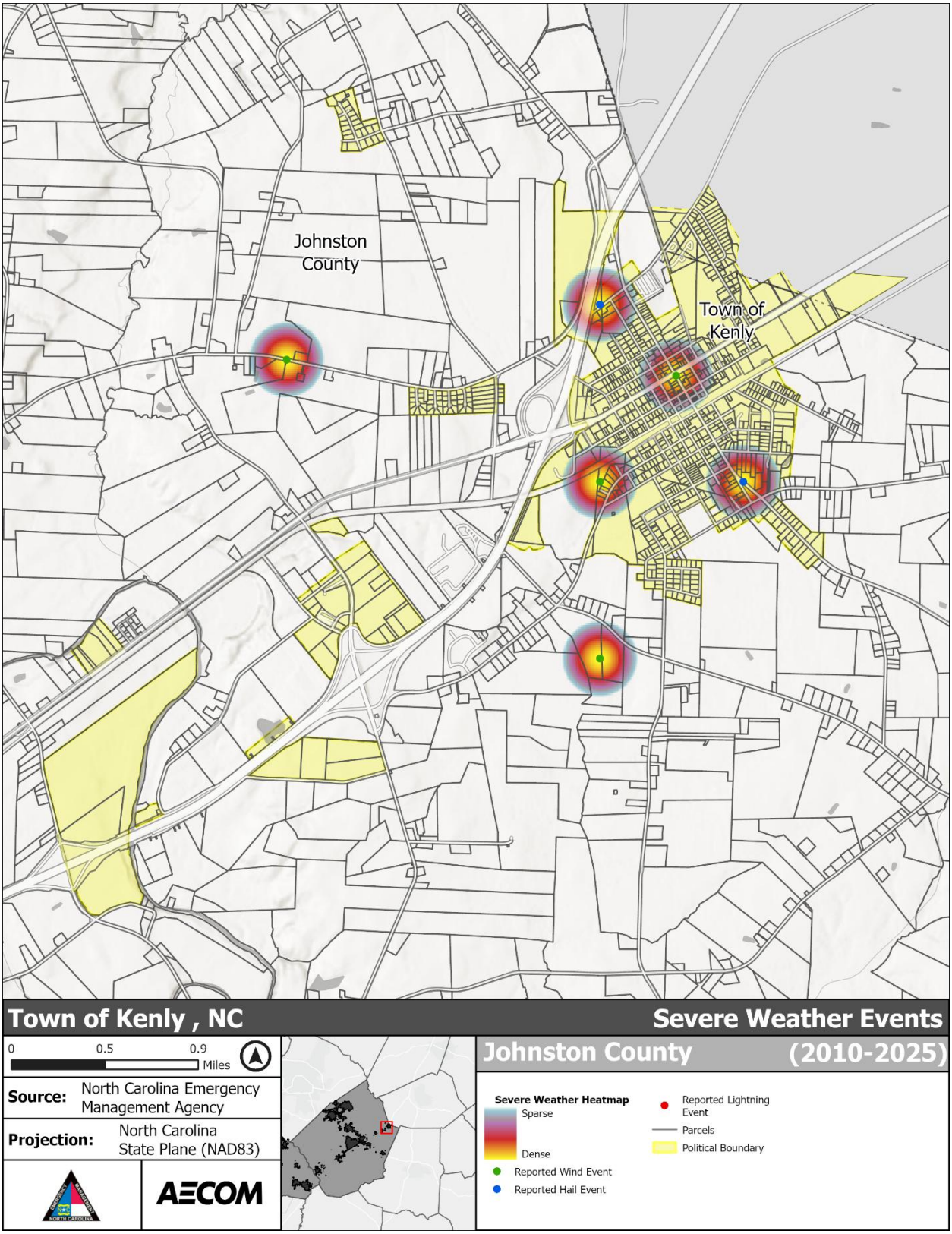

***Figure 5-77**: Severe Weather Area – Town of Kenly*

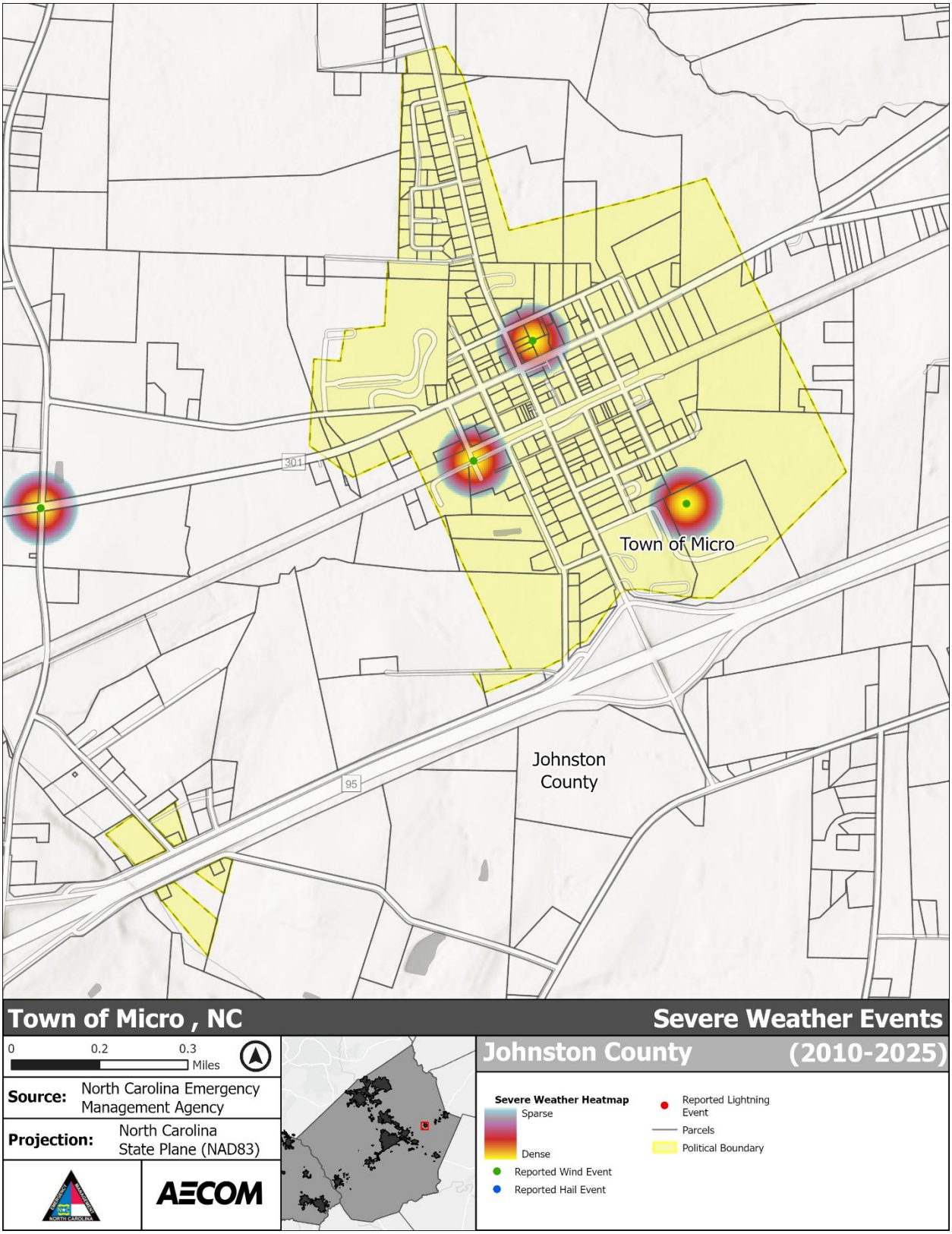

***Figure 5-78**: Severe Weather Area – Town of Micro*

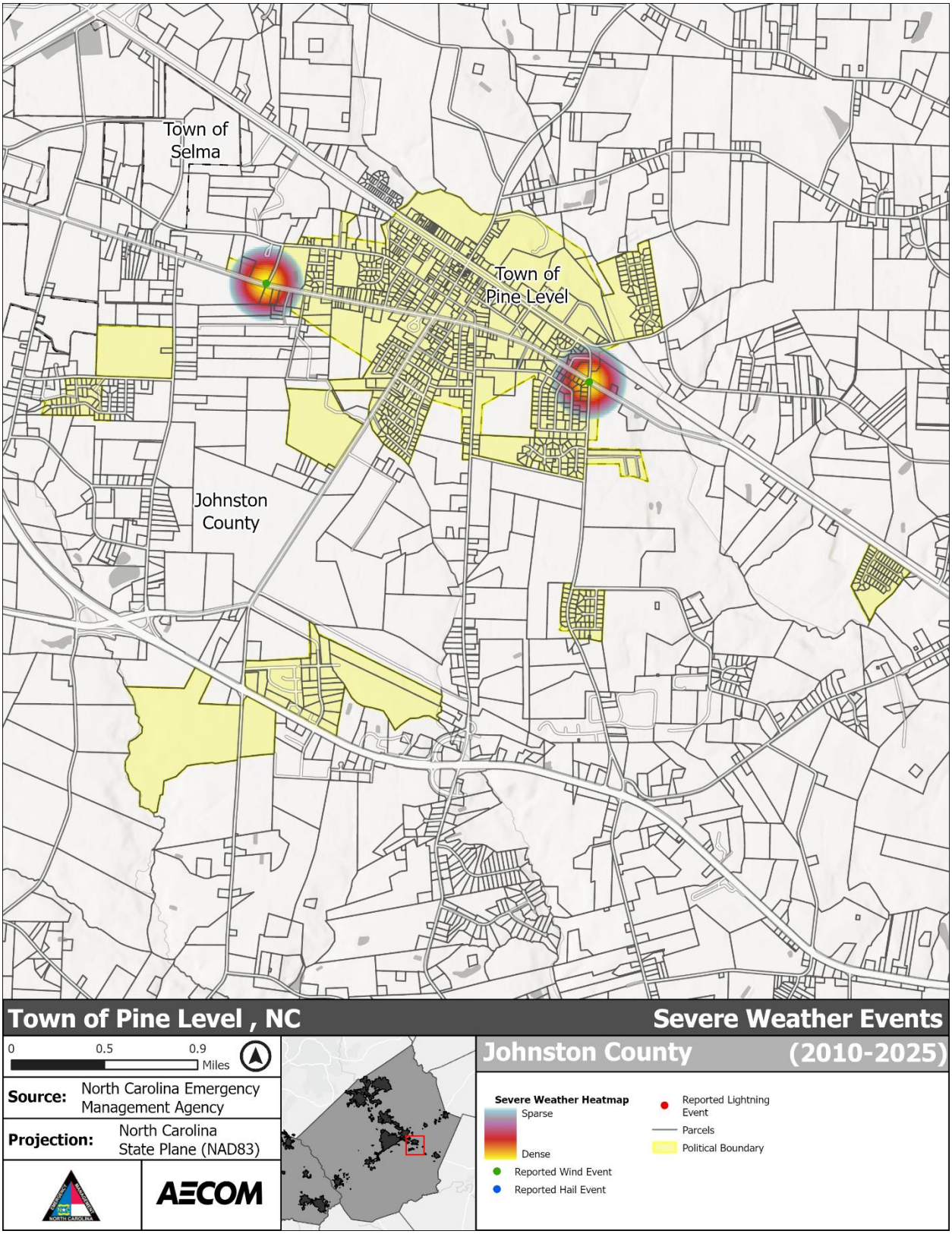

***Figure 5-79**: Severe Weather Area – Town of Pine Level*

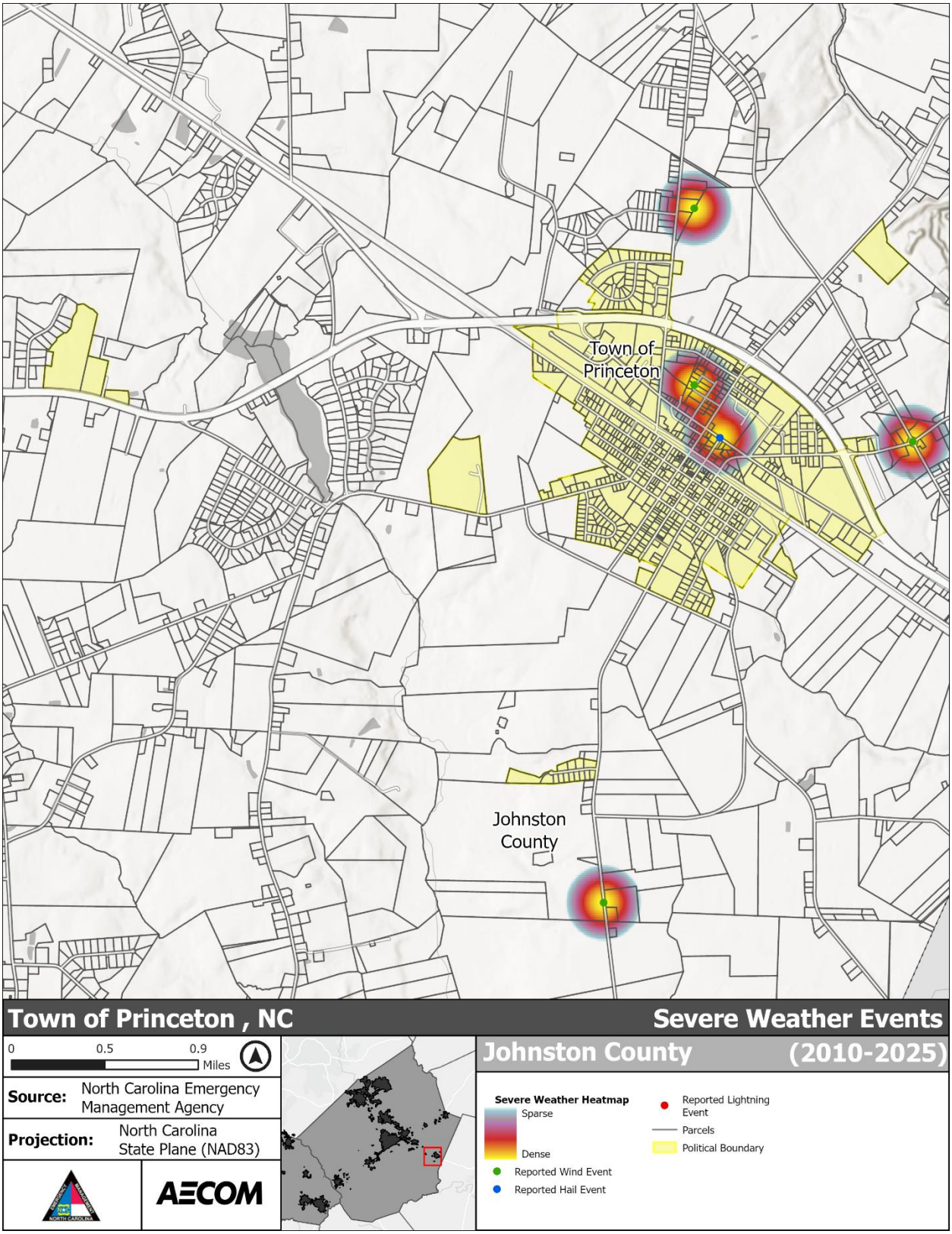

***Figure 5-80**: Severe Weather Area – Town of Princeton*

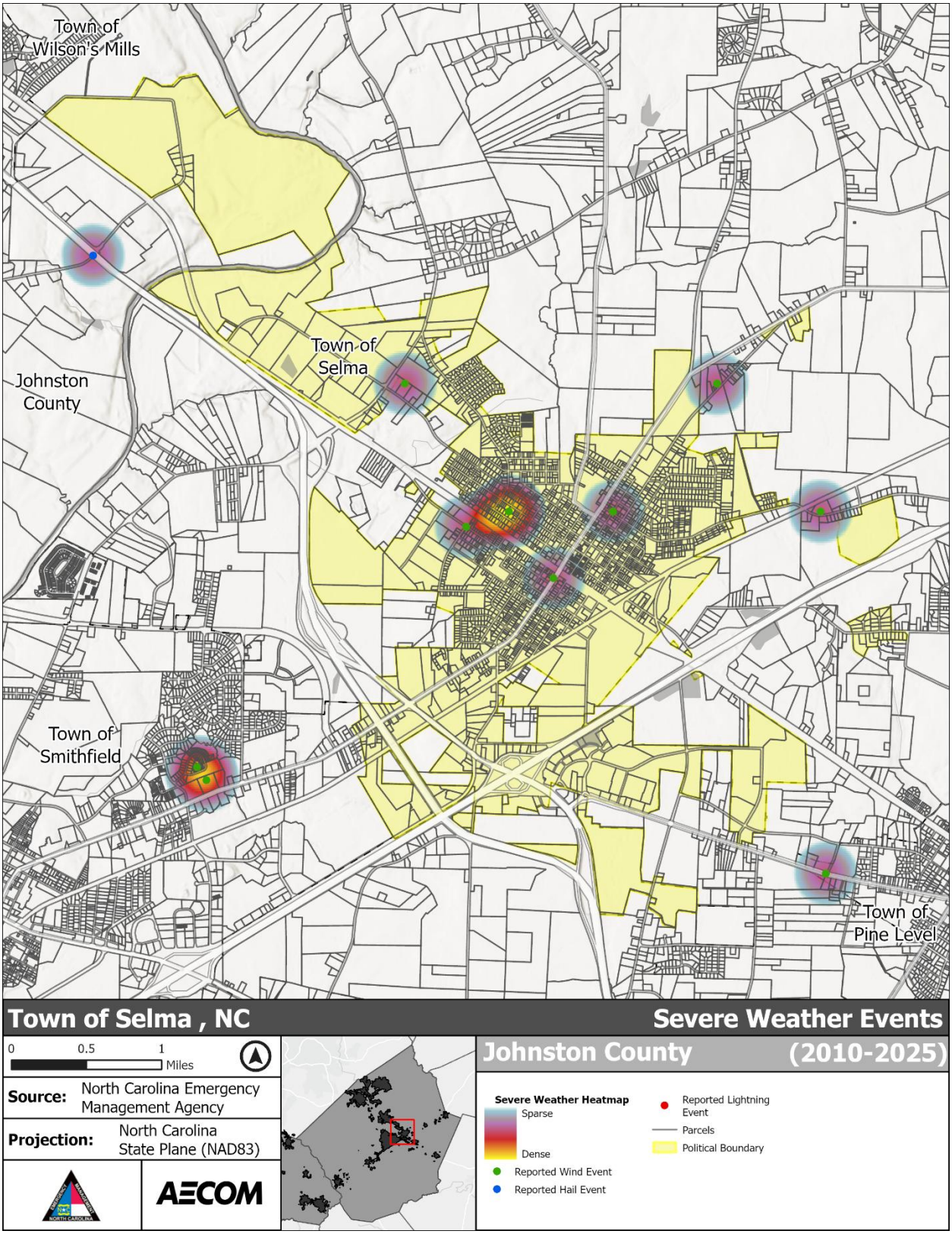

***Figure 5-81**: Severe Weather Area – Town of Selma*

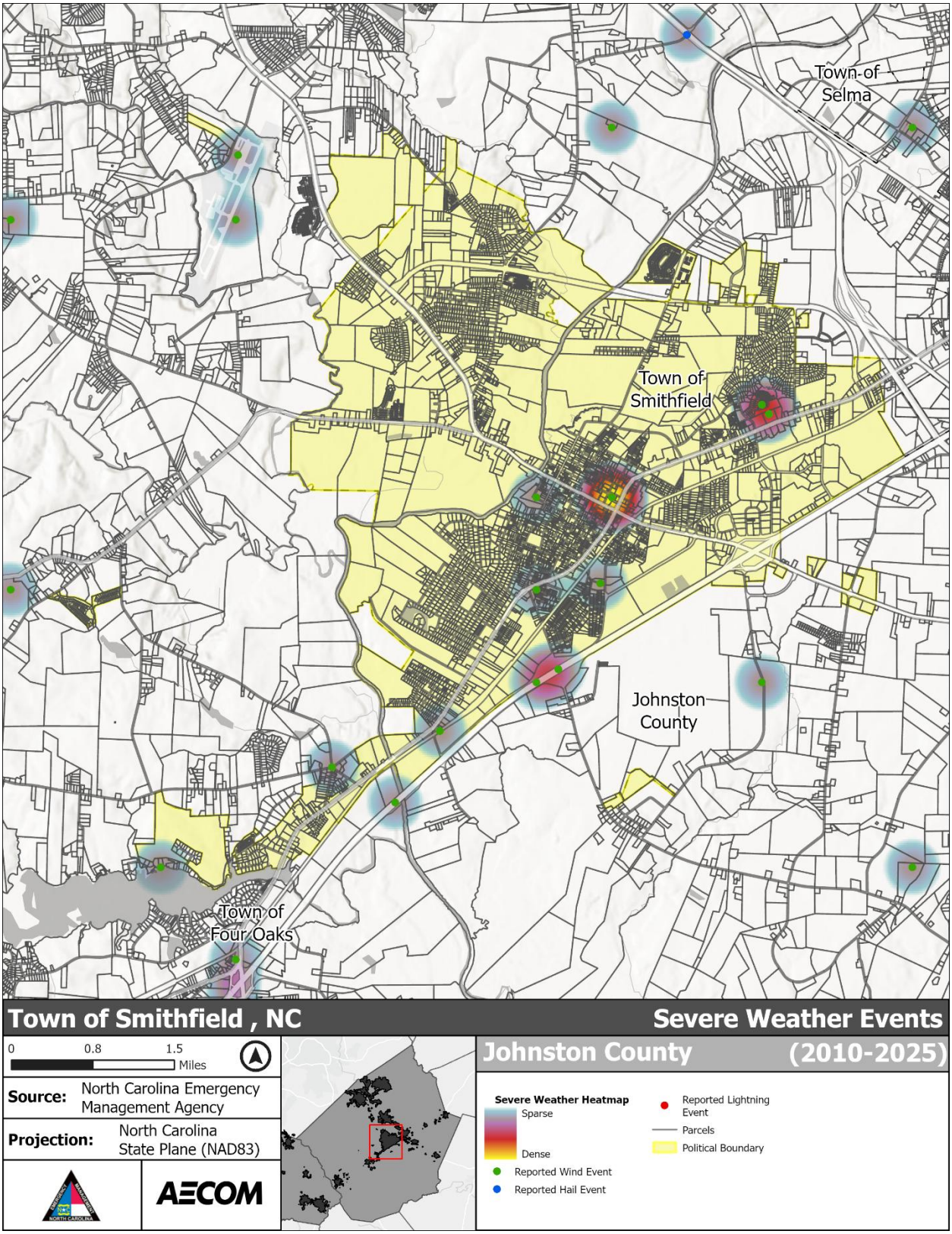

***Figure 5-82**: Severe Weather Area – Town of Smithfield*

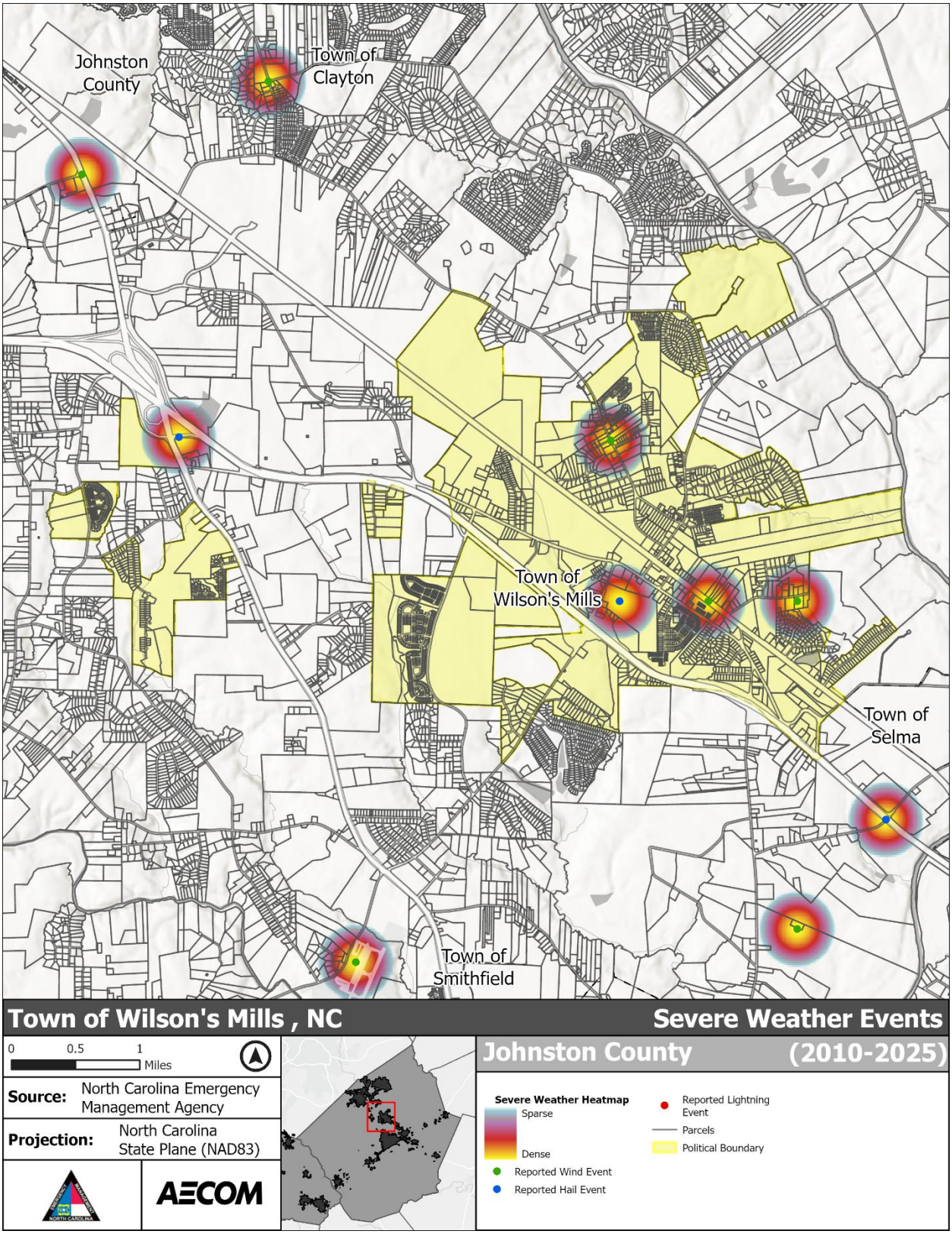

***Figure 5-83**: Severe Weather Area – Town of Wilson's Mills*

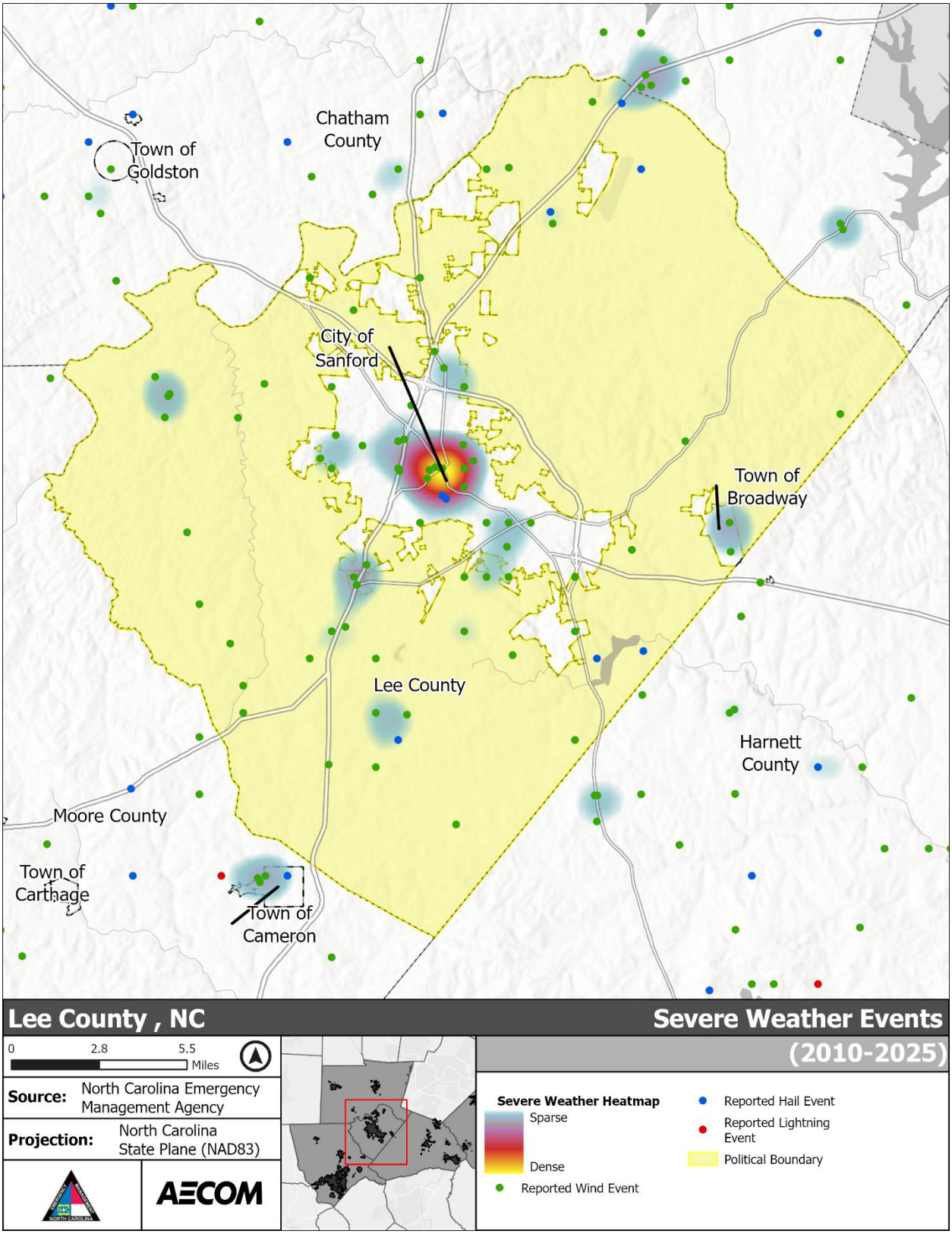

***Figure 5-84**: Severe Weather Area – Lee County*

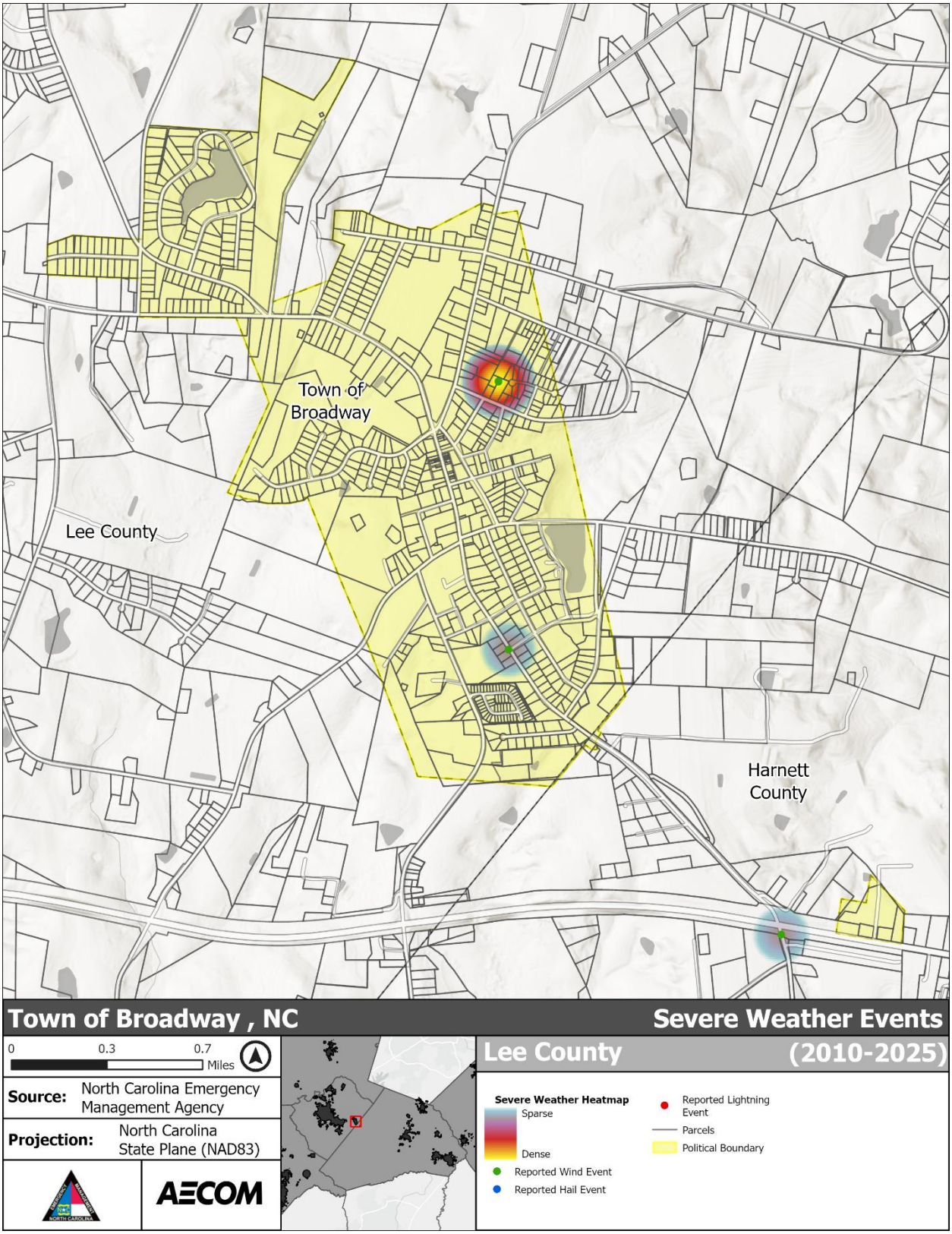

***Figure 5-85**: Severe Weather Area – Town of Broadway*

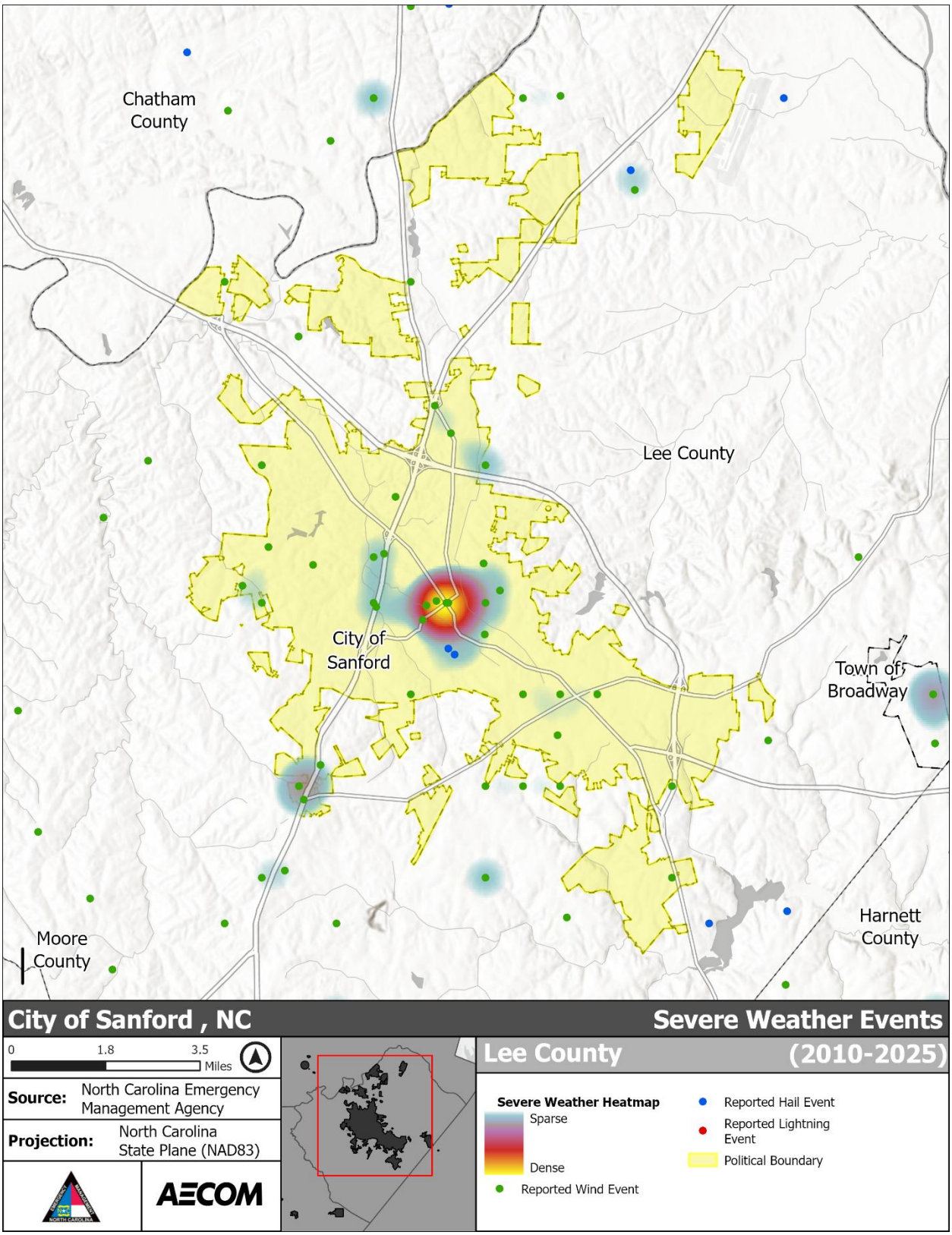

Figure 5-86: Severe Weather Area – City of Sanford

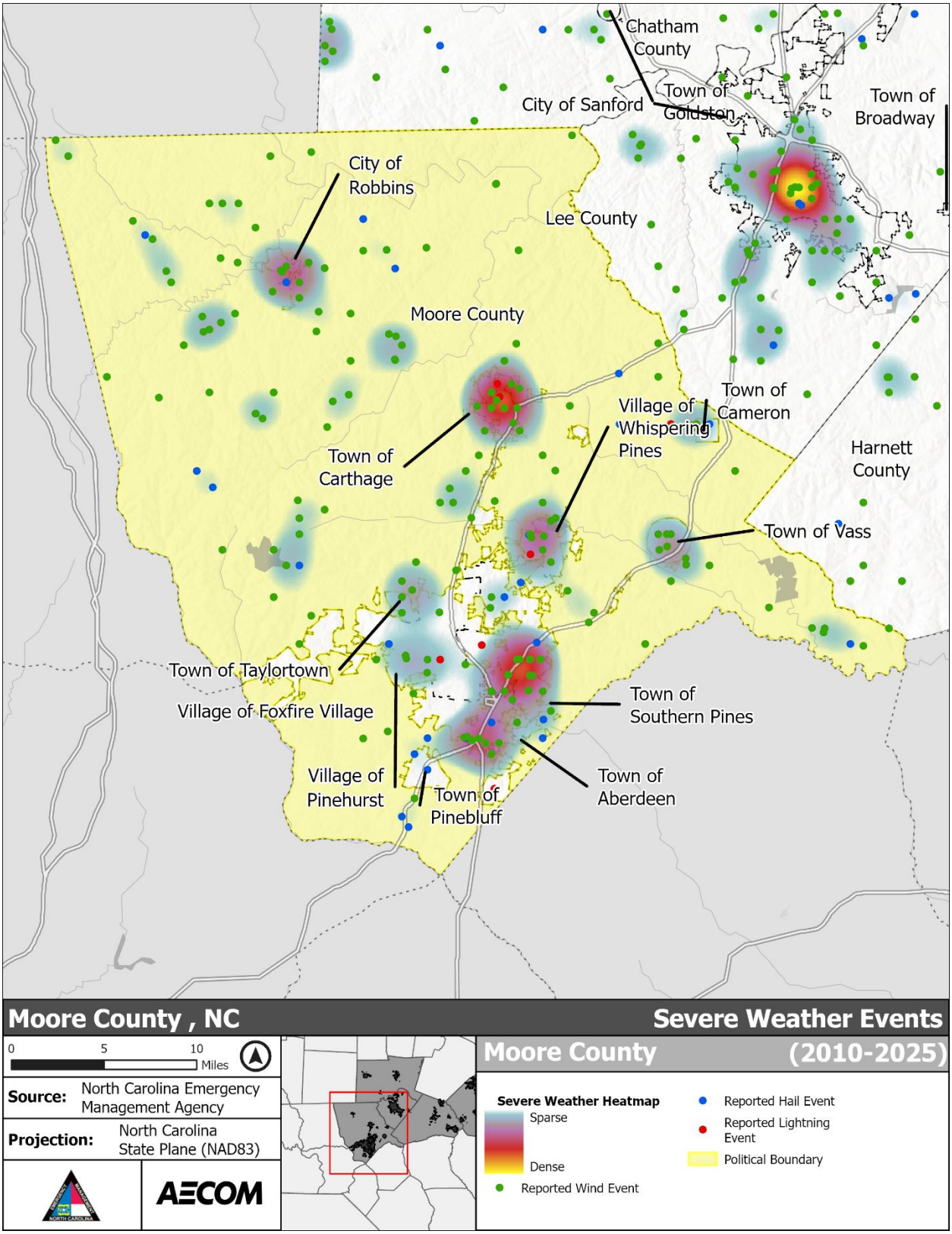

***Figure 5-87**: Severe Weather Area – Moore County*

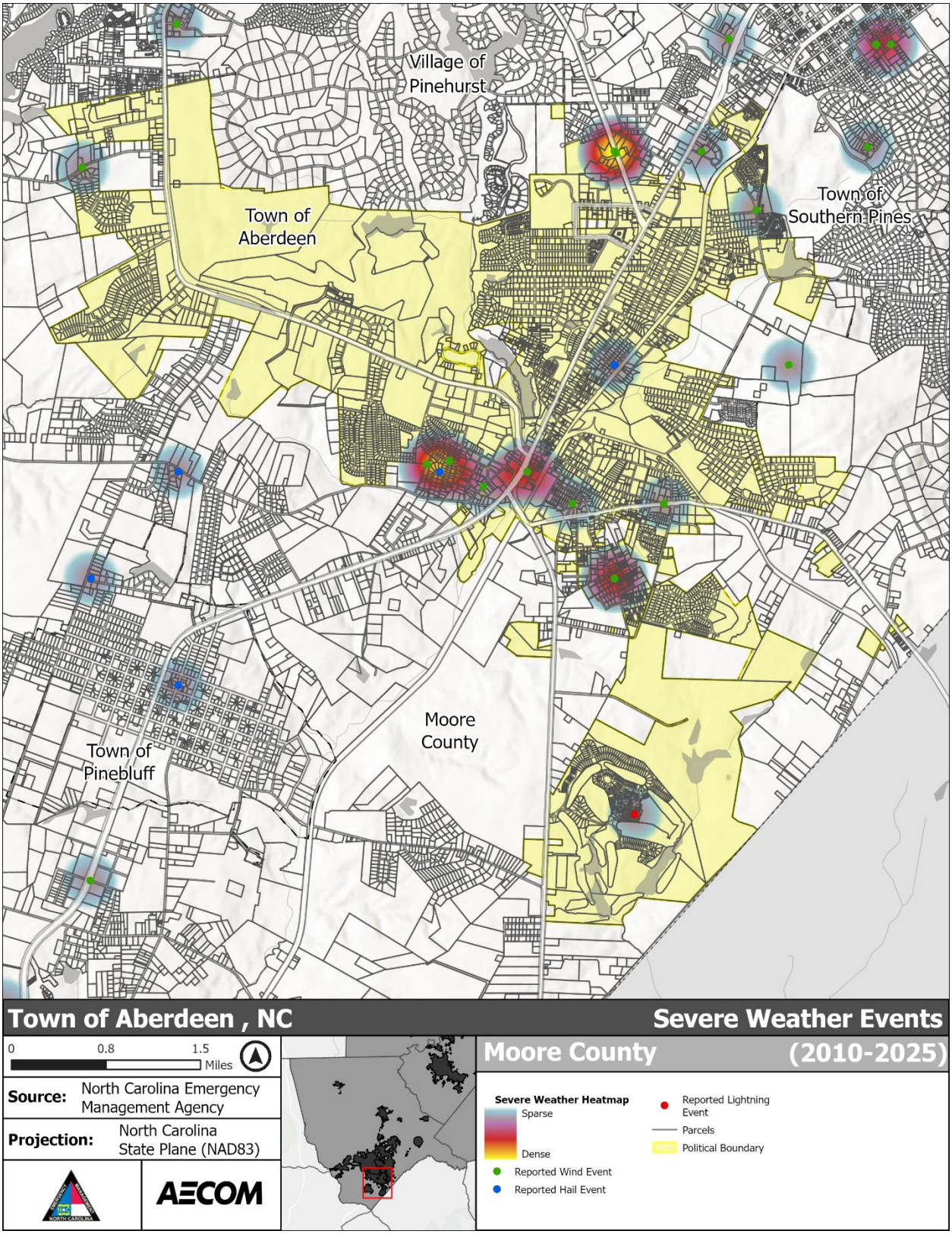

***Figure 5-88**: Severe Weather Area – Town of Aberdeen*

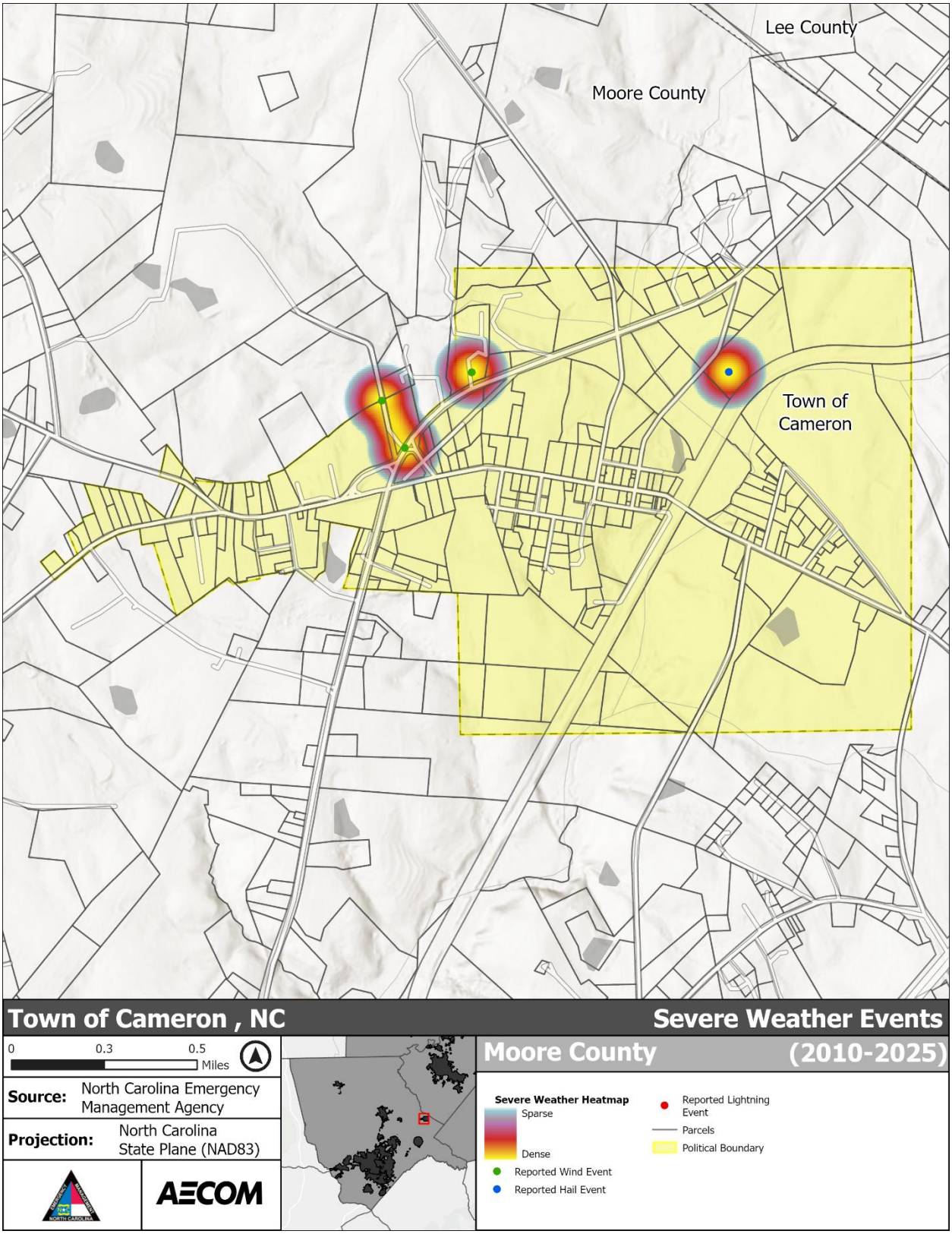

***Figure 5-89**: Severe Weather Area – Town of Cameron*

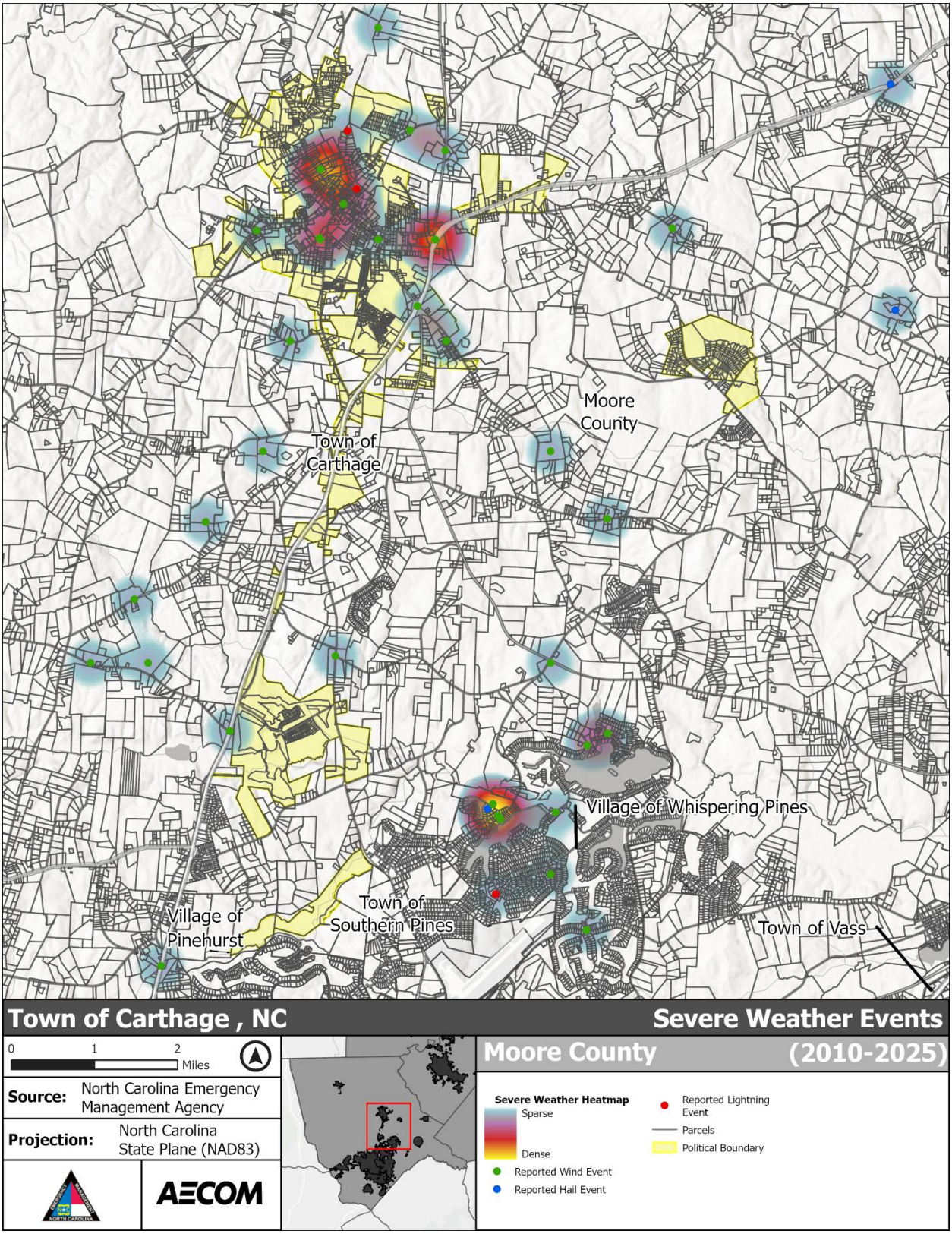

***Figure 5-90**: Severe Weather Area – Town of Carthage*

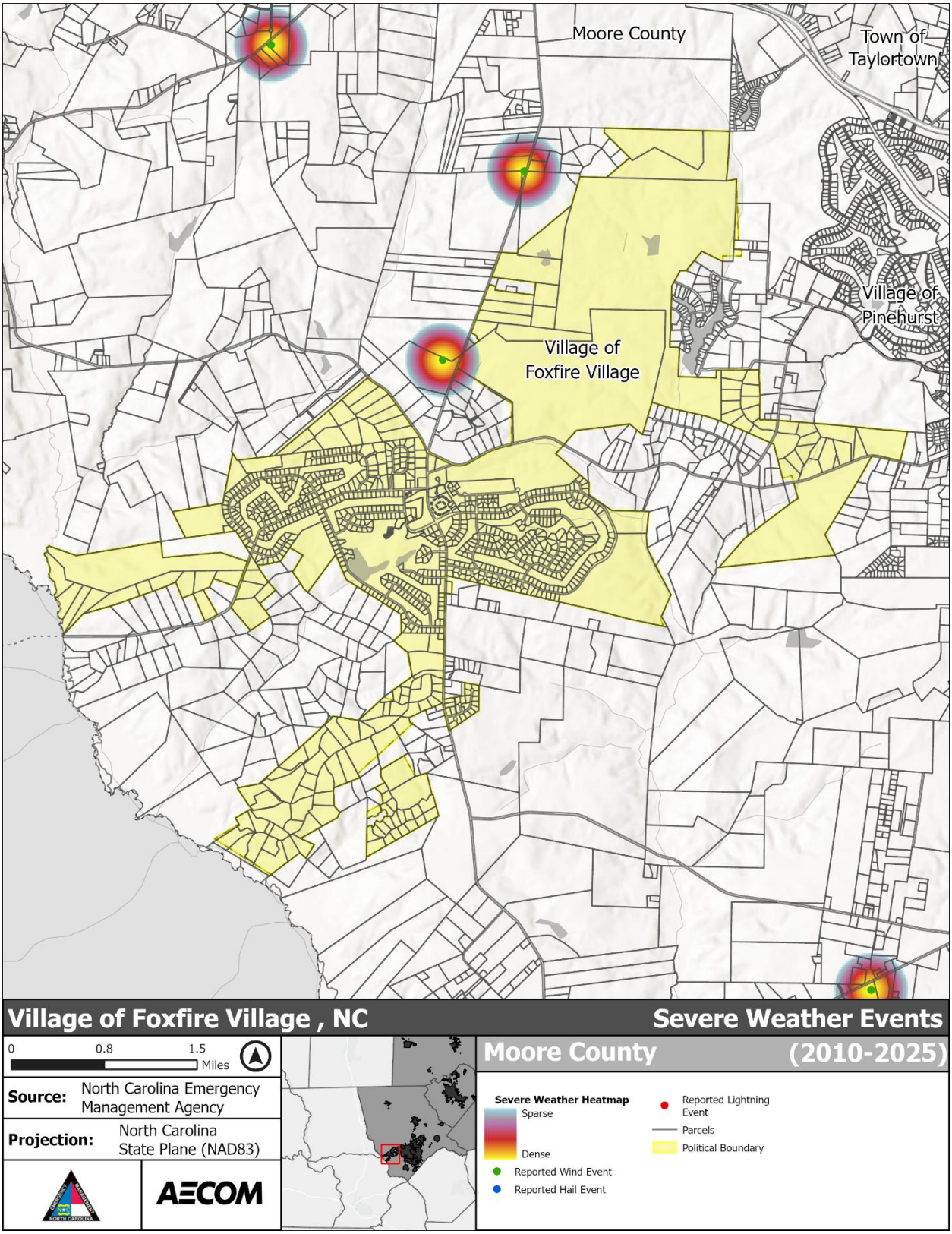

***Figure 5-91**: Severe Weather Area – Foxfire Village*

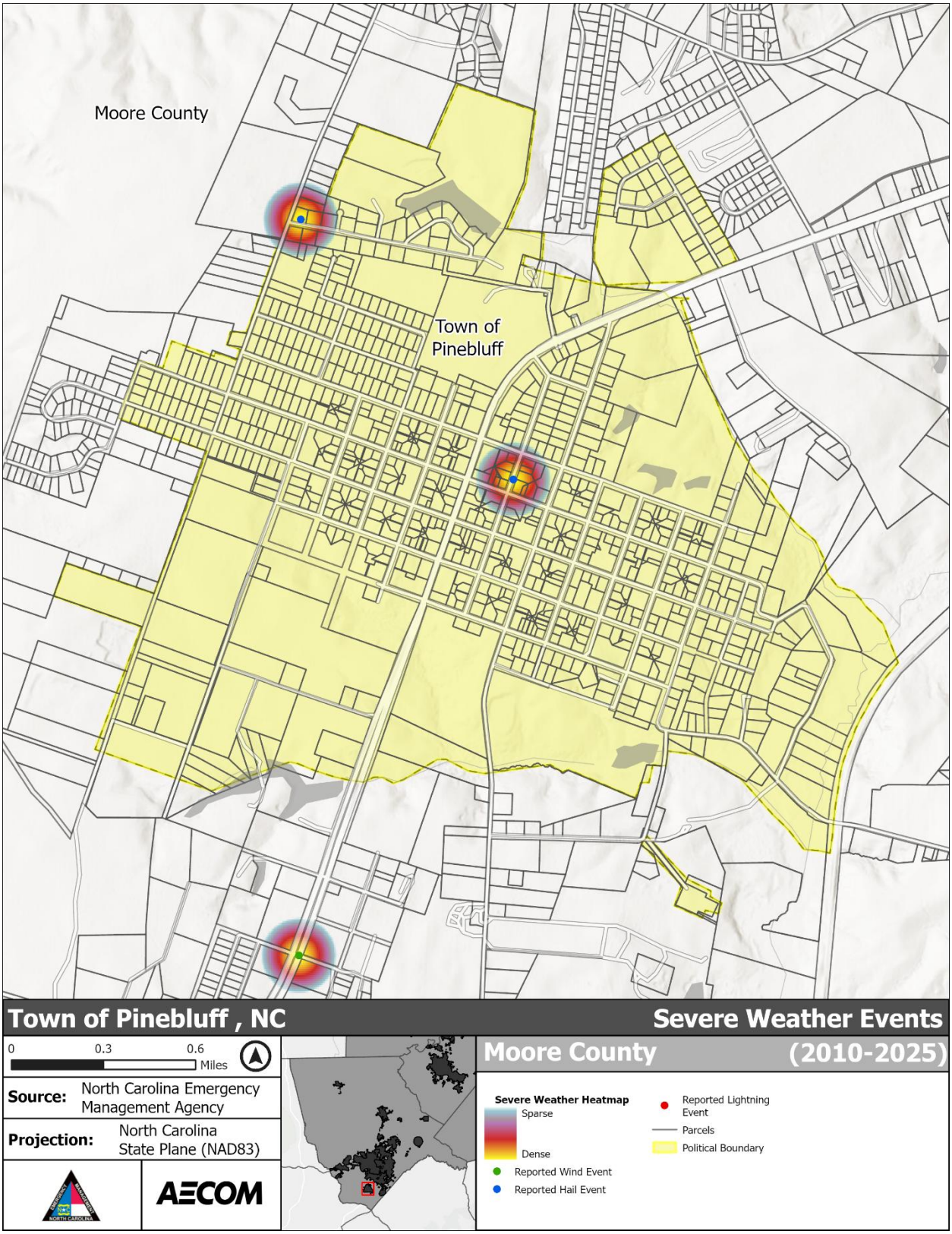

Figure 5-92: Severe Weather Area – Town of Pinebluff

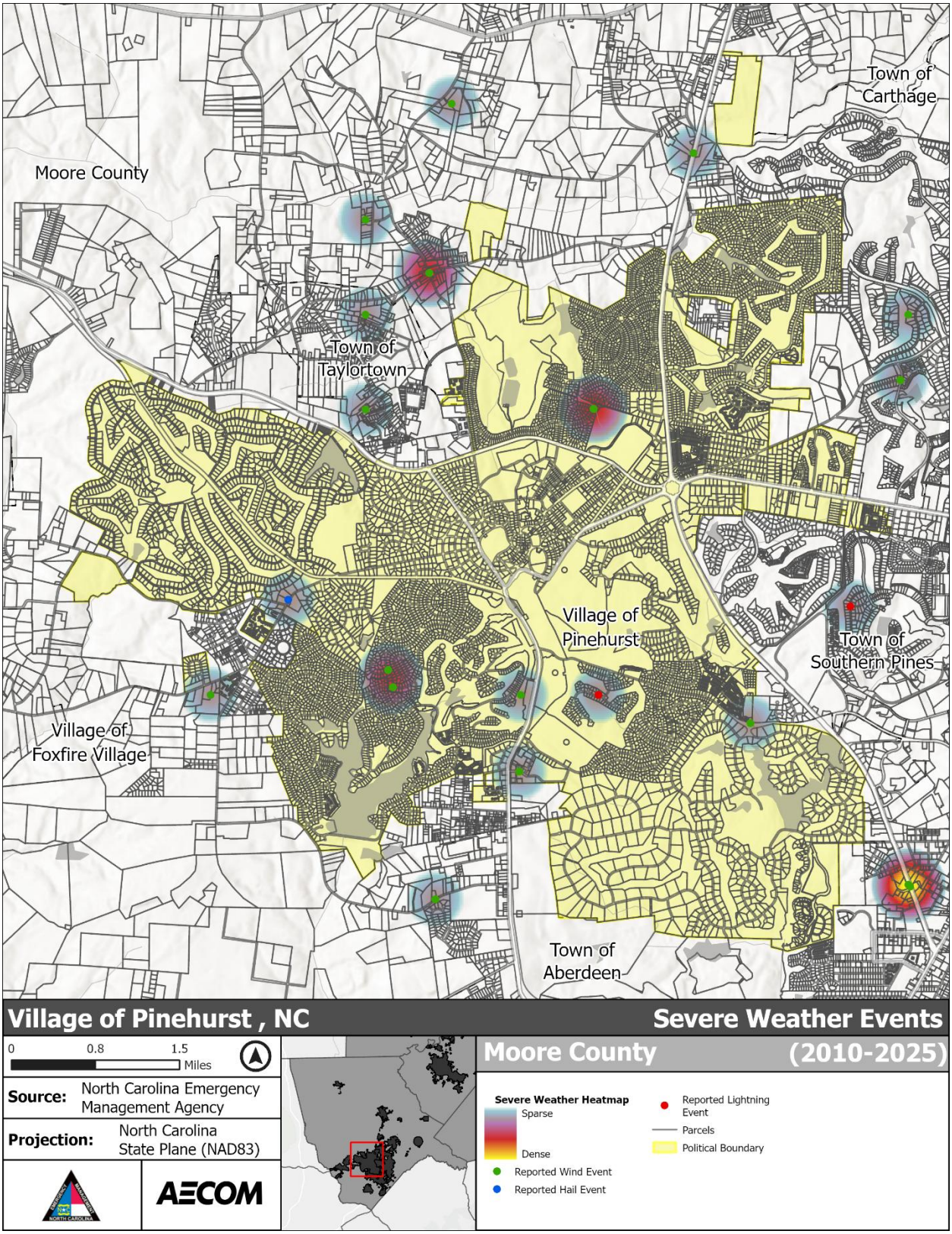

Figure 5-93: Severe Weather Area – Village of Pinehurst

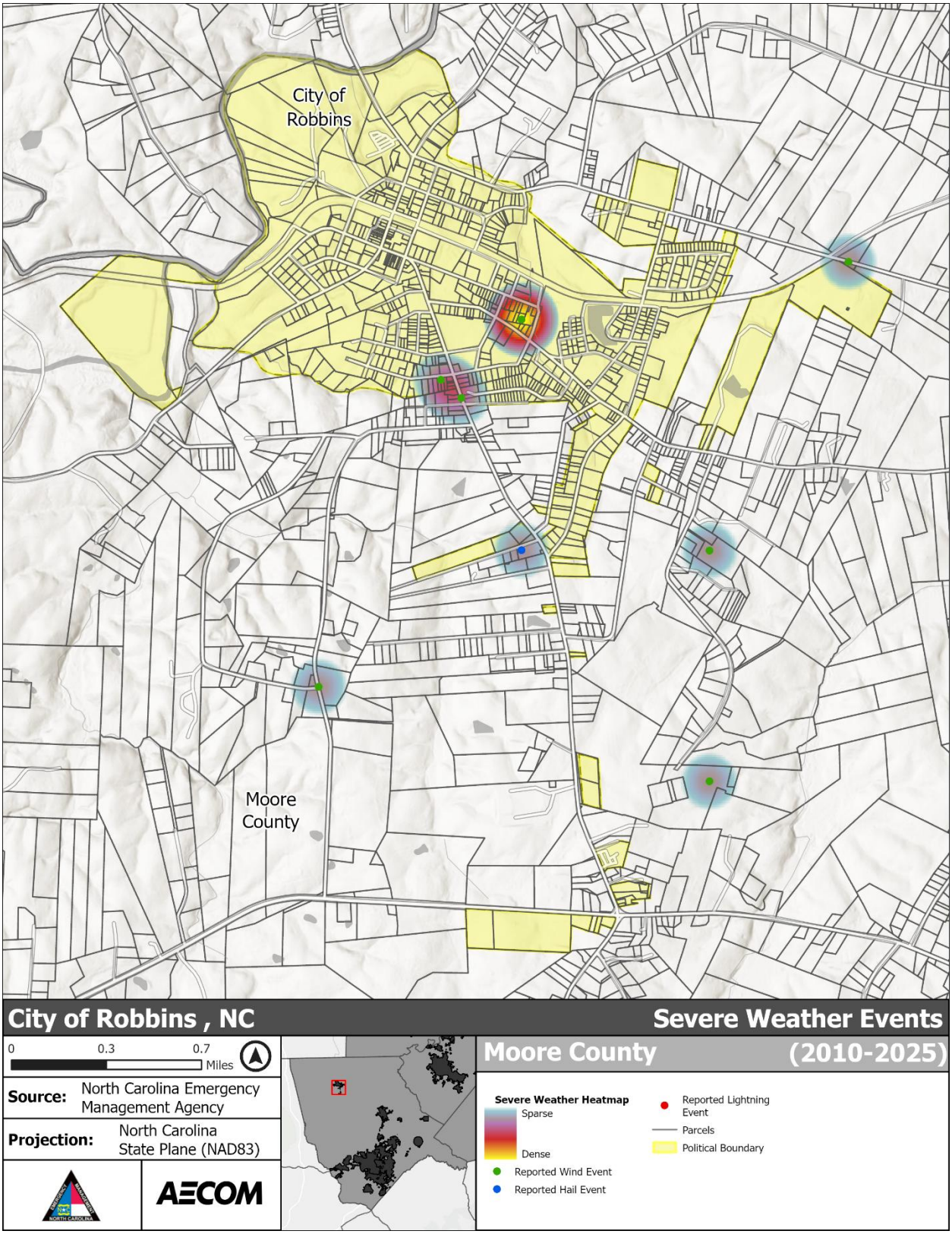

***Figure 5-94**: Severe Weather Area – City of Robbins*

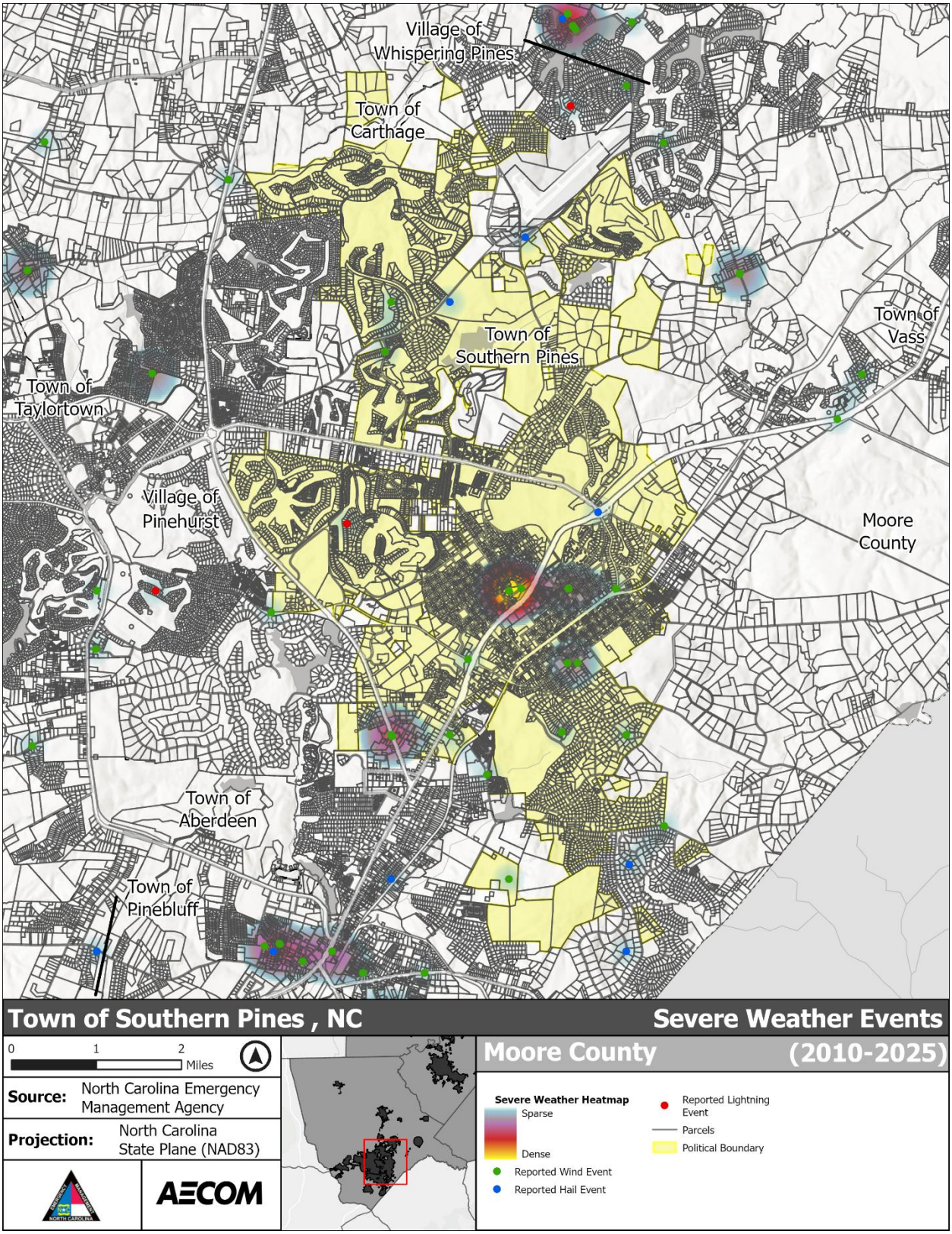

***Figure 5-95**: Severe Weather Area – Town of Southern Pines*

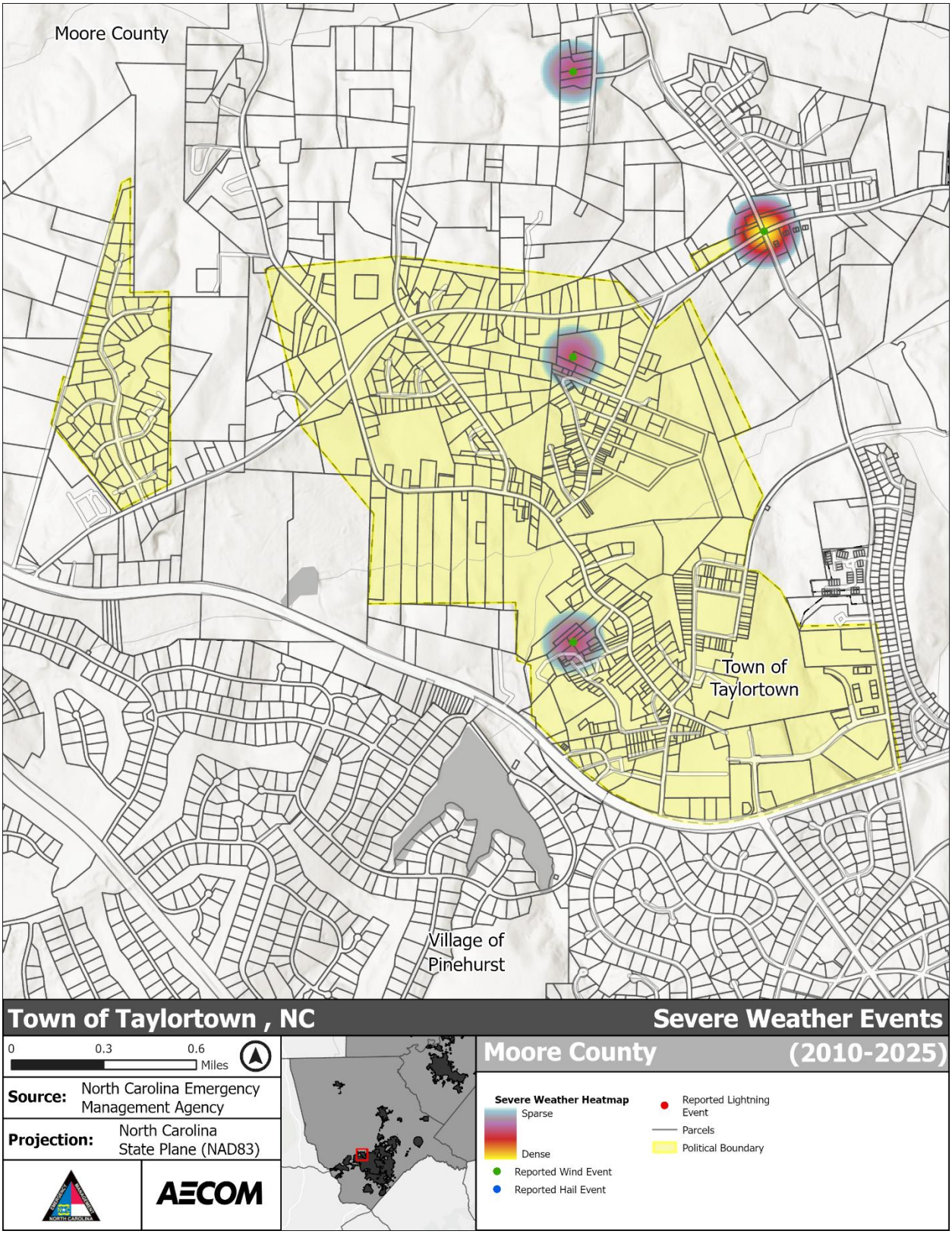

***Figure 5-96**: Severe Weather Area – Town of Taylortown*

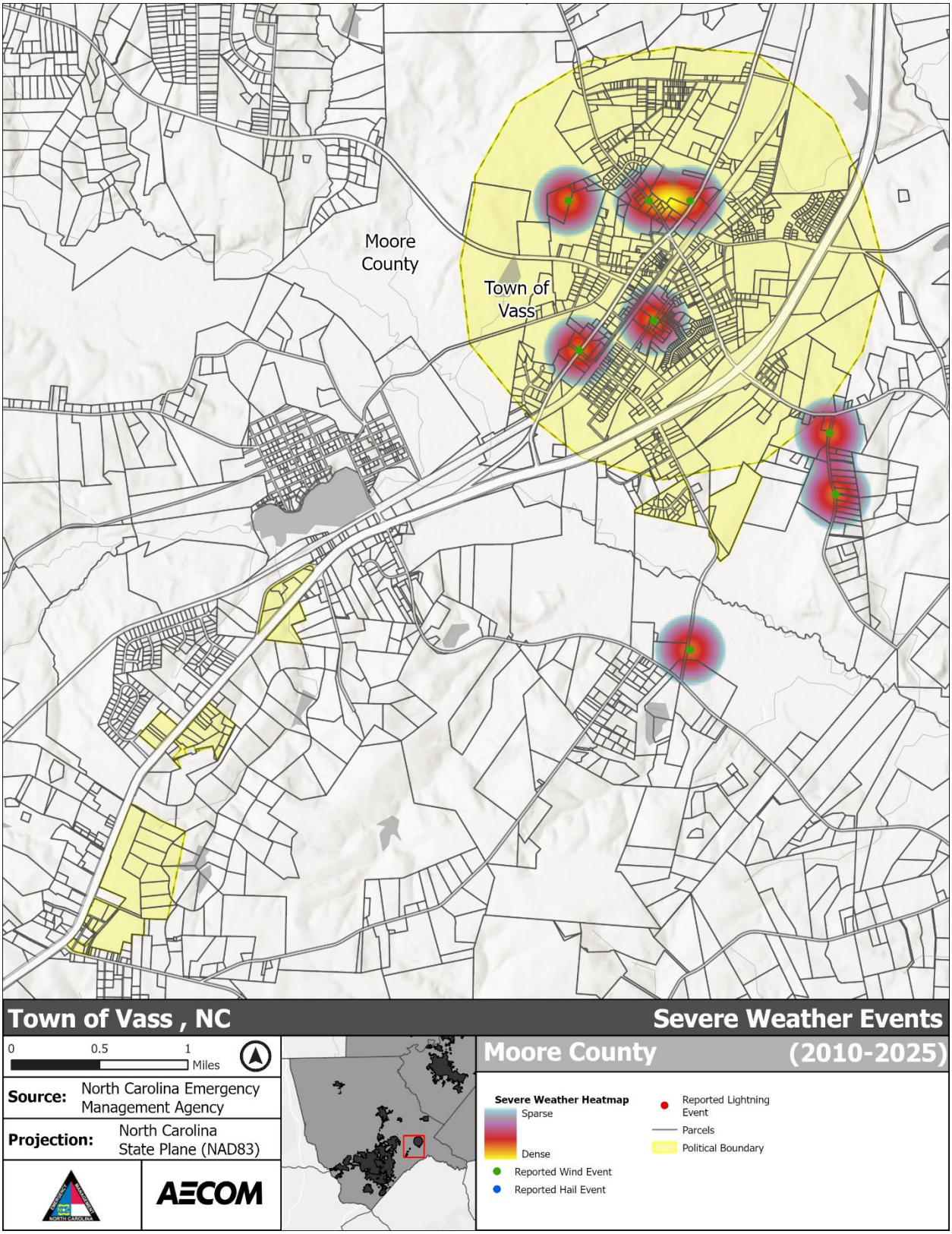

***Figure 5-97**: Severe Weather Area – Town of Vass*

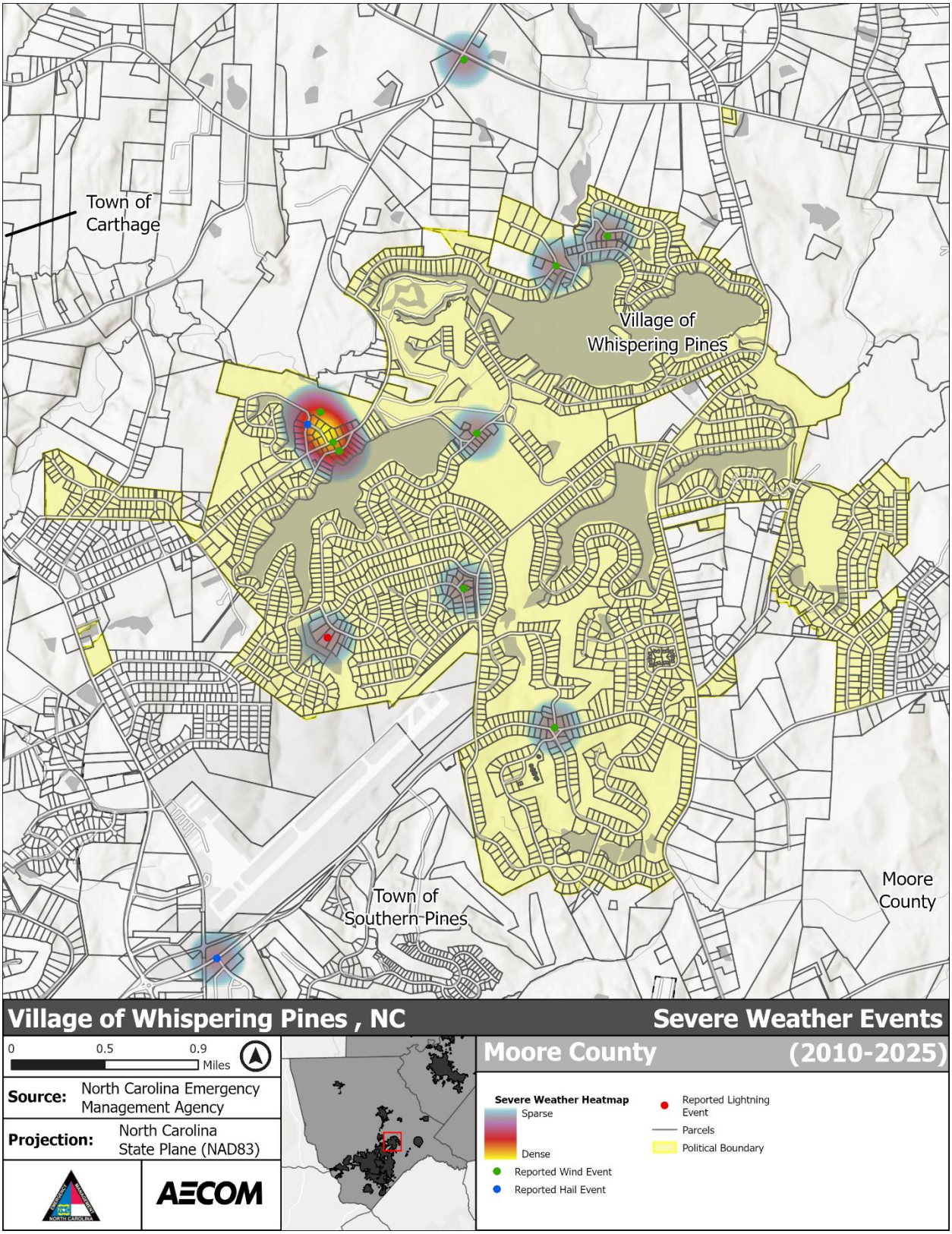

***Figure 5-98**: Severe Weather Area – Village of Whispering Pines*

5.6.3 Extent

The number of thunder events and the reported wind speeds define the thunderstorm extent. Between 2014 and 2025, the highest reported thunderstorm winds reported was 56mph, the total property damage $34,113,500, and the total crop damage was $32,000, according to the NCEI Storm Events Database.

__Table 5-23__: Summary of events, deaths (indirectly and directly related), and Injuries (indirectly and directly related) from the NCEI Storm events database for hail, heavy rain, lightning, strong wind, and thunderstorm wind events between 2014 and 2025[43].

County	Hail			Heavy Rain		Lightning			Strong Wind			Thunderstorm Wind		
	Events	Deaths	Injuries	Events	Deaths	Events	Deaths	Injuries	Events	Deaths	Injuries	Events	Deaths	Injuries
Chatham	12	0	0	3	0	0	0	0	4	0	0	87	0	0
Harnett	17	0	0	6	0	2	1	0	3	0	0	57	0	0
Johnston	12	0	0	14	0	6	0	0	9	0	0	117	0	2
Lee	6	0	0	0	0	1	1	0	4	0	0	27	0	1
Moore	15	0	0	1	0	1	0	0	5	0	0	91	0	1
Total	62	0	0	24	0	10	2	0	25	0	0	379	0	4

5.6.4 Historical Occurrences

According to the NCEI Storm Events Database, there have been 62 instances of hail, 24 reports of heavy rain, 10 reports of lightning events, 25 strong wind events, and 379 thunderstorm wind events reported between 2014 and 2025.

__Table 5-24__: NCEI Storm Events Database summary of some thunderstorm-related events with high total damages reported (includes property and crop damages reported)[44]

County	Jurisdiction	Total Damage	Total Injuries	Total Deaths	Event Description	Episode Narrative
6/11/2014: Thunderstorm Winds						
Johnston	Clayton	$30,000	-	-	Numerous trees and power lines were blown down along a swath from several miles southwest of Clayton to several miles southwest of Princeton. In addition, crops	As a upper-level trough finally began to shift east, height falls aloft overspread the region; in addition, several upper-level disturbances affected the area. With increased upper-level forcing, fairly widespread

[43] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

[44] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

County	Jurisdiction	Total Damage	Total Injuries	Total Deaths	Event Description	Episode Narrative
					were damaged near Princeton, as well as a few small barns. Also, shingles were blown off a couple of homes. Monetary damage was unknown and was estimated.	convection developed across the area within the moderately unstable, moist air mass. Many trees were blown down, including several that fell onto homes and vehicles. Additionally, some large hail was observed.
Chatham	Pittsboro	-	-	-	A couple of trees were blown down along a swath from near Pittsboro to near Jordan Lake.	
6/19/2015: Thunderstorm Winds						
Moore	Robbins	$25,000	-	-	A metal and wood roof was blown off a business, and limbs two inches in diameter were reported down.	Scattered to Numerous storms developed in a moist and unstable air mass, aided by a passing upper-level disturbance. Some of these storms produced wind damage, and one produced severe hail.
6/29/2016: Thunderstorm Wind and Hail						
Harnett	Kipling	$50,000	-	-	Several trees were blown down on Kipland Road. A few of the trees fell onto a few houses and one parked vehicle. Property damage was estimated.	With a front stalled across central NC, a weak upper-level disturbance tracking through the region aided thunderstorm development across the western Piedmont during the afternoon hours, which then moved eastward into the central Piedmont and adjacent Sandhills through the evening hours. Damaging thunderstorm winds were the main threat, with a few reports of quarter to half-dollar-size hail.
Chatham	Merry Oaks	$500	-	-	Tree down on powerlines just south of exit 84 on US Highway 1.	
		-	-	-	Half-dollar to quarter-sized hail falling at the Sky Mart on Old US Highway 1.	
Johnston	Rains Crossroads	-	-	-	Trees and powerlines were blown down along Aycock Road near Rains Crossroads Road.	
9/28/2016: Lightning and Hail						

County	Jurisdiction	Total Damage	Total Injuries	Total Deaths	Event Description	Episode Narrative
Moore	Southern Pines	$40,000	-	-	The kitchen of a residence caught fire after lightning struck a tree, traveled along a fence, and into the home. The strike also caused a gas leak in the home. The fire was quickly contained and did minimal damage to the kitchen; however, the lightning strike caused considerable damage to the electrical circuits and possibly the HVAC system.	A slow-moving cold front moving into the area, coupled with a deep upper low settling southward into the Tennessee Valley, set the stage for multiple rounds of convection during the afternoon into the evening. Some of these storms produced large hail and flash flooding. Some of the flooding was significant across the Sandhills region, where 6 to 10 inches of rain fell. Multiple roads were flooded and/or washed out, homes and businesses flooded, and dams were topped or breached across the Sandhills region.
Harnett	Dunn	-	-	-		
Johnston	Emit	-	-	-		
8/23/2017: Thunderstorm Wind						
Johnston	Smithfield	$100,000	1	-	Multiple trees and power lines were reported down, along with structural damage to multiple buildings and carports in Smithfield.	A strong cold front moved across central North Carolina during the evening into the overnight hours. Showers and storms developed in advance of the front along a prefrontal trough. Some of these storms became severe across eastern portions of central North Carolina, producing wind damage. One such report of damage resulted in an individual being injured by a large tree branch falling on a car, trapping and injuring the occupant.
		$25,000			Damage was reported at a few auto sales stores on Brightleaf Boulevard, between Brogden Road and 5th Street.	
		$20,000			Billboards were damaged, and trees were reported down near the Brogden Road exit along Interstate 95.	
		$10,000			A large tree branch fell on a car on Lee Street. An entrapped occupant sustained minor injuries.	
9/1/2017: Hail and Thunderstorm Wind						
Harnett	Angier	$2,000,000	-	-	Hail up to 2.75 inches fell across northern Harnett County. Property damage values have been estimated.	The remnants of Harvey increased the southwesterly flow over Central North Carolina as it moved northeastward through Tennessee and Kentucky. In

County	Jurisdiction	Total Damage	Total Injuries	Total Deaths	Event Description	Episode Narrative
		$8,000	-	-	Numerous trees were blown down across the northern portions of Harnett County.	the wake of the northward-moving warm front, a cold front moved into and stalled over Central North Carolina, providing lift in the strongly sheared, moist environment. The resulting thunderstorms became severe, producing damaging wind gusts, large hail, and flash flooding.
		$500	-	-	One tree was blown down onto Raws Church Road, blocking the road.	
Johnston	Hardy Crossroads	$500	-	-	One tree was blown down onto a roadway approximately 4 miles east-northeast of Angier.	
Lee	Sanford	$75,000	-	-	Numerous trees were blown down along a swath from north of Sanford to approximately 3 miles southeast of Sanford. One tree was blown down onto a car, and another onto a house. Two additional structures reported damage with a roof collapse.	
	Tramway	$8,000	-	-	Numerous trees were blown down along a swath from Tramway to Sanford.	
	Jonesboro	--	-	-		
Moore	Carthage	$1,000	-	-	Two trees were blown down along a swath from NC 24-27 in Carthage to Glendon Carthage Road, 6 miles east of Glendon.	
	West End	$1,000	-	-	Two trees were blown down along a swath from Carthage Road in Seven Lakes to Route 73 near Taylortown.	
4/15/2018: Thunderstorm Wind						
Chatham	Siler City	$5,000	-	-	Multiple trees and power lines were blown down in Siler City.	A strong upper low system moved from Iowa across the Lower Great Lakes region, with a deep trough taking on a negative tilt while swinging into North Carolina. An associated strong cold front approached western North Carolina that afternoon and pushed east and east-northeast across central North Carolina on the night of the 15th. A strengthening and
	Pittsboro	$1,000	-	-	One tree was blown down across Thompson Avenue.	
	Moncure	$1,000	-	-	One tree was blown down on River Forks Drive near NC-87.	
	Wilsonville	$1,000	-	-	One tree was blown down across Farrington Road.	

County	Jurisdiction	Total Damage	Total Injuries	Total Deaths	Event Description	Episode Narrative
Harnett	Turlington	$30,000	-	-	One tree was blown down on a residence in Benson, causing significant damage to the home.	backing flow at all levels led to a surge of moisture in NC. Moderate instability, strong deep-layer shear, and high low-level storm-relative helicity were also present. The result was a quasi-linear convective system with embedded mesovortices, which produced widespread severe weather, including a tornado in Greensboro, as it moved through North Carolina.
Lee	Sanford Municipal Airport	$1,000	-	-	One tree was blown down across Lemon Springs Road.	
		$1,000	-	-	One tree was blown down on Lemon Springs Road in Sanford.	
	Colon	$1,000	-	-	One tree was blown down on Colon Road.	
Moore	Robbins	$2,000	-	-	A couple of trees were blown down along a swath from NC 24-27 highway near Robbins to Glendon-Carthage Road near Carthage.	
8/8/2018: Thunderstorm Wind						
Chatham	Crutchfield Crossroads	$50,000	-	-	A dozen trees were blown down on a home and vehicle near the intersection of Griffin Road and Carl Johnson Road. A fallen tree also destroyed a detached garage.	A remnant MCV helped to initiate a broken band of thunderstorms that moved east across central North Carolina during the afternoon and late evening hours. The band of storms organized into a fairly large bowing cluster as it crossed the area, downing numerous trees across Central NC.
		-	-	-	One tree was blown down on a home on Staley Snow Camp Road. No additional information was available.	
	Bennett	-	-	-	One down tree was blocking the intersection at NC Highway 87 and Chicken Bridge Road.	
	Terrells	-	-	-	One tree was blown down on a home on Staley Snow Camp Road. No additional information was available.	
Johnston	Four Oaks	$300,000	-	-	Numerous trees are down in the Four Oaks, especially in the Johnston County Country Club community. Trees fell onto at least 13 homes, 3 of which were significantly damaged.	

County	Jurisdiction	Total Damage	Total Injuries	Total Deaths	Event Description	Episode Narrative
	Parkers Mill	-	-	-	One tree was reported down on NC Highway 50 near Reedy Prong Church Road.	
Moore	Harris	$15,000	-	-	Numerous trees and power lines are down throughout the county.	
7/17/2019: Thunderstorm Wind						
Harnett	Seminole	$10,000	-	-	One tree was blown down onto a house.	Scattered showers and thunderstorms developed ahead of a surface front, containing the weak remnants of Barry, associated with a mid-level trough as it moved into the central and southern Appalachians. A wet atmosphere with moderate instability and a good low-level lapse rate increased the likelihood of strong downbursts. A couple of storms became severe, producing a downburst that resulted in scattered wind damage across Johnston County.
Johnston	Wilsons Mills	$50,000	-	-	Numerous trees were blown down along Cleveland Road. At least six trees damaged structures on Hazelnut Lane, Brazil Nut Lane, and Lee Trace Drive.	
		$10,000	-	-	Several trees were blown down along a swath from 159 Strickland Road to Wilson's Mills Road. Multiple trees were blown down onto power lines. Additionally, the roof of a shed was blown off on Steel Bridge Road.	
	Clayton	$5,000	-	-	Storms became severe and caused	
		$2,000	-	-	A couple of trees were blown down between Coats Crossroads and Clayton, one at 93 Spaniel Lane and the other on Cleveland Road near North Shiloh Road.	
	Coats Crossroads	$2,000	-	-	A couple of trees were blown down near Coats Crossroads, one on NC-50 near Old Lee Road and the other on Interstate 40 at mile marker 317.	
8/15/2019: Thunderstorm Wind						
Chatham	Pittsboro	$5,000	-	-	Trees were reported down on power lines along Highway 15 near May Farm Road.	Scattered late afternoon and evening showers and thunderstorms developed along a slow-moving

County	Jurisdiction	Total Damage	Total Injuries	Total Deaths	Event Description	Episode Narrative
	Moncure	-	-	-	Multiple trees were reported down on Moncure Pittsboro Road.	surface trough across eastern portions of central North Carolina in an unstable atmosphere. Some of the storms became severe and produced wind damage, including widespread wind damage around Benson, North Carolina.
		-	-	-	One tree was reported down on John Robert Headen Road.	
Johnston	Benson	$25,000,000	-	-	More than 40 trees were reported down, along with multiple power lines and several homes damaged by falling trees and strong winds around Benson.	
		$20,000	-	-	A tree was reported down on a vehicle near the intersection of South Lincoln Street and West Woodall Street.	
4/13/2020: Thunderstorm Wind						
Chatham	Mt Vernon Springs	$50,000	-	-	A tree fell on a home on Rives Chapel Church Road.	Multiple clusters of strong to severe storms moved across central North Carolina in advance of a strong cold front during the morning hours. The storms prompted numerous reports of wind damage, including multiple wind gusts exceeding 58 miles per hour. Some of the trees fell on homes, causing significant damage and one fatality in Davidson County. Three tornadoes touch down during the early morning hours, resulting in numerous trees snapped and uprooted, and structural damage.
		$50,000	-	-	A tree fell on a home near Rives Chapel Church Road and Alex Watson Road.	
	Corinth	$10,000	-	-	Numerous trees were reported down near North Carolina Highway 42.	
	Pittsboro	-	-	-	One tree was reported down near Old Graham Road.	
	Bynum	-	-	-	A tree was reported down near Manns Chapel Road.	
Harnett	Overhills	$20,000	-	-	Numerous trees and power lines were reported down at the intersection of North Carolina Highway 87 and Nursery Road.	
Johnston	Four Oaks	-	-	-	One tree was reported down at Juniper Church Road and Tettersville Road.	
Lee	Sanford	$100,000	1	-	Trees were reported down on homes in Sanford. One child was injured.	
	Colon	$50,000	-	-	One tree was reported down on a home on Hawkins Avenue.	

County	Jurisdiction	Total Damage	Total Injuries	Total Deaths	Event Description	Episode Narrative
	Sanford	$20,000	-	-	Numerous trees were reported down near United States Highway 1 at mile marker 72.	
Moore	Carthage	$10,000	-	-	Trees were reported down on a carport near McReynolds Street.	
	Southern Pines Airport	$5,000	-	-	Trees were reported down near Rays Bridge Road.	
	Manly	$5,000	-	-	Trees were reported down in the 1100 block of Fort Bragg Road.	
4/7/2022: Lightning, Hail, and Thunderstorm Wind						
Johnston	Archers Lodge	$50,000	-	-	A house was struck by lightning along Covered Bridge Road, causing a fire.	A warm, moist, and unstable air mass ahead of an approaching, deep, mid- to upper-level cold trough allowed the development of showers and thunderstorms across eastern portions of the area. Several supercell thunderstorms formed, resulting in large hail and damaging straight-line winds.
	Coats Crossroads	-	-	-	Quarter-size hail was reported on Elevation Road near Benson, North Carolina.	
		-	-	-	A tree was reported down near I-40.	
	Outside Jurisdictional Boundaries	-	-	-	A tree was reported down near the North Carolina Highway 42 and I-40 interchange.	

Table 5-25 provides a summary of this historical information by participating jurisdiction. It is important to note that many of the events attributed to the county are countywide or cover large portions of the county. The individual counts by jurisdiction are for those events that are only attributed to that one jurisdiction.

***Table 5-25**: NCEI Storm events database summary of severe weather occurrences between 2014 and 2025. *Property damage includes property damage and crop damage related to the weather event reported[45].*

Jurisdiction	Events Reported					Property Damage Total				
	Hail	Heavy Rain	Lightning	Strong Wind	Thunderstorm Wind	Hail	Heavy Rain	Lightning	Strong Wind	Thunderstorm Wind
Chatham County	**12**	**3**	**-**	**4**	**87**	**-**	**-**	**-**	**$660,000**	**$435,500**
Goldston	2	-	-	-	2	-	-	-	-	$11,000
Pittsboro	1	-	-	-	10	-	-	-	-	$26,000
Siler City	-	-	-	-	13	-	-	-	-	$35,500

[45] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

Jurisdiction	Events Reported					Property Damage Total				
	Hail	Heavy Rain	Lightning	Strong Wind	Thunderstorm Wind	Hail	Heavy Rain	Lightning	Strong Wind	Thunderstorm Wind
Area outside Jurisdictional Boundaries	9	3	-	4	62	-	-	-	$660,000	$363,000
Harnett County	**17**	**6**	**2**	**3**	**57**	**$3,408,500**	**$2,000,000**	**-**	**$25,000**	**$1,150,000**
Angier	3	1	-	-	5	$2,000,000	-	-	-	$8,500
Coats	-	1	-	-	5	-	-	-	-	$15,500
Dunn	3	2	-	-	4	-	-	-	-	$20,000
Erwin	2		-	-	4	-	-	-	-	$8,000
Lillington	1	1	-	-	1	-	-	-	-	$500
Area outside Jurisdictional Boundaries	8	1	2	3	38	$2,000,000	-	-	-	$8,500
Johnston County	**12**	**14**	**6**	**9**	**117**	**-**	**-**	**$93,000**	**$1,339,500**	**$25,863,000**
Archer Lodge	1	1	1	-	6	-	-	$50,000	-	$13,500
Benson	1	-	2	-	13	-	-	$8,000	-	$25,035,000
Clayton	1	8	-	-	22	-	-	-	-	$67,500
Four Oaks	-	1	-	-	8	-	-	-	-	$338,500
Kenly	1	-	-	-	1	-	-	-	-	$0
Micro	1	-	-	-	4	-	-	-	-	$5,500
Pine Level	-	-	-	-	1	-	-	-	-	$5,000
Princeton	-	-	-	-	2	-	-	-	-	-
Selma	-	1	-	-	5	-	-	-	-	$9,500
Smithfield	-	-	-	-	6	-	-	-	-	$157,500
Wilson's Mill	1	-	-	-	7	-	-	-	-	$66,000
Area outside Jurisdictional Boundaries	6	3	3	9	42	-	-	$35,000	$1,339,500	$165,000
Lee County	**6**	**-**	**1**	**4**	**27**	**-**	**-**	**-**	**$660,000**	**$76,500**
Broadway	2	-	-	-	2	-	-	-	-	$5,000
Sanford	-	-	-	-	9	-	-	-	-	$212,000
Areas Outside Jurisdictional Boundaries	4	-	1	4	16	-	-	-	$660,000	$76,500
Moore County	**15**	**1**	**1**	**5**	**91**	**-**	**-**	**-**	**$1,155,500**	**$101,000**
Aberdeen	1	-	-	-	5	-	-	-	$8,000	-
Cameron	2	-	-	-	2	-	-	-	$10,000	-
Carthage	-	1	-	-	10	-	-	-	$21,000	-
Foxfire Village	-	-	-	-	-	-	-	-	-	-

Jurisdiction	Events Reported					Property Damage Total				
	Hail	Heavy Rain	Lightning	Strong Wind	Thunderstorm Wind	Hail	Heavy Rain	Lightning	Strong Wind	Thunderstorm Wind
Pinebluff	3	-	-	-	-	-	-	-	-	-
Pinehurst	-	-	-	-	-	-	-	-	-	-
Robbins	1	-	-	-	9	-	-	-	$32,000	-
Southern Pines	2	-	1	-	6	-	-	$40,000	-	$21,500
Taylortown	-	-	-	-	1	-	-	-	-	-
Vass	-	-	-	-	6	-	-	-	-	$3,500
Whispering Pines	-	-	-	-	-	-	-	-	-	-
Areas Outside Jurisdictional Boundaries	6	-	-	5	52	-	-	-	$1,155,500	$101,000

5.6.5 Probability of Future Occurrences

The NRI reports hazard risk for hail, lightning, and strong winds to represent severe weather. It uses the National Weather Service Storm Prediction Center (SPC) severe weather event reports, which include hail data from multiple sources such as public submissions, media sources, insurance sources, emergency managers, and trained spotters, and are reviewed, quality-checked, and compiled into the monthly storm data publications. These reports may include the latitude and longitude of hail events, location, date, time, size, and damage estimates. However, there could be underreporting in rural areas with fewer observers, missing reports of hail events, changes in data collection, inconsistent location data that may not reflect the full range of hail impacts, and incomplete or underreported hail size and damage estimates. There could be duplicate or conflicting reports, which can affect data consistency.

Hail is expected to have an average hazard risk index rating of “Very High” in Chatham County and “Relatively High” in Harnett County, Johnston County, Lee County, and Moore County. Chatham County had the highest expected annual frequency of hail at 4.71 events per year, or one event every 2.5 months. Similarly, Harnett, Johnston, Lee, and Moore County had annualized frequencies of 4.53, 4.56, 4.52, and 4.47, respectively —approximately one event every 2-3 months or 4-5 events per year. The county with the highest EAL is Johnston County, EAL of $803,517, followed by Harnett County ($647,468), Chatham County ($445,631), Moore County ($387,156), and Lee County ($309,655). The jurisdiction with the highest EAL total, calculated by summarizing the EALs of all census tracts overlapping its boundaries, is Sanford, with an EAL of $272,248 attributed to Hail. The jurisdictions with the next highest EALs attributed to hail are Clayton at $203,306, Lillington at $150,906, and Pinehurst at $148,575. The probability of future Hail is shown in the table below, by jurisdiction.

***Table 5-26**: NRI Hail Annualized Frequency, EAL total, EAL score, and Hazard Risk Index Score*

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Chatham County	**4.71**	**$445,631.02**	**81.83**	**Very High**	**81.08**	**Very High**
Goldston	4.70	$41,524.05	87.57	Very High	88.11	Very High
Pittsboro	4.72	$47,464.97	78.52	Relatively High	76.61	Relatively High
Siler City	4.74	$70,186.13	82.80	Very High	85.83	Very High
Area outside Jurisdictional Boundaries	4.70	$286,455.88	81.94	Very High	80.42	Very High
Harnett County	**4.53**	**$647,468.04**	**81.65**	**Relatively High**	**82.79**	**Relatively High**
Angier	4.51	$55,976.81	77.49	Relatively High	79.01	Relatively High
Coats	4.54	$53,552.21	83.68	Relatively High	85.52	Relatively High
Dunn	4.54	$108,362.01	83.78	Relatively High	86.86	Relatively High
Erwin	4.54	$106,615.15	83.73	Relatively High	85.71	Relatively High
Lillington	4.53	$150,906.31	79.72	Relatively High	79.74	Relatively High
Area outside Jurisdictional Boundaries	4.52	$213,394.27	83.15	Relatively High	83.93	Relatively High
Johnston County	**4.56**	**$803,517.34**	**77.39**	**Relatively High**	**77.07**	**Relatively High**
Archer Lodge	4.56	$104,655.20	79.82	Relatively High	76.61	Relatively High
Benson	4.56	$75,669.60	79.09	Relatively High	80.51	Very High
Clayton	4.53	$203,306.33	77.67	Relatively High	76.08	Relatively High
Four Oaks	4.56	$54,220.85	76.50	Relatively High	78.20	Relatively High
Kenly	4.56	$26,360.32	77.00	Relatively High	78.18	Relatively High
Micro	4.56	$39,317.63	76.91	Relatively High	79.13	Relatively High
Pine Level	4.56	$39,518.21	81.17	Very High	83.10	Very High
Princeton	4.58	$33,094.13	78.48	Relatively High	78.02	Relatively High
Selma	4.56	$118,928.18	78.85	Relatively High	81.05	Very High
Smithfield	4.57	$104,679.12	77.76	Relatively High	80.42	Very High
Wilson's Mill	4.56	$73,493.94	79.17	Relatively High	79.84	Relatively High
Area outside Jurisdictional Boundaries	4.59	$236,568.48	76.60	Relatively High	74.72	Relatively High
Lee County	**4.52**	**$309,655.11**	**79.99**	**Relatively High**	**81.43**	**Very High**
Broadway	4.55	$45,413.04	82.40	Very High	83.69	Very High
Sanford	4.53	$272,248.20	79.92	Relatively High	81.31	Very High
Areas Outside Jurisdictional Boundaries	4.49	$37,406.91	80.46	Very High	82.30	Very High
Moore County	**4.47**	**$387,156.96**	**75.60**	**Relatively High**	**74.17**	**Relatively High**
Aberdeen	4.38	$99,441.12	74.38	Relatively High	72.59	Relatively High
Cameron	4.49	$13,450.57	77.22	Relatively High	77.42	Relatively High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Carthage	4.49	$94,211.07	77.00	Relatively High	76.54	Relatively High
Foxfire Village	4.32	$40,080.48	75.91	Relatively High	74.24	Relatively High
Pinebluff	4.08	$23,098.87	75.55	Relatively High	75.69	Relatively High
Pinehurst	4.44	$148,575.89	77.60	Relatively High	76.67	Relatively High
Robbins	4.63	$50,921.84	78.58	Relatively High	80.11	Very High
Southern Pines	4.49	$146,979.83	76.56	Relatively High	75.12	Relatively High
Taylortown	4.49	$30,231.18	78.45	Relatively High	77.90	Relatively High
Vass	4.49	$17,117.48	79.80	Relatively High	81.11	Very High
Whispering Pines	4.49	$16,891.97	79.65	Relatively High	75.09	Relatively High
Areas Outside Jurisdictional Boundaries	4.49	$36,099.78	69.79	Relatively High	65.82	Relatively High

The NRI uses NCEI cloud-to-ground lightning strike data in time-period aggregation tiles of 4km by 4km, which summarize lightning strikes for each hour, day, month, or year. The data utilized by the NRI are annual lightning strikes, which are used to develop annualized frequencies at the census tract level from 1991 to 2012. These lightning strike reports are from the National Lightning Detection Network, operated by Vaisala and using a network of ground sensors to detect and locate cloud-to-ground lightning strikes in the U.S. In areas with low sensor coverage, lightning strikes may be underreported, affecting the accuracy of reporting. Annualized summaries may also reduce the ability to understand seasonal trends or variability in lightning strikes.

Lightning is expected to have an average hazard risk index rating of “Relatively Moderate” in Johnston County and “Relatively High” in Harnett County, Lee County, Chatham County, and Moore County. Harnett County had the highest expected annual frequency of lightning at 68.75, corresponding to approximately 69 lightning events, followed by Moore County (67.40), Lee County (58.45), Johnston County (57.99), and Chatham County (51.58). The county with the highest EAL is Moore County ($492,204), followed by Harnett County ($486,064), Johnston County ($400,936), Lee County ($214,632), and Chatham County ($165,295). The jurisdiction with the highest EAL total, calculated by summarizing the EALs of all census tracts overlapping its boundaries, is Pinehurst at $223,861, followed by Southern Pines ($222,235), and Southern Pines ($183,080), and Aberdeen ($159,708). The probability of future Lightning is shown in the table below, by jurisdiction.

***Table 5-27**: NRI Lightning annualized frequency, EAL Total, EAL Score, and Hazard Risk Rating*

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Chatham County	**51.58**	**$165,295.65**	**61.02**	**Relatively High**	**60.77**	**Relatively High**
Goldston	58.03	$12,634.42	74.59	Relatively High	76.64	Relatively High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Pittsboro	56.92	$22,784.90	57.93	Relatively Moderate	55.22	Relatively Moderate
Siler City	48.08	$26,762.08	62.75	Relatively High	73.51	Relatively High
Area outside Jurisdictional Boundaries	50.59	$103,114.25	60.23	Relatively High	57.65	Relatively Moderate
Harnett County	**68.75**	**$486,064.26**	**78.99**	**Relatively High**	**82.05**	**Very High**
Angier	65.13	$40,612.77	67.30	Relatively High	72.72	Relatively High
Coats	69.46	$39,342.73	85.35	Very High	88.97	Very High
Dunn	68.18	$64,886.16	79.96	Relatively High	87.82	Very High
Erwin	72.40	$71,728.54	83.42	Very High	87.97	Very High
Lillington	68.94	$106,309.53	73.15	Relatively High	73.86	Relatively High
Area outside Jurisdictional Boundaries	68.06	$172,613.73	84.80	Very High	86.45	Very High
Johnston County	**57.99**	**$400,936.87**	**56.54**	**Relatively Moderate**	**58.00**	**Relatively Moderate**
Archer Lodge	50.42	$53,454.15	65.03	Relatively High	59.05	Relatively Moderate
Benson	63.23	$43,250.59	62.37	Relatively High	67.04	Relatively High
Clayton	52.11	$111,176.98	60.56	Relatively High	58.47	Relatively Moderate
Four Oaks	60.91	$22,898.80	49.12	Relatively Moderate	55.14	Relatively Moderate
Kenly	56.55	$9,730.54	45.88	Relatively Moderate	51.10	Relatively Moderate
Micro	57.30	$16,199.26	48.09	Relatively Moderate	56.04	Relatively Moderate
Pine Level	57.36	$16,364.36	60.91	Relatively High	68.89	Relatively High
Princeton	53.03	$11,964.73	50.29	Relatively Moderate	53.48	Relatively Moderate
Selma	56.43	$56,484.16	59.00	Relatively Moderate	67.22	Relatively High
Smithfield	60.50	$50,339.76	55.99	Relatively Moderate	65.30	Relatively High
Wilson's Mill	54.84	$37,809.57	63.05	Relatively High	66.53	Relatively High
Area outside Jurisdictional Boundaries	61.89	$125,219.44	56.58	Relatively Moderate	54.06	Relatively Moderate
Lee County	**58.45**	**$214,632.00**	**73.24**	**Relatively High**	**77.39**	**Relatively High**
Broadway	61.78	$26,561.73	75.75	Relatively High	80.03	Very High
Sanford	58.67	$183,080.04	72.53	Relatively High	76.55	Relatively High
Areas Outside	56.96	$31,551.96	78.26	Relatively High	83.26	Very High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Jurisdictional Boundaries						
Moore County	**67.40**	**$492,204.57**	**78.52**	**Relatively High**	**75.84**	**Relatively High**
Aberdeen	78.89	$159,708.37	82.24	Very High	79.14	Relatively High
Cameron	58.86	$13,251.35	75.99	Relatively High	77.08	Relatively High
Carthage	60.60	$107,193.39	78.25	Relatively High	77.64	Relatively High
Foxfire Village	70.48	$55,941.09	81.72	Very High	77.72	Relatively High
Pinebluff	78.52	$46,892.30	89.78	Very High	89.65	Very High
Pinehurst	74.11	$223,861.83	86.75	Very High	84.00	Very High
Robbins	56.31	$38,846.25	74.54	Relatively High	79.09	Relatively High
Southern Pines	74.08	$222,235.00	84.82	Very High	81.98	Very High
Taylortown	64.42	$39,141.90	85.88	Very High	84.25	Very High
Vass	65.52	$19,998.60	86.62	Very High	89.15	Very High
Whispering Pines	62.67	$28,488.13	93.19	Very High	85.15	Very High
Areas Outside Jurisdictional Boundaries	62.08	$40,109.48	64.42	Relatively High	56.74	Relatively Moderate

The NRI defines a strong wind event as damaging winds that often originate from thunderstorms that are classified as exceeding 58mph. The NRI uses the NWS Storm Prediction Center strong wind reports from event reports compiled by the NWS to the Storm Data archives into the Severe Weather Database with data from 1968 to 2019. Wind speeds or sustained wind speeds may not be exact, and the method of wind speed measurement was only recorded from 2006 on in the dataset. Wind speeds of less than 58 mph, or 50.4 knots, were filtered out in annualized frequency calculations. The coordinates of the strong wind events were buffered by 80km to estimate the general area where the strong winds may have been present. The areas of impact with an 80km buffer were then used to estimate the annualized frequency at the census block level. The mechanisms for wind speed measurements were not consistently recorded until 2006, and many of the wind speed measurements are estimated and not measured. Additionally, only the events that were above 58mph were excluded, which means that the full record of damaging wind events may not be included. There may also be misrepresentation of strong wind event impacts in vulnerable areas where the population is more sparsely distributed.

According to the NRI, the county with the highest EAL attributed to strong winds is Moore County ($492,204), followed by Harnett County ($486,064), Johnston County ($400,936), Lee County ($214,632), and Chatham County ($165,295). Harnett County has the highest expected annualized frequency, with an expected 68.75 events per year, followed by Moore County (67.40), Lee County (58.45), Johnston County (57.99), and Chatham County (51.58). The

jurisdiction with the highest total EAL, summarized from all census tracts that overlap jurisdictional boundaries, is Pinehurst ($223,861), followed by Southern Pines ($222,235), Sanford ($183,080), and Aberdeen ($159,708).

The jurisdictional summary of strong wind annualized frequency, EAL total, average EAL score, and Hazard Risk Index Score is below.

***Table 5-28**: NRI Strong Wind Annualized Frequency, EAL total, EAL Score, and Hazard Risk Index Score.*

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Chatham County	**51.58**	**$165,295.65**	**61.02**	**Relatively High**	**60.77**	**Relatively High**
Goldston	58.03	$12,634.42	74.59	Relatively High	76.64	Relatively High
Pittsboro	56.92	$22,784.90	57.93	Relatively Moderate	55.22	Relatively Moderate
Siler City	48.08	$26,762.08	62.75	Relatively High	73.51	Relatively High
Area outside Jurisdictional Boundaries	50.59	$103,114.25	60.23	Relatively High	57.65	Relatively Moderate
Harnett County	**68.75**	**$486,064.26**	**78.99**	**Relatively High**	**82.05**	**Very High**
Angier	65.13	$40,612.77	67.30	Relatively High	72.72	Relatively High
Coats	69.46	$39,342.73	85.35	Very High	88.97	Very High
Dunn	68.18	$64,886.16	79.96	Relatively High	87.82	Very High
Erwin	72.40	$71,728.54	83.42	Very High	87.97	Very High
Lillington	68.94	$106,309.53	73.15	Relatively High	73.86	Relatively High
Area outside Jurisdictional Boundaries	68.06	$172,613.73	84.80	Very High	86.45	Very High
Johnston County	**57.99**	**$400,936.87**	**56.54**	**Relatively Moderate**	**58.00**	**Relatively Moderate**
Archer Lodge	50.42	$53,454.15	65.03	Relatively High	59.05	Relatively Moderate
Benson	63.23	$43,250.59	62.37	Relatively High	67.04	Relatively High
Clayton	52.11	$111,176.98	60.56	Relatively High	58.47	Relatively Moderate
Four Oaks	60.91	$22,898.80	49.12	Relatively Moderate	55.14	Relatively Moderate
Kenly	56.55	$9,730.54	45.88	Relatively Moderate	51.10	Relatively Moderate

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Micro	57.30	$16,199.26	48.09	Relatively Moderate	56.04	Relatively Moderate
Pine Level	57.36	$16,364.36	60.91	Relatively High	68.89	Relatively High
Princeton	53.03	$11,964.73	50.29	Relatively Moderate	53.48	Relatively Moderate
Selma	56.43	$56,484.16	59.00	Relatively Moderate	67.22	Relatively High
Smithfield	60.50	$50,339.76	55.99	Relatively Moderate	65.30	Relatively High
Wilson's Mill	54.84	$37,809.57	63.05	Relatively High	66.53	Relatively High
Area outside Jurisdictional Boundaries	61.89	$125,219.44	56.58	Relatively Moderate	54.06	Relatively Moderate
Lee County	**58.45**	**$214,632.00**	**73.24**	**Relatively High**	**77.39**	**Relatively High**
Broadway	61.78	$26,561.73	75.75	Relatively High	80.03	Very High
Sanford	58.67	$183,080.04	72.53	Relatively High	76.55	Relatively High
Areas Outside Jurisdictional Boundaries	56.96	$31,551.96	78.26	Relatively High	83.26	Very High
Moore County	**67.40**	**$492,204.57**	**78.52**	**Relatively High**	**75.84**	**Relatively High**
Aberdeen	78.89	$159,708.37	82.24	Very High	79.14	Relatively High
Cameron	58.86	$13,251.35	75.99	Relatively High	77.08	Relatively High
Carthage	60.60	$107,193.39	78.25	Relatively High	77.64	Relatively High
Foxfire Village	70.48	$55,941.09	81.72	Very High	77.72	Relatively High
Pinebluff	78.52	$46,892.30	89.78	Very High	89.65	Very High
Pinehurst	74.11	$223,861.83	86.75	Very High	84.00	Very High
Robbins	56.31	$38,846.25	74.54	Relatively High	79.09	Relatively High
Southern Pines	74.08	$222,235.00	84.82	Very High	81.98	Very High
Taylortown	64.42	$39,141.90	85.88	Very High	84.25	Very High
Vass	65.52	$19,998.60	86.62	Very High	89.15	Very High
Whispering Pines	62.67	$28,488.13	93.19	Very High	85.15	Very High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Areas Outside Jurisdictional Boundaries	62.08	$40,109.48	64.42	Relatively High	56.74	Relatively Moderate

5.6.6 Impact

5.6.6.1 People

Thunderstorms are generally associated with hazards such as high wind, lightning, and hail. High winds can cause trees to fall, potentially resulting in injuries or death, and lightning can cause house fires and serious injury. Severe weather events can have a wide range of impacts on residents in the planned area, including power outages, blocked roads, and property damage. Individuals with disabilities (11.8% in Chatham County, 15.5% in Harnett County, 13% in Johnston County, 17.7% in Lee County, and 14% in Moore County[46]) and individuals with an independent living difficulty (4.8% in Chatham County, 6.4% in Harnett County, 5.1% in Johnston County, 6.4% in Lee County, and 5.9% in Moore County[47]) may be disproportionately vulnerable to severe storm impacts, especially those with limited mobility or who rely on electricity to power medical devices.

Residents who live in mobile homes (13% in Chatham County, 18.5% in Harnett County, 14% in Johnston County, 14.3% in Lee County, and 11% in Moore County[48]) or other types of housing units, such as RVs, Boats, or Vans (0.1% in Chatham County, Harnett County, Johnston County, and Moore County, and 0.2% in Lee County[49]) may be disproportionately damaged by severe weather event impacts such as strong winds, hail, and lightning. Critical emergency alerts are often transmitted via radio, reverse 911, or text message. Residents in the planning area that lack telephone service (0.5% of housing units in Chatham County, 0.8% in Harnett County, 1.1% in Johnston County, 0.9% in Lee County, and 0.9% in Moore County[50]), don't have a computing device (5% of housing units in Chatham County, 6.1% in Harnett County, 3.2% in Johnston County, 5.1% in Lee County, and 5.3% in Moore County estimated in 2023[51]),

[46] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810
[47] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810
[48] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04
[49] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04
[50] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04
[51] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

or who do not have an internet subscription (13.2% of housing units in Chatham County, 16.3% in Harnett County, 13.7% in Johnston County, 23.8% in Lee County, and 10.2% in Moore County in 2023[52]) may have a limited capacity to receive information over telephone, the internet, or important emergency alerts, review preparedness and response information.

Hail may also pose a risk to the health and safety of residents in the planning area, which can range from minor injuries to serious and potentially fatal head trauma. Lightning can have a significant impact on humans if directly struck, which includes series brain injury, burns, cardiovascular damage, nervous system damage, and death.

5.6.6.2 Changes in Development or Housing Characteristics

As the planning area continues to increase in the resident population (16.54% increase in Moore County, 11.58% in Lee County, 34.19% in Johnston County, 19.03% in Harnett County, and 23.33% in Chatham County between 2010 and 2023[53]) and housing units (increasing in Chatham County by 20.8%, Harnett County by 14.08%, Johnston County by 29.87%, Lee County by 11.35%, Moore County by 11.92%, and the planning area by 19.3% total[54]), it is important to note that increased development in areas with frequent lightning, hail, and strong winds can raise insurance premiums in high-risk areas and affect the affordability of housing in the planning area. The infrastructure in the planning area should be developed to be resilient to frequent severe weather impacts and to avoid frequent storm disruptions.

5.6.6.3 Economy

Economic damages include property damage from wind, lightning, and hail, as well as intangibles such as business interruption and additional living expenses. Residents with a housing unit that is a mobile home (13% in Chatham County, 18.5% in Harnett County, 14% in Johnston County, 14.3% in Lee County, and 11% in Moore County[55]) or a RV, Boat, or Van (0.1% in Chatham County, 0.1% in Harnett County, 0.1% in Johnston County, 0.2% in Lee County, and 0.1% in Moore County[56]). These housing units may be disproportionately damaged by hail, lightning, or strong winds, putting residents at risk of incurring additional expenses from damage.

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[52] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[53] U.S. Census Bureau. (n.d.). TOTAL POPULATION. Decennial Census, DEC Summary File 1, Table P1. Retrieved June 16, 2025, from https://data.census.gov/table/DECENNIALSF12010.P1

U.S. Census Bureau, U.S. Department of Commerce. (n.d.). ACS Demographic and Housing Estimates. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP05. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP05

[54]

[55] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[56] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

5.6.6.4 Natural Environment

Thunderstorms have a significant impact on the environment. One of the most dangerous outcomes for the environment is when lightning causes sparks to flare up in surrounding forests or immense shrubs. This is often the cause of bushfires, which then spread quickly due to the fast winds that accompany the storm. Wind can also damage or knock down trees, which can bring down power lines, fall on structures, obstruct roads, and cause other damage.

5.6.6.5 First Responders

First responders can be impacted in the same way as the public. Downed trees, power lines, and flood waters may prevent access to areas in need, which prolongs response time. Thunderstorm events can cause power outages, which may impact operations. Downed trees, power lines, and flash flooding may prevent access to critical facilities and/or emergency equipment.

5.6.6.6 Future Conditions

According to the NCCR[57], the frequency and severity of thunderstorms in NC are likely to increase due to climate change impacts. This includes increases in frequent extreme precipitation and flooding in the planning area.

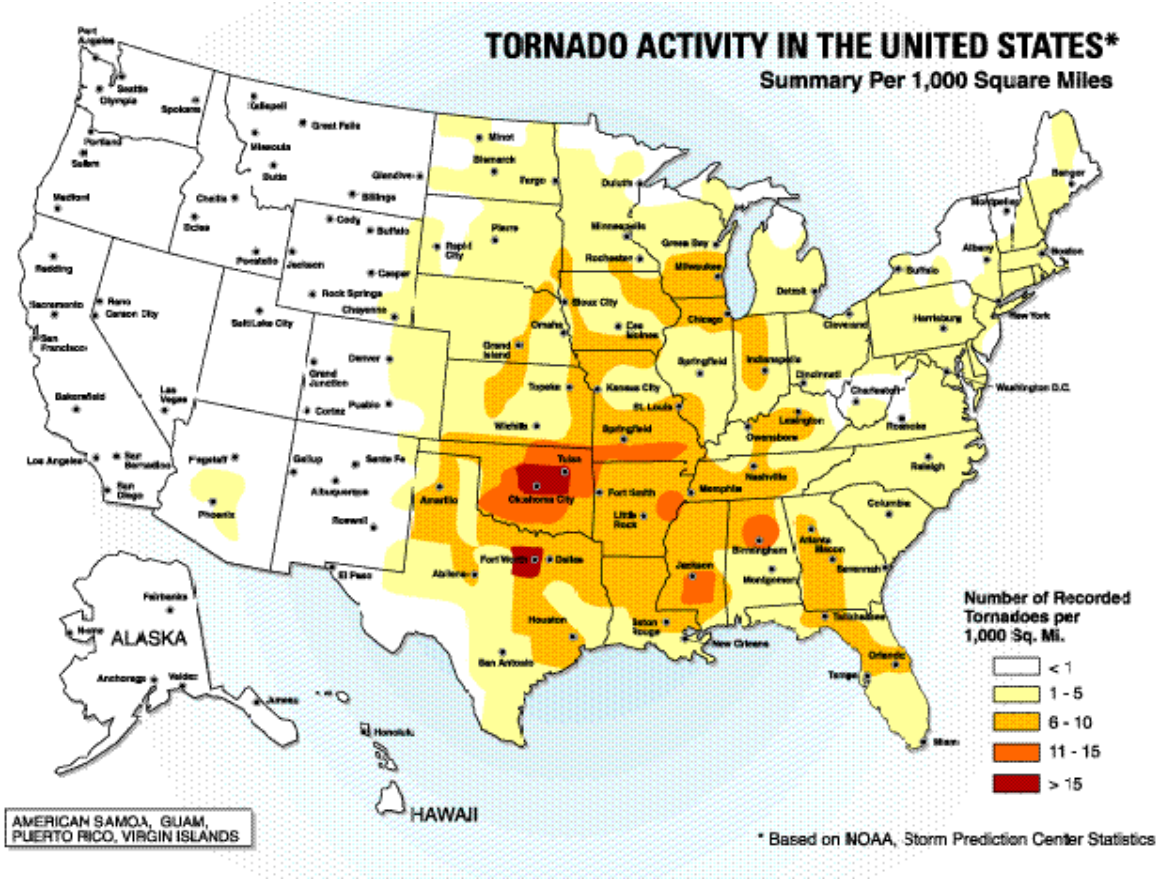
5.7 Tornado

5.7.1 Hazard Description and Background

A tornado is a violent windstorm characterized by a twisting, funnel-shaped cloud extending to the ground. Tornadoes are most often generated by thunderstorm activity (but sometimes result from hurricanes and other tropical storms) when cool, dry air intersects and overrides a layer of warm, moist air, forcing the warm air to rise rapidly. The damage caused by a tornado is a result of the high wind velocity and wind-blown debris, also accompanied by lightning or large hail. According to the National Weather Service, tornado wind speeds normally range from 40 miles per hour to more than 300 miles per hour. The most violent tornadoes have winds of 250 miles per hour or more and can cause extreme destruction, turning normally harmless objects into deadly missiles.

Each year, an average of over 1200 tornadoes are reported nationwide, resulting in an average of 80 deaths and 1,500 injuries. According to the NOAA Storm Prediction Center (SPC), the highest concentration of tornadoes in the United States has been in Oklahoma, Texas, Kansas, and Florida, respectively. Although the Great Plains region of the Central United States does favor the development of the largest and most dangerous tornadoes (earning the designation of “tornado alley”), Florida experiences the greatest number of tornadoes per square mile of all the United States (SPC, 2002). Figure 5-99 shows tornado activity in the United States based on the number of recorded tornadoes per 1,000 square miles.

[57] North Carolina Institute for Climate Studies [NCICS]. (2020). North Carolina Climate Science Report. NCICS. Retrieved January 29, 2025, from https://ncics.org/wp-content/uploads/2020/10/NC_Climate_Science_Report_FullReport_Final_revised_September2020.pdf



Source: Federal Emergency Management Agency

***Figure 5-99**: Tornado Activity in the United States*

Tornadoes are more likely to occur from March through May and are most likely to form in the late afternoon and early evening. Most tornadoes are a few dozen yards wide and touch down briefly, but even small, short-lived tornadoes can inflict tremendous damage. Highly destructive tornadoes may carve out a path over a mile wide and several miles long.

The destruction caused by tornadoes ranges from light to inconceivable, depending on the storm's intensity, size, and duration. Typically, tornadoes cause the greatest damage to structures of light construction, including residential dwellings (particularly mobile homes). Tornadic magnitude is reported according to Fujita and Enhanced Fujita Scales. Tornado magnitudes before 2005 were determined using the traditional version of the Fujita Scale (Table 5-29). Tornado magnitudes were determined in 2005, and later were determined using the Enhanced Fujita Scale (Table 5-30).

***Table 5-29**: The Fujita Scale (Effective Before 2005)*

F-SCALE NUMBER	INTENSITY	WIND SPEED	TYPE OF DAMAGE DONE
F0	GALE TORNADO	40–72 MPH	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages to signboards.
F1	MODERATE TORNADO	73–112 MPH	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes are pushed off foundations or overturned; moving autos are pushed off the roads; attached garages may be destroyed.
F2	SIGNIFICANT TORNADO	113–157 MPH	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F3	SEVERE TORNADO	158–206 MPH	Roofs and some walls were torn off well-constructed houses; trains overturned; most trees in the forest were uprooted.
F4	DEVASTATING TORNADO	207–260 MPH	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown, and large missiles generated.
F5	INCREDIBLE TORNADO	261–318 MPH	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile-sized missiles fly through the air in excess of 100 meters; trees debarked; steel-reinforced concrete structures badly damaged.
F6	INCONCEIVABLE TORNADO	319–379 MPH	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable, and the mess produced by F4 and F5 winds would surround the F6 winds. Missiles, such as cars and refrigerators, would do serious secondary damage that could not be directly identified as F6 damage. If this level is ever achieved, evidence for it might only be found in a ground swirl pattern, as it may never be identifiable through engineering studies.

Source: National Weather Service

***Table 5-30**: The Enhanced Fujita Scale (Effective 2005 and Later)*

EF-SCALE NUMBER	INTENSITY PHRASE	3 SECOND GUST (MPH)	TYPE OF DAMAGE DONE
EF0	GALE	65–85	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages to signboards.
EF1	MODERATE	86–110	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes are pushed off foundations or overturned; moving autos are pushed off the roads; attached garages may be destroyed.

EF-SCALE NUMBER	INTENSITY PHRASE	3 SECOND GUST (MPH)	TYPE OF DAMAGE DONE
EF2	SIGNIFICANT	111–135	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
EF3	SEVERE	136–165	Roof and some walls torn off well-constructed houses; trains overturned; most trees in the forest uprooted.
EF4	DEVASTATING	166–200	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown, and large missiles generated.
EF5	INCREDIBLE	Over 200	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile-sized missiles fly through the air in excess of 100 meters; trees debarked; steel-reinforced concrete structures badly damaged.

Source: National Weather Service

5.7.2 Location and Spatial Extent

Tornadoes occur throughout North Carolina, including the Cape Fear Region. Tornadoes typically affect a relatively small area, but the damage can be extensive. Event locations are completely random, and it is not possible to predict specific areas that are more susceptible to tornado strikes over time. Therefore, it is assumed that the Cape Fear Region is uniformly exposed to this hazard.

To demonstrate the location and spatial extent of tornado hazards in the planning area, the following maps utilize the NRI EAL data and the NOAA SPC Tornado Tracks dataset.[58] The NOAA and SPC Tornado Tracks dataset displays the path and magnitude of reported tornadoes in the US, Puerto Rico, and the U.S. Virgin Islands between 1950 and 2024. The NRI EAL for tornadoes is also included in the maps below, using the economic losses reported by the NWS SPC Severe Weather Database[59] to evaluate tornado risk in the planning area. The period of record for EAL data set is from 1950 to 2019. All EF-2, 3, 4, and 5 tornadoes were recorded before 1986, and EF-0, EF-1, and EF-2 tornadoes recorded from 1986 to 2019.

[58] Storm Prediction Center [SPC] & National Oceanic and Atmospheric Administration [NOAA]. (n.d.). Tornado Tracks [Dataset]. In Federal Emergency Management Administration [FEMA], FEMA Geospatial Resource Center. FEMA. https://gis-fema.hub.arcgis.com/datasets/fedmaps::tornado-tracks-1/about

[59] Storm Prediction Center [SPC], National Weather Service [NWS]. (2021). Severe Weather Database files, Tornado, 1950-2021 [online dataset]. Retrieved from http://www.spc.noaa.gov/wcm/.

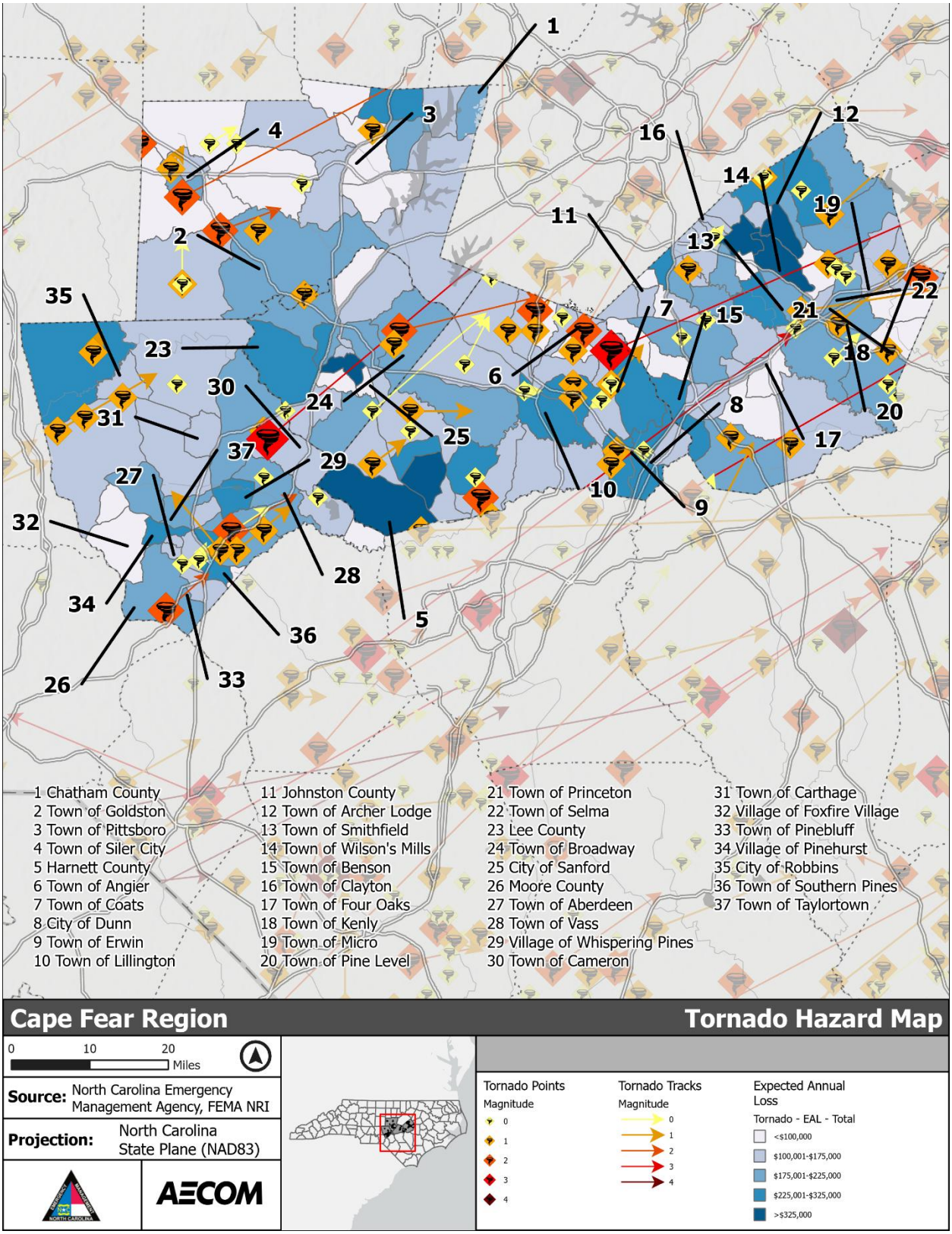


***Figure 5-100**: Tornado Hazard Area – Cape Fear Region*

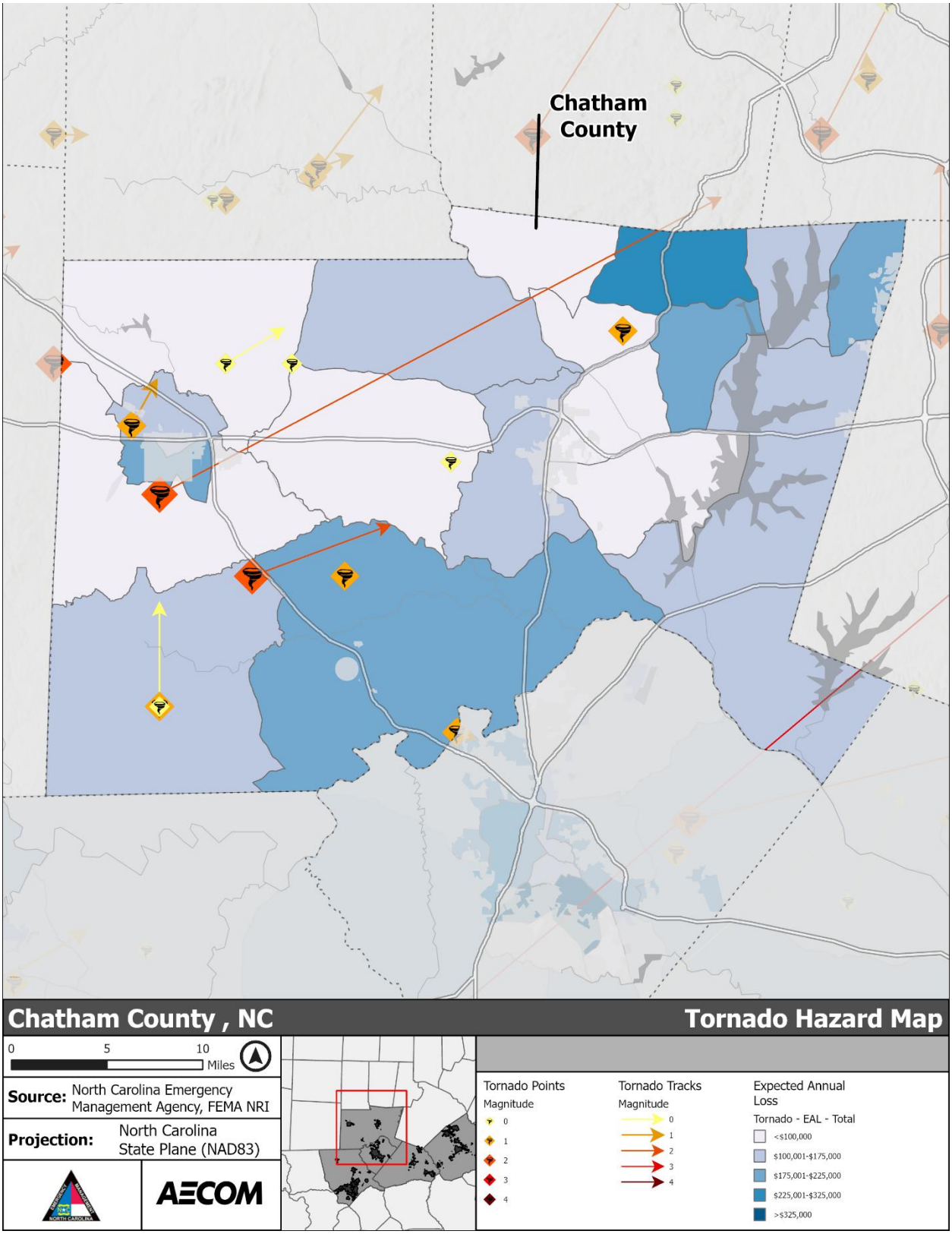


***Figure 5-101**: Tornado Hazard Area – Chatham County*

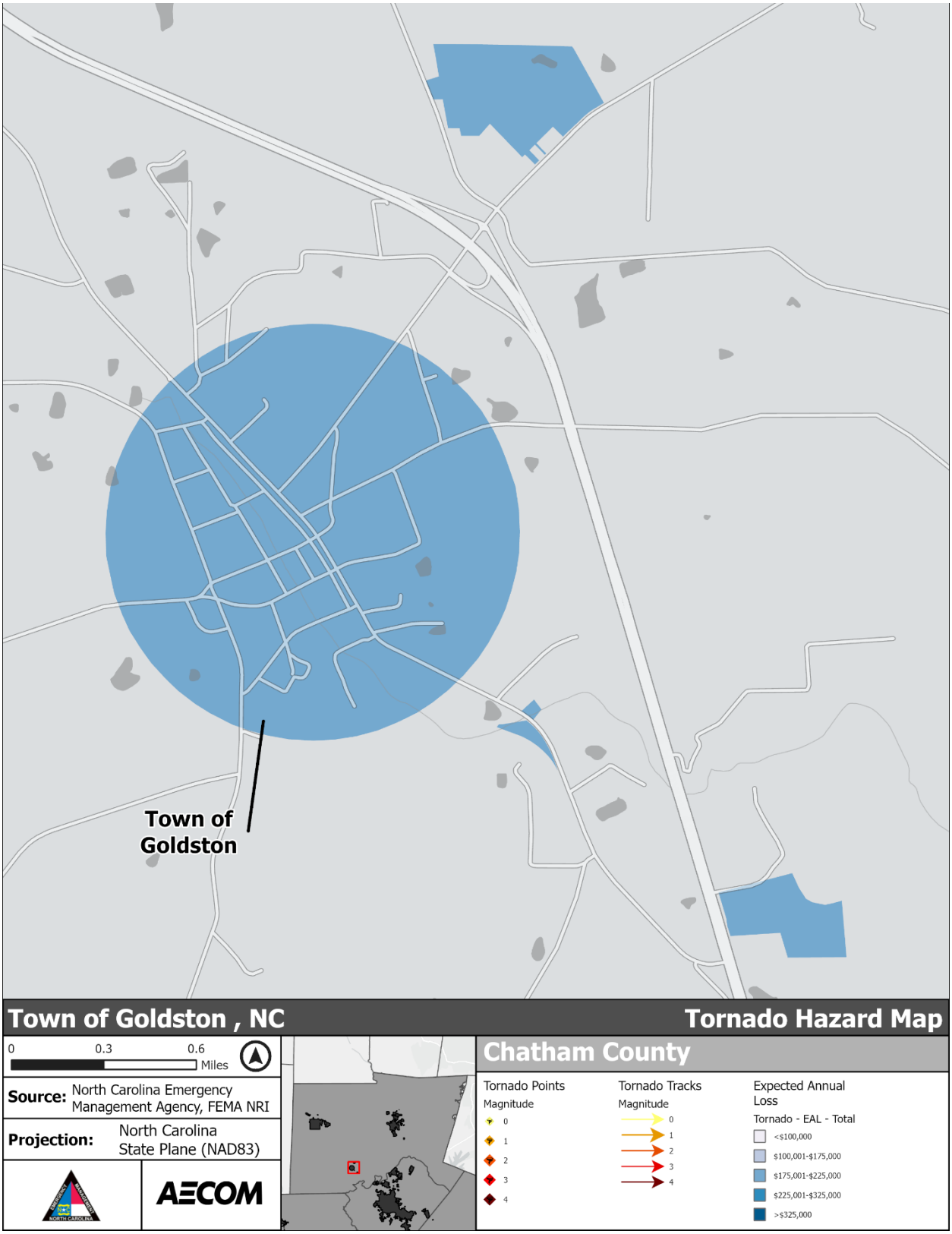


***Figure 5-102**: Tornado Hazard Area – Town of Goldston*

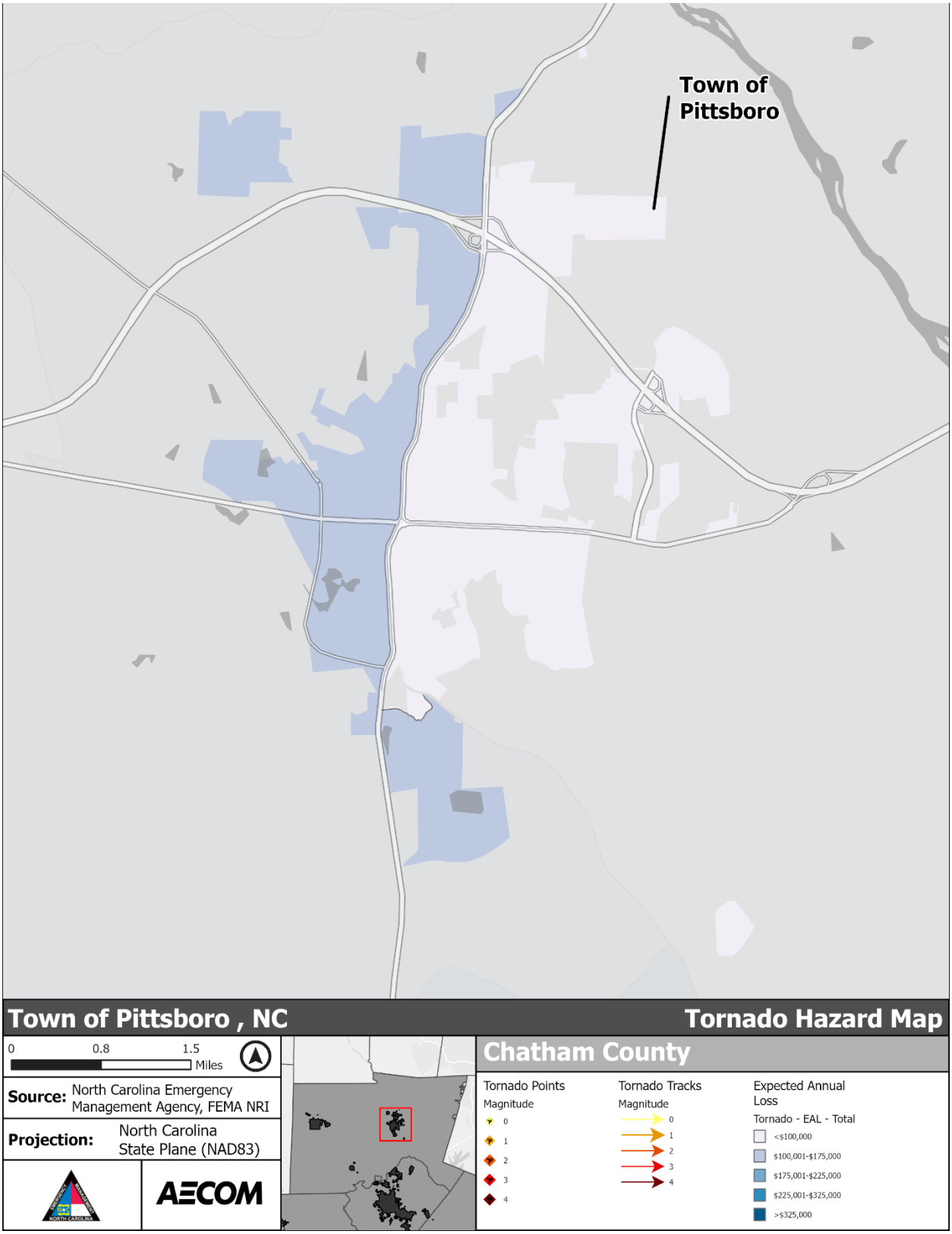


***Figure 5-103**: Tornado Hazard Area – Town of Pittsboro*

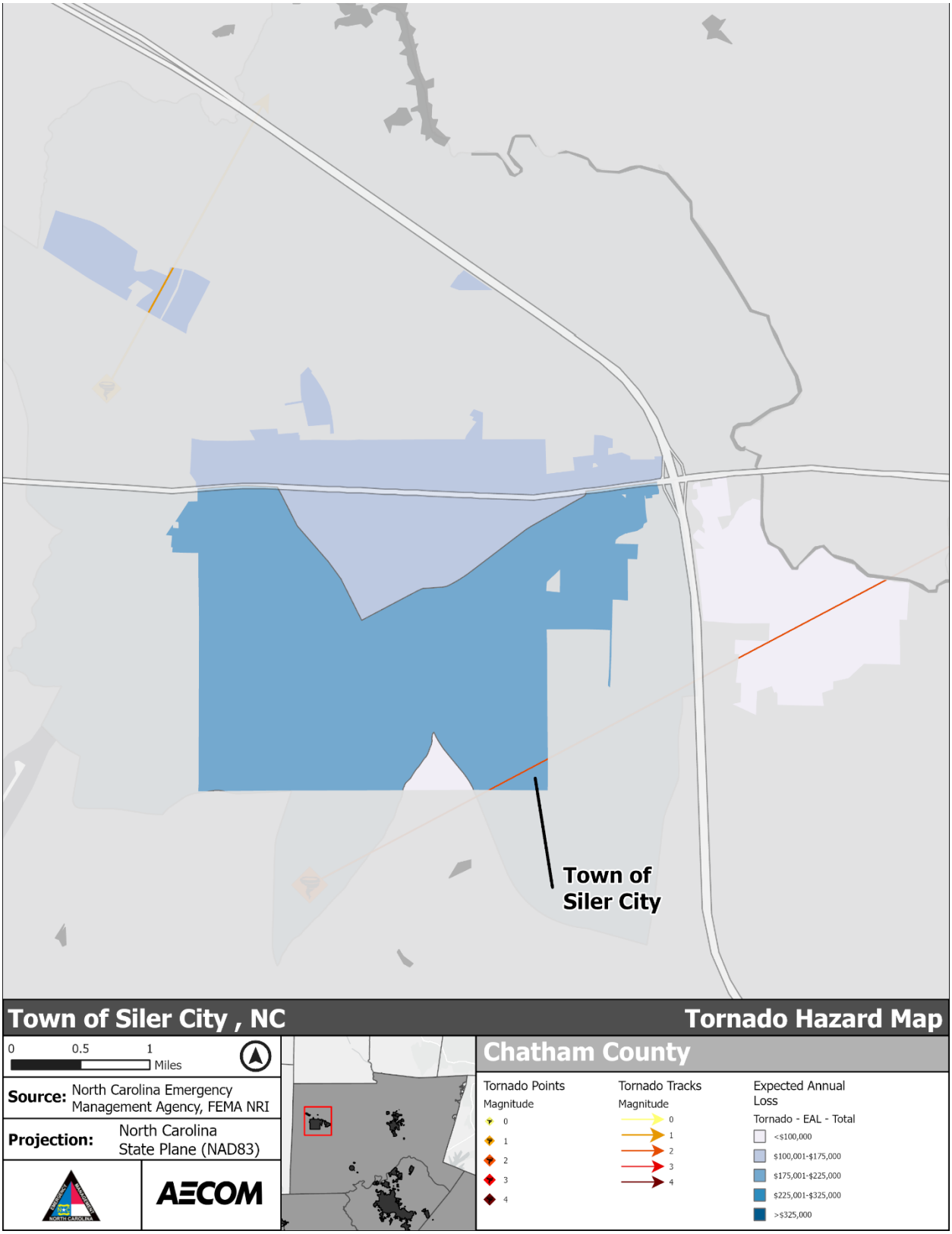


***Figure 5-104**: Tornado Hazard Area – Town of Siler City*

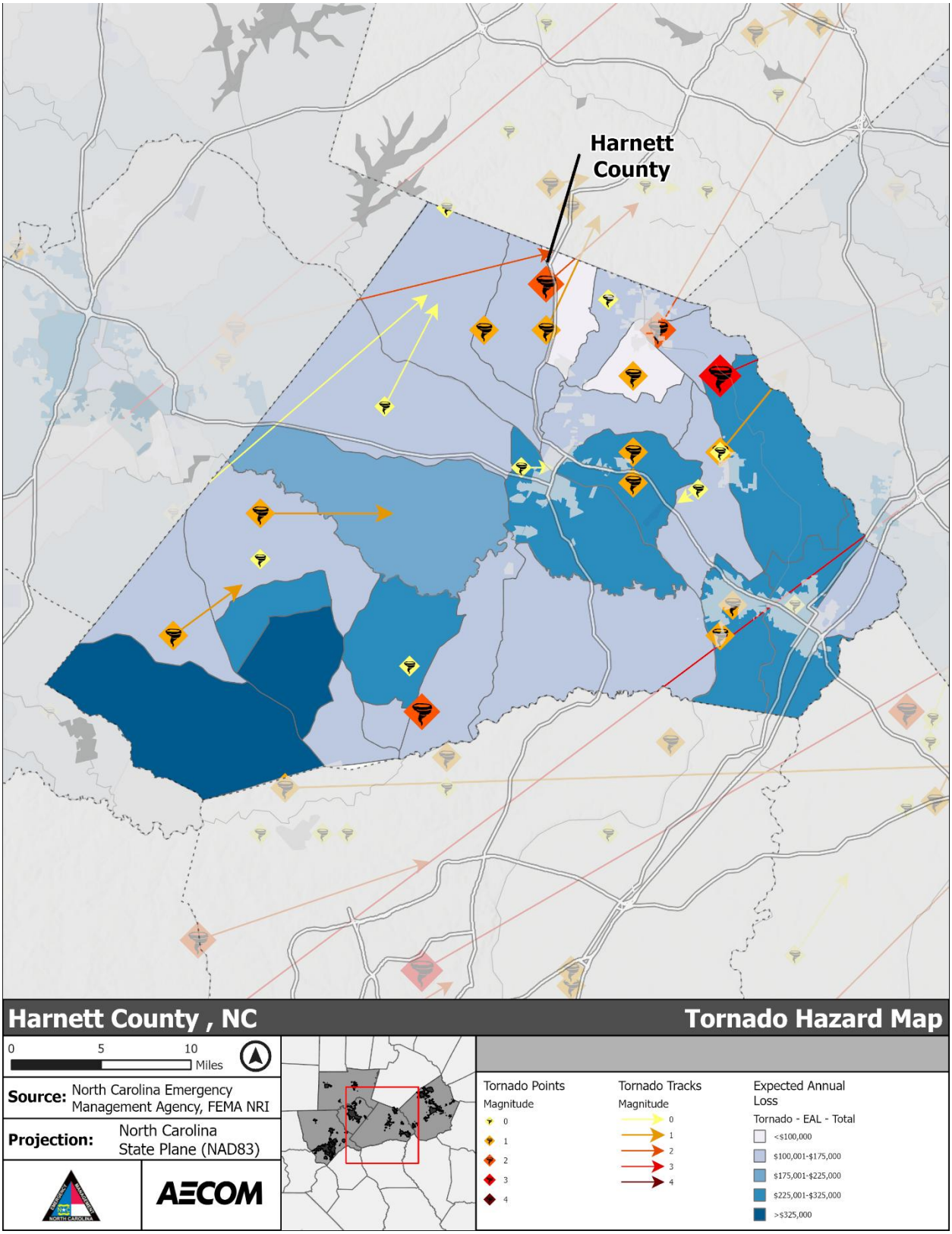


***Figure 5-105**: Tornado Hazard Area – Harnett County*

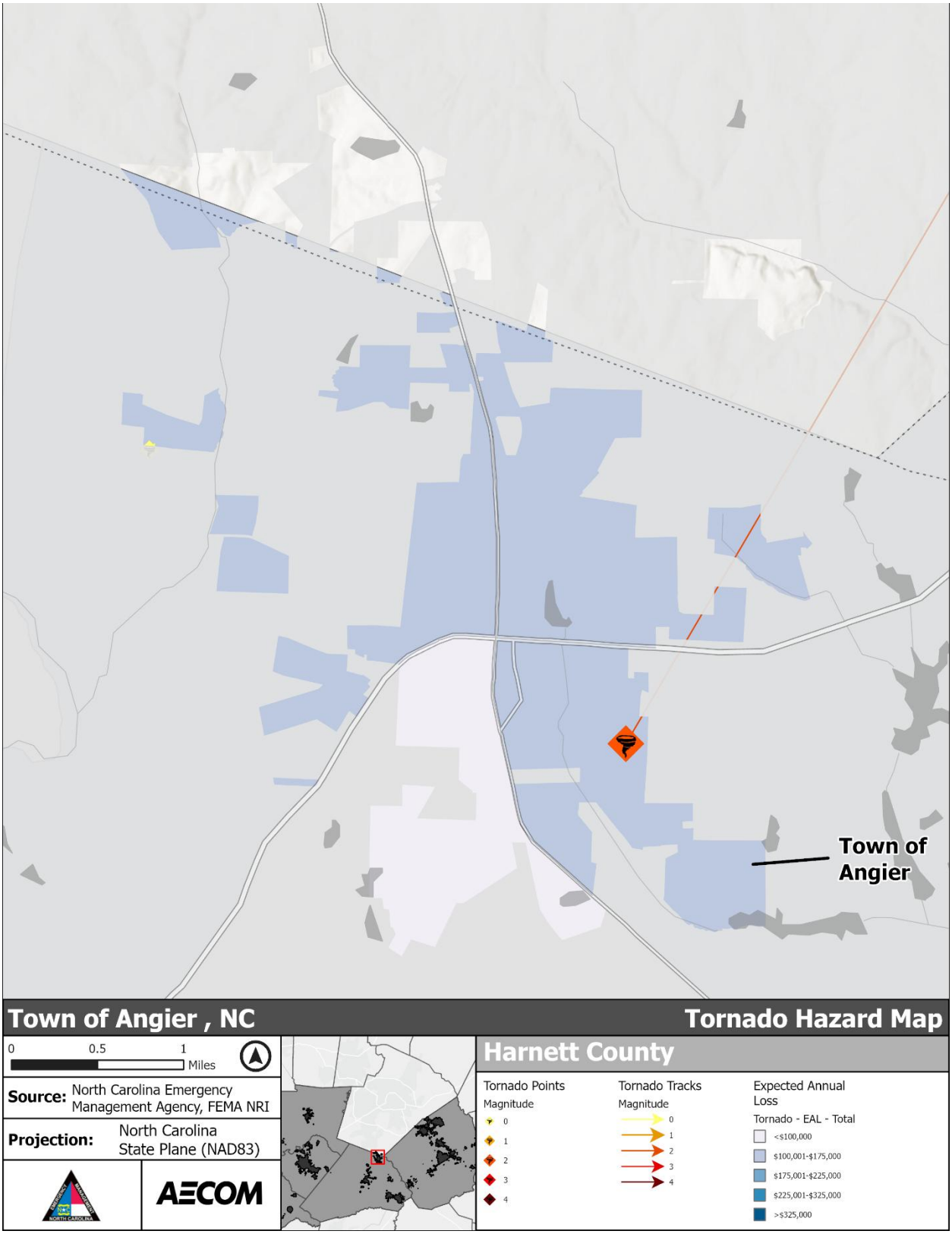


***Figure 5-106**: Tornado Hazard Area – Town of Angier*

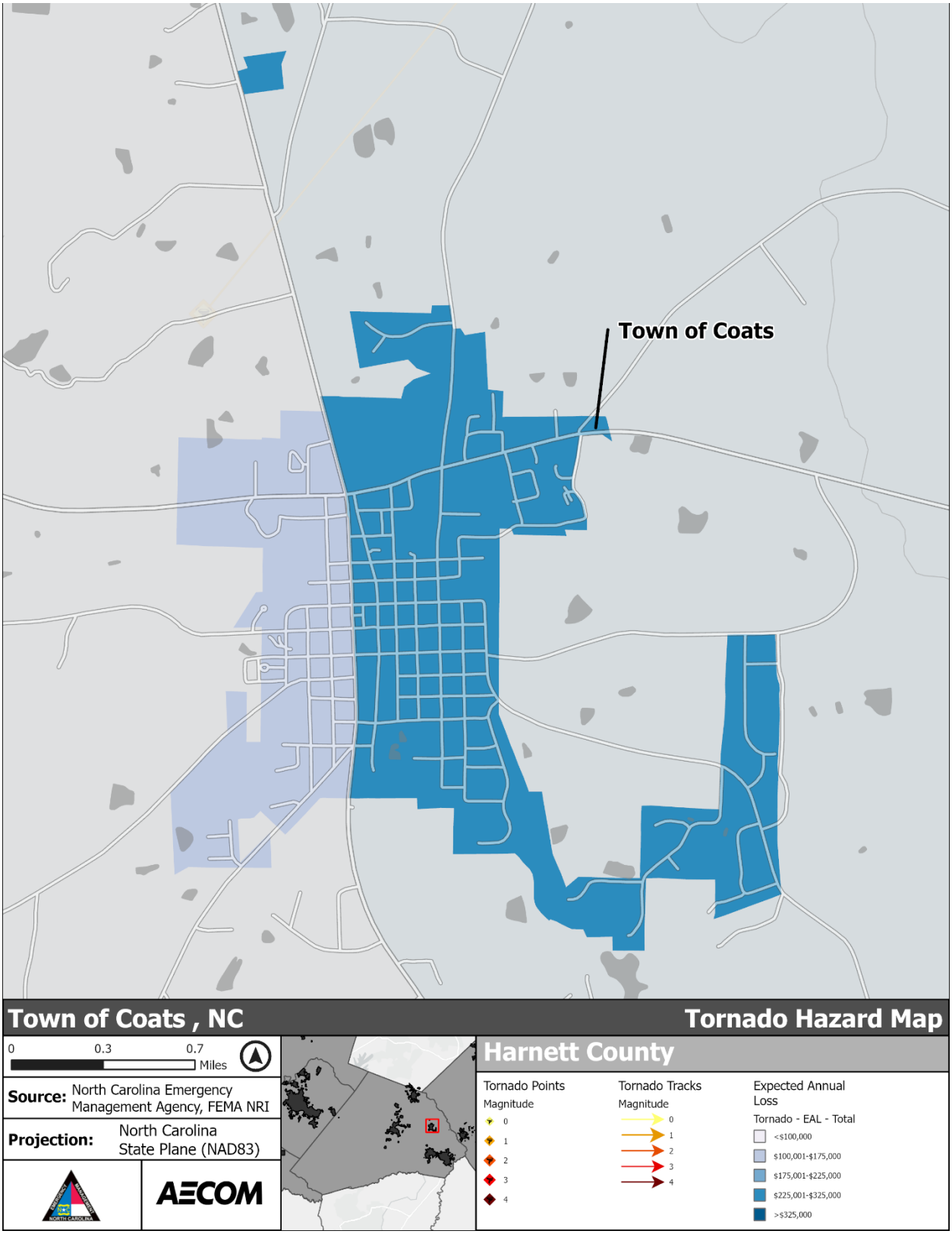


***Figure 5-107**: Tornado Hazard Area – Town of Coats*

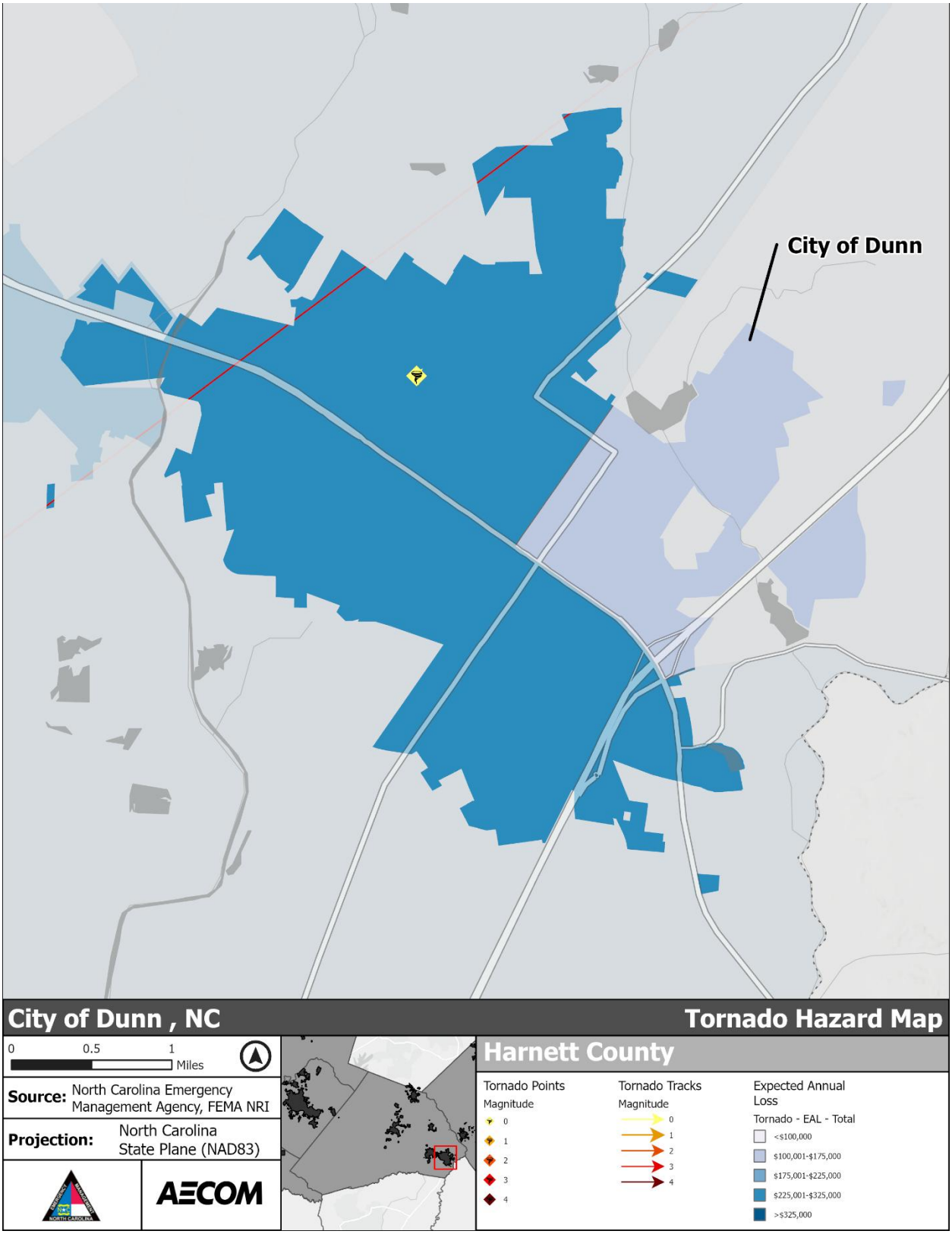


***Figure 5-108**: Tornado Hazard Area – City of Dunn*

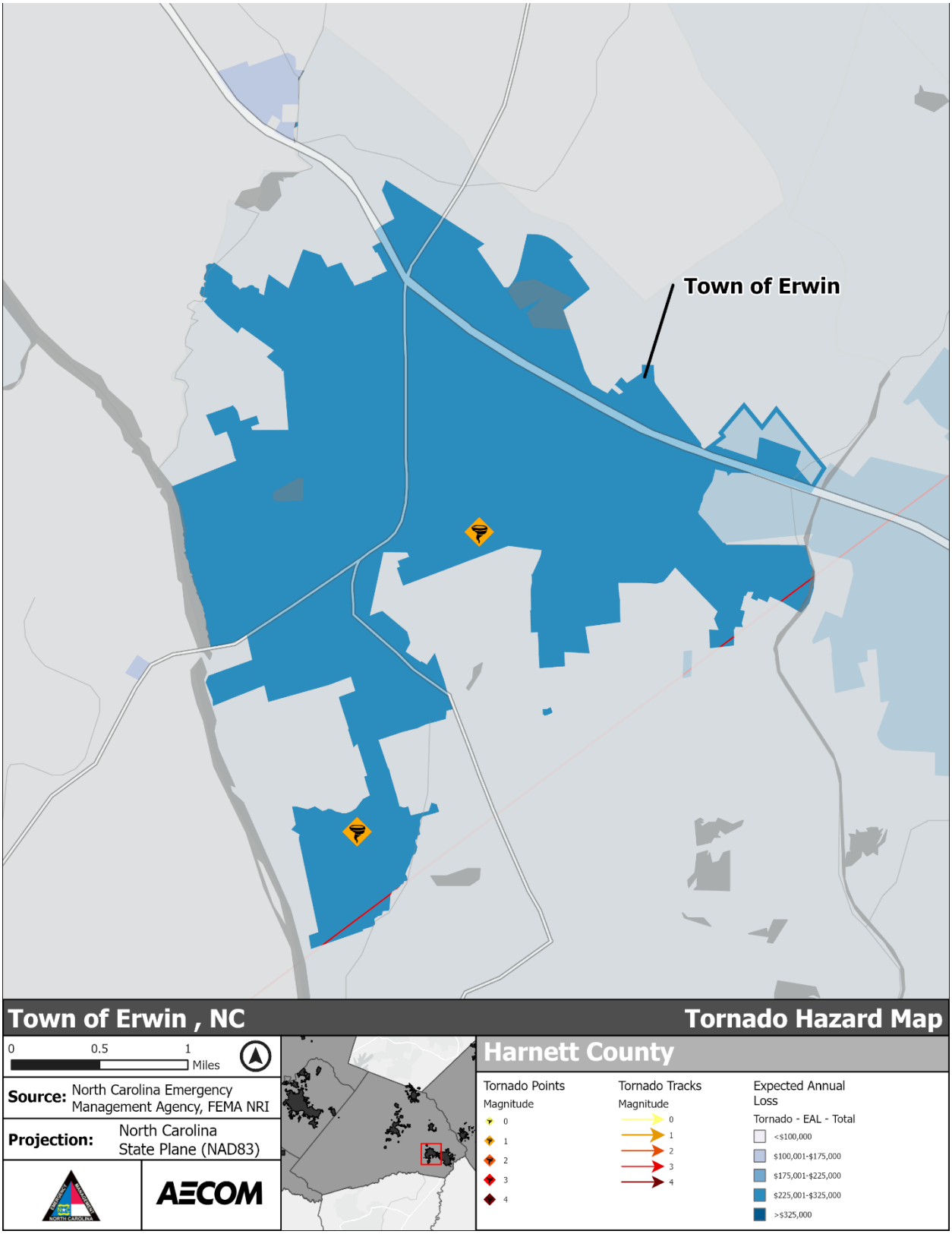


***Figure 5-109**: Tornado Hazard Area – Town of Erwin*

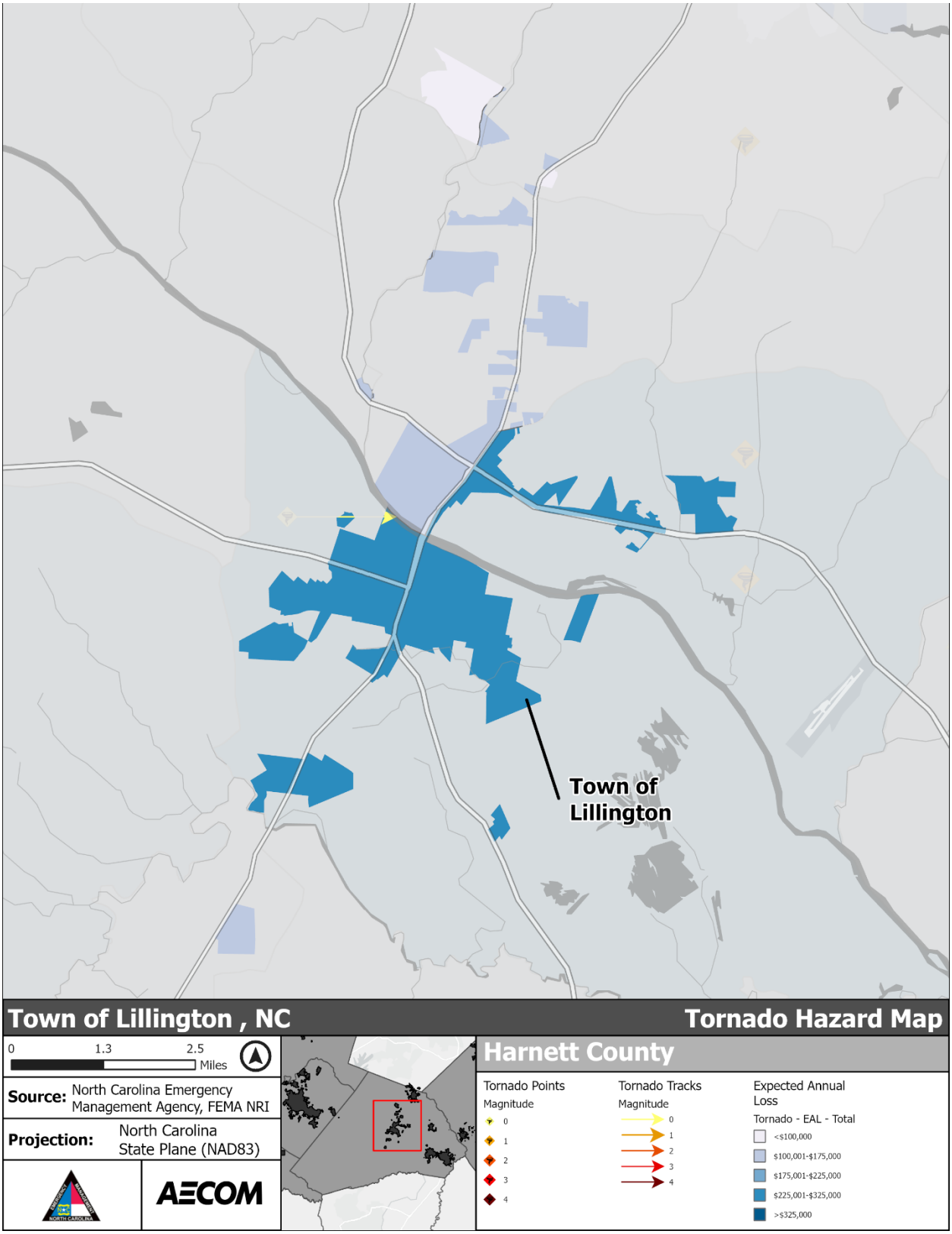


***Figure 5-110**: Tornado Hazard Area – Town of Lillington*

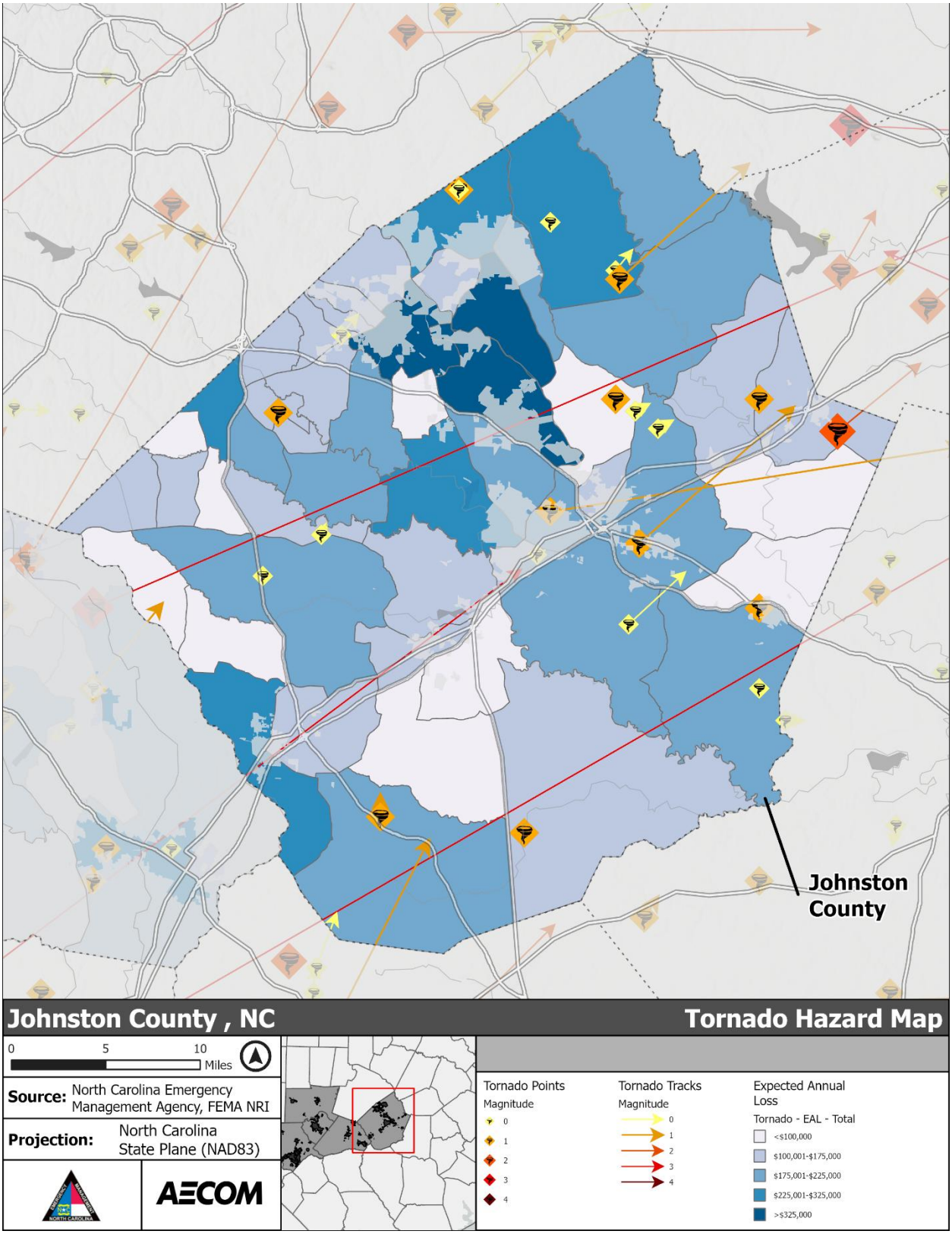


***Figure 5-111**: Tornado Hazard Area – Johnston County*

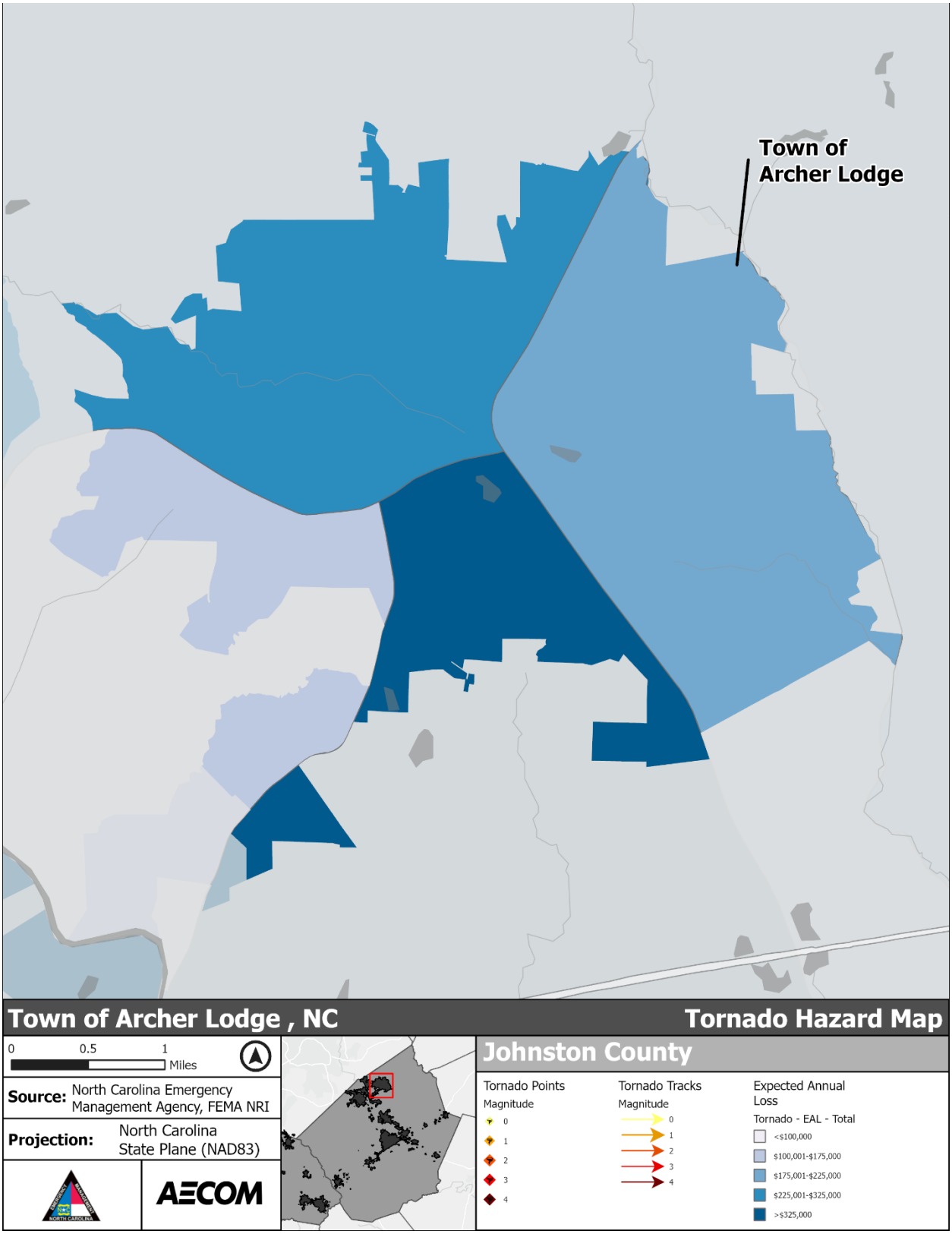


***Figure 5-112**: Tornado Hazard Area – Town of Archer Lodge*

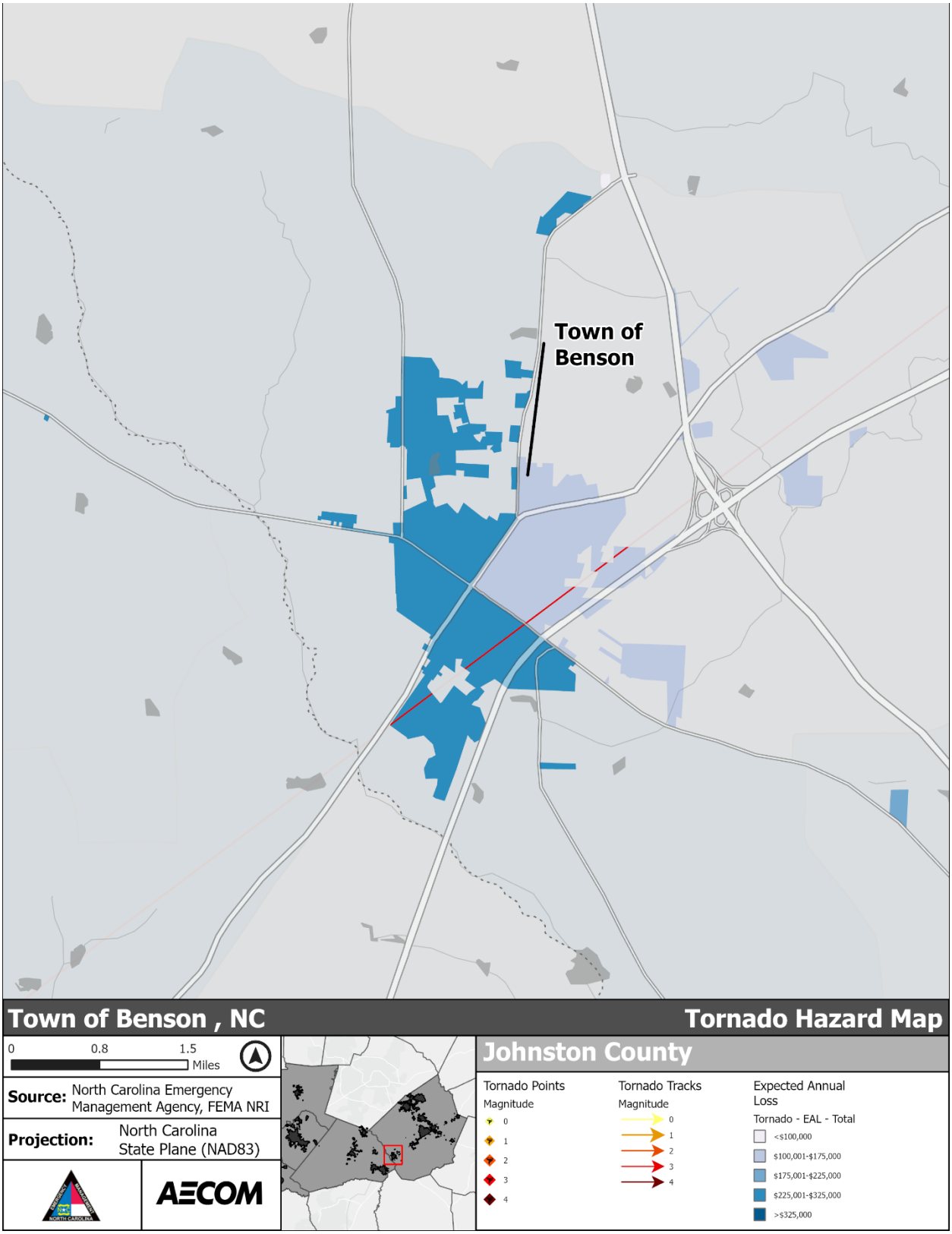


***Figure 5-113**: Tornado Hazard Area – Town of Benson*

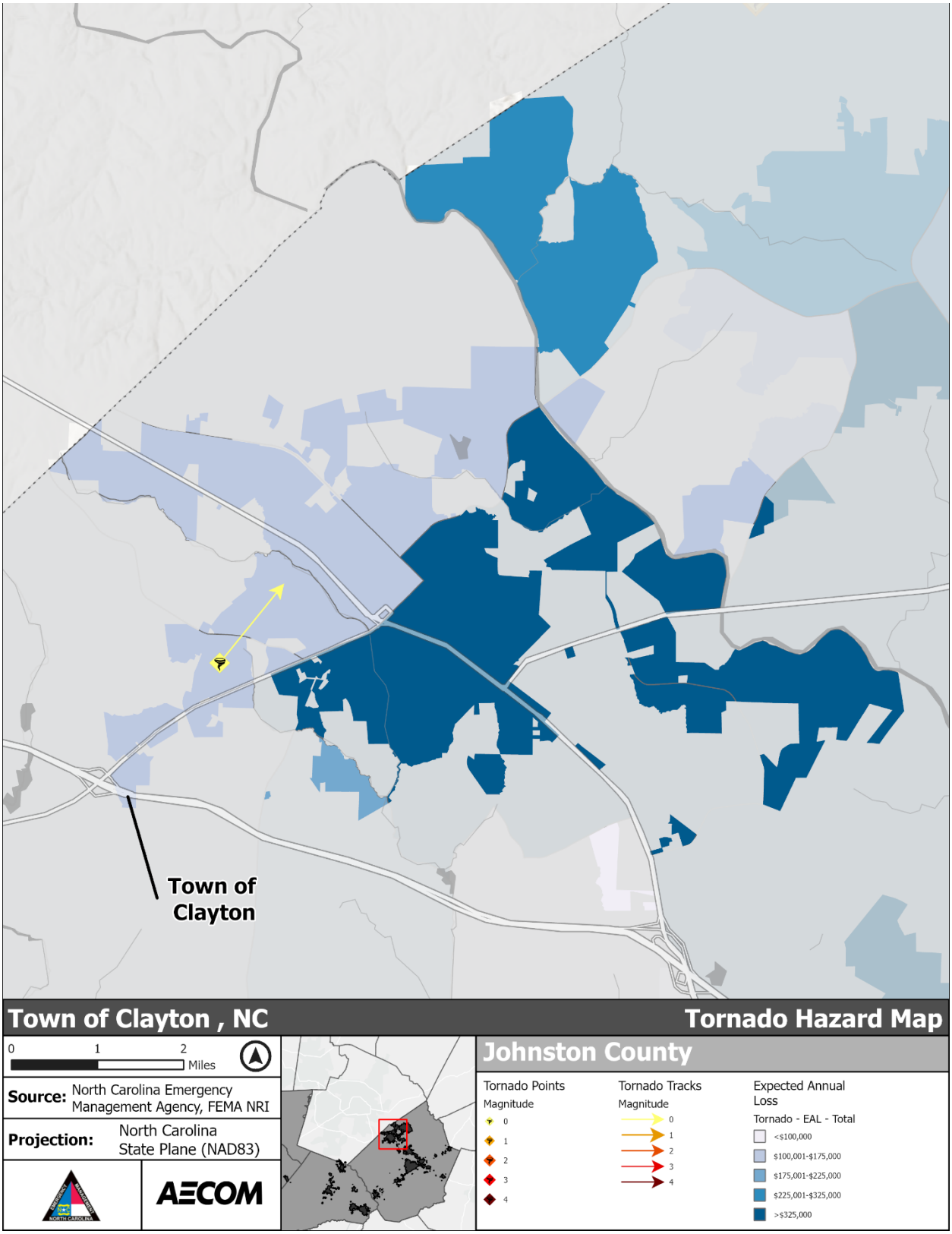


***Figure 5-114**: Tornado Hazara Area – Town of Clayton*

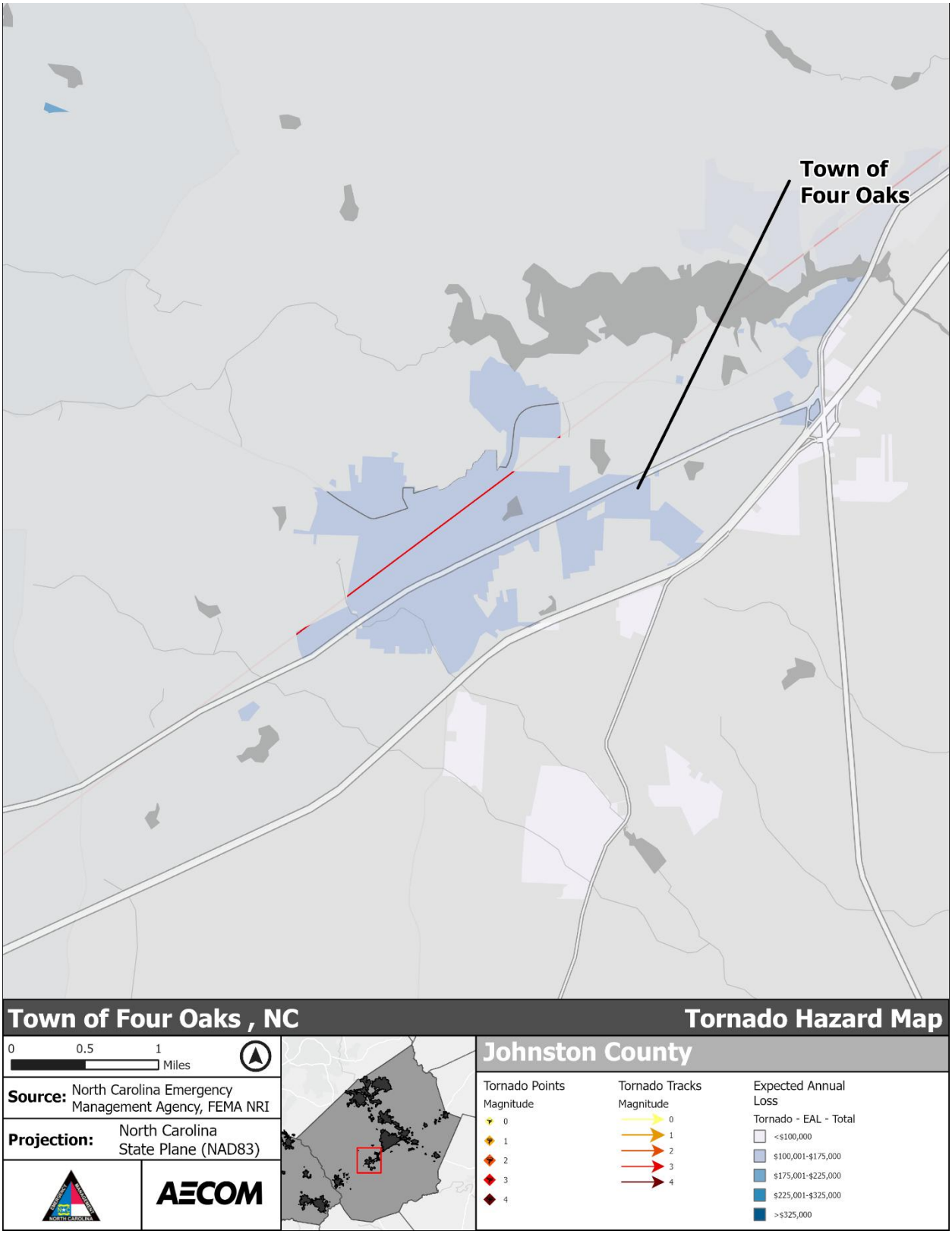


***Figure 5-115**: Tornado Hazara Area – Town of Four Oaks*

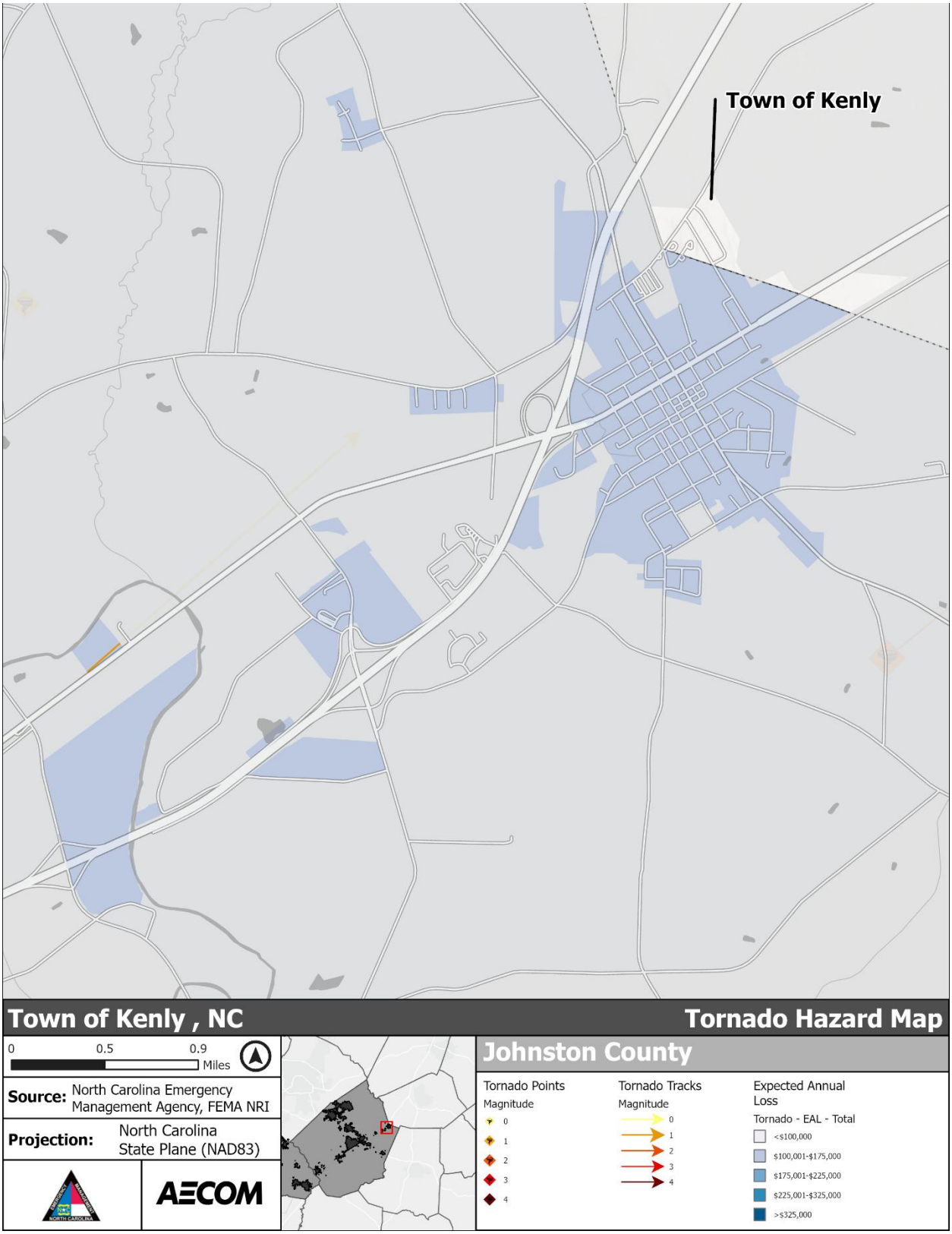


***Figure 5-116**: Tornado Hazard Area – Town of Kenly*

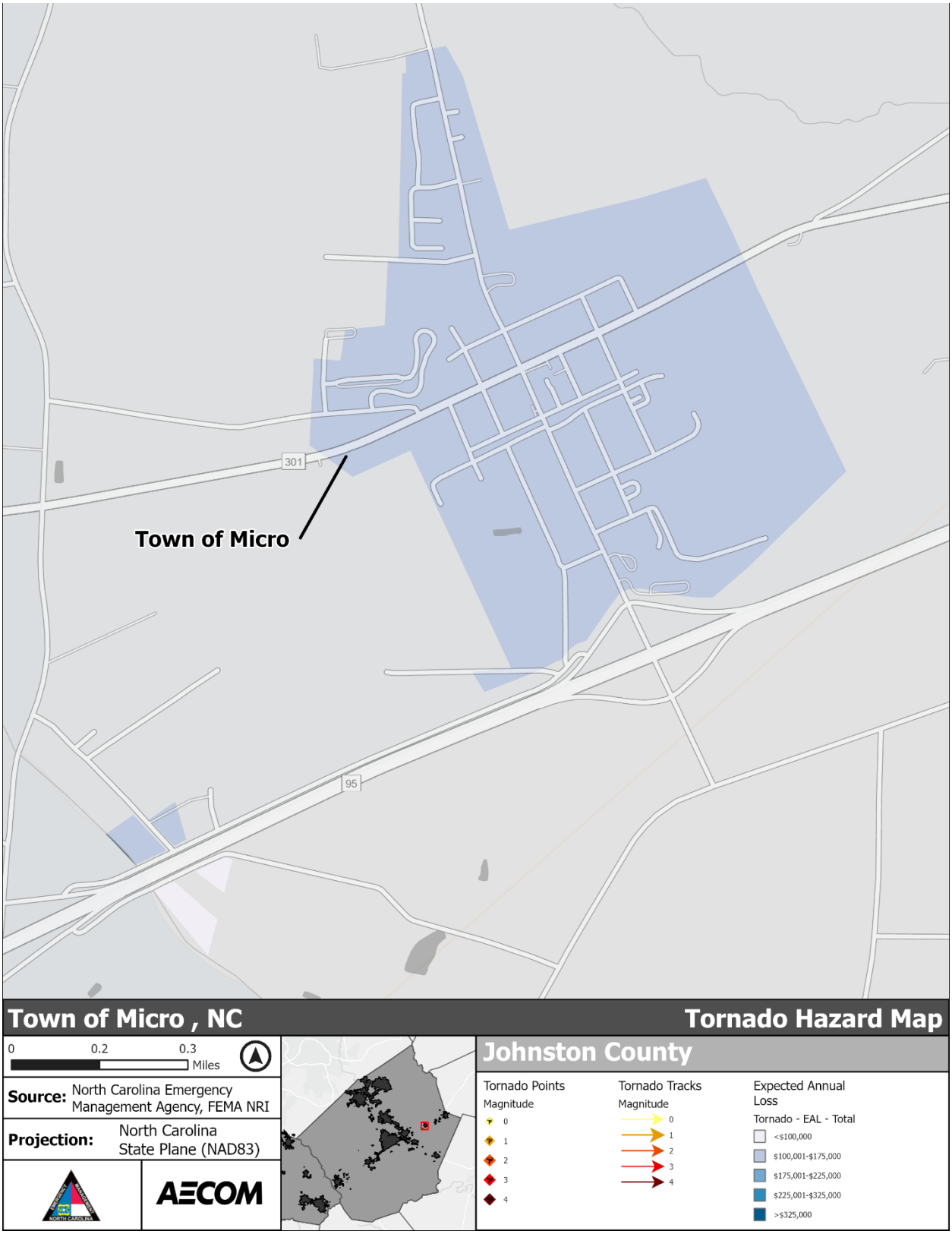


***Figure 5-117**: Tornado Hazard Area – Town of Micro*

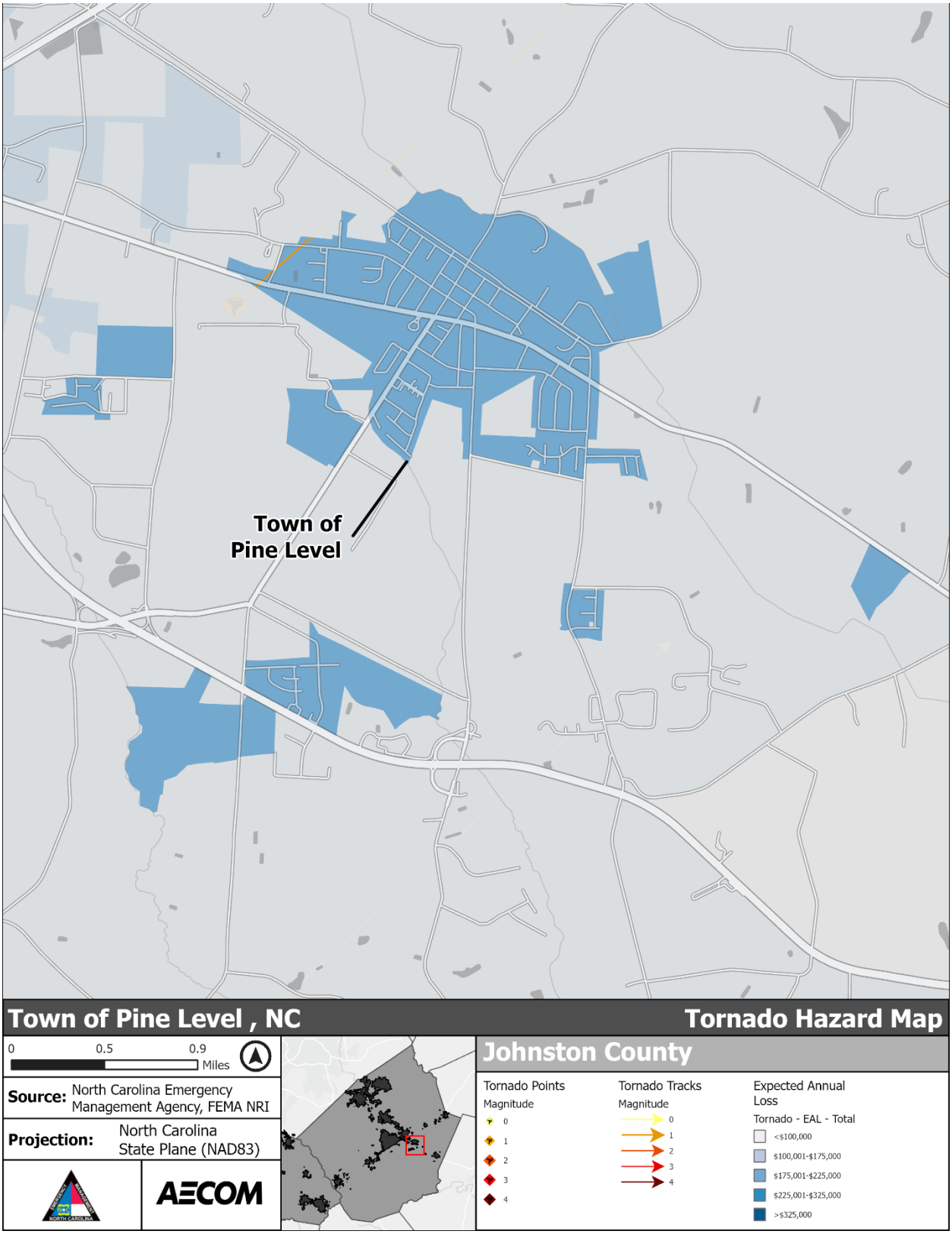


***Figure 5-118**: Tornado Hazard Area – Town of Pine Level*

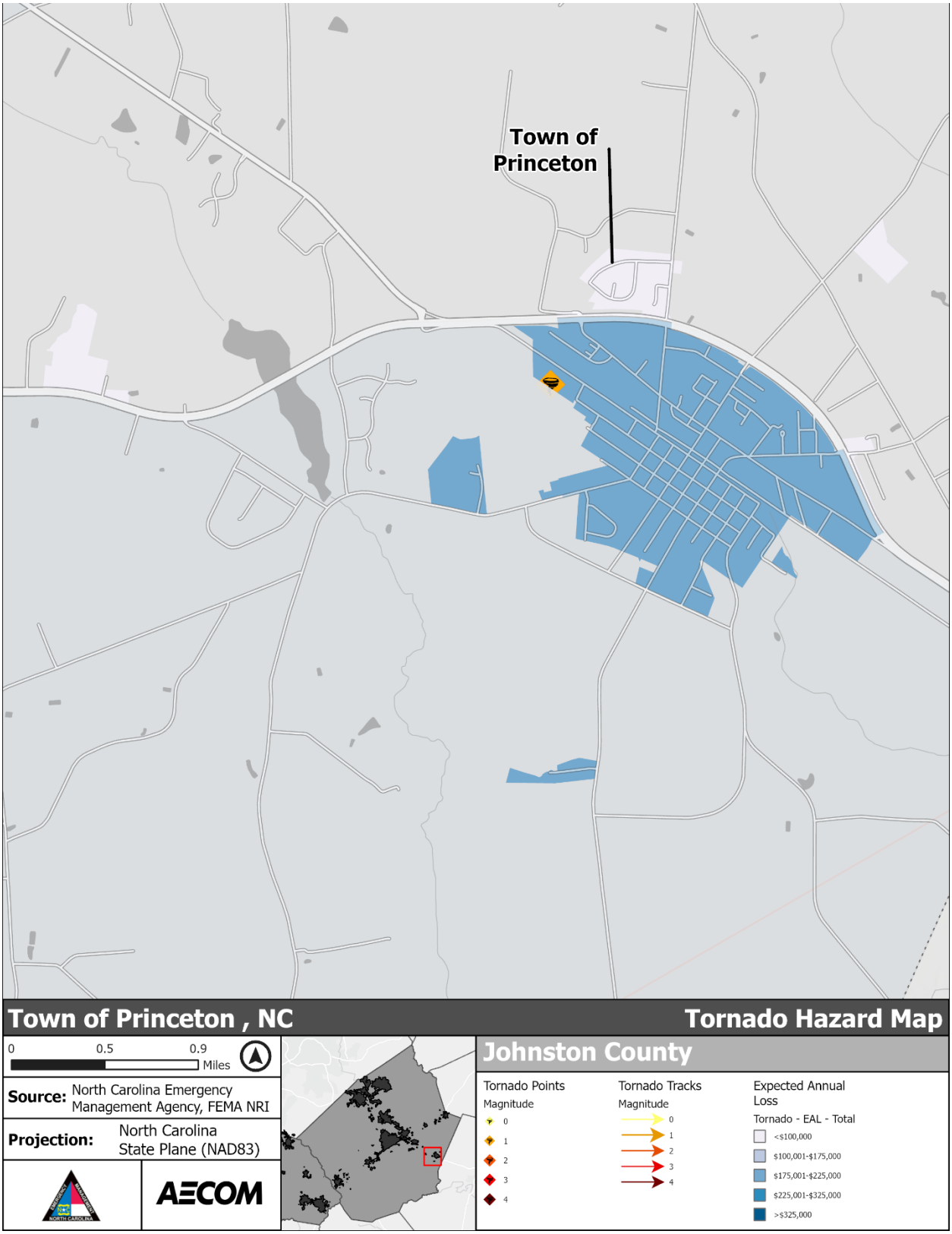


***Figure 5-119**: Tornado Hazard Area – Town of Princeton*

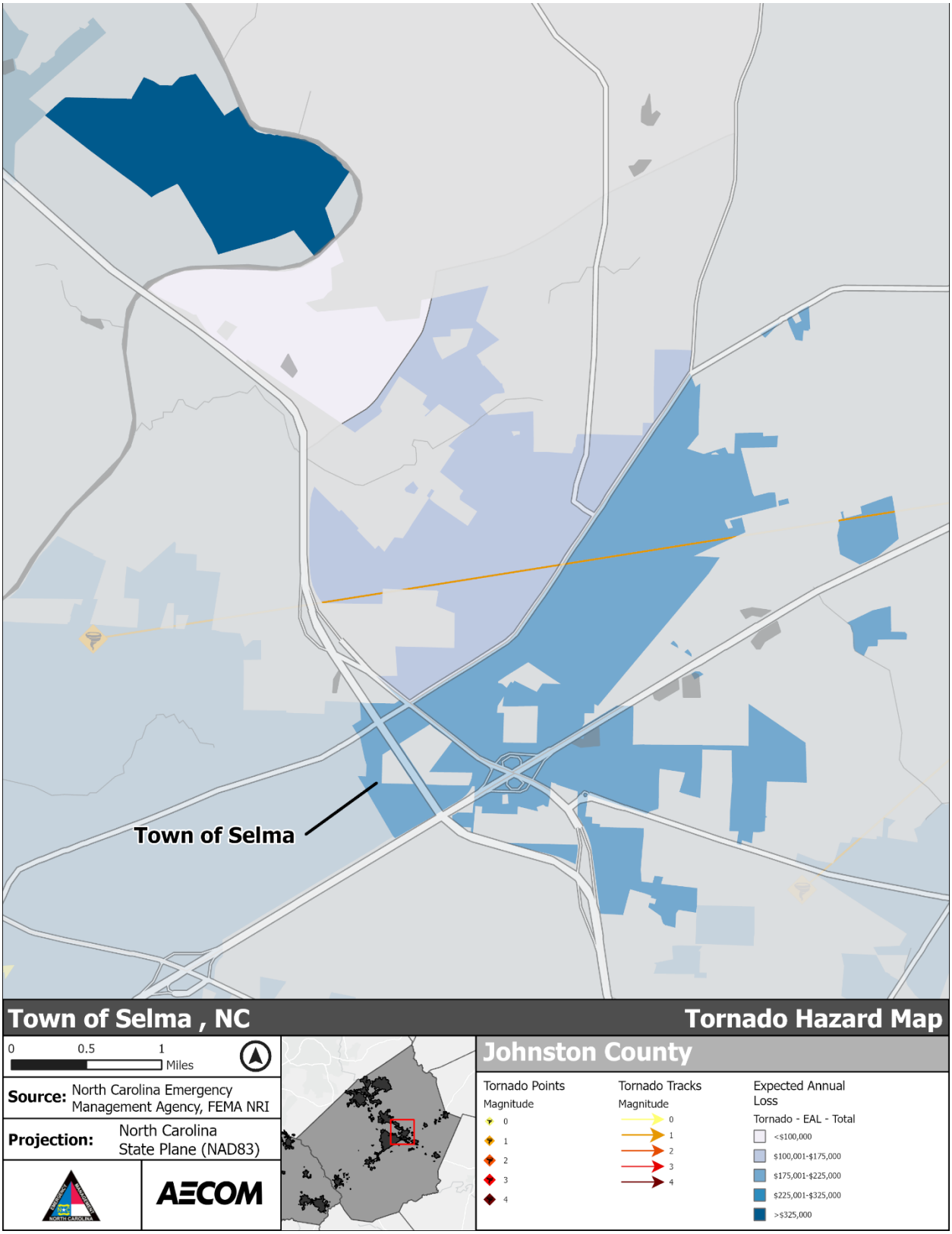


***Figure 5-120**: Tornado Hazard Area – Town of Selma*

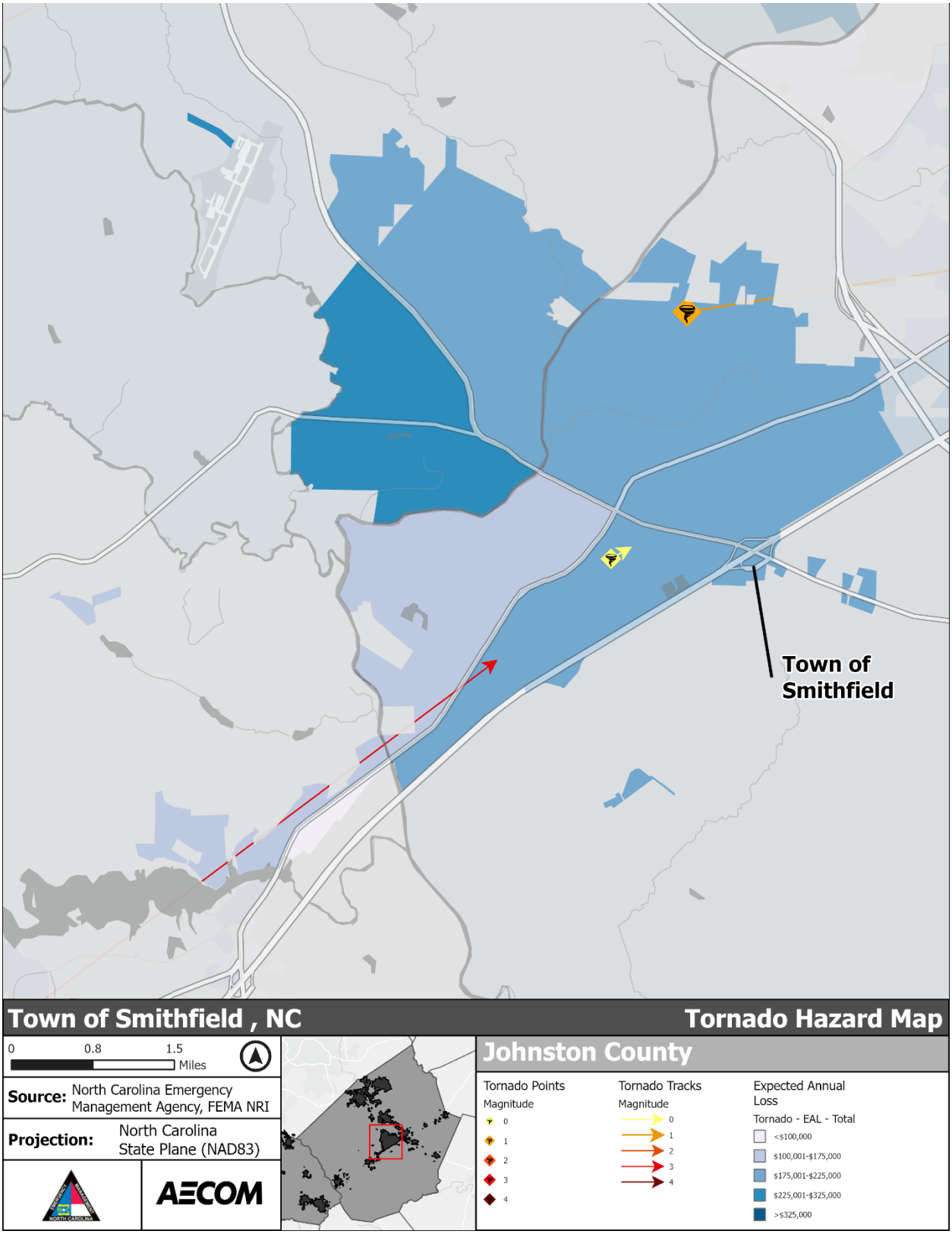


***Figure 5-121**: Tornado Hazard Area – Town of Smithfield*

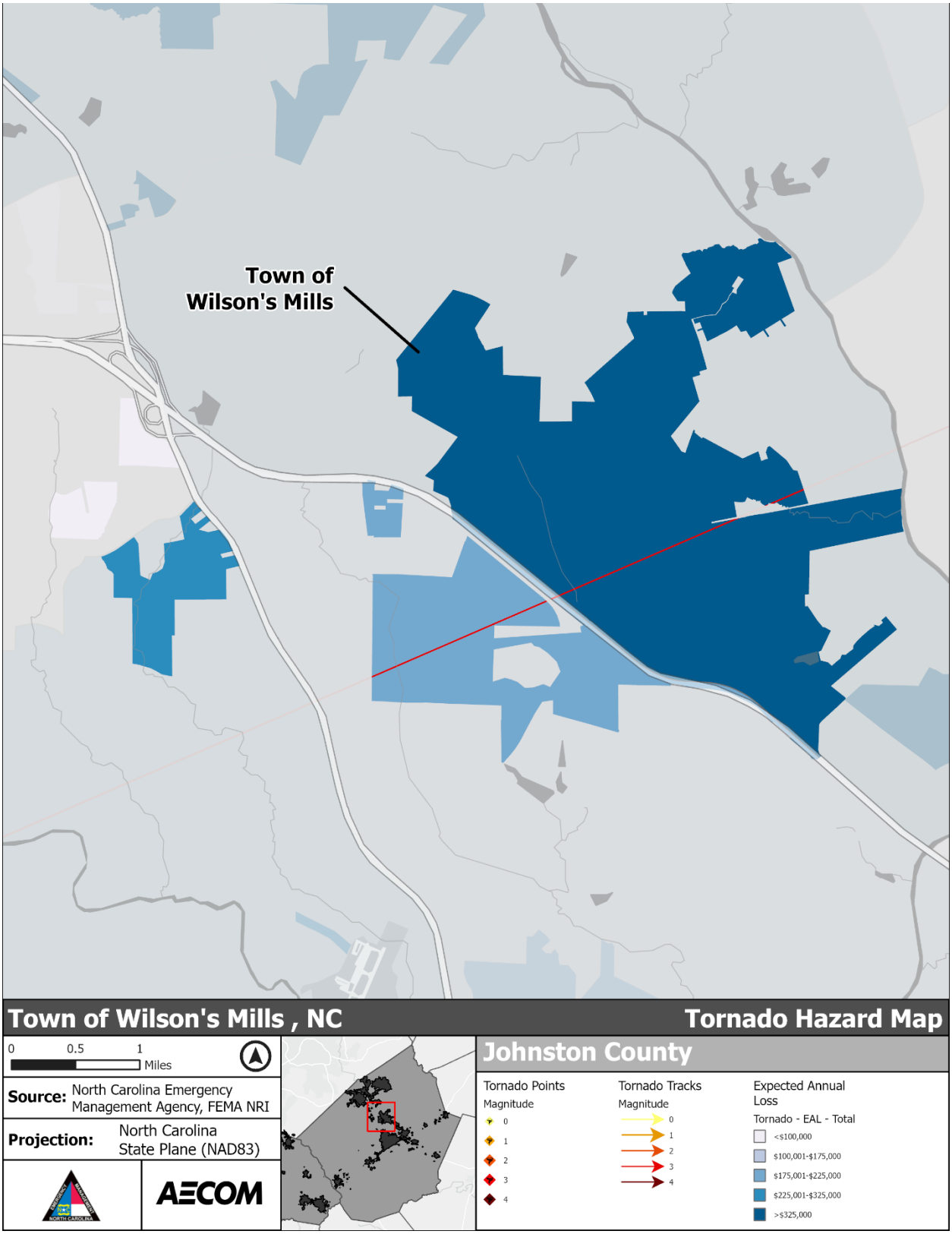


***Figure 5-122**: Tornado Hazard Area – Town of Wilson's Mills*

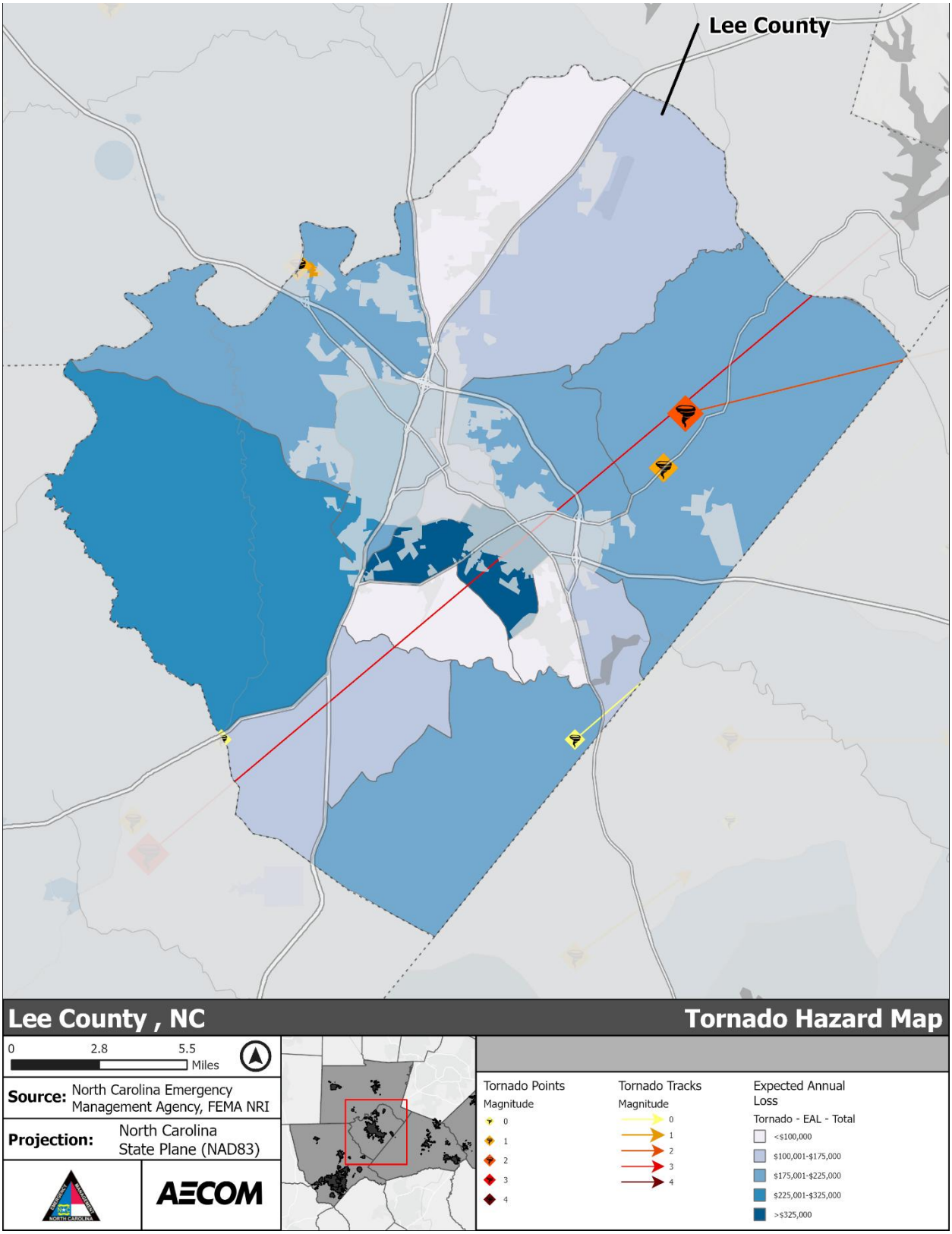


***Figure 5-123**: Tornado Hazard Area – Lee County*

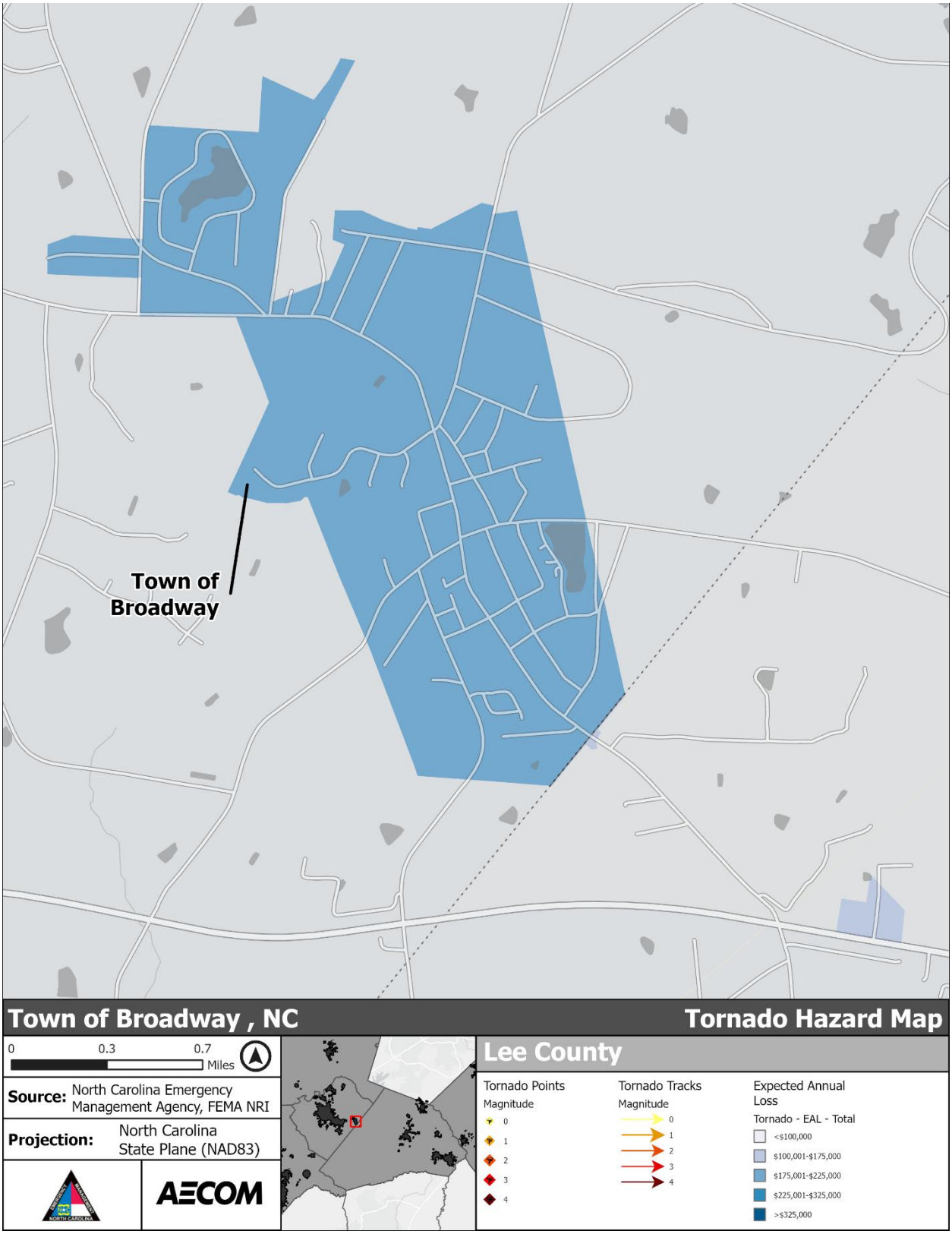


***Figure 5-124**: Tornado Hazard Area – Town of Broadway*

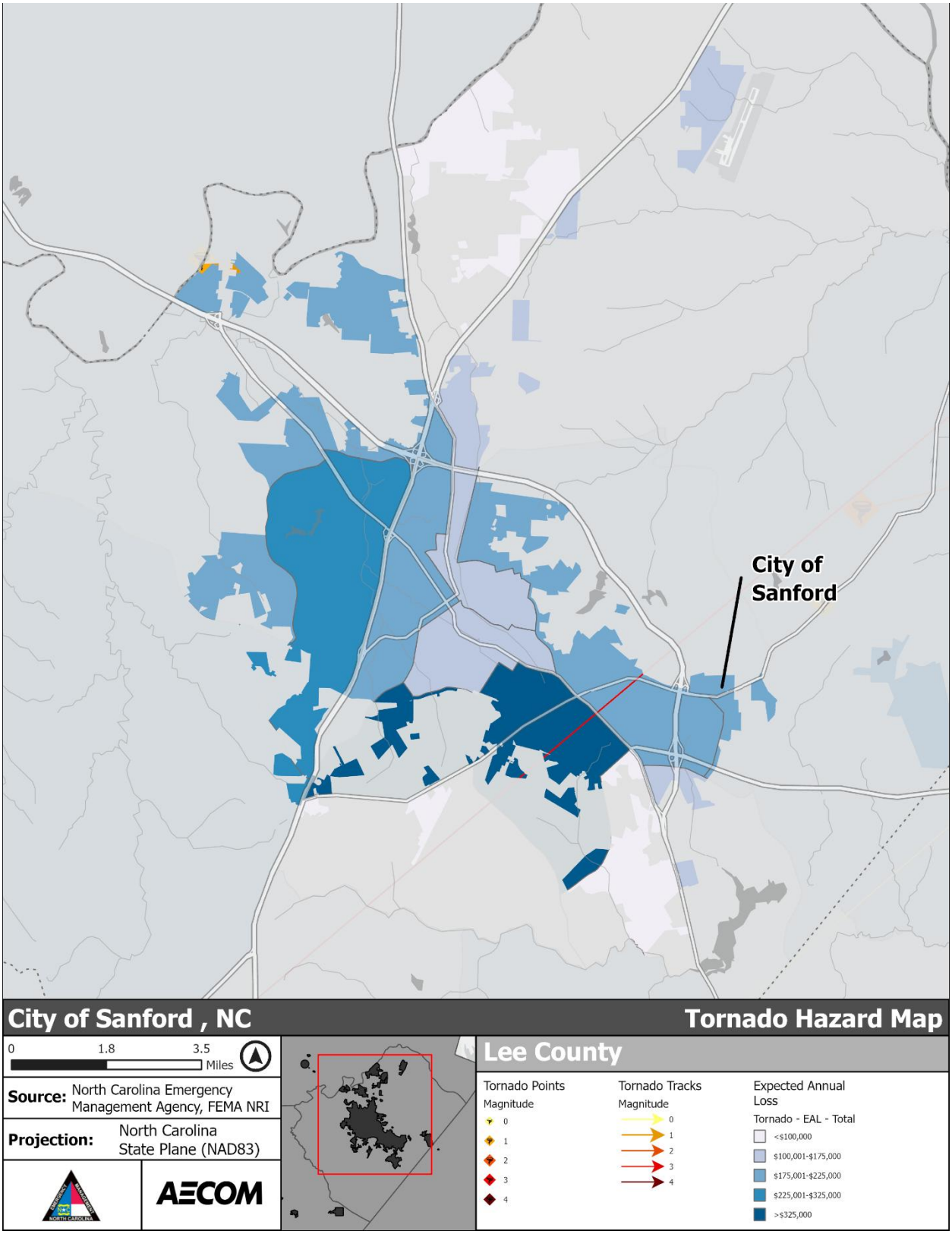


***Figure 5-125**: Tornado Hazard Area – City of Sanford*

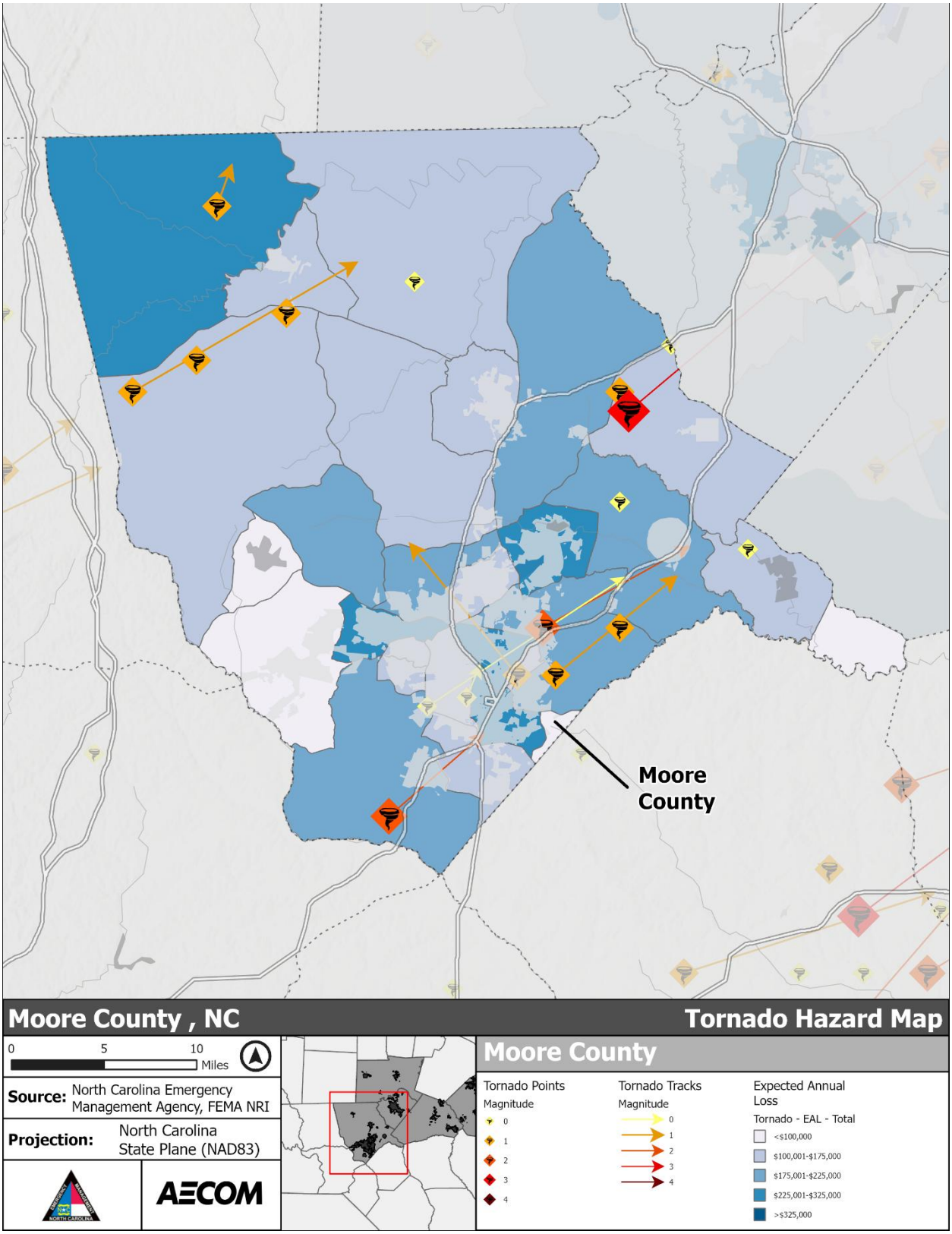


***Figure 5-126**: Tornado Hazard Area – Moore County*

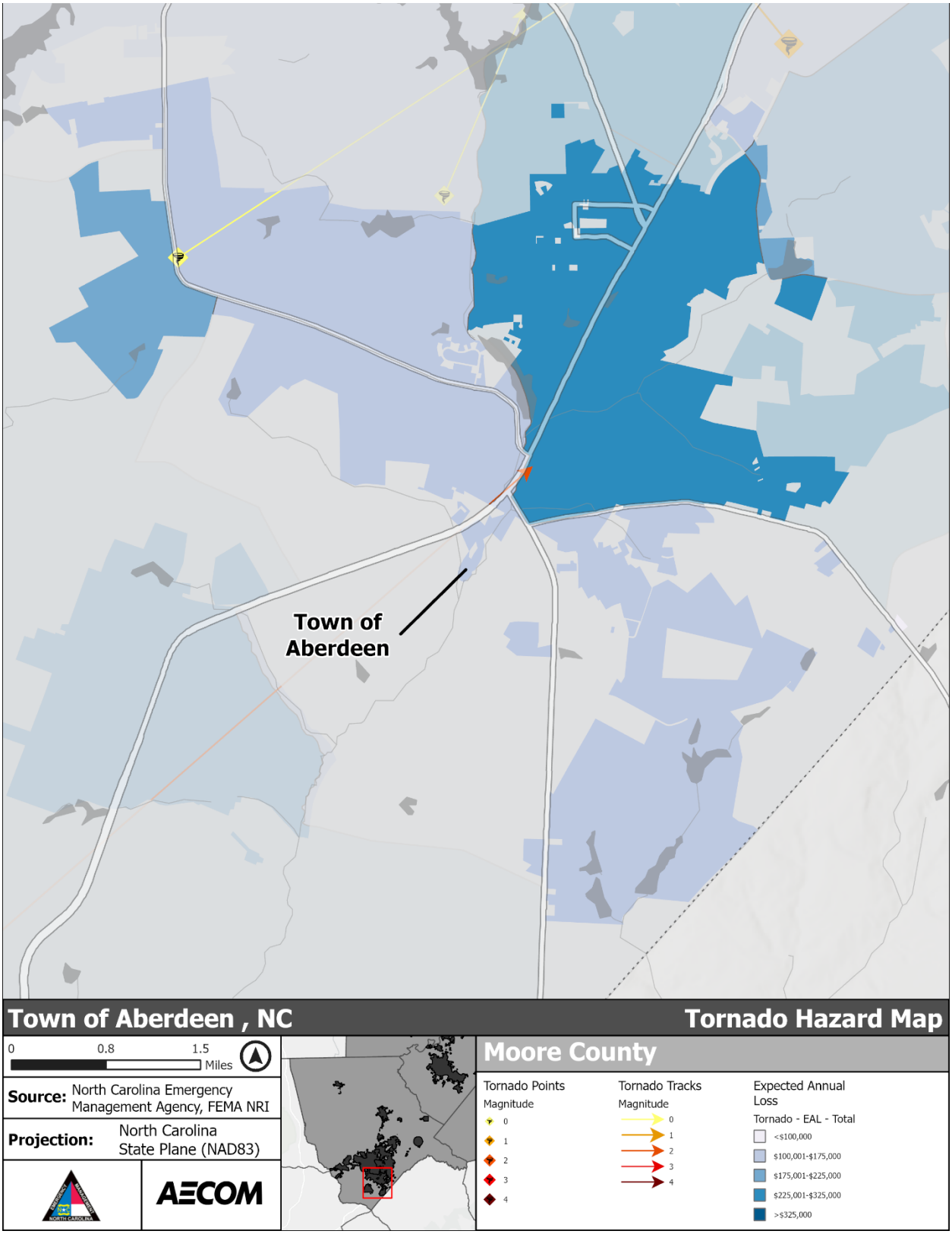


***Figure 5-127**: Tornado Hazard Area – Town of Aberdeen*

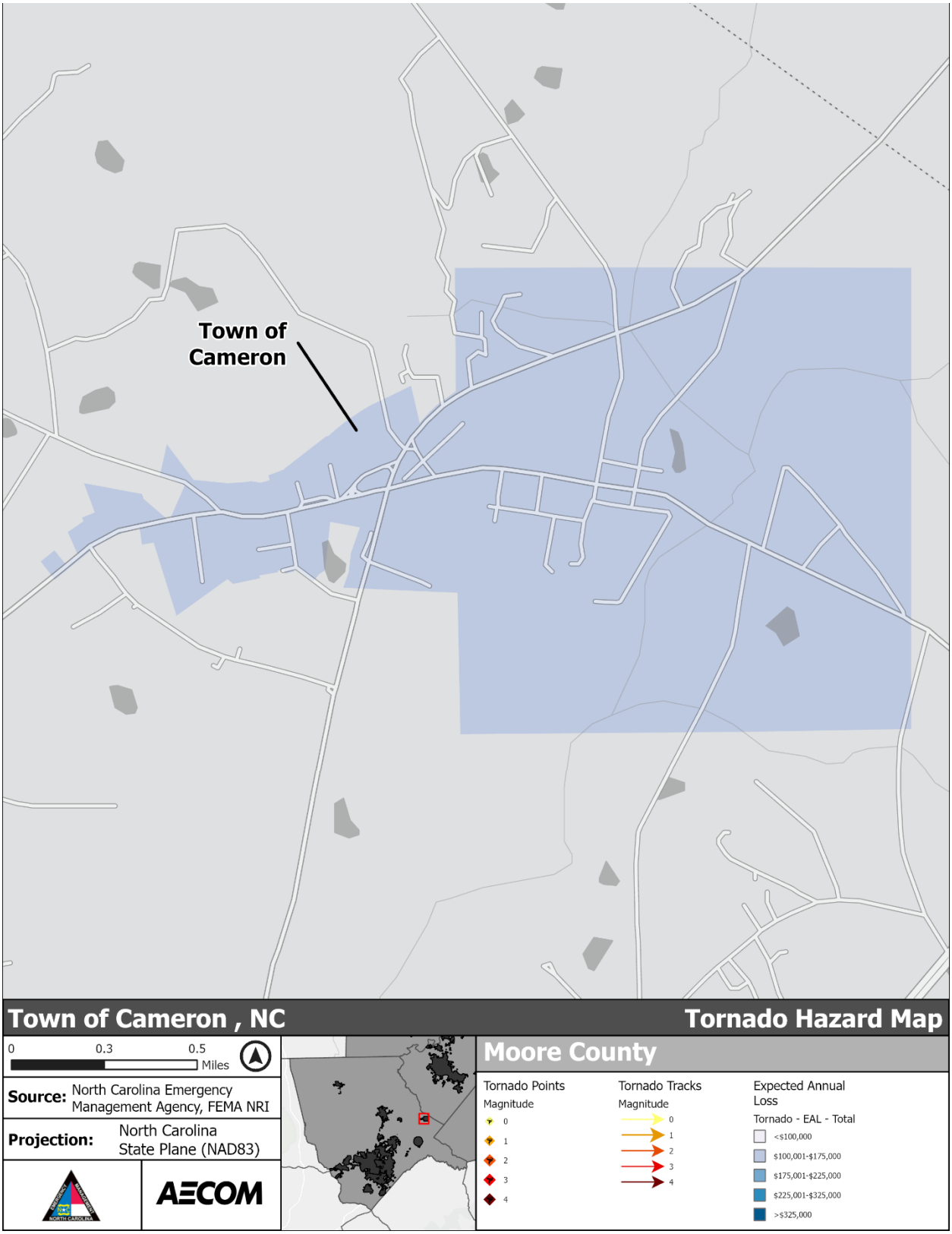


***Figure 5-128**: Tornado Hazard Area – Town of Cameron*

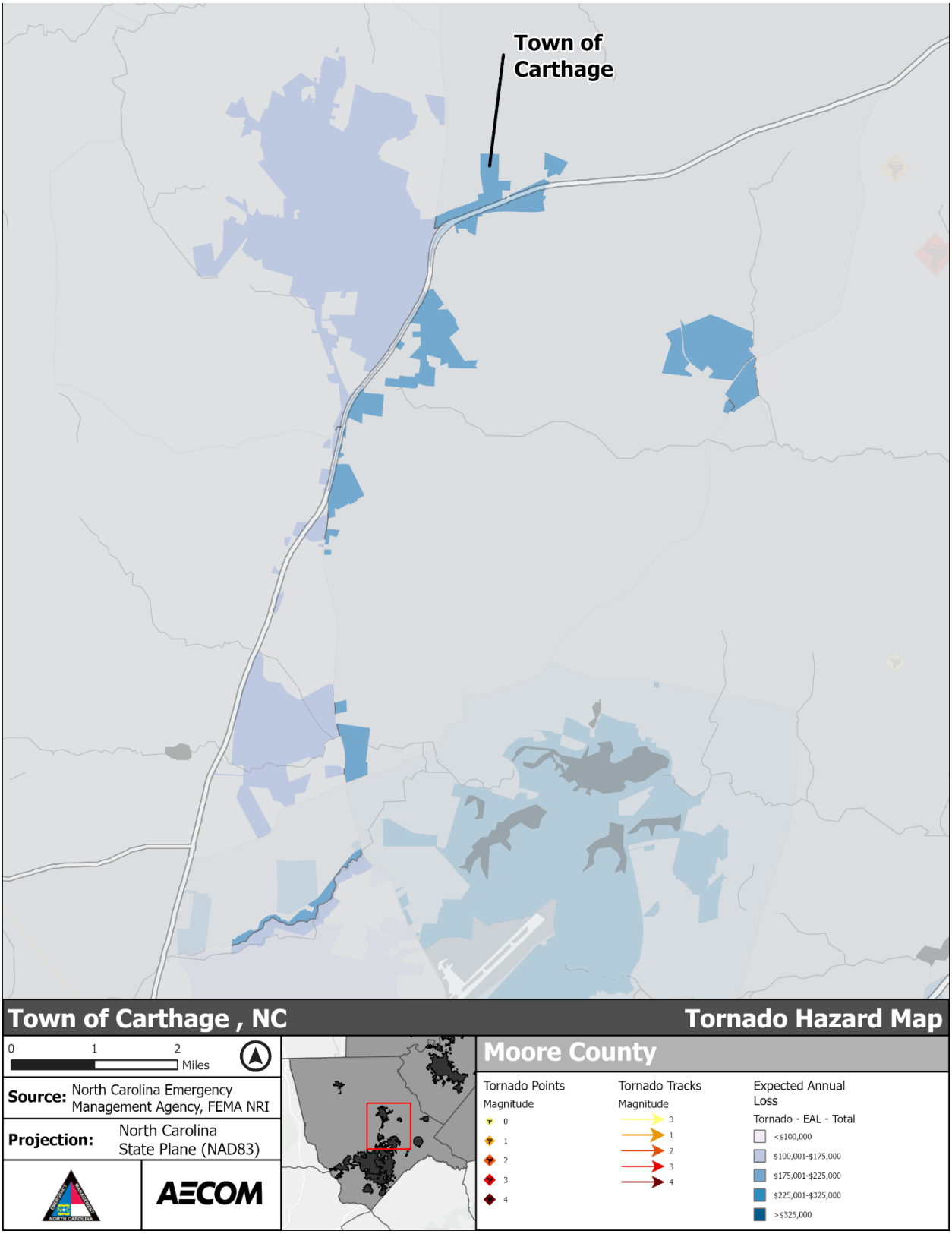


***Figure 5-129**: Tornado Hazard Area - Town of Carthage*

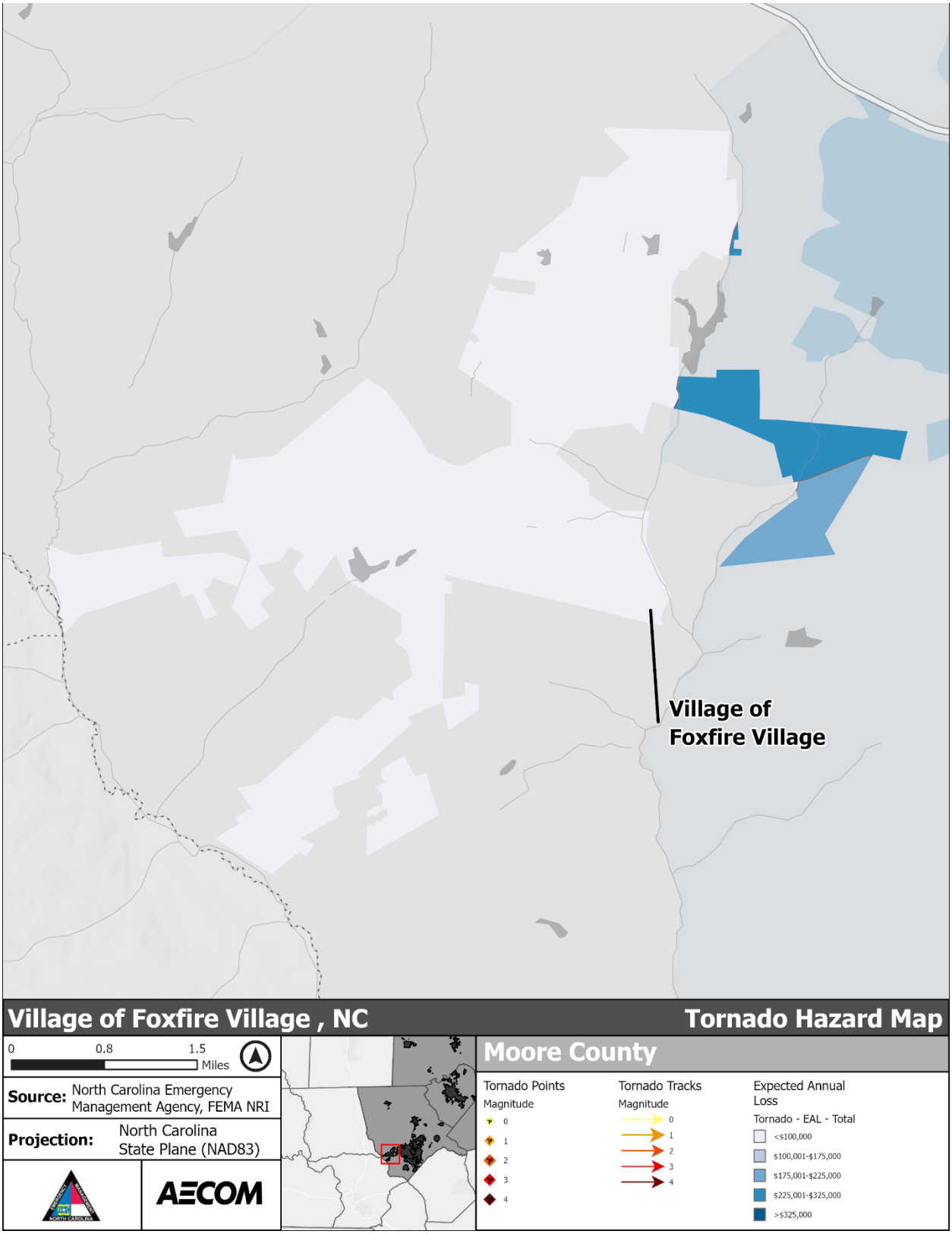


***Figure 5-130**: Tornado Hazard Area – Village of Foxfire*

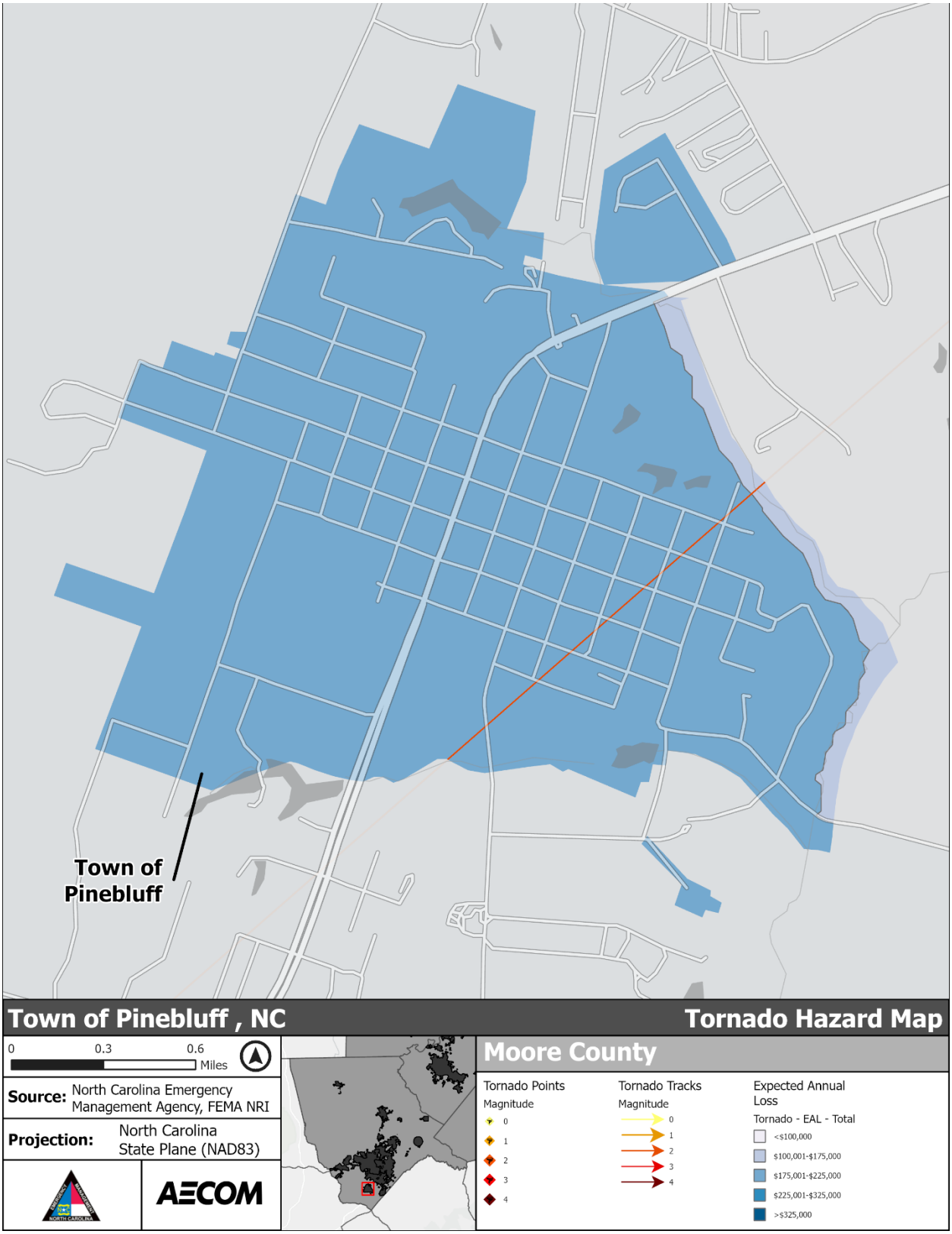


***Figure 5-131**: Tornado Hazard Area – Town of Pinebluff*

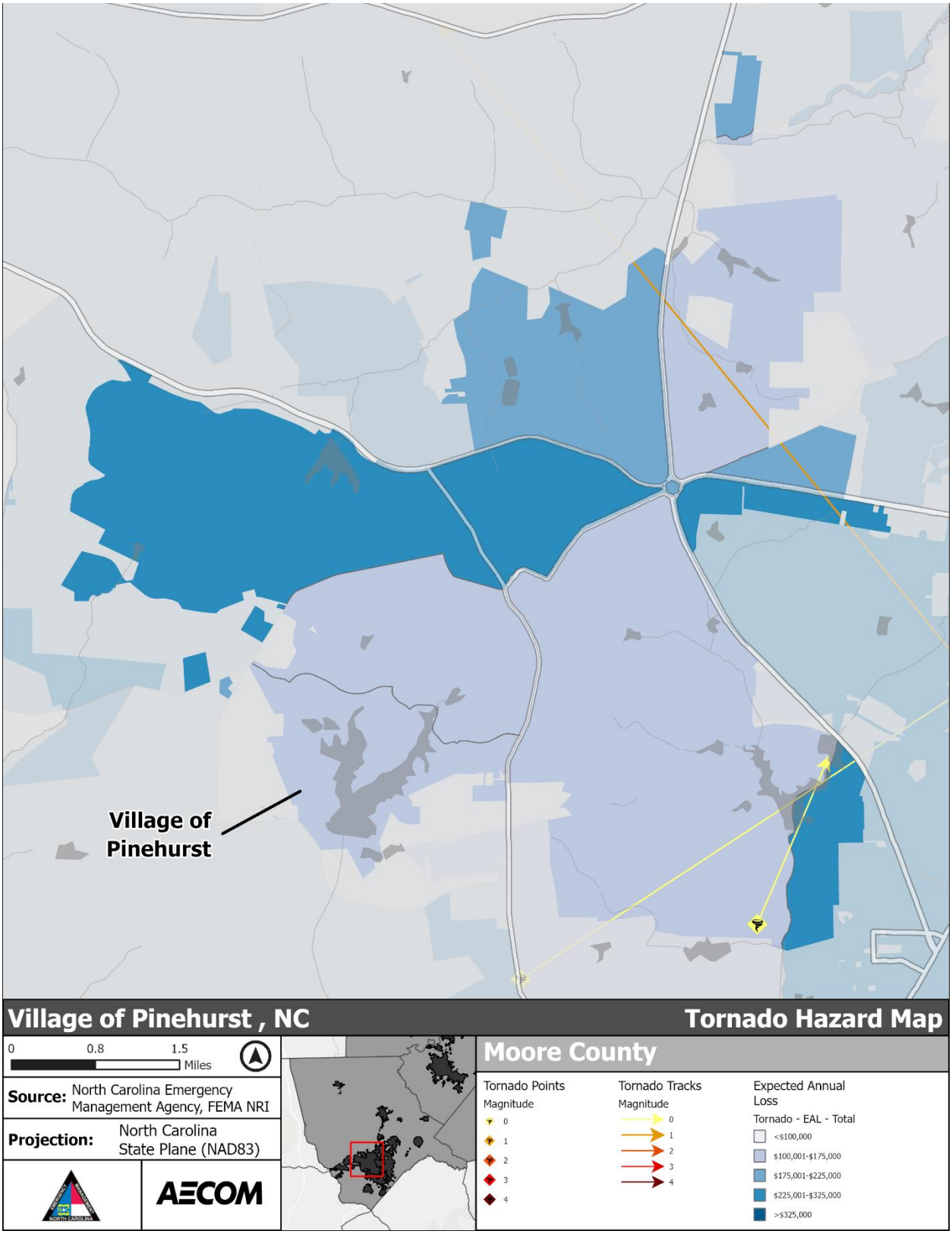


***Figure 5-132**: Tornado Hazard Area – Village of Pinehurst*

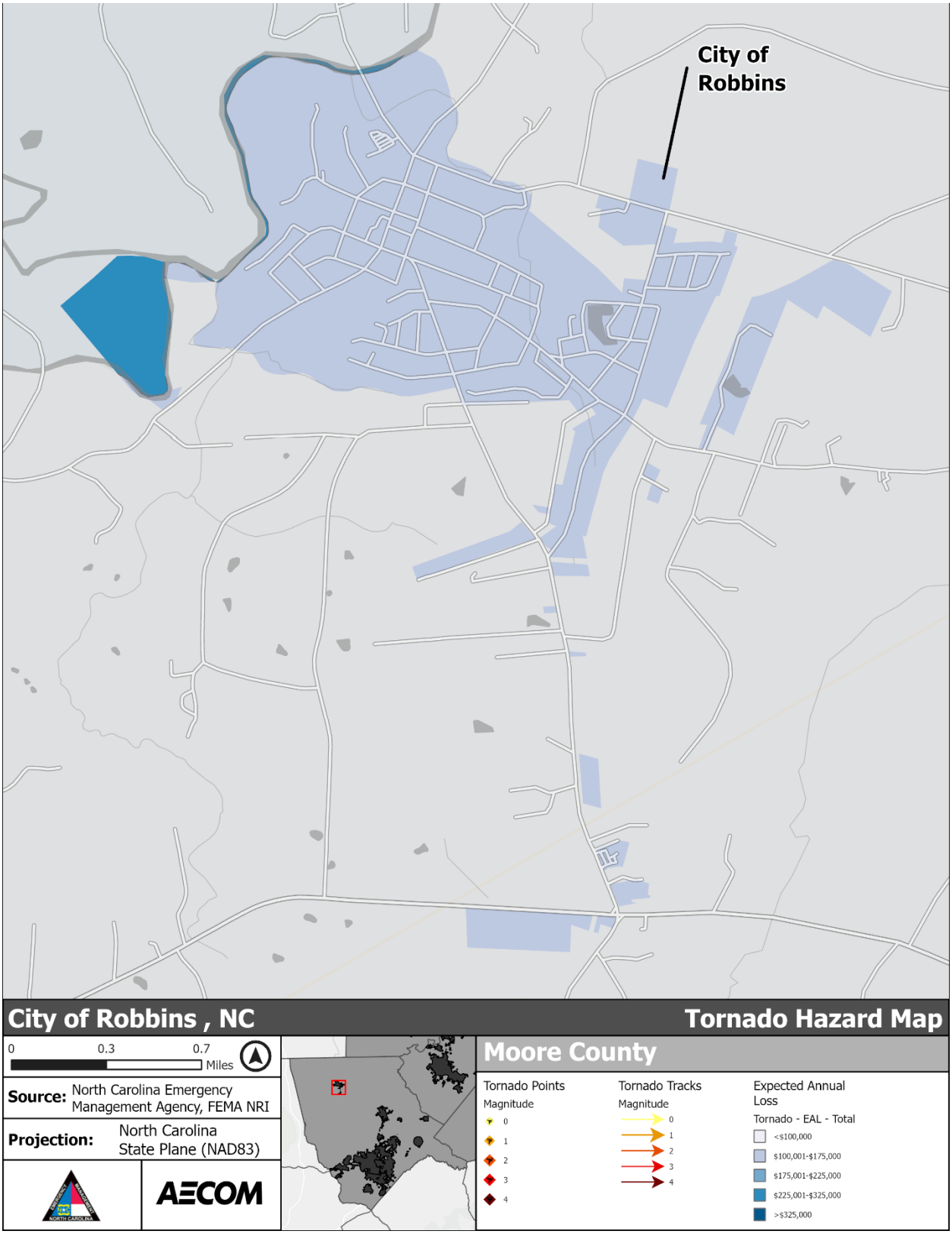


***Figure 5-133**: Tornado Hazard Area – City of Robbins*

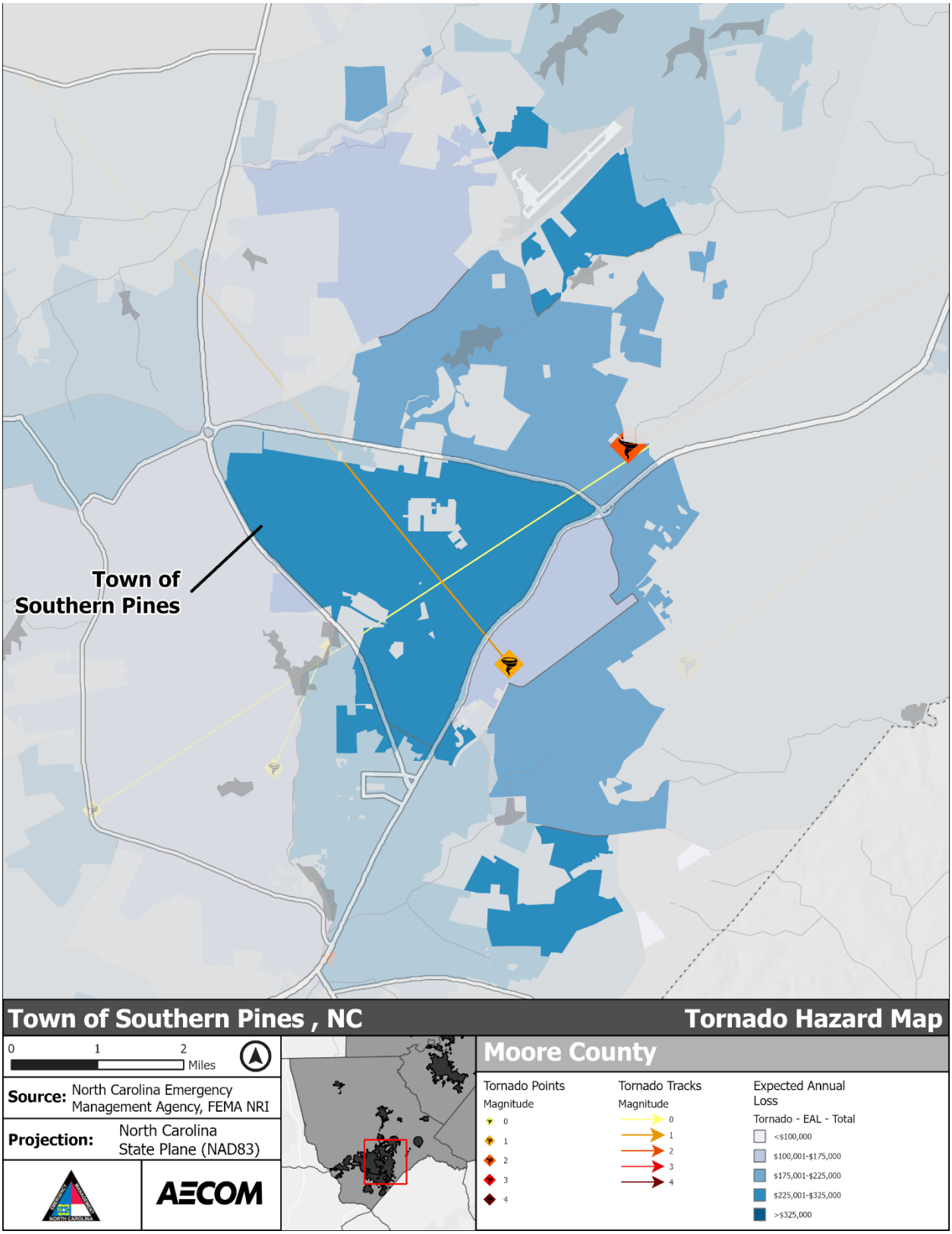


***Figure 5-134**: Tornado Hazard Area – Town of Southern Pines*

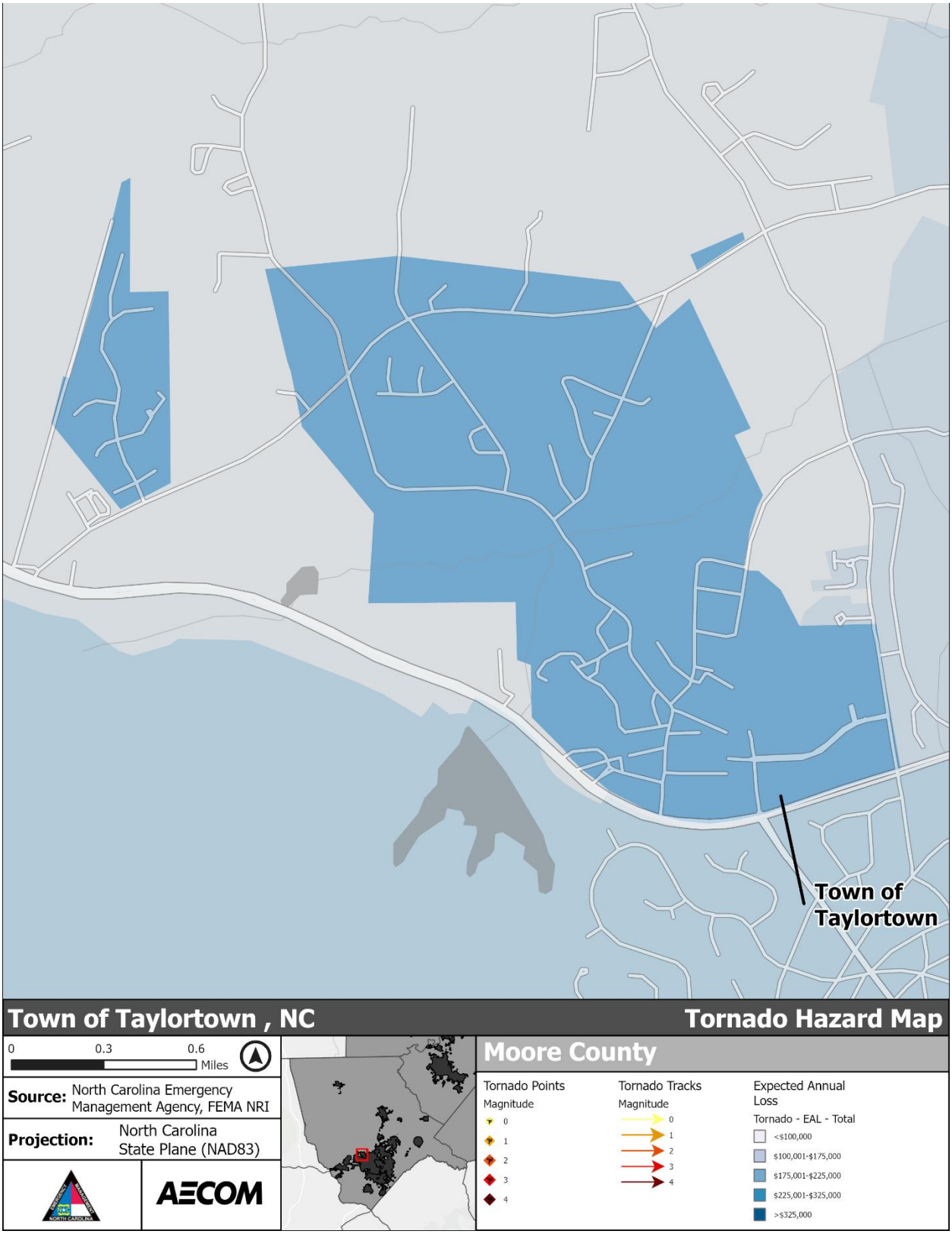


***Figure 5-135**: Tornado Hazard Area – Town of Taylortown*

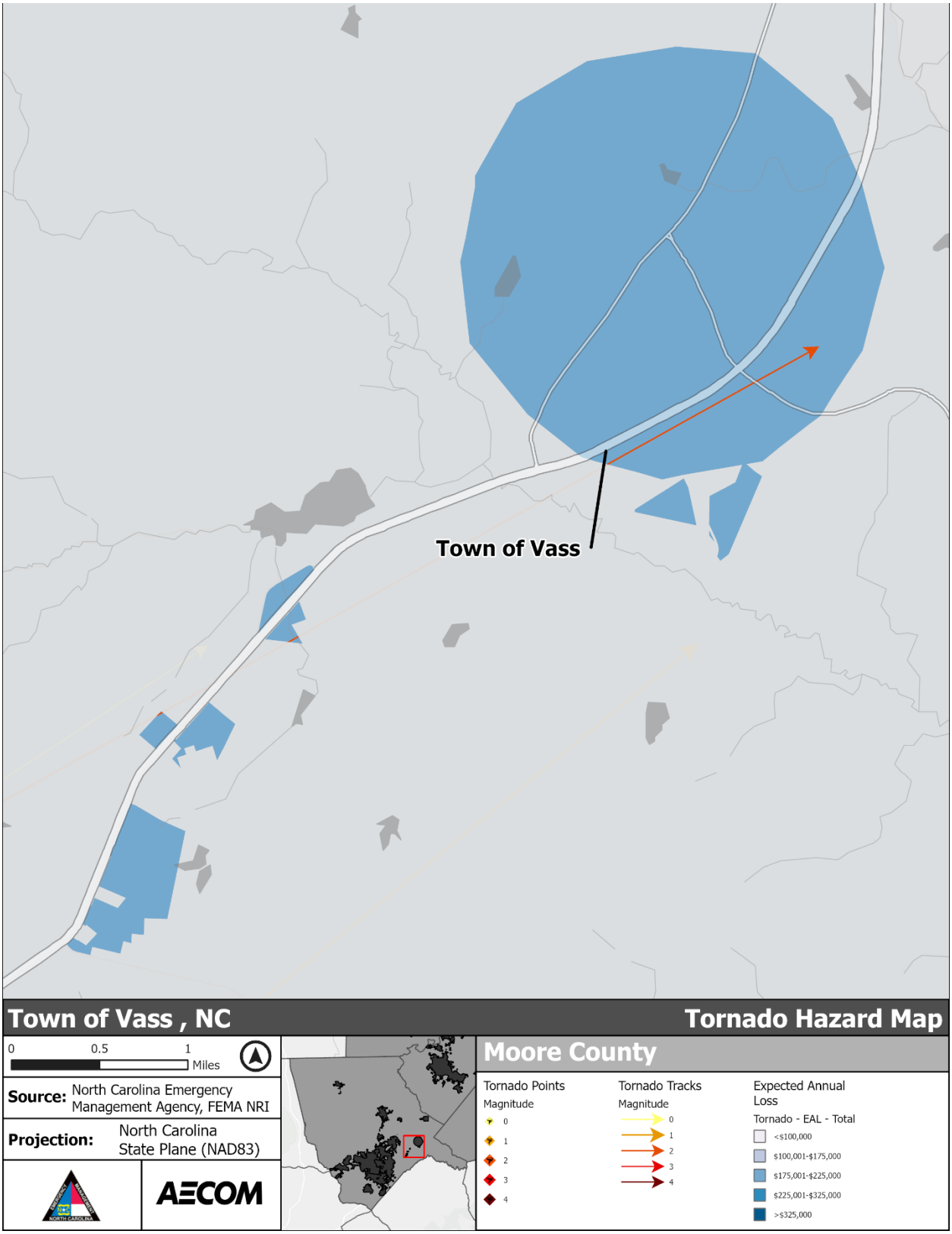


***Figure 5-136**: Tornado Hazard Area – Town of Vass*

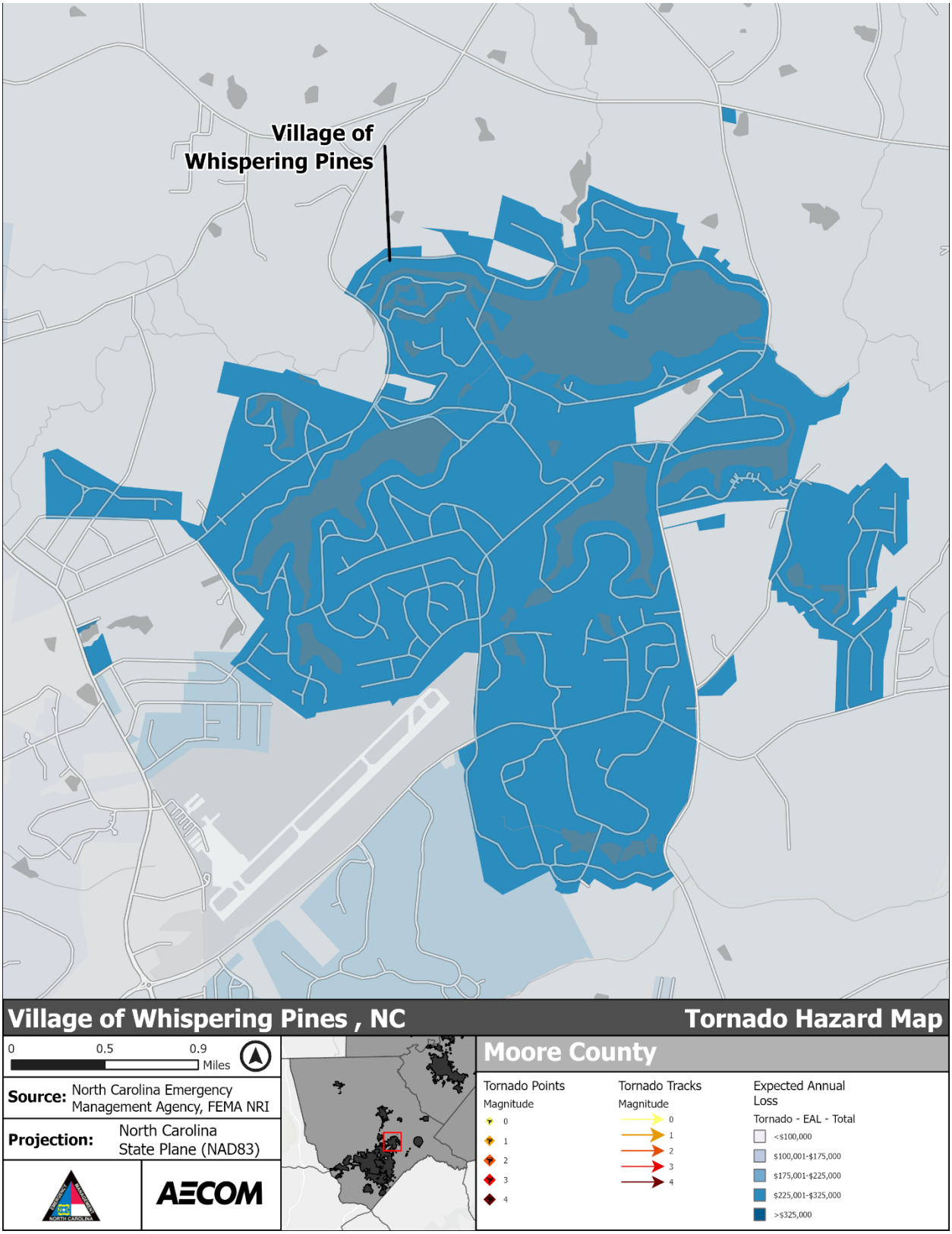


***Figure 5-137**: Tornado Hazard Area – Village of Whispering Pines*

5.7.3 Extent

The greatest tornadoes experienced in the planning area are included below in **Table 5-31**. The highest magnitude tornado recorded in the planning area are EF3s, which occurred in Harnett County and Johnston County on November 23, 1992, and an EF3 tornado that impacted Lee County on April 16, 2011.

***Table 5-31**: Greatest Tornado Occurrences in the Cape Fear Region*

Location	Date	Magnitude
Chatham County (Unincorporated Area)	10/7/1965	EF2
Town of Pittsboro	9/17/2004	EF0
Town of Siler City	3/29/1991	EF2
Harnett County (Unincorporated Area)	11/23/1992	EF3
Town of Angier	11/2/1966	EF2
Town of Coats	6/12/1989	EF1
Town of Erwin	5/15/1975	EF1
Town of Lillington	9/14/2007	EF0
Johnston County (Unincorporated Area)	11/23/1992	EF3
Town of Clayton	9/14/2007	EF0
Town of Kenly	11/15/2008	EF2
Town of Pine Level	4/16/2011	EF1
Town of Princeton	3/4/1977	EF1
Town of Smithfield	5/29/1973	EF1
Lee County (Unincorporated Area)	4/16/2011	EF3
Moore County (Unincorporated Area)	2/11/1981	EF2
Town of Aberdeen	7/2/2003	EF0
Town of Southern Pines	2/11/1981	EF2
Village of Pinehurst	9/6/2011	EF0

Source: National Weather Service Storm Prediction Center

5.7.4 Historical Occurrences

The following historical occurrences in the Cape Fear region, ranging from 1950 to 2019, have been identified based on the NCDC Storm Events database.

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
Lee	-	4/6/1956	F2	0	0	$25,000	$0	-
Harnett	-	2/18/1960	F1	0	0	$25,000	$0	-
Chatham	-	10/7/1965	F2	0	0	$25,000	$0	-
Harnett	-	11/2/1966	F2	0	0	$250,000	$0	-
Harnett	-	1/5/1971	F2	0	0	$250,000	$0	-
Harnett	-	5/17/1973	F1	0	0	$25,000	$0	-
Moore	-	5/24/1973	F1	0	0	$250,000	$0	-
Johnston	-	5/29/1973	F1	0	0	$25,000	$0	-
Chatham	-	5/15/1975	F1	0	0	$25,000	$0	-
Harnett	-	5/15/1975	F1	0	6	$25,000	$0	-
Johnston	-	3/4/1977	F1	0	0	$25,000	$0	-
Moore	-	3/4/1977	F1	0	0	$25,000	$0	-
Chatham	-	7/27/1977	F1	0	0	$250	$0	-
Moore	-	8/5/1978	F1	0	0	$0	$0	-
Moore	-	2/11/1981	F2	0	0	$2,500,000	$0	-
Moore	-	2/11/1981	F2	0	0	$250,000	$0	-
Moore	-	6/10/1982	F1	0	1	$25,000	$0	-
Harnett	-	6/16/1982	F2	0	0	$250,000	$0	-
Moore	-	6/16/1982	F1	0	0	$2,500	$0	-
Chatham	-	8/17/1985	F0	0	0	$25,000	$0	-
Harnett	-	7/1/1986	F0	0	0	$2,500	$0	-
Harnett	-	7/1/1986	F1	0	0	$25,000	$0	-
Harnett	-	6/12/1989	F1	0	0	$25,000	$0	-

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
Chatham	-	6/28/1989	F1	0	0	$0	$0	-
Harnett	-	10/23/1990	F1	0	0	$25,000	$0	-
Chatham	-	3/29/1991	F2	0	0	$250,000	$0	-
Moore	-	3/29/1991	F1	0	2	$250,000	$0	-
Harnett	-	11/4/1992	F1	0	0	$2,500	$0	-
Johnston	-	11/4/1992	F1	0	0	$2,500	$0	-
Johnston	-	11/4/1992	F1	0	0	$0	$0	-
Harnett	-	11/23/1992	F3	0	0	$0	$0	-
Johnston	-	11/23/1992	F3	0	12	$2,500,000	$0	-
Harnett	-	5/1/1994	F0	0	0	$5,000	$0	Two miles south of Dunn, near the intersection of Highway 301 and Arrowhead Road, a small tornado destroyed a garage, which was attached to a manufactured home, on a brick foundation. The porch and the roof of the home were also damaged. Down the street, a few yards away, two large oak trees were uprooted and landed on the roof of a house.
Harnett	Buies Creek	8/17/1994	F1	0	0	$500,000	$0	Harnett County officials reported a tornado touched down near Buies Creek. The Emergency Management Team at the site reported numerous trees down, along with several mobile homes damaged to the point that people were trapped inside.
Harnett	Anderson Creek	12/17/2000	F0	0	0	$0	$0	Windows were blown out of buildings at Ray Road and Hwy 210.
Harnett	Coats	12/17/2000	F0	0	0	$0	$0	Large tree limbs were blown down, smashing car windows.
Johnston	Kenly	10/11/2002	F1	0	0	$0	$0	A tornado touched down just west of Kenly, causing F0 to strong F1 damage. It began near J. Howell Road and Old Highway 222, causing minor damage to a hog farm. The worst damage was along Bunn Road, where four mobile homes were damaged, one of which was

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								overturned and totally destroyed. The other mobile homes sustained projectile damage, and a roof was blown off a barn. The tornado traveled northeast and severely damaged a home on Highway 222, collapsing the rear wall of the house. The damage path ended near the Wilson County border.
Chatham	Silk Hope	5/31/2003	F0	0	0	$0	$0	A brief tornado touchdown twisted and blew down large trees.
Moore	Aberdeen	7/2/2003	F0	0	0	$0	$0	A tornado was sighted moving northeast between Aberdeen and Vass. Numerous trees were blown down along the path, and some homes and vehicles were damaged.
Harnett	Angier	5/2/2004	F1	0	0	$0	$0	A tornado produced damage from Jackson Road to Christian Light Road to Cokesbury Road. Three homes had roof damage, and a tree fell on a mobile home. Several sheds and vehicles were also damaged. About three dozen large trees were blown down or snapped.
Johnston	Princeton	6/4/2004	F0	0	0	$0	$0	Police spotted a tornado near Oakland Church Road.
Harnett	Pineview	8/12/2004	F1	0	4	$0	$0	A tornado touched down near the intersection of Highways 24 and 27, south of Pineview. The tornado moved across Heritage Park Subdivision and the Carolina Lakes Golf Course. Three mobile homes were blown off their foundations and destroyed in and around Heritage Park. An additional two dozen homes sustained minor damage to siding, windows, and shingles. The Spout Springs Presbyterian Church was also partially destroyed. In all, 120 buildings had minor damage, 23 had major damage, and 11 were condemned; of those 11, nine were completely destroyed. Four people were reported injured, three of which occurred in one of the mobile homes blown off its foundation.
Harnett	Anderson Creek	8/29/2004	F0	0	0	$0	$0	A tornado touched down near Anderson Creek, snapping down a couple of trees.
Harnett	Pineview	9/8/2004	F0	0	0	$0	$0	A tornado touched down briefly near Barbecue, removing the tops of a few trees.

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
Lee	White Hill	9/8/2004	F0	0	0	$0	$0	A tornado touched down along South Plank Road on the Moore/Lee County Line, damaging the roof of a home.
Moore	Vass	9/8/2004	F0	0	0	$0	$0	A tornado touched down briefly just northwest of Woodlake near Line Road.
Chatham	Pittsboro	9/17/2004	F0	0	0	$0	$0	A tornado touched down briefly on the west side of Pittsboro, blowing down several trees, which in turn knocked down several power lines.
Moore	Vass	9/17/2004	F0	0	0	$0	$0	A tornado touched down briefly near Vass, blowing down trees and snapping power poles.
Moore	Parkwood	9/27/2004	F0	0	0	$0	$0	A tree was blown down onto a mobile home.
Moore	Southern Pines	9/27/2004	F1	0	0	$0	$0	A tornado touched down at the Elks Golf Club just south of Southern Pines. Over 200 trees were snapped or uprooted at the golf course, a few large trees were blown down north of the golf course, and more were blown down onto homes in a neighborhood east of Broad Street and south of Morganton Road. A small shopping center on Broad Street sustained roof and wall failure, and damage was noted at a car dealership as well. The tornado lifted and touched down again at the Memorial Park Ball Diamonds, where F0 damage was noted. Partial roof damage occurred to several homes in a neighborhood along US Highway 1 and Massachusetts Avenue. Several large trees were blown onto houses between Glover and Carlisle Streets in Pinehurst. The tornado weakened as it crossed the Plantation Golf Club, and as it crossed Midland Road, minor property damage occurred. The Mid-South Country Club lost about 250 trees, and the Midland Country Club sustained significant tree damage. Twelve cars in the Midland parking lot were destroyed. In all, the tornado damaged 121 buildings, eight of which were destroyed.
Harnett	Olivia	7/7/2005	F0	0	0	$0	$0	A tornado touched down in Swann near the Harnett-Lee County Line. Several trees were blown down and twisted, and a few shingles were blown off houses. The tornado lifted and touched down intermittently as it traveled northeast, causing minor tree damage. The tornado lifted after touching down a final time in Cokesbury.

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
Lee	Broadway	5/14/2006	F1	0	0	$0	$0	Storm survey found widespread tree damage beginning at the intersection of Dalrymple and Salem church road...continue northeast through a heavily wooded area...lifting just before Copeland Road. There was only minor structural damage.
Harnett	Lillington	9/14/2007	EF0	0	0	$0	$0	On the afternoon and evening of September 14th, tropical moisture streamed north ahead of the remnants of Humberto. The environment over Central North Carolina became supportive of tornado development as a surface boundary stalled across the area. The public reported a brief tornado touchdown in the River Bluff Development on South River Road. Numerous trees were blown down in the area. The tornado touched down again briefly at 620 pm just northeast of Lillington.
Johnston	Clayton	9/14/2007	EF0	0	0	$0	$0	A tornado touched down at Clayton Middle School on Guy Road. A second tornado touched down from the same thunderstorm near the Jordan community. On the afternoon and evening of September 14th, tropical moisture streamed north ahead of the remnants of Humberto. The environment over Central North Carolina became supportive for tornado development as a surface boundary stalled across the area.
Johnston	Emit	9/14/2007	EF0	0	0	$0	$0	On the afternoon and evening of September 14th, tropical moisture streamed north ahead of the remnants of Humberto. The environment over Central North Carolina became supportive of tornado development as a surface boundary stalled across the area. There was a report of a brief tornado touchdown near the Jordan community.
Johnston	Benson	9/14/2007	EF0	0	0	$0	$0	On the afternoon and evening of September 14th, tropical moisture streamed north ahead of the remnants of Humberto. The environment over Central North Carolina became supportive of tornado development as a surface boundary stalled across the area. Law enforcement reported a tornado and multiple trees down on Stephenson Road.
Chatham	Crutchfield Crossroads	8/27/2008	EF0	0	0	$20,000	$0	A weak tornado initially touched down on Jesse Bridges Road between Smith Hudson Road and Rufus Brewer Road. Most of the damage occurred along Jesse Bridges Road, with very large trees

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								blown down in different directions. There was considerable damage to an outbuilding, and in one case, a window screen was torn from a porch and placed on a weathervane on the roof of a home. Some homes had experienced peeling aluminum siding. Several downed trees were noted near the intersection of Rufus and Brewer and Silk Hope Liberty Roads, and on Will Brown Road. The remnants of Hurricane Fay, which made landfall along the Louisiana coast, moved northeast across central North Carolina, producing several weak tornadoes along with significant flash flooding.
Johnston	Archer	8/27/2008	EF0	0	0	$0	$0	The remnants of Hurricane Fay, which made landfall along the Louisiana coast, moved northeast across central North Carolina, producing several weak tornadoes along with significant flash flooding. Local fire departments and law enforcement reported a brief tornado touchdown near the intersection of Covered Bridge Road and Thanksgiving Road. Multiple trees were snapped and uprooted in the highly wooded area.
Johnston	Brogden	11/15/2008	EF0	0	0	$75,000	$0	Two mini supercells tracked northeast along a warm front during the early morning hours of the 15th. The two supercells spawned several tornadoes in Sampson, Johnston, and Wilson counties, two of which resulted in two fatalities. The tornado initially touched down near Daughtry Road south of U.S. Highway 70, damaging several pine trees and causing minor roof damage. The tornado tracked northeast, crossing Crocker Road, where a car was smashed when a large carport collapsed. A travel trailer was overturned, and a nearby home suffered shingle and siding damage. The tornado crossed Creech's Mill Road, where a horse farm had one small barn destroyed. A 30-foot horse trailer was also blown over, and two large bay doors were blown in on the stables. The tornado proceeded northeast across Stevens Chapel Road and Country Store Road, damaging numerous trees and outbuildings along the way. Finally, at one dwelling, the tornado broke a garage window and blew out a garage door.

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
Johnston	Peacocks Crossroads	11/15/2008	EF1	0	0	$30,000	$0	Two mini supercells tracked northeast along a warm front during the early morning hours of the 15th. The two supercells spawned several tornadoes in Sampson, Johnston, and Wilson counties, two of which resulted in two fatalities. The tornado initially touched down just off Noah Road, where it uprooted several trees. It traveled north-northwest across bare fields, taking down mature trees for approximately one-half of a mile. The tornado then crossed Wood Crossroads Road, where it produced significant roof damage to one double-wide mobile home and ripped the porch off a single-level brick home. The tornado then proceeded north-northwest across open fields before producing minor damage on Five Point Roads to an aluminum skirt of a double-wide mobile home and other minor damage to sheds and storage buildings.
Johnston	Kenly	11/15/2008	EF2	1	2	$500,000	$200,000	Two mini supercells tracked northeast along a warm front during the early morning hours of the 15th. The two supercells spawned several tornadoes in Samspon, Johnston, and Wilson counties, two of which resulted in two fatalities. The tornado initially touched down just north of Piney Grove Church Road, and damage was limited to minor trees and structural damage. The tornado then tracked northeast, over bare fields and stands of mature trees for approximately three-quarters of a mile, twisting off mature trees, before producing significant damage at the intersection of NC Hwy 222 and Crumpler Road. The strongest evidence of EF-2 damage was at this intersection, where a well-constructed single-level brick home was destroyed. The entire roof was blown off this home, and a large pine tree fell through the kitchen. All of the walls on the west side of the house were missing. In addition, one vehicle was flipped upside down and another, with an attached trailer, was moved approximately 30 feet down the homeï¿½ï¿½ï¿½s driveway. The family of 4 was awakened as the damage occurred, but by great fortune, no one sustained any injury. As the tornado crossed Scott Road, a double-wide mobile home was removed from its foundation and flipped approximately 50 feet. A 61-

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								year-old female occupant of this mobile home was killed, while her husband was transported to a medical facility. In addition, three other double-wide mobile homes were condemned as they sustained significant structural damage to roofs and southwest-facing exterior walls. A pickup truck was completely overturned in one of the driveways. Continuing northeast, the tornado moved across Kenly International Airport. The tornado was likely aloft at this point, producing EF-1 damage to trees, but there was considerable debris from the homes on Scott Road strewn about the airport grounds. A portion of an open aircraft hangar constructed of sheet tin over a wooden frame was twisted and destroyed. There was also some damage to the Cessna 150 housed in this hangar. The tornado then crossed into southwest Wilson County, causing damage to several mobile homes along Fabwhitley Road. Several other homes in the Lucama area suffered minor damage from the strong winds. The tornado finally lifted off the ground just north of Newsom Mill Road near a local racetrack.
Johnston	Parkers Mill	3/27/2009	EF0	0	0	$0	$50,000	Low-topped tornadic supercells developed along a stationary front located across the coastal plain region of North Carolina. The storms intensified as a shortwave trough moved northeast across the area, producing EF-1 damage in Cumberland County. Five houses on OBJ Road sustained minor damage ranging from shingle damage, damaged garage doors to blown-out windows.
Johnston	Coats Crossroads	3/27/2009	EF0	0	0	$0	$15,000	Low-topped tornadic supercells developed along a stationary front located across the coastal plain region of North Carolina. The storms intensified as a shortwave trough moved northeast across the area, producing EF-1 damage in Cumberland County. Numerous trees were blown down and snapped in a wooded area behind an open field.
Johnston	Micro	5/5/2009	EF0	0	0	$28,000	$0	Two tornadic supercells developed along a stalled warm front that extended across the southern piedmont and coastal plain of North Carolina. The cells produced four tornadoes in Johnston, Nash, and Wilson counties. An EF-0 tornado touched down on 2550 NC Highway

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								39. The tornado damaged the roofs of four buildings and blew a boat into a car, causing moderate damage.
Johnston	Emit	5/5/2009	EF1	0	0	$200,000	$0	Two tornadic supercells developed along a stalled warm front that extended across the southern piedmont and coastal plain of North Carolina. The cells produced four tornadoes in Johnston, Nash, and Wilson counties. An EF-1 tornado touched down initially just to the west of NC Highway 96 in a wooded area. The tornado crossed NC Highway 96 and produced significant damage to several homes along and east of NC Highway 96. The homes sustained exterior and roof damage, with uprooted or snapped tree damage consistent with EF-1 damage. The tornado proceeds to cross NC Highway 39. Several homes between Antioch Church Road and NC Highway 42 sustained damaged. The tornado continued to track east-northeast, causing shingle roof damage to the Antioch Fire Station and a nearby home. A mobile home near the fire department also sustained shingle and siding damage. The tornado then continued to track northeast across Barnes Lake Road and NC Highway 222, where it caused significant tree damage and some minor roof or shingle damage to surrounding homes or mobile homes. The tornado then |exited the county, crossing over into southwest Nash County.
Chatham	Brickhaven	4/16/2011	EF0	0	0	$75,000	$0	The tornado exited Lee County and moved into extreme southeastern Chatham County, just south and east of Harris Lake. Only two homes sustained damage, with moderate|to major roof damage to one of the homes, when a tree crashed through it. A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								produce nine tornadoes in the Raleigh CWA, including 2 EF3s and 4 EF2s. The tornadoes left eight dead with approximately 275 injuries.
Harnett	Erwin Airport	4/16/2011	EF2	1	24	$16,000,000	$0	A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to produce nine tornadoes in the Raleigh CWA, including 2 EF3s and 4 EF2s. The tornadoes left eight dead with approximately 275 injuries. The tornado exited Cumberland County and entered Harnett County just south of Dunn. EF1 damage was common in the Dunn area, with areas of EF2 damage with wind speeds up to 130 mph. Mobile homes were completely wiped off their foundations, and trees were debarked. A second fatality occurred here when a 42-year-old Hispanic male died from injuries suffered from the tornado. The victimï¿½ï¿½ï¿½s body was found lying on a concrete slab, thrown from a mobile home that was destroyed. Several other residents in the mobile home park were injured, including one who was ejected from a trailer and impaled with an object, with another person trapped underneath debris. In total, 200 homes and businesses were damaged, with 40 homes destroyed and another 40 homes suffering major damage.
Johnston	Pine Level	4/16/2011	EF1	0	0	$0	$0	A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to produce nine tornadoes in the Raleigh

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								CWA, including 2 EF3s and 4 EF2s. The tornadoes left eight dead with approximately 275 injuries. A tornado touched down near Pine Level, just south of Highway 70, and tracked northeast towards Micro in the vicinity of Highway 301. The tornado lifted just southwest of Kenly. Numerous trees were snapped in half or uprooted, resulting in downed powerlines and damage to homes and businesses. Peak winds were estimated at 90 mph.
Johnston	Benson	4/16/2011	EF2	0	67	$25,000,000	$0	A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to produce nine tornadoes in the Raleigh CWA, including 2 EF3s and 4 EF2s. The tornadoes left eight dead with approximately 275 injuries. The tornado exited Harnett County and continued northeast into southern Johnston County. The tornado tracked south of Benson, where it crossed NC Highway 242 and NC Highway 50. Several modular homes were destroyed, and numerous other homes sustained major damage. There were also hundreds of trees that were uprooted or snapped in half. The tornado subsequently crossed Interstate 40 near mile Marker 330 and continued moving northeast to just south of Four Oaks before crossing Interstate 95 near mile marker 90. The tornado lifted just before reaching Smithfield, where little or no damage was observed. Throughout this part of the track, there was a broad swath of EF0 damage with embedded areas of EF1 and EF2 damage. In total, 450 homes were damaged, of which 287 homes were completely destroyed.
Lee	White Hill	4/16/2011	EF3	2	36	$57,000,000	$0	A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to produce nine tornadoes in the Raleigh CWA, including 2 EF3s and 4 EF2s. The tornadoes left eight dead with approximately 275 injuries. The tornado exited Moore County and proceeded to strengthen to an EF1 as it moved into Lee County along Wildlife Road. The tornado blew a single-wide trailer off its foundation, while also damaging the home next door. The tornado continued to intensify to EF3 intensity along Lemon Springs Road, striking the St. Andrews Subdivision. One fatality occurred when a tree fell onto a vehicle along Lemon Springs Road, crushing the driver. Numerous homes were completely destroyed, and several two-story homes had their upper floors removed. Wind speeds were estimated at 140 mph with a path length of over one-quarter mile. Additional homes were blown off their foundations on Cemetery Drive. The tornado continued to produce major damage as it moved east along Cameron Drive. The upper floor was blown off two apartment buildings. The tornado then entered an industrial complex along Industrial Drive, where multiple steel-constructed retail buildings were destroyed, in addition to 3 large warehouses at the static control facility. Winds in this area likely exceeded 160 mph. The tornado then destroyed the Tractor Supply Company, Big Lots, and the Lowes Home Improvement Store along Highway 421. Winds in this area were estimated to be around 140 mph. Two homes were blown off their foundations along Rice Road, north of NC Highway 42. Another fatality occurred along Poplar Spring Church Road when a mobile home was lifted off the ground and then thrown into the woods and destroyed. In total, 457 homes were damaged, with 116 homes being destroyed. Seventeen businesses were damaged as well. The tornado continued northeast along Avent Ferry Road, crossing into Chatham County, just east of Harris Lake.

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
Moore	Cameron	4/16/2011	EF0	0	0	$0	$0	A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to produce nine tornadoes in the Raleigh CWA, including 2 EF3s, and 4 EF2s. The tornadoes left eight dead with approximately 275 injuries. A tornado touched down in northeastern Moore County, west of Cameron, near the |intersection of Red Hill Road and Gilchrist Road. The initial tornado touchdown intensity was EF0 with only minor damage reported to a few homes, consisting mainly of shingle damage.
Moore	Midtown	9/6/2011	EF0	0	0	$10,000	$0	As the remnants of Tropical Storm Lee tracked along a frontal zone that extended from the southern Appalachians into central Virginia, heavy rain and severe storms spread into central North Carolina. The initial severe weather threat, during the early morning hours, was tornadoes due to the highly sheared environment associated with the former tropical cyclone. As the day progressed, and the remnant low of Lee continued to weaken, the severe weather threat transitioned to straight-line winds, as instability increased with the heating of the day. The National Weather Service in Raleigh, NC, has confirmed an EF0 tornado with maximum winds of 80 mph near Pinehurst in Moore County, North Carolina, on September 6, 2011. The damage was mainly confined to several clusters of trees along a narrow path that was 1.3 miles in length in the country club of the North Carolina Golf Resort. At least two homes had fallen trees on them, but damage to the homes was minimal. At least two homes experienced extensive debris across the property, including a small boat that was lifted out of a nearby pond and tossed up onto the property. Monetary damage was estimated.

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
Johnston	Micro	2/26/2013	EF0	0	0	$45,000	$0	An isolated EF-0 tornado coincident with a triple point low and in the warm sector east of a wedge front boundary produced minor damage near Selma in Johnston County. At approximately 818 pm EST, a weak tornado touched down near the 2700 block of Old Beulah Road, 4 miles northeast of Selma. The first visible damage was to the metal sheeting on the roof of an outbuilding. The tornado continued a couple of hundred yards before causing significant damage to a two-story barn. The preexisting barn structure was over 40 years old, and while the foundation was attached, most of the structure was settled onto concrete blocks with an open crawl space underneath. The tornado blew off the roof of the barn. Two of the side walls were also blown out, leaving two walls intact. Across the street, a single-family mobile home suffered minor damage to shingles and vinyl siding. An adjacent carport also had minor roof damage. The tornado continued another couple of hundred yards, where one final sheet metal building sustained minor roof damage.||There were no injuries or fatalities to report.
Lee	Cumnock	6/27/2015	EF1	0	0	$25,000	$0	Scattered thunderstorms developed as an unseasonably strong mid-level trough approached the region. With a prefrontal trough serving as a low-level focus and a very moist and unstable air mass in place, many of the storms became severe, producing wind damage. In addition, a brief tornado spun up in Lee County. An NWS Raleigh survey team found that the tornado touched down on the east bank of the Deep River. Hardwood and softwood tree damage indicated wind speeds of 105 mph. The tornado then tracked east and resulted in damage to a home. The damage consisted of roof and shingle damage, siding damage, garden damage, windows blown out of a van, and a trampoline that was mangled and blown 130 yards downstream. Maximum winds at this location were estimated to be 90 mph. The tornado then lifted, but while doing so, it resulted in several trees being blown down along Rosser Road near Cotten Road.

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
Harnett	Mamers	4/12/2019	EF0	0	0	$10,000	$0	Enhanced southerly flow advected warm, moist air into the region ahead of a diving shortwave trough and attendant cold front. This resulted in sufficient moisture, strong shear, and marginal instability to produce a line of showers and strong thunderstorms. These storms produced scattered wind damage, localized flash flooding, and a brief tornado as they moved through central North Carolina. An EF0 tornado touched down just south of Raven Rock State Park, crossed Hicks Road, and moved north-northeast through the park. The tornado then crossed the Cape Fear River, exited the park, and lifted just before reaching Cokesbury Road. The tornado remained on the ground for approximately 4 minutes and traveled 4.9 miles. This tornado produced minor intermittent tree damage in the form of uprooted and snapped hardwood trees.
Chatham	Siler City	4/19/2019	EF1	0	0	$100,000	$0	A tornado briefly touched down in the Siler City area. Damage consisted of numerous snapped and uprooted trees, downed power poles and power lines, and damage to the roof covering of several homes. Monetary damages were estimated. A deepening upper-level trough, which featured a strong polar jet ejecting northeast atop an eastward advancing cold front, brought severe thunderstorms that produced|7 tornadoes and widespread damaging straight-line winds across central NC. The strongest tornado of the day in North Carolina formed in southwestern Orange County and reached EF-2 strength as it neared Hillsborough. Along its path, estimated at 12 miles long and a maximum of 600 yards wide, the roof and exterior walls of one home were reported as completely destroyed.
Johnston	Timothy	4/19/2019	EF1	0	0	$400,000	$0	A deepening upper-level trough, which featured a strong polar jet ejecting northeast atop an eastward advancing cold front, brought severe thunderstorms that produced|7 tornadoes and widespread damaging straight-line winds across central NC. The strongest tornado of the day in North Carolina formed in southwestern Orange County and reached EF-2 strength as it neared Hillsborough. Along its path, estimated at 12 miles long and a maximum of 600 yards wide, the roof

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								and exterior walls of one home were reported as completely destroyed. This is a continuation of the Spivey's Corner tornado. The tornado oscillated up and down for about 8 miles, resulting in minor tree damage when it briefly touched down. The tornado finally touched down one last time in the Meadow area of southern Johnston County, where it did considerable roof and window damage to two homes, snapped and uprooted numerous trees, and blew over several grain silos.
Moore	Howard Mill	4/19/2019	EF1	0	0	$200,000	$0	A deepening upper-level trough, which featured a strong polar jet ejecting northeast atop an eastward advancing cold front, brought severe thunderstorms that produced|7 tornadoes and widespread damaging straight-line winds across central NC. The strongest tornado of the day in North Carolina formed in southwestern Orange County and reached EF-2 strength as it neared Hillsborough. Along its path, estimated at 12 miles long and a maximum of 600 yards wide, the roof and exterior walls of one home were reported as completely destroyed. A tornado briefly touched down in the Robbins area of northwest Moore County. Damage consisted of numerous snapped and uprooted trees and subsequent damage to the roofs of several homes that the trees fell on. Based on the damage to the trees, this tornado was rated an EF-1 with maximum wind speeds of 90 to 100 mph.
Johnston	Drug Store	7/23/2019	EF1	0	0	$0	$0	A cold front overtook a preceding outflow boundary and pre-frontal surface trough that was in place across central NC. Convection along the southward-moving cold front organized into a QLCS as it intercepted the axis of strong diabatic heating and instability south of the front. Along with swaths of wind damage, two weak, short-lived tornadoes developed along the line. A brief tornado touched down in the Cleveland area, near the intersection of Cornwallis Road and Justin Drive, and lifted near the intersection of Goldfield Drive and Justin Drive. Damage observed included minor shingles on several homes, numerous softwood trees snapped, and lawn furniture tossed

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								a substantial distance. Damage indicators were consistent with maximum wind speeds of 85 to 90 mph.
Johnston	Smithfield	9/5/2019	EF0	0	0	$50,000	$0	Hurricane Dorian moved north and northeastward near and along the coast of North Carolina on September 5th and 6th, with Dorian making landfall along the Outer Banks of North Carolina during the morning of September 6th. Meanwhile, heavy rain and strong damaging winds spread inland and across eastern central North Carolina. Heavy rainfall of 3 to 7 inches produced flash flooding across portions of the Coastal Plain of central North Carolina, generally along and east of the Interstate 95 corridor. Strong damaging winds of 35 to 55 mph spread inland across the Coastal Plain and eastern Sandhills of central North Carolina. This resulted in numerous power outages and trees down in these locations. Several weak tornadoes occurred during the afternoon of September 5th as multiple rain bands shifted eastward and into central North Carolina during peak heating. A weak EF-0 tornado very briefly touched down in Smithfield. Damage consisted of |at least one very large Oak tree that was uprooted and blown down |onto a home. In addition, numerous other large tree branches and |several smaller trees were snapped and uprooted. This tornado |occurred in an outer rain band associated with Hurricane Dorian.
Harnett	Buies Creek	1/3/2022	EF0	0	0	$100,000	$0	A strong upper-level low moved from the Midwest into the Mid Atlantic from January 2nd into the 3rd. Strong storms to isolated severe storms preceded the arrival of the low, along with a broad area of 2 to 4 inches of rain along the United States Highway 1 corridor, producing flooding around the Triangle region of central North Carolina. Strong, sustained gradient winds were felt over much of the area, with numerous gusts of 35 to 50 miles per hour. As the law moved through the area, rain mixed with and changed to snow, with several inches of snow reported across portions of the northwest and far northern Piedmont. An EF-0 tornado briefly touched down two miles southwest of Coats, North Carolina. It was on the ground for about two minutes before dissipating. The tornado resulted in roof, window, and siding

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								damage to several homes. In addition, about a dozen trees were either snapped or uprooted, at least two fences were blown over, and at least two |outbuildings or sheds were destroyed or rolled over.

It should be noted that only those historical occurrences listed in the NCDC database are shown here and that other, unrecorded, or unreported events may have occurred within the planning area during this timeframe. The 10 most notable occurrences are listed below:

4/16/2011: Tornado Outbreak

- Planning area NCEI Storm Events Database Reported Damage[60]: $98,075,000
- SPC Total Tornado Damage[61]: $313,175,000

One of the largest tornado outbreaks in U.S. history produced 178 confirmed tornados, 38 deaths, and 588 injuries across the U.S.[62] This event occurred between April 14 and April 16, 2011, because of a strong storm system that produced deadly tornadoes across Oklahoma and the South on April 14th, weakening as it crossed the southern Appalachian Mountains early on April 16th. A squall descended the Blue Ridge and intensified while moving into the central piedmont region of North Carolina, where four tornado supercells evolved, producing nine tornadoes, which left eight dead and 275 injured in NC alone[63]. There were 32 tornadoes recorded in NC, making it the most widespread tornado outbreak in NC history,[64] with 304 injuries and 24 deaths reported in the state.

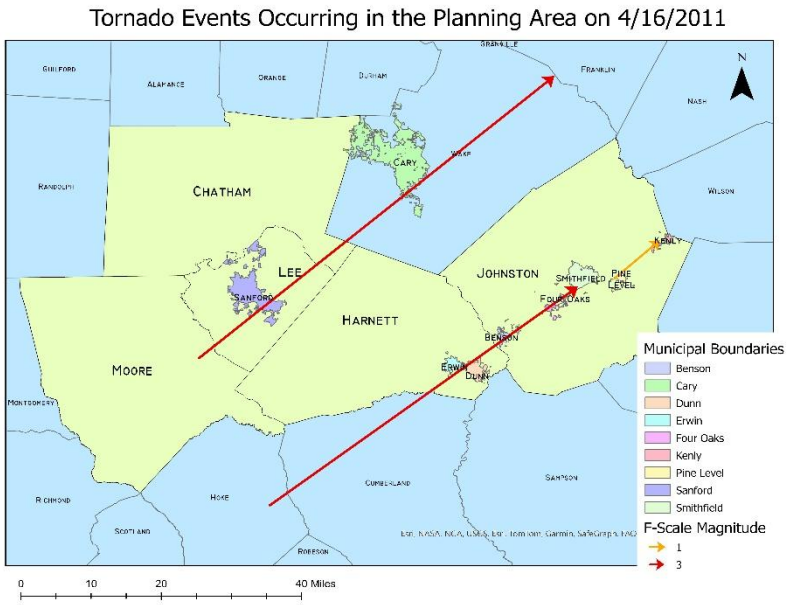


***Figure 5-138**: Map of tornado tracks in the planning area on 4/16/2011 from SPC*

[60] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

[61] Storm Prediction Center. (2025). Tornado Tracks (By National Oceanic and Atmospheric Administration [NOAA]) [Dataset]. https://www.arcgis.com/home/item.html?id=e75412d18bdc469dbf89bf7e929475cc

[62] U.S. Department of Commerce, National Oceanic and Atmospheric Administration [NOAA], National Environmental Satellite Data and Information Service, & National Climatic Data Center. (2011). Storm Data and Unusual Weather Phenomena with Late Reports and Corrections. NCDC, 53(4), ISSN 0039-1972. http://www1.ncdc.noaa.gov/pub/orders/IPS/IPS-365AE391-42D1-432E-86E8-60949C642469.pdf

[63] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

[64] North Carolina State Climate Office. (2015, April 16). NC Extremes: April 2011 Tornado outbreak One for the records – North Carolina State Climate Office (By North Carolina State University). https://climate.ncsu.edu/blog/2015/04/nc-extremes-april-2011-tornado-outbreak-one-for-the-records/

11/23/1992: Tornado Outbreak

- Planning area NCEI Storm Events Database Reported Damage[65]: $2,500,000
- SPC Total Tornado Damage[66] : $500,000-5,000,000

According to the Natural Disaster Survey Report[67] published by NOAA about the November 21-23, 1992, widespread tornado outbreak across the southern U.S., 94 tornadoes across 13 states occurred and dissipated in the mid-Atlantic region. This outbreak formed and caused 26 deaths and 641 injuries across the US, with two deaths and 74 injuries reported in North Carolina. Five tornados were reported in North Carolina as a result of the outbreak that caused 110 homes and seven businesses to be destroyed and damaged almost 600 homes and two businesses for a total estimated loss of $9.3 million in NC alone. According to the NCEI Storm Events Database, there were 12 injuries in the planning area attributed to the tornado.



***Figure 5-139**: Damages to businesses in Sanford from a F-3 tornado from NWS Raleigh*

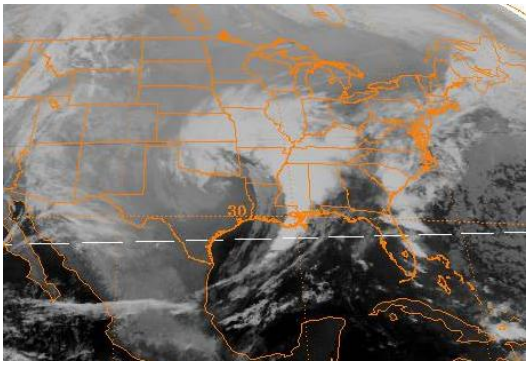


***Figure 5-140**: Satellite images from the November 1992 tornado outbreak[68]*

[65] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

[66] Storm Prediction Center. (2025). Tornado Tracks (By National Oceanic and Atmospheric Administration [NOAA]) [Dataset]. https://www.arcgis.com/home/item.html?id=e75412d18bdc469dbf89bf7e929475cc

[67] National Oceanic and Atmospheric Administration [NOAA], National Weather Service [NWS], & U.S. Department of Commerce. (1993). The widespread November 21-23, 1992, tornado outbreak : Houston to Raleigh and Gulf Coast to Ohio Valley. In NOAA Institutional Repository. NOAA. https://repository.library.noaa.gov/view/noaa/56596/noaa_56596_DS1.pdf

[68] National Weather Service [NWS]. (n.d.-b). NWS Jackson, MS--November 21-22, 1992 Tornado outbreak (By National Oceanic and Atmospheric Administration [NOAA]). National Weather Service. Retrieved July 25, 2025, from https://www.weather.gov/jan/1992_11_21_22_tor_metdata

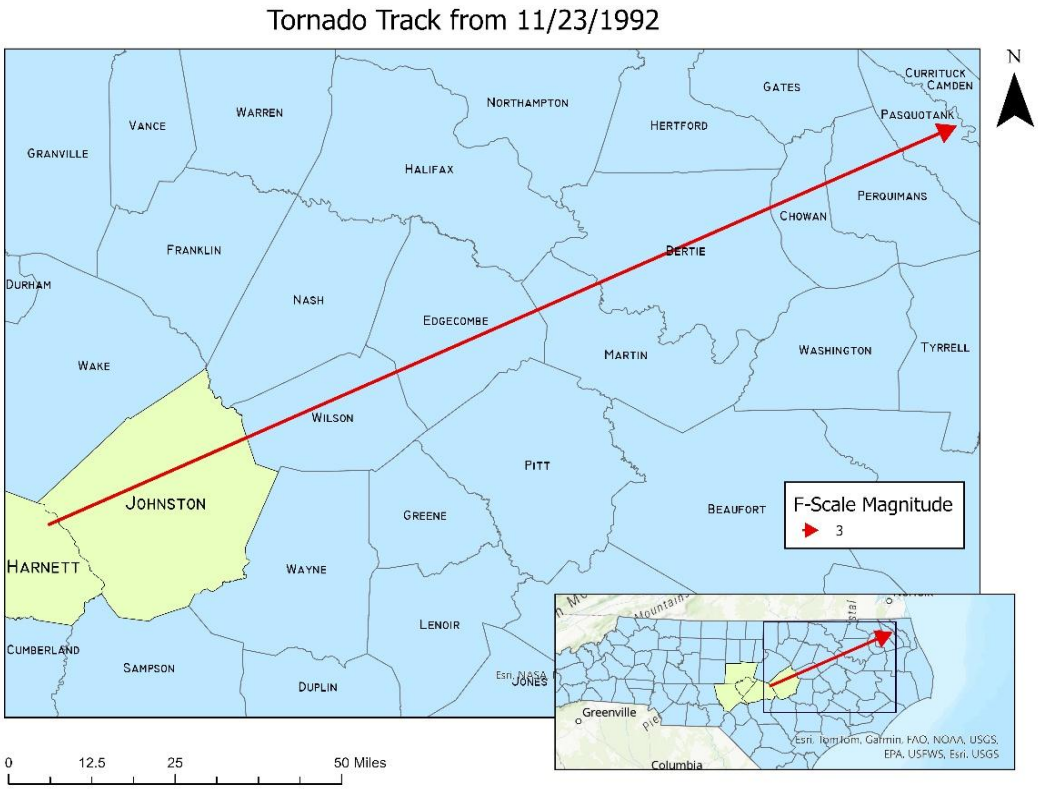


***Figure 5-141**: Tornado track from the November 21-23, 1992 tornado outbreaks impacting the planning area*

2/11/1981: Tornado Outbreak

- Planning area NCEI Storm Events Database Reported Damage[69]: $3,000,000
- SPC Total Tornado Damage[70] :
  - **Tornado 1:** $50,000-500,000
  - **Tornado 2:** $500,000-$5,000,000

Six F2 tornadoes were reported in North Carolina on February 11, 1981, in a tornado outbreak, and 2 of the F2 tornadoes were reported in the planning area. While the event had no reported injuries or deaths in the planning area, there were two deaths and two injuries reported because of tornadoes in NC.

[69] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

[70] Storm Prediction Center. (2025). Tornado Tracks (By National Oceanic and Atmospheric Administration [NOAA]) [Dataset]. https://www.arcgis.com/home/item.html?id=e75412d18bdc469dbf89bf7e929475cc

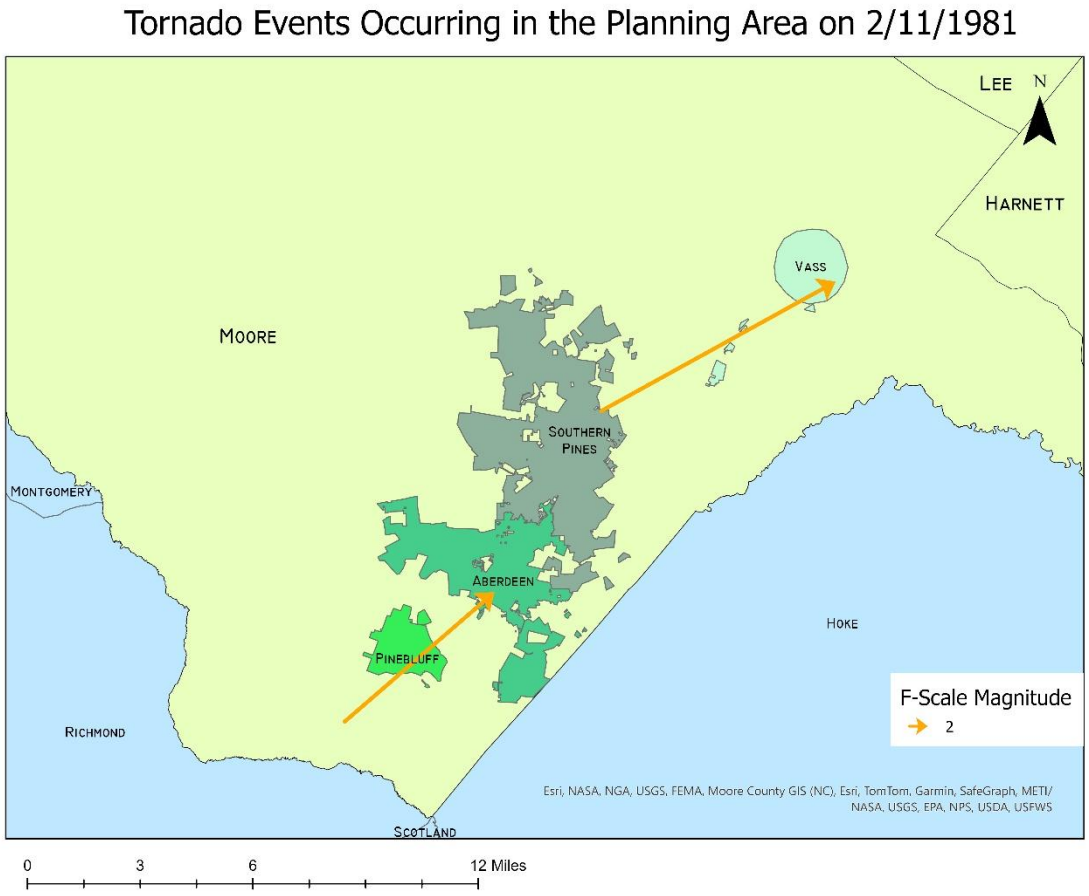


***Figure 5-142**: Tornado paths for 2/11/1981 tornado events*

11/15/2008: Tornado Events

- NCEI Storm Events Database Reported Damage (including Crop Damage)[71]: $805,000
- SPC Total Tornado Damage[72] :
  - Tornado 1 (F-Scale 1): $30,000
  - Tornado 2 (F-Scale 2): $500,000

[71] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

[72] Storm Prediction Center. (2025). Tornado Tracks (By National Oceanic and Atmospheric Administration [NOAA]) [Dataset]. https://www.arcgis.com/home/item.html?id=e75412d18bdc469dbf89bf7e929475cc



Figure 5-143: Kenly tornado Damage image from WRAL News reports on November 15, 2008[73]

According to the NCEI Storm Events Database reports[74], two mini supercells were tracked along a warm front early morning on November 15, 2008, which created multiple tornadoes across Sampson, Johnston, and Wilson counties. The following are summaries from the NCEI Storm Event Database episode narratives and summaries:

The F-2 tornado in Kenly touched down north of Piney Grove Church Road, and the damage was limited to tree and structural damage. The tornado then traveled northeast over fields and some trees for almost a mile, uplifting mature trees in its path, before damaging the intersection of NC Hwy 222 and Crumpler Road significantly. Near this damaged intersection, a well-built single level brick home was destroyed, had its roof blown off, and had a pine tree fall through the kitchen. All of the walls on the west side of the home were missing. It also flipped a vehicle with a trailer attached to it, moving it 30 feet away from its initial position. As the tornado moved across Scott Road, a double-wide mobile home was ripped from the foundation, flipped 50 feet, and seriously injured the two occupants, one of whom died. Three other double-wide mobile homes were condemned as they had considerable damage to the roofs and walls. As the tornado moved across Kenly International Airport, significant debris from the damaged homes on Scott Roads was blown onto the airport property. The airport's aircraft hangar's roof was twisted and destroyed, damaging a plane inside the hangar. The tornado then crossed into Wilson County before damaging several more homes on Fabwhitley Road and the Lucama area. Finally, the tornado lifted off the ground north of Newson Mill Road. There was one death and two injuries reported in Kenly because of the F-2 Tornado.

[73] WRAL News. (2008a, November 15). Mims: Kenly damage reports still coming in [Video]. WRAL.com. https://www.wral.com/video/weather/video/3966587/

[74] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/



***Figure 5-144**: WRAL Tour of Tornado Damage in Kenly from the 11/15/2008 tornado event*[75]

The F-1 Tornado touched down off Noah Road and uprooted several trees before traveling north across bare fields. The tornado continued to travel and take down mature trees for approximately half a mile before crossing Wood Crossroads Road. It significantly damaged the roof of a double-wide mobile home and ripped the porch off a single-level brick home before moving north-northwest across fields before damaging the aluminum skirt of a double-wide home and producing minor damage to sheds and storage buildings on Five Points Road.

An F-0 tornado touched down near Daughtry Road south of US Highway 70, where it damaged several pine trees and caused minor roof damage to surrounding structures. The tornado then moved northeast before crossing Crocker Road, where a carport collapsed and smashed a car that was parked inside it. A trailer nearby was overturned and a nearby home suffered damage to shingles and siding before the tornado blew over a 30-foot horse trailer and 2 large bay doors in the stables. The tornado then moved northeast along Stevens Chapel Road and Country Store Road, damaging trees and outbuildings in its path. Finally, the tornado broke a garage window and blew out the garage door.

[75] WRAL News. (2008, November 15). Web only: Sky 5 tour of tornado damage in Kenly area [Video]. WRAL.com. https://www.wral.com/video/weather/video/3966538/

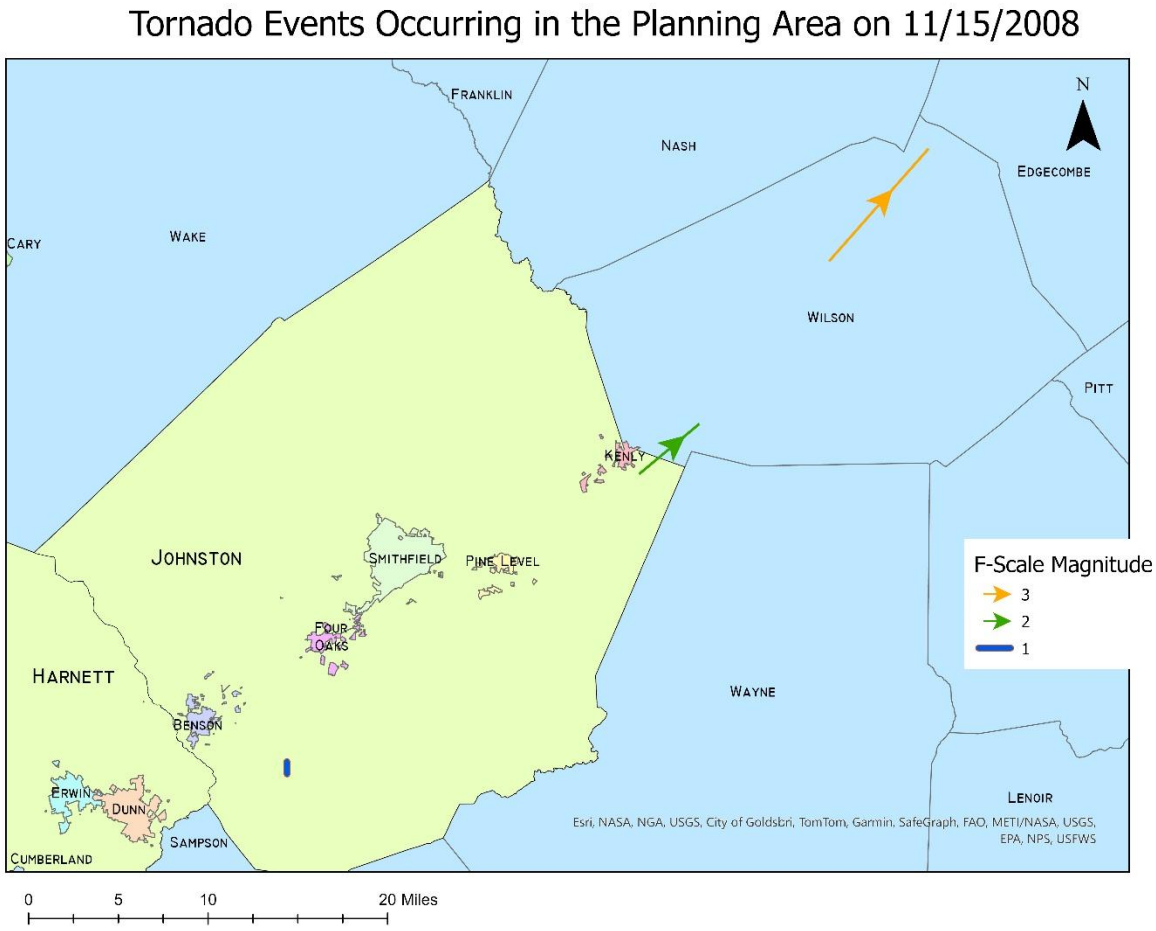


***Figure 5-145**: Map of 11/15/2008 Tornadoes in the Planning Area*

4/19/2019: Tornado Events

- NCEI Storm Events Database Reported Damage (including Crop Damage)[76]: $700,000
- SPC Total Tornado Damage[77] : $1,350,000

According to the NCEI Storm Events Database episode narrative, an advancing cold front brought severe thunderstorms that produced damaging straight-line winds and seven tornadoes across central NC. The strongest tornado was F-2 in Orange County. Three F-1 Tornados were reported in the planning area on April 19, 2019, in Moore, Chatham, and Johnston County. The following are summaries of the three F-1 tornados that were reported in the planning area from the NCEI Storm Events Database:

[76] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

[77] Storm Prediction Center. (2025). Tornado Tracks (By National Oceanic and Atmospheric Administration [NOAA]) [Dataset]. https://www.arcgis.com/home/item.html?id=e75412d18bdc469dbf89bf7e929475cc

An **F-1 tornado in Johnston County** was a continuation of the Spivey's Corner tornado, which oscillated up and down for 8 miles before creating minor damage to trees and touching down briefly. The tornado then touched down again in the Meadow area of southern Johnston County and did considerable damage to the roof and windows of two homes, snapped trees, uprooted trees, and blew over several grain silos. This tornado continued for approximately 10.15 miles[78] was responsible for approximately $1,050,000 of damage.



***Figure 5-146**: Downed Powerline in Smithfield from F-1 Tornado on April 19, 2019, from WRAL News[79]*

An F-1 tornado touched down in Moore County near Robbins in the northwest of the county. The tornado snapped and uprooted multiple trees, which fell on and damaged several houses in the surrounding area. Wind speeds were measured between 90 and 100mph maximum, and based on the damage, it was determined to be an F1 tornado.

An F-1 Tornado touched down in Chatham County near the Siler City area and uprooted trees, snapped trees, brought down power lines, and damaged roofs.

[78] Storm Prediction Center. (2025). Tornado Tracks (By National Oceanic and Atmospheric Administration [NOAA]) [Dataset]. https://www.arcgis.com/home/item.html?id=e75412d18bdc469dbf89bf7e929475cc
[79] WRAL News. (2019, April 19). Images: Good Friday storm damage (M. Burns, Ed.). WRAL.com. https://www.wral.com/video/weather/video/3966587/



***Figure 5-147**: Tornado Damage in Siler City from F-1 Tornado April 19, 2019 from WRAL News*[80]

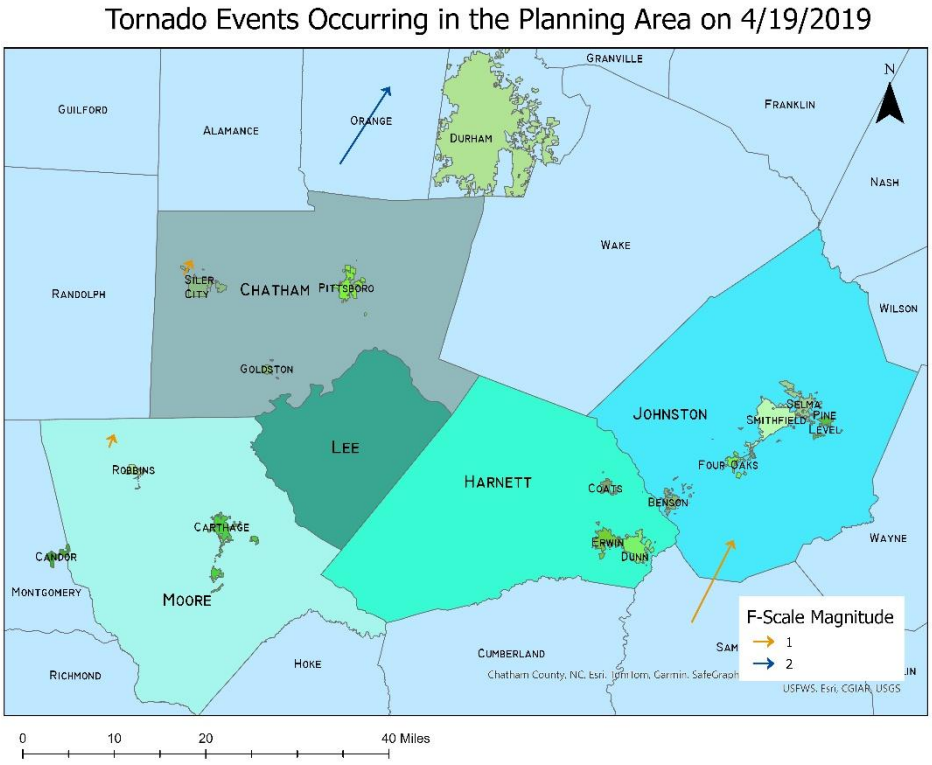


***Figure 5-148**: Tornado events that occurred in the planning area on 4/19/2019*

[80] WRAL News. (2019, April 19). Images: Good Friday storm damage (M. Burns, Ed.). WRAL.com. https://www.wral.com/video/weather/video/3966587/

Table 5-32: Tornado events in the planning area from the NCEI Storm Events Database[81]

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
Lee	-	4/6/1956	F2	0	0	$25,000	$0	-
Harnett	-	2/18/1960	F1	0	0	$25,000	$0	-
Chatham	-	10/7/1965	F2	0	0	$25,000	$0	-
Harnett	-	11/2/1966	F2	0	0	$250,000	$0	-
Harnett	-	1/5/1971	F2	0	0	$250,000	$0	-
Harnett	-	5/17/1973	F1	0	0	$25,000	$0	-
Moore	-	5/24/1973	F1	0	0	$250,000	$0	-
Johnston	-	5/29/1973	F1	0	0	$25,000	$0	-
Chatham	-	5/15/1975	F1	0	0	$25,000	$0	-
Harnett	-	5/15/1975	F1	0	6	$25,000	$0	-
Johnston	-	3/4/1977	F1	0	0	$25,000	$0	-
Moore	-	3/4/1977	F1	0	0	$25,000	$0	-
Chatham	-	7/27/1977	F1	0	0	$250	$0	-
Moore	-	8/5/1978	F1	0	0	$0	$0	-
Moore	-	2/11/1981	F2	0	0	$2,500,000	$0	-
Moore	-	2/11/1981	F2	0	0	$250,000	$0	-
Moore	-	6/10/1982	F1	0	1	$25,000	$0	-
Harnett	-	6/16/1982	F2	0	0	$250,000	$0	-
Moore	-	6/16/1982	F1	0	0	$2,500	$0	-
Chatham	-	8/17/1985	F0	0	0	$25,000	$0	-
Harnett	-	7/1/1986	F0	0	0	$2,500	$0	-
Harnett	-	7/1/1986	F1	0	0	$25,000	$0	-
Harnett	-	6/12/1989	F1	0	0	$25,000	$0	-
Chatham	-	6/28/1989	F1	0	0	$0	$0	-

[81] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
Harnett	-	10/23/1990	F1	0	0	$25,000	$0	-
Chatham	-	3/29/1991	F2	0	0	$250,000	$0	-
Moore	-	3/29/1991	F1	0	2	$250,000	$0	-
Harnett	-	11/4/1992	F1	0	0	$2,500	$0	-
Johnston	-	11/4/1992	F1	0	0	$2,500	$0	-
Johnston	-	11/4/1992	F1	0	0	$0	$0	-
Harnett	-	11/23/1992	F3	0	0	$0	$0	-
Johnston	-	11/23/1992	F3	0	12	$2,500,000	$0	-
Harnett	-	5/1/1994	F0	0	0	$5,000	$0	Two miles south of Dunn, near the intersection of Highway 301 and Arrowhead Road, a small tornado destroyed a garage, which was attached to a manufactured home, on a brick foundation. The porch and the roof of the home were also damaged. Down the street, a few yards away, two large oak trees were uprooted and landed on the roof of a house.
Harnett	Buies Creek	8/17/1994	F1	0	0	$500,000	$0	Harnett County officials reported a tornado touched down near Buies Creek. The Emergency Management Team at the site reported numerous trees down, along with several mobile homes damaged to the point that people were trapped inside.
Harnett	Anderson Creek	12/17/2000	F0	0	0	$0	$0	Windows were blown out of buildings at Ray Road and Hwy 210.
Harnett	Coats	12/17/2000	F0	0	0	$0	$0	Large tree limbs were blown down, smashing car windows.
Johnston	Kenly	10/11/2002	F1	0	0	$0	$0	A tornado touched down just west of Kenly, causing F0 to strong F1 damage. It began near J. Howell Road and Old Highway 222, causing minor damage to a hog farm. The worst damage was along Bunn Road, where four mobile homes were damaged, one

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								of which was overturned and totally destroyed. The other mobile homes sustained projectile damage, and a roof was blown off a barn. The tornado traveled northeast and severely damaged a home on Highway 222, collapsing the rear wall of the house. The damage path ended near the Wilson County border.
Chatham	Silk Hope	5/31/2003	F0	0	0	$0	$0	A brief tornado touchdown twisted and blew down large trees.
Moore	Aberdeen	7/2/2003	F0	0	0	$0	$0	A tornado was sighted moving northeast between Aberdeen and Vass. Numerous trees were blown down along the path, and some homes and vehicles were damaged.
Harnett	Angier	5/2/2004	F1	0	0	$0	$0	A tornado produced damage from Jackson Road to Christian Light Road to Cokesbury Road. Three homes had roof damage, and a tree fell on a mobile home. Several sheds and vehicles were also damaged. About three dozen large trees were blown down or snapped.
Johnston	Princeton	6/4/2004	F0	0	0	$0	$0	Police spotted a tornado near Oakland Church Road.
Harnett	Pineview	8/12/2004	F1	0	4	$0	$0	A tornado touched down near the intersection of Highways 24 and 27, south of Pineview. The tornado moved across Heritage Park Subdivision and the Carolina Lakes Golf Course. Three mobile homes were blown off their foundations and destroyed in and around Heritage Park. An additional two dozen homes sustained minor damage to siding, windows, and shingles. The Spout Springs Presbyterian Church was also partially destroyed. In all, 120 buildings had minor damage, 23 had major damage, and 11 were condemned; of those 11, nine were completely destroyed. Four people were reported injured, three

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								of which occurred in one of the mobile homes blown off its foundation.
Harnett	Anderson Creek	8/29/2004	F0	0	0	$0	$0	A tornado touched down near Anderson Creek, snapping down a couple of trees.
Harnett	Pineview	9/8/2004	F0	0	0	$0	$0	A tornado touched down briefly near Barbecue, removing the tops of a few trees.
Lee	White Hill	9/8/2004	F0	0	0	$0	$0	A tornado touched down along South Plank Road on the Moore/Lee County Line, damaging the roof of a home.
Moore	Vass	9/8/2004	F0	0	0	$0	$0	A tornado touched down briefly just northwest of Woodlake near Line Road.
Chatham	Pittsboro	9/17/2004	F0	0	0	$0	$0	A tornado touched down briefly on the west side of Pittsboro, blowing down several trees, which in turn knocked down several power lines.
Moore	Vass	9/17/2004	F0	0	0	$0	$0	A tornado touched down briefly near Vass, blowing down trees and snapping power poles.
Moore	Parkwood	9/27/2004	F0	0	0	$0	$0	A tree was blown down onto a mobile home.
Moore	Southern Pines	9/27/2004	F1	0	0	$0	$0	A tornado touched down at the Elks Golf Club just south of Southern Pines. Over 200 trees were snapped or uprooted at the golf course, a few large trees were blown down north of the golf course, and more were blown down onto homes in a neighborhood east of Broad Street and south of Morganton Road. A small shopping center on Broad Street sustained roof and wall failure, and damage was noted at a car dealership as well. The tornado lifted and touched down again at the Memorial Park Ball Diamonds, where F0 damage was noted. Partial roof damage occurred to several homes in a neighborhood along US Highway 1 and Massachusetts Avenue. Several large trees were blown onto houses between Glover and Carlisle

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								Streets in Pinehurst. The tornado weakened as it crossed the Plantation Golf Club, and as it crossed Midland Road, minor property damage occurred. The Mid-South Country Club lost about 250 trees, and the Midland Country Club sustained significant tree damage. Twelve cars in the Midland parking lot were destroyed. In all, the tornado damaged 121 buildings, eight of which were destroyed.
Harnett	Olivia	7/7/2005	F0	0	0	$0	$0	A tornado touched down in Swann near the Harnett-Lee County Line. Several trees were blown down and twisted, and a few shingles were blown off houses. The tornado lifted and touched down intermittently as it traveled northeast, causing minor tree damage. The tornado lifted after touching down a final time in Cokesbury.
Lee	Broadway	5/14/2006	F1	0	0	$0	$0	Storm survey found widespread tree damage beginning at the intersection of Dalrymple and Salem church road...continue northeast through a heavily wooded area...lifting just before Copeland Road. There was only minor structural damage.
Harnett	Lillington	9/14/2007	EF0	0	0	$0	$0	On the afternoon and evening of September 14th, tropical moisture streamed north ahead of the remnants of Humberto. The environment over Central North Carolina became supportive of tornado development as a surface boundary stalled across the area. The public reported a brief tornado touchdown in the River Bluff Development on South River Road. Numerous trees were blown down in the area. The tornado touched down again briefly at 620 pm just northeast of Lillington.
Johnston	Clayton	9/14/2007	EF0	0	0	$0	$0	A tornado touched down at Clayton Middle School on Guy Road. A second tornado touched down from the

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								same thunderstorm near the Jordan community. On the afternoon and evening of September 14th, tropical moisture streamed north ahead of the remnants of Humberto. The environment over Central North Carolina became supportive for tornado development as a surface boundary stalled across the area.
Johnston	Emit	9/14/2007	EF0	0	0	$0	$0	On the afternoon and evening of September 14th, tropical moisture streamed north ahead of the remnants of Humberto. The environment over Central North Carolina became supportive of tornado development as a surface boundary stalled across the area. There was a report of a brief tornado touchdown near the Jordan community.
Johnston	Benson	9/14/2007	EF0	0	0	$0	$0	On the afternoon and evening of September 14th, tropical moisture streamed north ahead of the remnants of Humberto. The environment over Central North Carolina became supportive of tornado development as a surface boundary stalled across the area. Law enforcement reported a tornado and multiple trees down on Stephenson Road.
Chatham	Crutchfield Crossroads	8/27/2008	EF0	0	0	$20,000	$0	A weak tornado initially touched down on Jesse Bridges Road between Smith Hudson Road and Rufus Brewer Road. Most of the damage occurred along Jesse Bridges Road, with very large trees blown down in different directions. There was considerable damage to an outbuilding, and in one case, a window screen was torn from a porch and placed on a weathervane on the roof of a home. Some homes had experienced peeling aluminum siding. Several downed trees were noted near the intersection of Rufus and Brewer and Silk Hope

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								Liberty Roads, and on Will Brown Road. The remnants of Hurricane Fay, which made landfall along the Louisiana coast, moved northeast across central North Carolina, producing several weak tornadoes along with significant flash flooding.
Johnston	Archer	8/27/2008	EF0	0	0	$0	$0	The remnants of Hurricane Fay, which made landfall along the Louisiana coast, moved northeast across central North Carolina, producing several weak tornadoes along with significant flash flooding. Local fire departments and law enforcement reported a brief tornado touchdown near the intersection of Covered Bridge Road and Thanksgiving Road. Multiple trees were snapped and uprooted in the highly wooded area.
Johnston	Brogden	11/15/2008	EF0	0	0	$75,000	$0	Two mini supercells tracked northeast along a warm front during the early morning hours of the 15th. The two supercells spawned several tornadoes in Sampson, Johnston, and Wilson counties, two of which resulted in two fatalities. The tornado initially touched down near Daughtry Road south of U.S. Highway 70, damaging several pine trees and causing minor roof damage. The tornado tracked northeast, crossing Crocker Road, where a car was smashed when a large carport collapsed. A travel trailer was overturned, and a nearby home suffered shingle and siding damage. The tornado crossed Creech's Mill Road, where a horse farm had one small barn destroyed. A 30-foot horse trailer was also blown over, and two large bay doors were blown in on the stables. The tornado proceeded northeast across Stevens Chapel Road and Country Store Road, damaging numerous trees and outbuildings along the

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								way. Finally, at one dwelling, the tornado broke a garage window and blew out a garage door.
Johnston	Peacocks Crossroads	11/15/2008	EF1	0	0	$30,000	$0	Two mini supercells tracked northeast along a warm front during the early morning hours of the 15th. The two supercells spawned several tornadoes in Sampson, Johnston, and Wilson counties, two of which resulted in two fatalities. The tornado initially touched down just off Noah Road, where it uprooted several trees. It traveled north-northwest across bare fields, taking down mature trees for approximately one-half of a mile. The tornado then crossed Wood Crossroads Road, where it produced significant roof damage to one double-wide mobile home and ripped the porch off a single-level brick home. The tornado then proceeded north-northwest across open fields before producing minor damage on Five Point Roads to an aluminum skirt of a double-wide mobile home and other minor damage to sheds and storage buildings.
Johnston	Kenly	11/15/2008	EF2	1	2	$500,000	$200,000	Two mini supercells tracked northeast along a warm front during the early morning hours of the 15th. The two supercells spawned several tornadoes in Samspon, Johnston, and Wilson counties, two of which resulted in two fatalities. The tornado initially touched down just north of Piney Grove Church Road, and damage was limited to minor trees and structural damage. The tornado then tracked northeast, over bare fields and stands of mature trees for approximately three-quarters of a mile, twisting off mature trees, before producing significant damage at the intersection of NC Hwy 222 and Crumpler Road. The strongest evidence of EF-2 damage was at this

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								intersection, where a well-constructed single-level brick home was destroyed. The entire roof was blown off this home, and a large pine tree fell through the kitchen. All of the walls on the west side of the house were missing. In addition, one vehicle was flipped upside down and another, with an attached trailer, was moved approximately 30 feet down the homeï¿½ï¿½ï¿½s driveway. The family of 4 was awakened as the damage occurred, but by great fortune, no one sustained any injury. As the tornado crossed Scott Road, a double-wide mobile home was removed from its foundation and flipped approximately 50 feet. A 61-year-old female occupant of this mobile home was killed, while her husband was transported to a medical facility. In addition, three other double-wide mobile homes were condemned as they sustained significant structural damage to roofs and southwest-facing exterior walls. A pickup truck was completely overturned in one of the driveways. Continuing northeast, the tornado moved across Kenly International Airport. The tornado was likely aloft at this point, producing EF-1 damage to trees, but there was considerable debris from the homes on Scott Road strewn about the airport grounds. A portion of an open aircraft hangar constructed of sheet tin over a wooden frame was twisted and destroyed. There was also some damage to the Cessna 150 housed in this hangar. The tornado then crossed into southwest Wilson County, causing damage to several mobile homes along Fabwhitley Road. Several other homes in the Lucama area suffered minor damage from the strong winds. The

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								tornado finally lifted off the ground just north of Newsom Mill Road near a local racetrack.
Johnston	Parkers Mill	3/27/2009	EF0	0	0	$0	$50,000	Low-topped tornadic supercells developed along a stationary front located across the coastal plain region of North Carolina. The storms intensified as a shortwave trough moved northeast across the area, producing EF-1 damage in Cumberland County. Five houses on OBJ Road sustained minor damage ranging from shingle damage, damaged garage doors to blown-out windows.
Johnston	Coats Crossroads	3/27/2009	EF0	0	0	$0	$15,000	Low-topped tornadic supercells developed along a stationary front located across the coastal plain region of North Carolina. The storms intensified as a shortwave trough moved northeast across the area, producing EF-1 damage in Cumberland County. Numerous trees were blown down and snapped in a wooded area behind an open field.
Johnston	Micro	5/5/2009	EF0	0	0	$28,000	$0	Two tornadic supercells developed along a stalled warm front that extended across the southern piedmont and coastal plain of North Carolina. The cells produced four tornadoes in Johnston, Nash, and Wilson counties. An EF-0 tornado touched down on 2550 NC Highway 39. The tornado damaged the roofs of four buildings and blew a boat into a car, causing moderate damage.
Johnston	Emit	5/5/2009	EF1	0	0	$200,000	$0	Two tornadic supercells developed along a stalled warm front that extended across the southern piedmont and coastal plain of North Carolina. The cells produced four tornadoes in Johnston, Nash, and Wilson counties. An EF-1 tornado touched down initially just to the west of NC Highway 96 in a wooded area. The tornado crossed NC Highway 96

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								and produced significant damage to several homes along and east of NC Highway 96. The homes sustained exterior and roof damage, with uprooted or snapped tree damage consistent with EF-1 damage. The tornado proceeds to cross NC Highway 39. Several homes between Antioch Church Road and NC Highway 42 sustained damaged. The tornado continued to track east-northeast, causing shingle roof damage to the Antioch Fire Station and a nearby home. A mobile home near the fire department also sustained shingle and siding damage. The tornado then continued to track northeast across Barnes Lake Road and NC Highway 222, where it caused significant tree damage and some minor roof or shingle damage to surrounding homes or mobile homes. The tornado then |exited the county, crossing over into southwest Nash County.
Chatham	Brickhaven	4/16/2011	EF0	0	0	$75,000	$0	The tornado exited Lee County and moved into extreme southeastern Chatham County, just south and east of Harris Lake. Only two homes sustained damage, with moderate|to major roof damage to one of the homes, when a tree crashed through it. A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								produce nine tornadoes in the Raleigh CWA, including 2 EF3s and 4 EF2s. The tornadoes left eight dead with approximately 275 injuries.
Harnett	Erwin Airport	4/16/2011	EF2	1	24	$16,000,000	$0	A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to produce nine tornadoes in the Raleigh CWA, including 2 EF3s and 4 EF2s. The tornadoes left eight dead with approximately 275 injuries. The tornado exited Cumberland County and entered Harnett County just south of Dunn. EF1 damage was common in the Dunn area, with areas of EF2 damage with wind speeds up to 130 mph. Mobile homes were completely wiped off their foundations, and trees were debarked. A second fatality occurred here when a 42-year-old Hispanic male died from injuries suffered from the tornado. The victimï¿½ï¿½ï¿½s body was found lying on a concrete slab, thrown from a mobile home that was destroyed. Several other residents in the mobile home park were injured, including one who was ejected from a trailer and impaled with an object, with another person trapped underneath debris. In total, 200 homes and businesses were damaged, with 40 homes destroyed and another 40 homes suffering major damage.

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
Johnston	Pine Level	4/16/2011	EF1	0	0	$0	$0	A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to produce nine tornadoes in the Raleigh CWA, including 2 EF3s and 4 EF2s. The tornadoes left eight dead with approximately 275 injuries. A tornado touched down near Pine Level, just south of Highway 70, and tracked northeast towards Micro in the vicinity of Highway 301. The tornado lifted just southwest of Kenly. Numerous trees were snapped in half or uprooted, resulting in downed powerlines and damage to homes and businesses. Peak winds were estimated at 90 mph.
Johnston	Benson	4/16/2011	EF2	0	67	$25,000,000	$0	A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to produce nine tornadoes in the Raleigh CWA, including 2 EF3s and 4 EF2s. The tornadoes left eight

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								dead with approximately 275 injuries. The tornado exited Harnett County and continued northeast into southern Johnston County. The tornado tracked south of Benson, where it crossed NC Highway 242 and NC Highway 50. Several modular homes were destroyed, and numerous other homes sustained major damage. There were also hundreds of trees that were uprooted or snapped in half. The tornado subsequently crossed Interstate 40 near mile Marker 330 and continued moving northeast to just south of Four Oaks before crossing Interstate 95 near mile marker 90. The tornado lifted just before reaching Smithfield, where little or no damage was observed. Throughout this part of the track, there was a broad swath of EF0 damage with embedded areas of EF1 and EF2 damage. In total, 450 homes were damaged, of which 287 homes were completely destroyed.
Lee	White Hill	4/16/2011	EF3	2	36	$57,000,000	$0	A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to produce nine tornadoes in the Raleigh CWA, including 2 EF3s and 4 EF2s. The tornadoes left eight dead with approximately 275 injuries. The tornado exited Moore County and proceeded to strengthen to

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								an EF1 as it moved into Lee County along Wildlife Road. The tornado blew a single-wide trailer off its foundation, while also damaging the home next door. The tornado continued to intensify to EF3 intensity along Lemon Springs Road, striking the St. Andrews Subdivision. One fatality occurred when a tree fell onto a vehicle along Lemon Springs Road, crushing the driver. Numerous homes were completely destroyed, and several two-story homes had their upper floors removed. Wind speeds were estimated at 140 mph with a path length of over one-quarter mile. Additional homes were blown off their foundations on Cemetery Drive. The tornado continued to produce major damage as it moved east along Cameron Drive. The upper floor was blown off two apartment buildings. The tornado then entered an industrial complex along Industrial Drive, where multiple steel-constructed retail buildings were destroyed, in addition to 3 large warehouses at the static control facility. Winds in this area likely exceeded 160 mph. The tornado then destroyed the Tractor Supply Company, Big Lots, and the Lowes Home Improvement Store along Highway 421. Winds in this area were estimated to be around 140 mph. Two homes were blown off their foundations along Rice Road, north of NC Highway 42. Another fatality occurred along Poplar Spring Church Road when a mobile home was lifted off the ground and then thrown into the woods and destroyed. In total, 457 homes were damaged, with 116 homes being destroyed. Seventeen businesses were damaged as well. The tornado continued northeast along Avent

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								Ferry Road, crossing into Chatham County, just east of Harris Lake.
Moore	Cameron	4/16/2011	EF0	0	0	$0	$0	A strong storm system that had a history of producing deadly tornadoes across Oklahoma and the Deep South on the 14th and 15th weakened as it crossed the southern Appalachians during the early morning hours of the 16th. A squall line descended the Blue Ridge by the late morning hours, and rapidly intensified |as it moved east into the central Piedmont of North Carolina, with four long-lived tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to produce nine tornadoes in the Raleigh CWA, including 2 EF3s, and 4 EF2s. The tornadoes left eight dead with approximately 275 injuries. A tornado touched down in northeastern Moore County, west of Cameron, near the |intersection of Red Hill Road and Gilchrist Road. The initial tornado touchdown intensity was EF0 with only minor damage reported to a few homes, consisting mainly of shingle damage.
Moore	Midtown	9/6/2011	EF0	0	0	$10,000	$0	As the remnants of Tropical Storm Lee tracked along a frontal zone that extended from the southern Appalachians into central Virginia, heavy rain and severe storms spread into central North Carolina. The initial severe weather threat, during the early morning hours, was tornadoes due to the highly sheared environment associated with the former tropical cyclone. As the day progressed, and the remnant low of Lee continued to weaken, the severe weather threat transitioned to straight-line winds, as instability increased with the heating of the day. The National Weather Service in Raleigh, NC, has confirmed an

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								EF0 tornado with maximum winds of 80 mph near Pinehurst in Moore County, North Carolina, on September 6, 2011. The damage was mainly confined to several clusters of trees along a narrow path that was 1.3 miles in length in the country club of the North Carolina Golf Resort. At least two homes had fallen trees on them, but damage to the homes was minimal. At least two homes experienced extensive debris across the property, including a small boat that was lifted out of a nearby pond and tossed up onto the property. Monetary damage was estimated.
Johnston	Micro	2/26/2013	EF0	0	0	$45,000	$0	An isolated EF-0 tornado coincident with a triple point low and in the warm sector east of a wedge front boundary produced minor damage near Selma in Johnston County. At approximately 818 pm EST, a weak tornado touched down near the 2700 block of Old Beulah Road, 4 miles northeast of Selma. The first visible damage was to the metal sheeting on the roof of an outbuilding. The tornado continued a couple of hundred yards before causing significant damage to a two-story barn. The preexisting barn structure was over 40 years old, and while the foundation was attached, most of the structure was settled onto concrete blocks with an open crawl space underneath. The tornado blew off the roof of the barn. Two of the side walls were also blown out, leaving two walls intact. Across the street, a single-family mobile home suffered minor damage to shingles and vinyl siding. An adjacent carport also had minor roof damage. The tornado continued another couple of hundred yards, where one final

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								sheet metal building sustained minor roof damage.||There were no injuries or fatalities to report.
Lee	Cumnock	6/27/2015	EF1	0	0	$25,000	$0	Scattered thunderstorms developed as an unseasonably strong mid-level trough approached the region. With a prefrontal trough serving as a low-level focus and a very moist and unstable air mass in place, many of the storms became severe, producing wind damage. In addition, a brief tornado spun up in Lee County. An NWS Raleigh survey team found that the tornado touched down on the east bank of the Deep River. Hardwood and softwood tree damage indicated wind speeds of 105 mph. The tornado then tracked east and resulted in damage to a home. The damage consisted of roof and shingle damage, siding damage, garden damage, windows blown out of a van, and a trampoline that was mangled and blown 130 yards downstream. Maximum winds at this location were estimated to be 90 mph. The tornado then lifted, but while doing so, it resulted in several trees being blown down along Rosser Road near Cotten Road.
Harnett	Mamers	4/12/2019	EF0	0	0	$10,000	$0	Enhanced southerly flow advected warm, moist air into the region ahead of a diving shortwave trough and attendant cold front. This resulted in sufficient moisture, strong shear, and marginal instability to produce a line of showers and strong thunderstorms. These storms produced scattered wind damage, localized flash flooding, and a brief tornado as they moved through central North Carolina. An EF0 tornado touched down just south of Raven Rock State Park, crossed Hicks Road, and moved north-northeast through the park. The tornado then crossed

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								the Cape Fear River, exited the park, and lifted just before reaching Cokesbury Road. The tornado remained on the ground for approximately 4 minutes and traveled 4.9 miles. This tornado produced minor intermittent tree damage in the form of uprooted and snapped hardwood trees.
Chatham	Siler City	4/19/2019	EF1	0	0	$100,000	$0	A tornado briefly touched down in the Siler City area. Damage consisted of numerous snapped and uprooted trees, downed power poles and power lines, and damage to the roof covering of several homes. Monetary damages were estimated. A deepening upper-level trough, which featured a strong polar jet ejecting northeast atop an eastward advancing cold front, brought severe thunderstorms that produced|7 tornadoes and widespread damaging straight-line winds across central NC. The strongest tornado of the day in North Carolina formed in southwestern Orange County and reached EF-2 strength as it neared Hillsborough. Along its path, estimated at 12 miles long and a maximum of 600 yards wide, the roof and exterior walls of one home were reported as completely destroyed.
Johnston	Timothy	4/19/2019	EF1	0	0	$400,000	$0	A deepening upper-level trough, which featured a strong polar jet ejecting northeast atop an eastward advancing cold front, brought severe thunderstorms that produced|7 tornadoes and widespread damaging straight-line winds across central NC. The strongest tornado of the day in North Carolina formed in southwestern Orange County and reached EF-2 strength as it neared Hillsborough. Along its path, estimated at 12 miles long and a maximum of 600 yards wide, the roof and exterior walls of one home

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								were reported as completely destroyed. This is a continuation of the Spivey's Corner tornado. The tornado oscillated up and down for about 8 miles, resulting in minor tree damage when it briefly touched down. The tornado finally touched down one last time in the Meadow area of southern Johnston County, where it did considerable roof and window damage to two homes, snapped and uprooted numerous trees, and blew over several grain silos.
Moore	Howard Mill	4/19/2019	EF1	0	0	$200,000	$0	A deepening upper-level trough, which featured a strong polar jet ejecting northeast atop an eastward advancing cold front, brought severe thunderstorms that produced|7 tornadoes and widespread damaging straight-line winds across central NC. The strongest tornado of the day in North Carolina formed in southwestern Orange County and reached EF-2 strength as it neared Hillsborough. Along its path, estimated at 12 miles long and a maximum of 600 yards wide, the roof and exterior walls of one home were reported as completely destroyed. A tornado briefly touched down in the Robbins area of northwest Moore County. Damage consisted of numerous snapped and uprooted trees and subsequent damage to the roofs of several homes that the trees fell on. Based on the damage to the trees, this tornado was rated an EF-1 with maximum wind speeds of 90 to 100 mph.
Johnston	Drug Store	7/23/2019	EF1	0	0	$0	$0	A cold front overtook a preceding outflow boundary and pre-frontal surface trough that was in place across central NC. Convection along the southward-moving cold front organized into a QLCS as it intercepted the axis of strong diabatic heating and

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								instability south of the front. Along with swaths of wind damage, two weak, short-lived tornadoes developed along the line. A brief tornado touched down in the Cleveland area, near the intersection of Cornwallis Road and Justin Drive, and lifted near the intersection of Goldfield Drive and Justin Drive. Damage observed included minor shingles on several homes, numerous softwood trees snapped, and lawn furniture tossed a substantial distance. Damage indicators were consistent with maximum wind speeds of 85 to 90 mph.
Johnston	Smithfield	9/5/2019	EF0	0	0	$50,000	$0	Hurricane Dorian moved north and northeastward near and along the coast of North Carolina on September 5th and 6th, with Dorian making landfall along the Outer Banks of North Carolina during the morning of September 6th. Meanwhile, heavy rain and strong damaging winds spread inland and across eastern central North Carolina. Heavy rainfall of 3 to 7 inches produced flash flooding across portions of the Coastal Plain of central North Carolina, generally along and east of the Interstate 95 corridor. Strong damaging winds of 35 to 55 mph spread inland across the Coastal Plain and eastern Sandhills of central North Carolina. This resulted in numerous power outages and trees down in these locations. Several weak tornadoes occurred during the afternoon of September 5th as multiple rain bands shifted eastward and into central North Carolina during peak heating. A weak EF-0 tornado very briefly touched down in Smithfield. Damage consisted of |at least one very large Oak tree that was uprooted and blown down |onto a home. In addition, numerous

County	Location	Date	F-Scale Mag.	Deaths	Injuries	Property Damage	Crop Damage	Event Narrative
								other large tree branches and |several smaller trees were snapped and uprooted. This tornado |occurred in an outer rain band associated with Hurricane Dorian.
Harnett	Buies Creek	1/3/2022	EF0	0	0	$100,000	$0	A strong upper-level low moved from the Midwest into the Mid Atlantic from January 2nd into the 3rd. Strong storms to isolated severe storms preceded the arrival of the low, along with a broad area of 2 to 4 inches of rain along the United States Highway 1 corridor, producing flooding around the Triangle region of central North Carolina. Strong, sustained gradient winds were felt over much of the area, with numerous gusts of 35 to 50 miles per hour. As the law moved through the area, rain mixed with and changed to snow, with several inches of snow reported across portions of the northwest and far northern Piedmont. An EF-0 tornado briefly touched down two miles southwest of Coats, North Carolina. It was on the ground for about two minutes before dissipating. The tornado resulted in roof, window, and siding damage to several homes. In addition, about a dozen trees were either snapped or uprooted, at least two fences were blown over, and at least two |outbuildings or sheds were destroyed or rolled over.

According to the information provided in the preceding table, 81 recorded instances of tornadoes have affected the planning area since 1950, causing an estimated $107,128,250 in property damage, $215,000 in crop damage, four death(s), and 154 injury(ies). The highest magnitude tornado on record is EF3. The lowest magnitude tornado on record is an EF0

Table 5-32 provides a summary of this historical information by participating jurisdiction. It is important to note that many of the events attributed to the county are countywide or cover large portions of the county. The individual counts by jurisdiction are for those events that are only attributed to that one jurisdiction.

5.7.5 Probability of Future Occurrences

The NRI uses the NWS SPC Severe Weather Database to evaluate tornado risk in the planning area. The period of record for the data set is from 1950 to 2019, with EF-2, 3, 4, and 5 tornadoes recorded before 1986, and EF-0, EF-1, and EF-2 tornadoes recorded from 1986 to 2019. All counties in the planning area have a Relatively High EAL Score and a Relatively High average hazard risk index rating.

***Table 5-33**: NRI Tornado Annualized Frequency, EAL total, EAL score, and Hazard Risk Index Score.*

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Chatham County	**0.02**	**$2,683,077.39**	**68.61**	**Relatively High**	**68.01**	**Relatively High**
Goldston	0.05	$203,197.17	78.94	Relatively High	80.94	Very High
Pittsboro	0.01	$329,372.48	63.76	Relatively High	61.16	Relatively High
Siler City	0.01	$432,832.84	69.66	Relatively High	78.75	Relatively High
Area outside Jurisdictional Boundaries	0.02	$1,717,674.90	68.70	Relatively High	65.95	Relatively High
Harnett County	**0.01**	**$5,558,188.52**	**75.81**	**Relatively High**	**79.29**	**Relatively High**
Angier	0.00	$450,072.67	64.49	Relatively High	68.84	Relatively High
Coats	0.02	$425,839.37	79.84	Relatively High	85.18	Very High
Dunn	0.01	$921,138.30	81.73	Very High	89.77	Very High
Erwin	0.01	$877,568.75	80.43	Very High	85.79	Very High
Lillington	0.01	$1,254,821.38	70.88	Relatively High	72.21	Relatively High
Area outside Jurisdictional Boundaries	0.01	$1,921,380.70	80.01	Very High	82.50	Very High
Johnston County	**0.01**	**$9,483,297.85**	**73.34**	**Relatively High**	**73.83**	**Relatively High**

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Archer Lodge	0.01	$1,438,583.74	82.61	Very High	77.27	Relatively High
Benson	0.01	$717,246.45	74.24	Relatively High	78.35	Relatively High
Clayton	0.00	$2,902,638.81	77.93	Relatively High	75.49	Relatively High
Four Oaks	0.01	$511,985.76	66.94	Relatively High	71.26	Relatively High
Kenly	0.01	$244,132.74	66.25	Relatively High	69.81	Relatively High
Micro	0.01	$382,331.50	66.80	Relatively High	72.51	Relatively High
Pine Level	0.02	$403,042.28	78.69	Relatively High	84.64	Very High
Princeton	0.02	$303,783.74	70.54	Relatively High	72.32	Relatively High
Selma	0.01	$1,464,362.66	77.47	Relatively High	83.58	Very High
Smithfield	0.01	$1,214,009.76	73.96	Relatively High	80.97	Very High
Wilson's Mill	0.01	$963,980.12	80.16	Very High	82.38	Very High
Area outside Jurisdictional Boundaries	0.01	$2,639,916.15	71.25	Relatively High	68.45	Relatively High
Lee County	**0.01**	**$2,850,117.69**	**73.93**	**Relatively High**	**77.79**	**Relatively High**
Broadway	0.02	$323,417.91	72.65	Relatively High	77.03	Relatively High
Sanford	0.01	$2,504,221.20	73.89	Relatively High	77.50	Relatively High
Areas Outside Jurisdictional Boundaries	0.01	$345,896.48	74.28	Relatively High	79.82	Relatively High
Moore County	**0.01**	**$4,757,989.84**	**71.91**	**Relatively High**	**70.36**	**Relatively High**
Aberdeen	0.01	$1,332,061.28	71.84	Relatively High	70.10	Relatively High
Cameron	0.02	$148,600.77	70.91	Relatively High	72.32	Relatively High
Carthage	0.01	$1,123,655.53	72.56	Relatively High	72.79	Relatively High
Foxfire Village	0.01	$535,418.43	74.36	Relatively High	71.47	Relatively High
Pinebluff	0.01	$383,825.46	77.28	Relatively High	78.58	Relatively High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Pinehurst	0.01	$1,949,846.01	76.98	Relatively High	76.01	Relatively High
Robbins	0.03	$517,739.33	73.85	Relatively High	77.88	Relatively High
Southern Pines	0.00	$1,915,852.22	75.59	Relatively High	74.19	Relatively High
Taylortown	0.01	$388,565.32	77.78	Relatively High	77.31	Relatively High
Vass	0.02	$203,966.39	79.06	Relatively High	83.23	Very High
Whispering Pines	0.01	$258,714.94	85.55	Very High	75.36	Relatively High
Areas Outside Jurisdictional Boundaries	0.01	$417,505.11	61.01	Relatively High	55.17	Relatively Moderate

5.7.6 Impact

5.7.6.1 People

The onset of tornado events is rapid, giving those in danger little time to seek shelter. According to NOAA, the current average lead time is 13 minutes. Injury may result from direct tornado impact or from later exposure to debris and entering damaged buildings. A study of injuries after a tornado in Marion, Illinois, found that 50% of tornado-related injuries occurred during rescue attempts, cleanup, and other post-tornado activities. Common causes of injury included falling objects and heavy, rolling objects. Because tornadoes often damage power lines, gas lines, or electrical systems, there is a risk of fire, electrocution, or an explosion.

- Tornadoes may disproportionately impact those who live in mobile homes (13% in Chatham County, 18.5% in Harnett County, 14% in Johnston County, 14.3% in Lee County, and 11% in Moore County) or a RV, Boat, or Van (0.1% in Chatham County, 0.1% in Harnett County, 0.1% in Johnston County, 0.2% in Lee County, and 0.1% in Moore County)[82]. These housing units are more likely to be significantly damaged by a tornado or tornado debris than traditionally constructed homes due to the lack of anchoring or limited anchoring to a foundation, which makes them more susceptible to being lifted or rolled by strong winds associated with tornadoes. They are also built with lighter materials for mobility, which means they are less able to withstand high winds and generally do not meet the same building codes as traditionally constructed homes. According to NOAA and FEMA, 54% of tornado fatalities are in mobile homes, and you

[82] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

are 15 to 20 times more likely to be killed in a mobile home than a traditionally constructed home during a tornado[83].

- The ability to shelter in the event of a tornado is critical, so it is important that residents in the planning area can receive emergency alerts through reverse 911 systems or over the internet. In the planning area it is estimated that 5% of housing units in Chatham County, 6.1% in Harnett County, 3.2% in Johnston County, 5.1% in Lee County, and 5.3% in Moore County do not have access to a computing device and 13.2% of housing units in Chatham County, 16.3% in Harnett County, 13.7% in Johnston County, 23.8% in Lee County, and 10.2% in Moore County in 2023 do not have an internet subscription[84]. Additionally, some housing units in the planning area lack telephone service (0.5% of housing units in Chatham County, 0.8% in Harnett County, 1.1% in Johnston County, 0.9% in Lee County, and 0.9% in Moore County)[85]. The NWS reported an average of 10.52 minutes lead time between 2006 and 2024,[86] which means it is critical that residents in the planning area receive emergency alerts in a timely manner to reach a storm shelter.
- For residents that live in a housing unit that is more vulnerable to tornado related damages, such as mobile homes and RVs, it is important that there is a vehicle available to travel to shelter locations in the event of a tornado and is a significant vulnerability for residents who do not have a vehicle in their housing unit (2.9% in Chatham County, 3.8% in Harnett County, 3.8% in Johnston County, 4.3% in Lee County, and 4.1% in Moore County[87]). Additionally, individuals in the planning area who have a disability (11.8% in Chatham County, 15.5% in Harnett County, 13% in Johnston County, 17.7% in Lee County, and 14% in Moore County) and individuals with an independent living difficulty (4.8% in Chatham County, 6.4% in Harnett County, 5.1% in Johnston County, 6.4% in Lee County, and 5.9% in Moore County) may require extra assistance to get to shelter during a tornado event. [88] It is important that residents in the planning area prepare for tornado events and have a plan to adequately shelter or get to a storm shelter.

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[83] NOAA's National Weather Service. (n.d.-g). Severe Weather Awareness Week--Mobile Home Safety. https://www.weather.gov/shv/awarenessweek_severe_mobilehomes

[84] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[85] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[86] National Oceanic and Atmospheric Association [NOAA] & National Weather Service [NWS]. (n.d.). Severe weather warnings for tornadoes: Storm based lead time (minutes) (By U.S. Department of Commerce). Retrieved July 28, 2025, from https://performance.commerce.gov/KPI-NOAA/NOAA-Severe-weather-warnings-for-tornadoes-Storm-b/ysdv-8h2r

[87] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[88] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810

- To prepare residents in the planning area for tornado events, the following mitigation actions should be considered:
  - Conduct a survey to determine which residents would require assistance to reach an adequate shelter in the event of a tornado, so that emergency services know where vulnerable residents are who would potentially need assistance to reach a tornado shelter.
  - Ensure that all residents in the planning area have at least one method of receiving emergency alerts in the event of a tornado, which would include reverse 911, SMS text message alerts, or internet-based alerts.
  - Educate residents about the importance of having a plan to remain safe during tornado events, including how to develop a plan to shelter in place or to reach an adequate storm shelter.

5.7.6.2 Changes in Development or Housing Characteristics

The weakest tornadoes, EF0, can cause minor roof damage, and strong tornadoes can destroy frame buildings and even badly damage steel-reinforced concrete structures. Most building codes in the United States do not include provisions that protect against tornadic winds. Given the strength of wind impacts and construction techniques, buildings are vulnerable to direct impact, including potential destruction, from tornadoes and from wind debris that tornadoes turn into missiles. All jurisdictions in the Region are vulnerable to building damage. Mobile homes are particularly susceptible to damage and fatalities during tornadoes. Harnett and Lee County have more manufactured housing than other counties in the Region.

All counties in the planning area have experienced an increase in housing units between 2013 and 2023, with Chatham County up 20.8%, Harnett County up 14.08%, Johnston County up 29.87%, Lee County up 11.35%, Moore County up 11.92%, and the planning area up 19.3% overall. This means that more housing units are located in the planning area that tornadoes could impact. It is important that emergency management prepare and educate homeowners about tornado impacts and risks, including how to prepare for and reduce their impacts.

5.7.6.3 Economy

The largest impact of tornadoes is the economic damage caused by widespread destruction along their paths. More directly, there are many people killed by these storms, and to a lesser extent, pets and farm animals. The major damage is the destruction of homes, buildings, and farms, the wrecking of cars and trucks, and the loss of power distribution systems. Winds as high as 300 mph blow down walls, tear up trees, and throw debris in every direction at high speeds. Indirect losses include workers who cannot report to jobs and commercial entities that are most close to repair damages.

5.7.6.4 Natural Environment

There is no defense for plants and animals from a direct impact from a tornado. Plants and animals in the path of the tornado will receive significant damage or be killed. Strong tornadoes can shred trees and lift grass from the ground.

5.7.6.5 First Responders

Due to the rapid onset of tornado events, first responders could be critically affected by tornado events through direct impact of the tornado itself or injury received during response efforts. Response may be hindered if responders are unable to reach those affected by the storm, either because storm conditions persist or because they are unable to safely enter affected areas. As mentioned above, a large percentage of tornado-related injuries occur during rescue attempts, cleanup, and other post-tornado activities, often due to walking through debris and entering damaged buildings.

5.7.6.6 Future Conditions

Under future conditions, the frequency, intensity, and resulting impacts of tornadoes in the Cape Fear region may shift due to changes in atmospheric patterns that influence storm development. Warmer temperatures and increased atmospheric moisture could enhance the energy available for severe thunderstorms, potentially leading to more intense tornadoes. However, some models suggest that while individual tornadoes may become more severe, their overall frequency may not necessarily increase and could even decrease in certain areas. The resulting impacts may also intensify as development expands into vulnerable areas, increasing exposure and potential damage from high-wind events.

5.8 Winter Storm

5.8.1 Hazard Description and Background

A winter storm can range from a moderate snowfall over a few hours to blizzard conditions with blinding, wind-driven snow lasting 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 damage, such as roof collapses on older buildings.

All winter storm events have the potential to create dangerous conditions in affected areas. Heavy snowfall poses a greater risk, reducing visibility due to blowing snow and making driving conditions treacherous. The National Weather Service defines a heavy snow event as an accumulation of four or more inches in 12 hours or less. A blizzard is the most severe form of winter storm. It combines low temperatures, heavy snow, and winds of 35 miles per hour or more, which reduces visibility to a quarter mile or less for at least three 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.

Significant amounts of freezing rain are characteristic of ice storms and result from 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 can 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, etc. – have the potential to cause significant hazards to a community. Even small accumulations can bring down power lines and tree limbs, creating hazardous driving conditions. Furthermore, communication and power may be disrupted for days.

5.8.2 Location and Spatial Extent

Nearly the entire continental United States is susceptible to winter storms 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 Cape Fear Region is accustomed to severe winter weather and often experiences it during the winter months. Given the atmospheric nature of the hazard, the entire region has uniform exposure to a winter storm.

The NRI reports on risk data for winter storm events, which include precipitation such as snow, sleet, or freezing rain and are generated from the NWS Winter Weather Alerts compiled by Iowa State University's Iowa Environmental Mesonet. These include the alert area and attributes for the winter weather events, which range from 2005 to 2017. The NRI also reports on Ice Storms,

which include freezing rain events with significant ice accumulations of 0.25 inches or greater and are reported from historical events from the USACE Cold Regions Research Engineering Laboratory Damaging Ice Storm GIS, where ice-damaged ice-sensitive structures between 1946 to 2014. To best represent the hazards related to winter storms in the planning area, the following maps re3present the Ice Storm events, and Winter Storm events as defined by the NRI and the EAL by census tract. The maps also have housing density, referenced from the Southern Wildfire Risk Assessment Portal data set[89] and based on the 2020 US Census data to represent houses per Km^2 in the regional overview. This is to provide an understanding of spatial risk distribution in the planning area and how it might relate to the distribution of housing.

[89] Pyrologix. (2023d). Housing Density [Dataset]. In Southern Wildfire Risk Assessment Portal, Southern Wildfire Risk Assessment Portal. Southern Wildfire Risk Assessment.

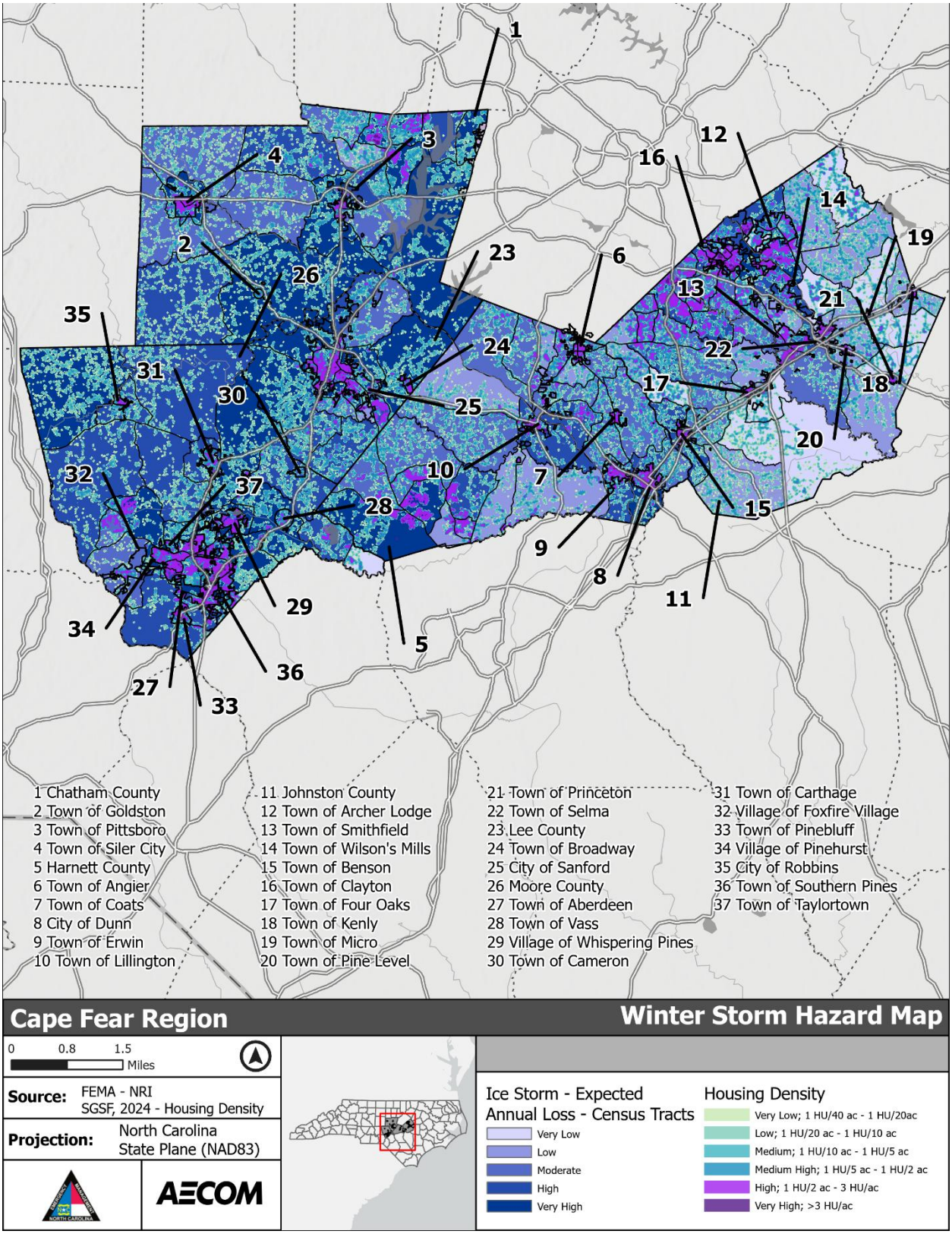


***Figure 5-149**: Ice Storm Hazard Area – Cape Fear Region*

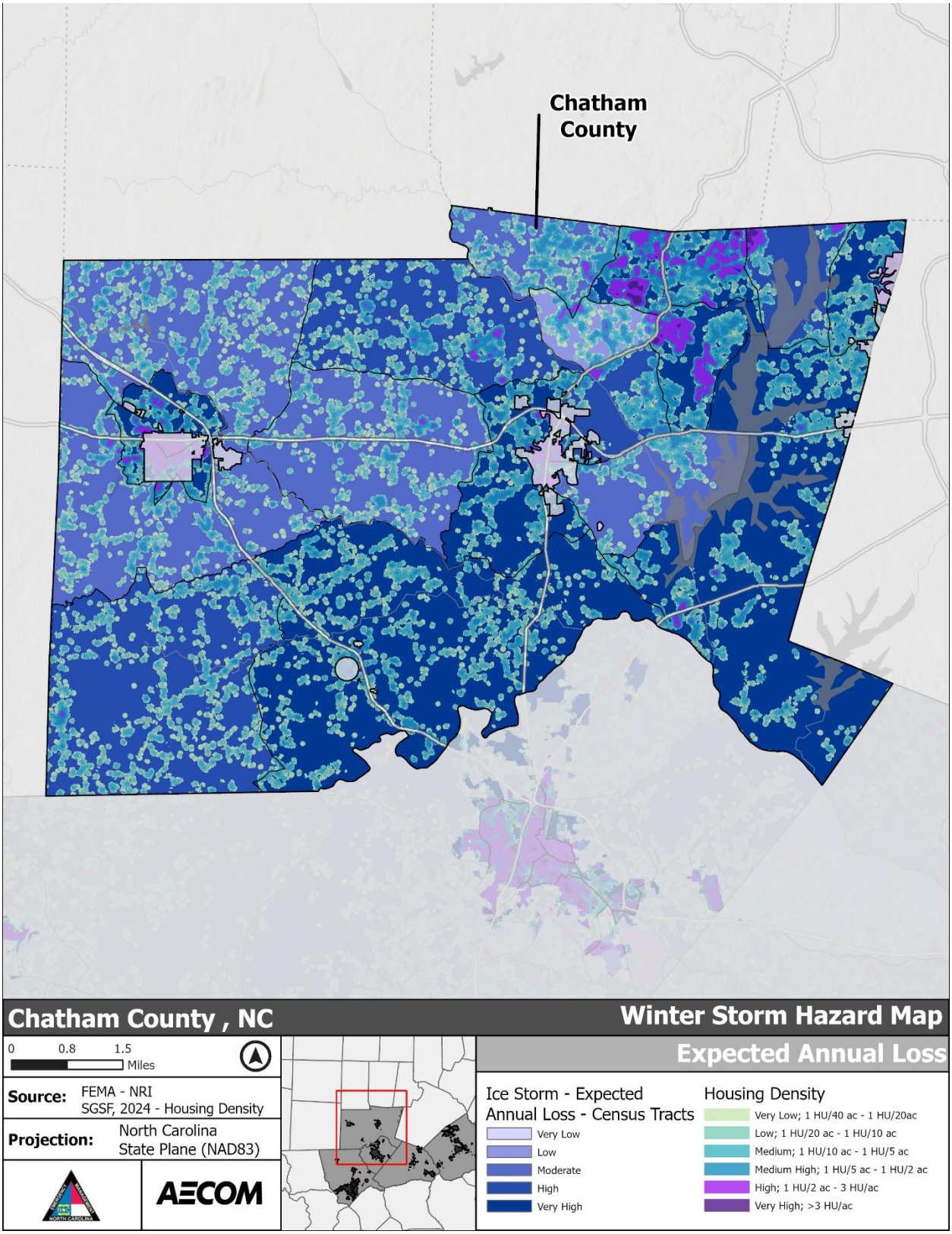


***Figure 5-150**: Ice Storm Hazard Area - Chatham County*

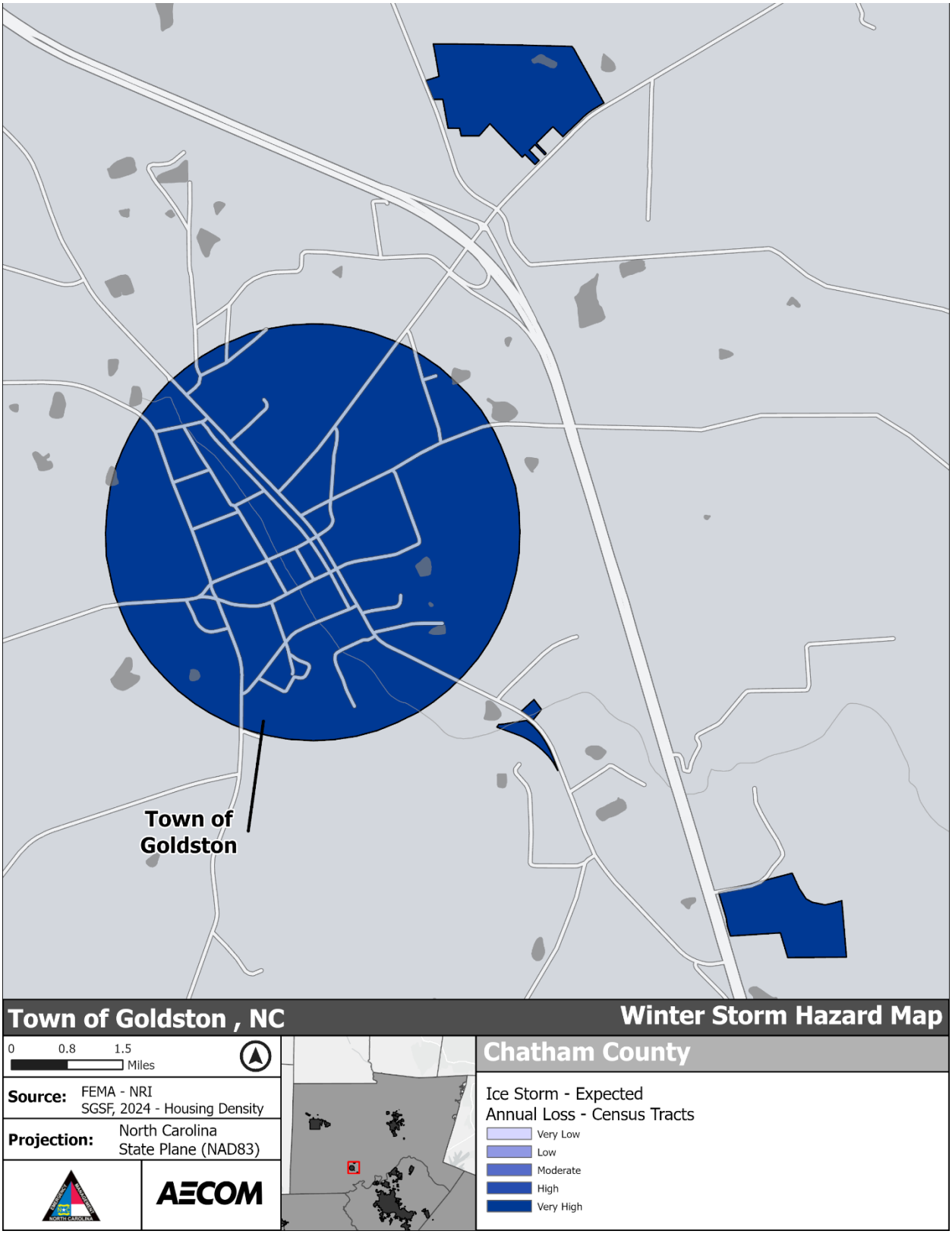


***Figure 5-151**: Ice Storm Hazard Area – Town of Goldston*

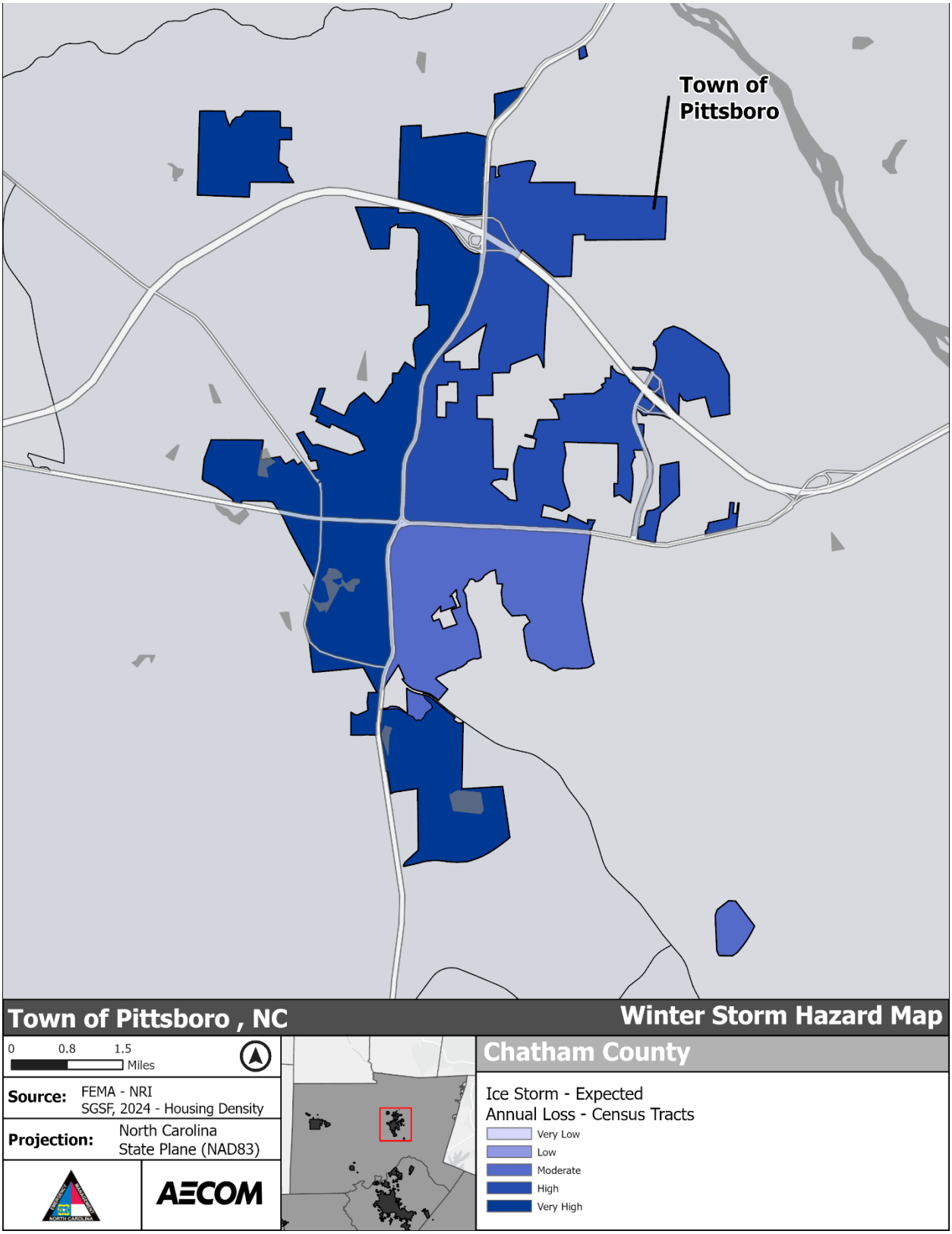


***Figure 5-152**: Ice Storm Hazard Area – Town of Pittsboro*

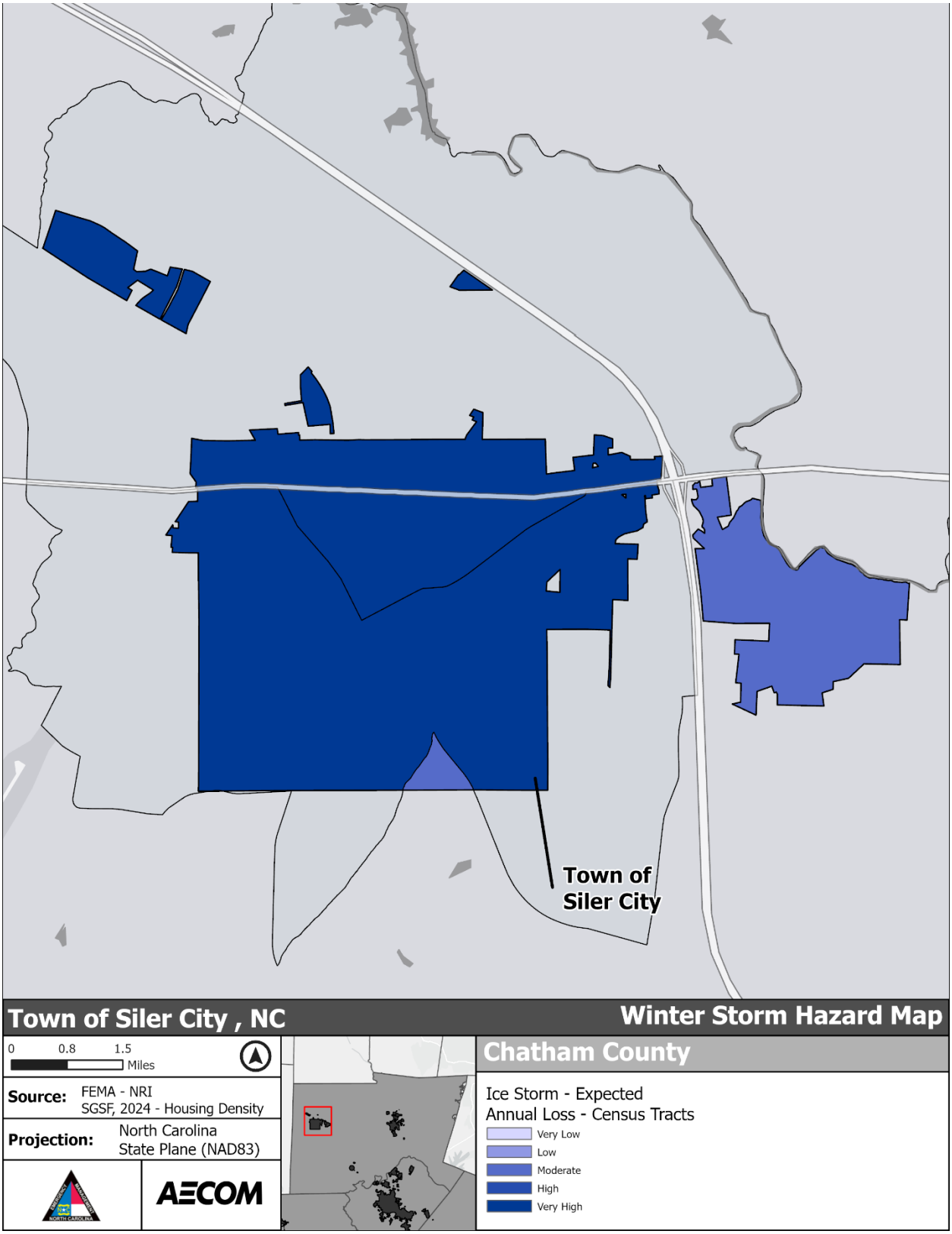


***Figure 5-153**: Ice Storm Hazard Area – Town of Siler City*

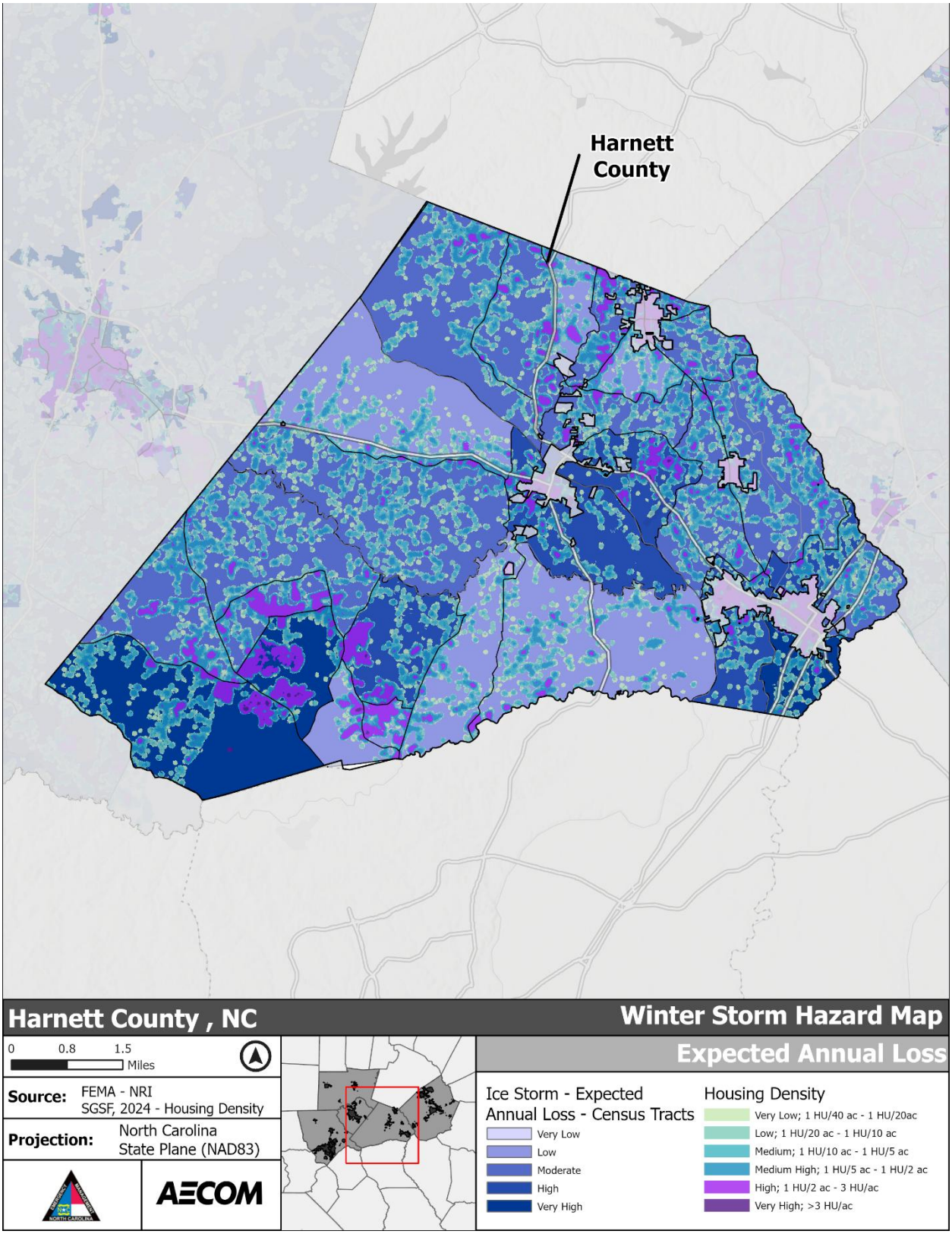


***Figure 5-154**: Ice Storm Hazard Area - Harnett County*

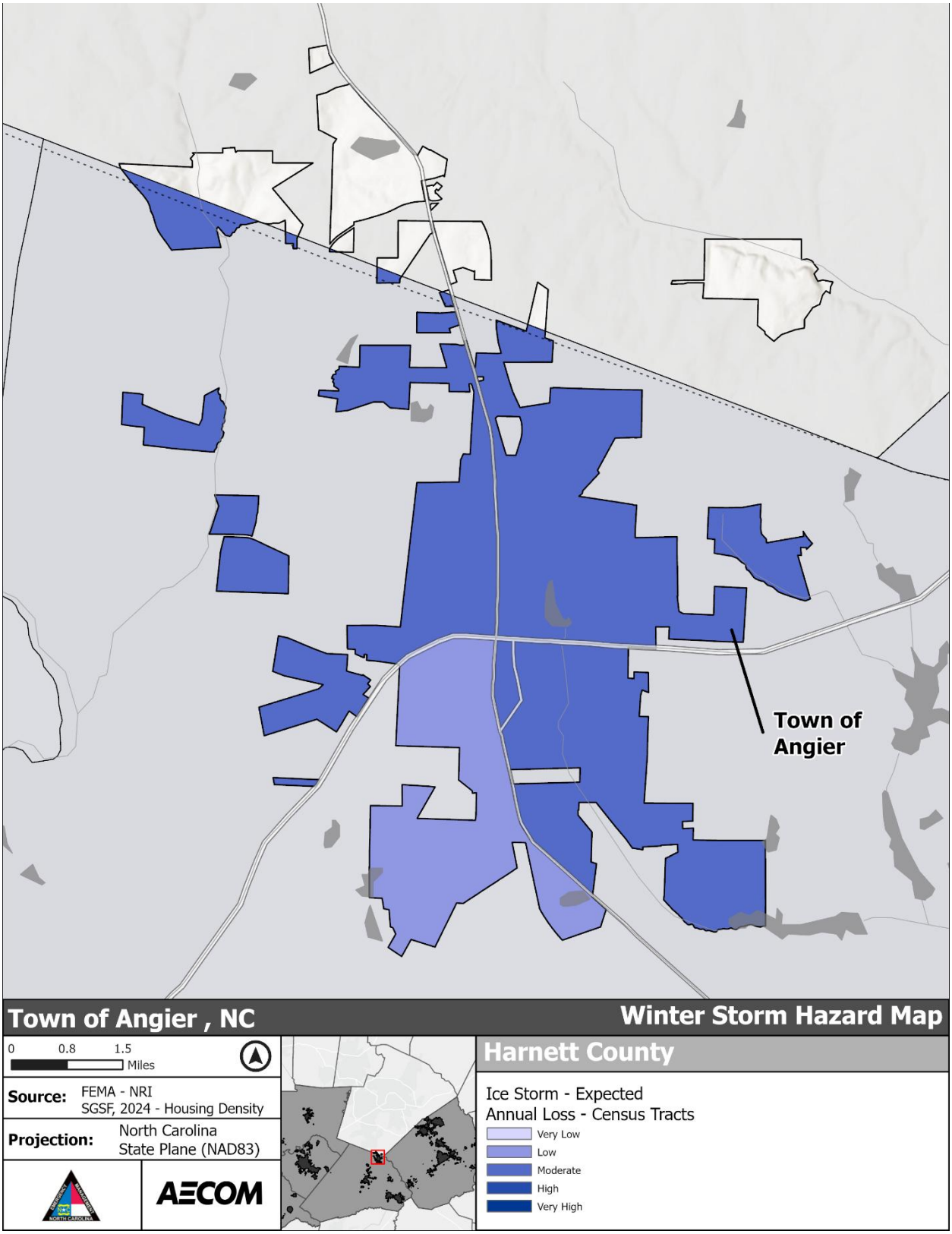


***Figure 5-155**: Ice Storm Hazard Area – Town of Angier*

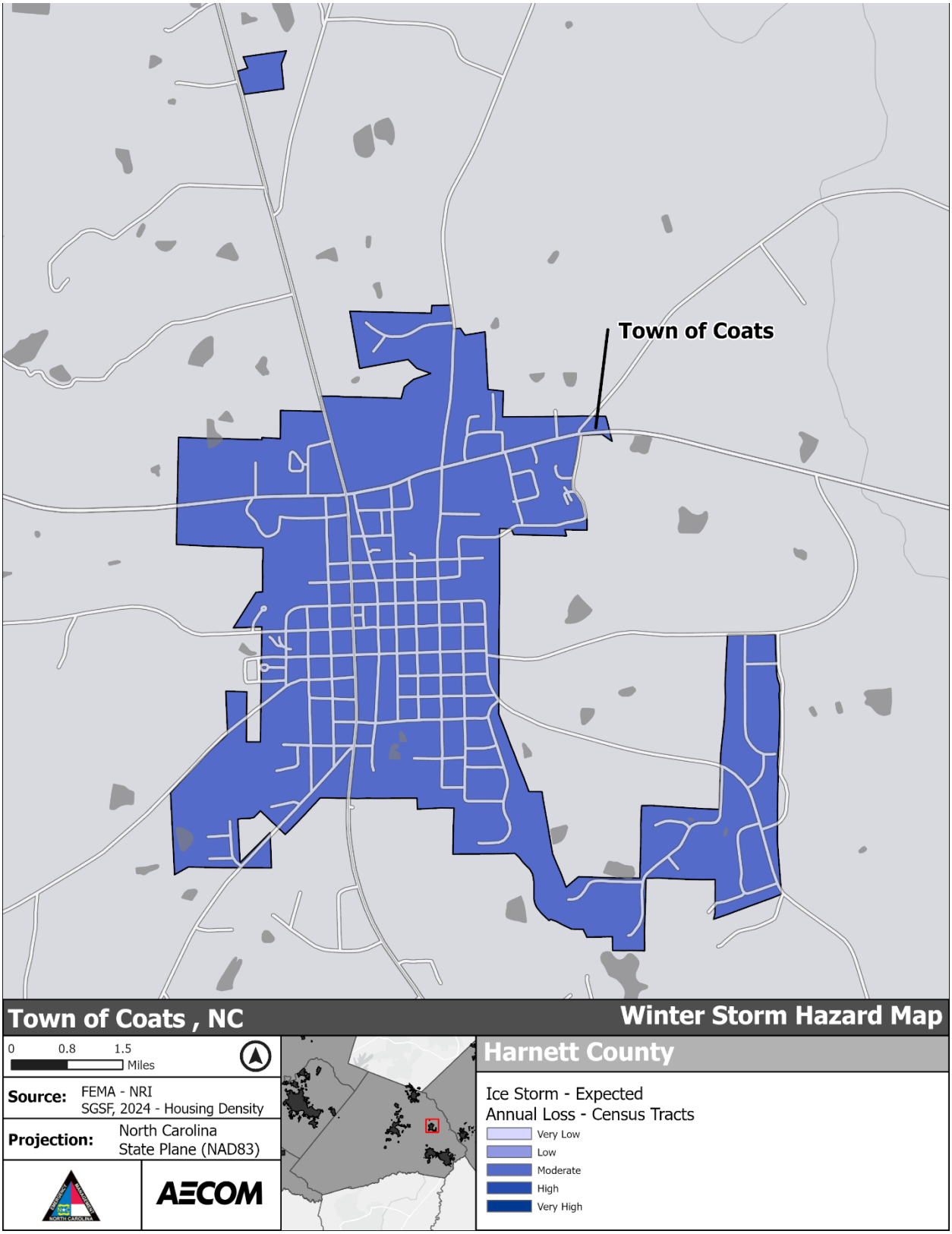


***Figure 5-156**: Ice Storm Hazard Area – Town of Coats*

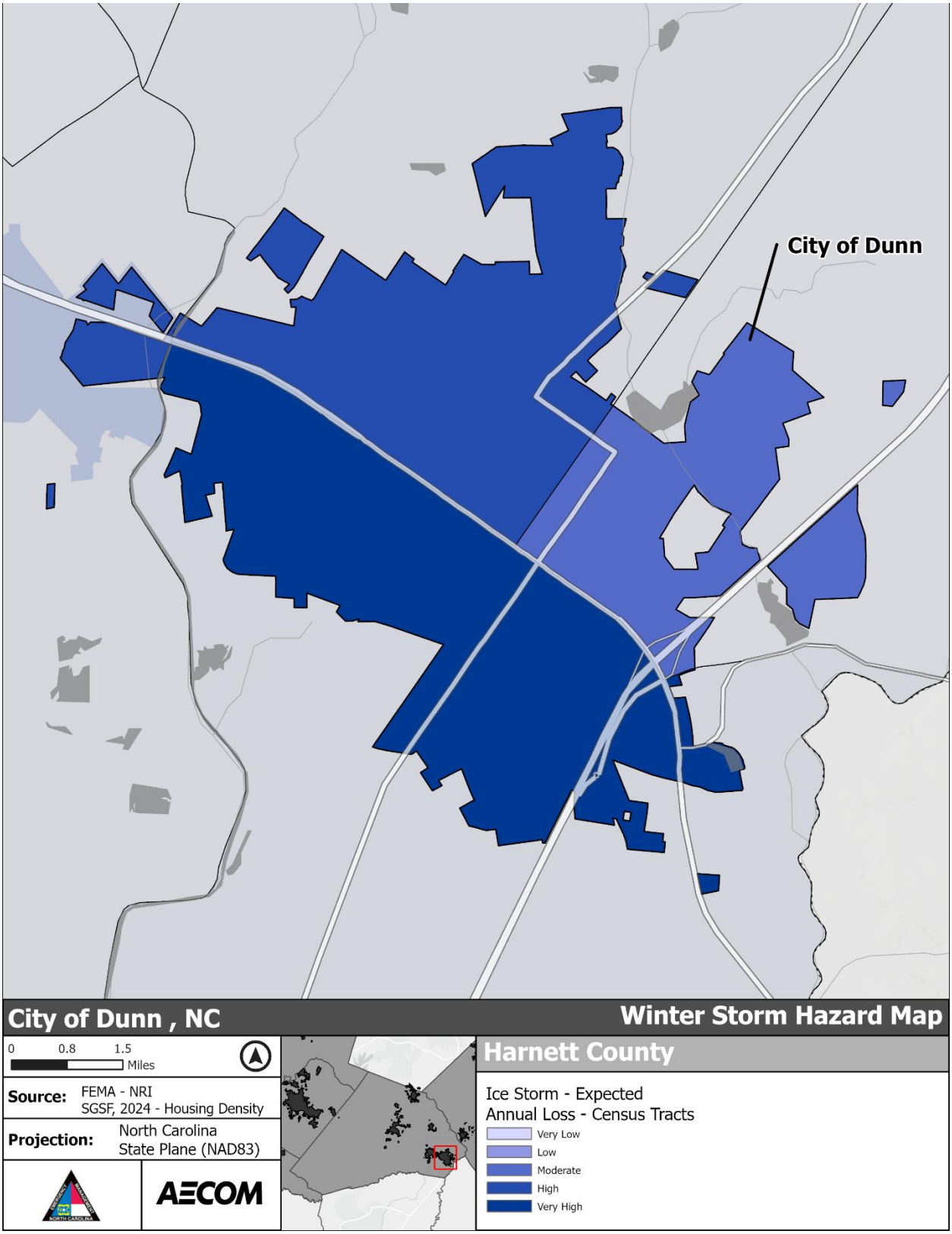


***Figure 5-157**: Ice Storm Hazard Area – City of Dunn*

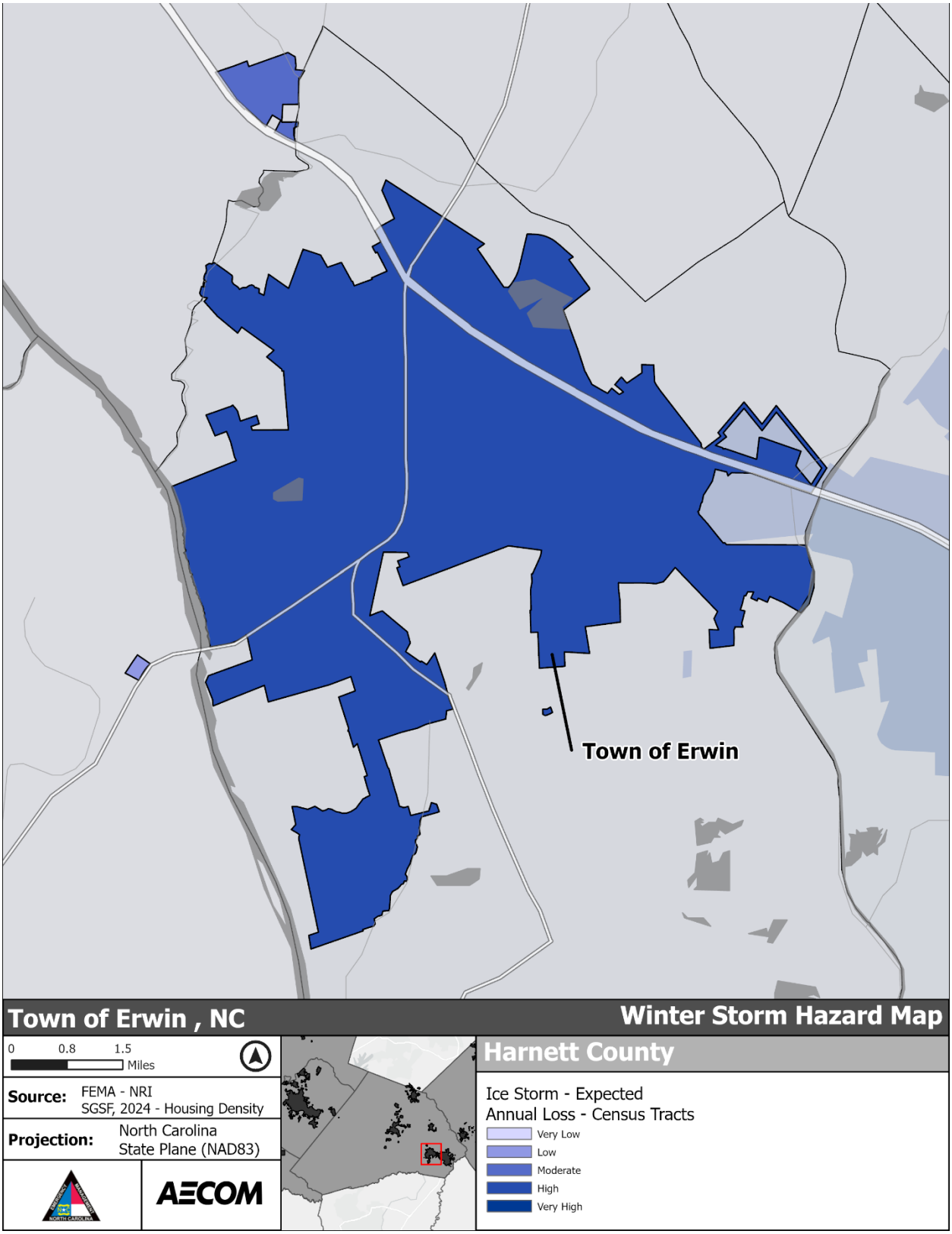


***Figure 5-158**: Ice Storm Hazard Area – Town of Erwin*

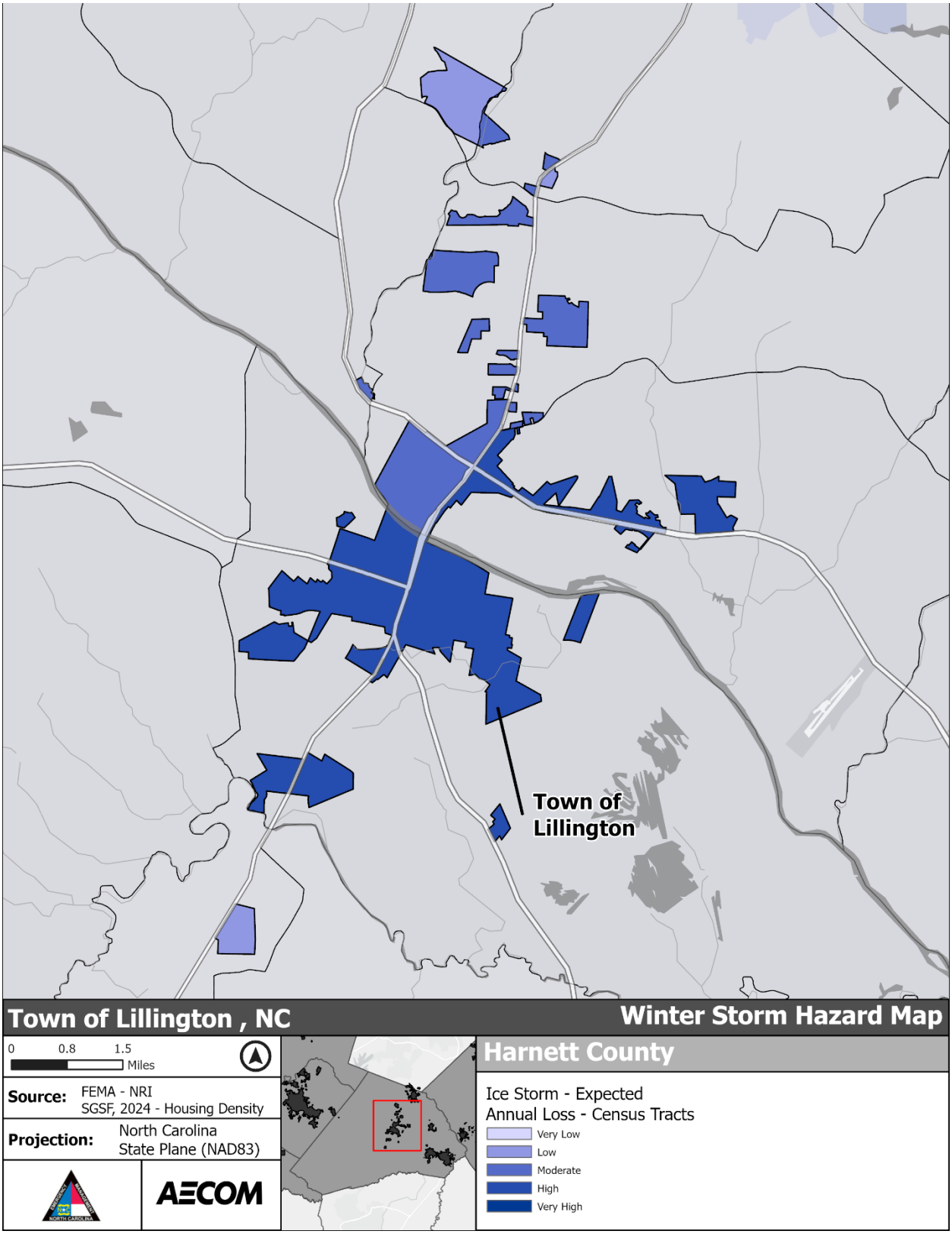


***Figure 5-159**: Ice Storm Hazard Area - Town of Lillington*

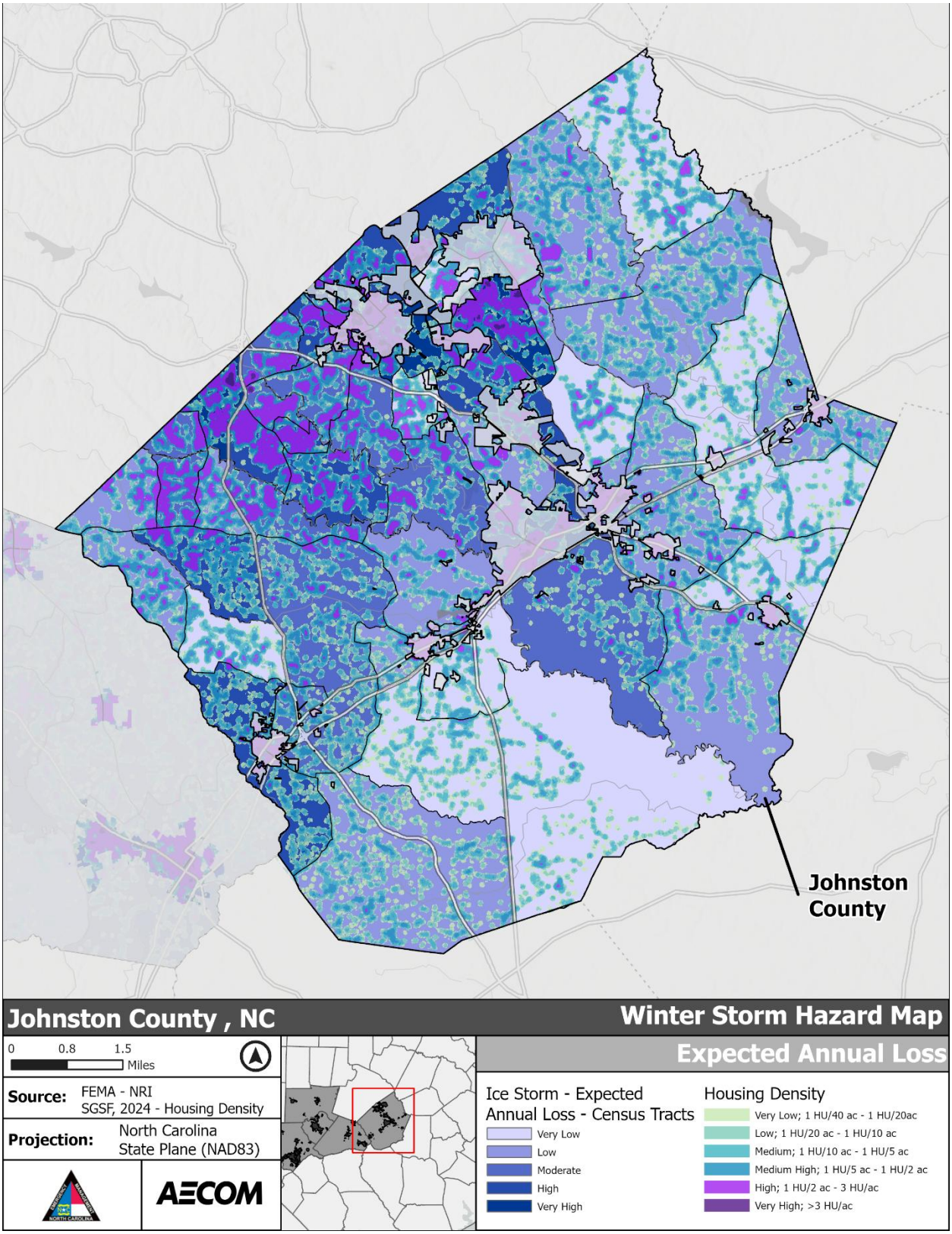


***Figure 5-160**: Ice Storm Hazard Area - Johnston County*

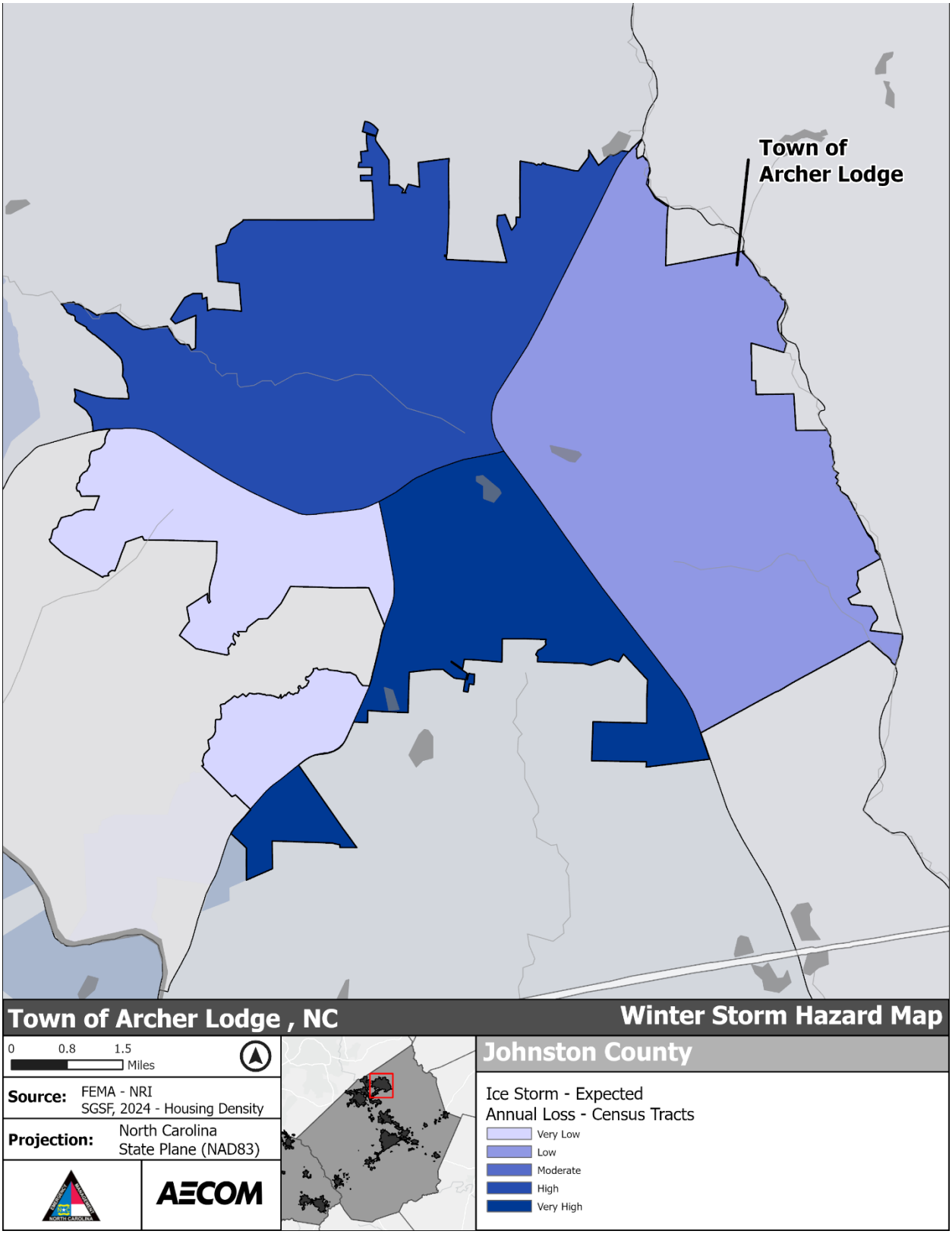


***Figure 5-161**: Ice Storm Hazard Area – Town of Archer Lodge*

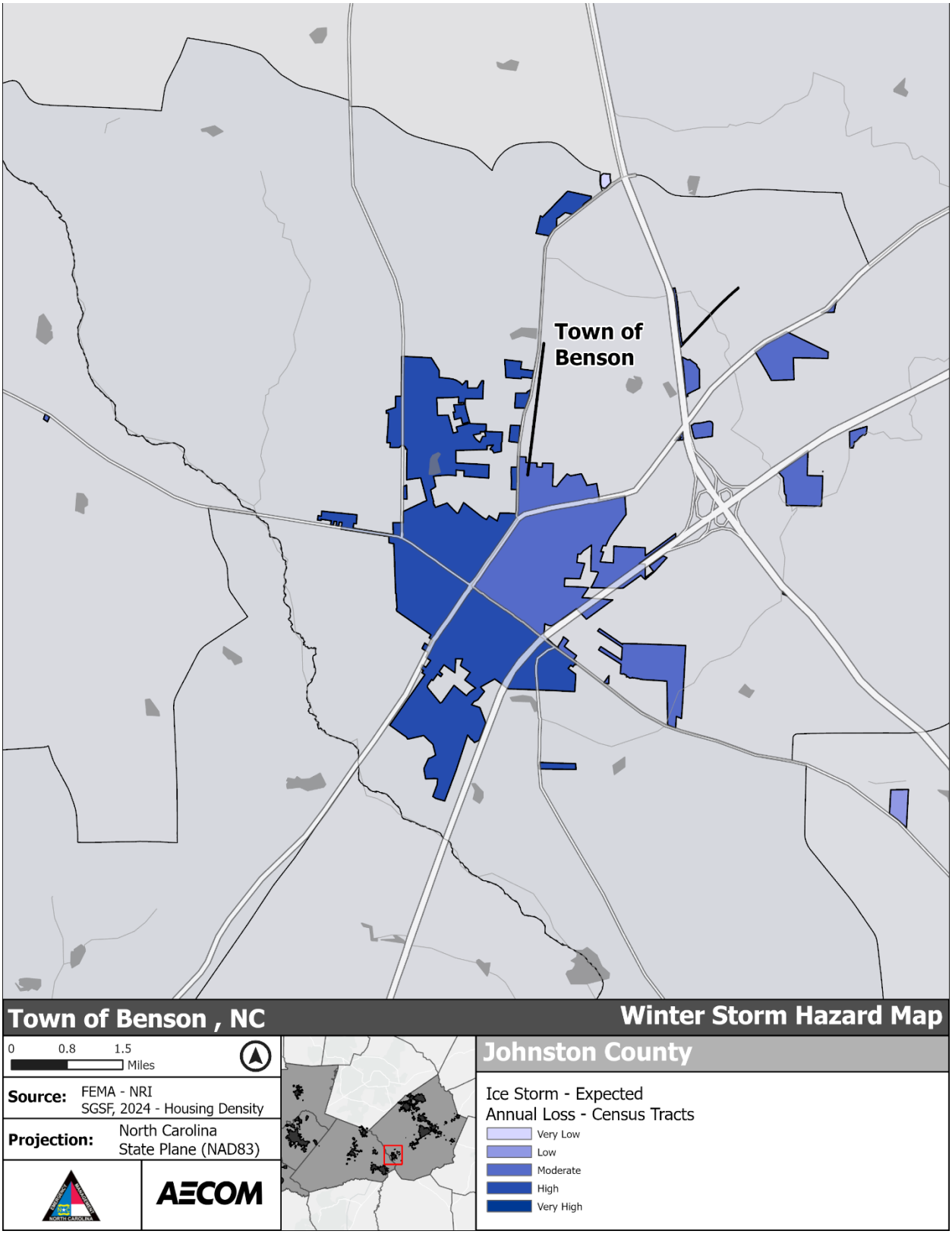


***Figure 5-162**: Ice Storm Hazard Area – Town of Benson*

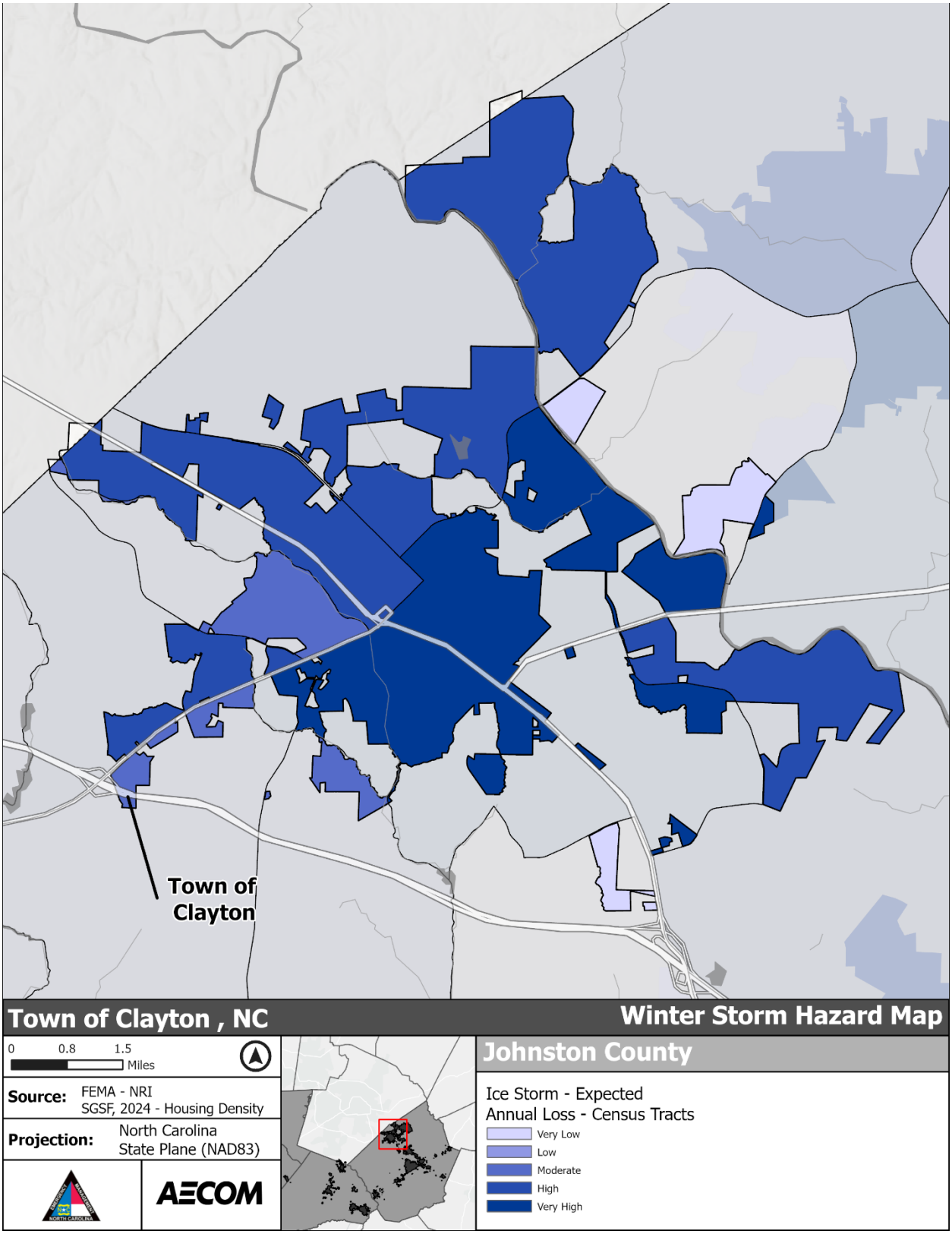


***Figure 5-163**: Ice Storm Hazard Area – Town of Clayton*

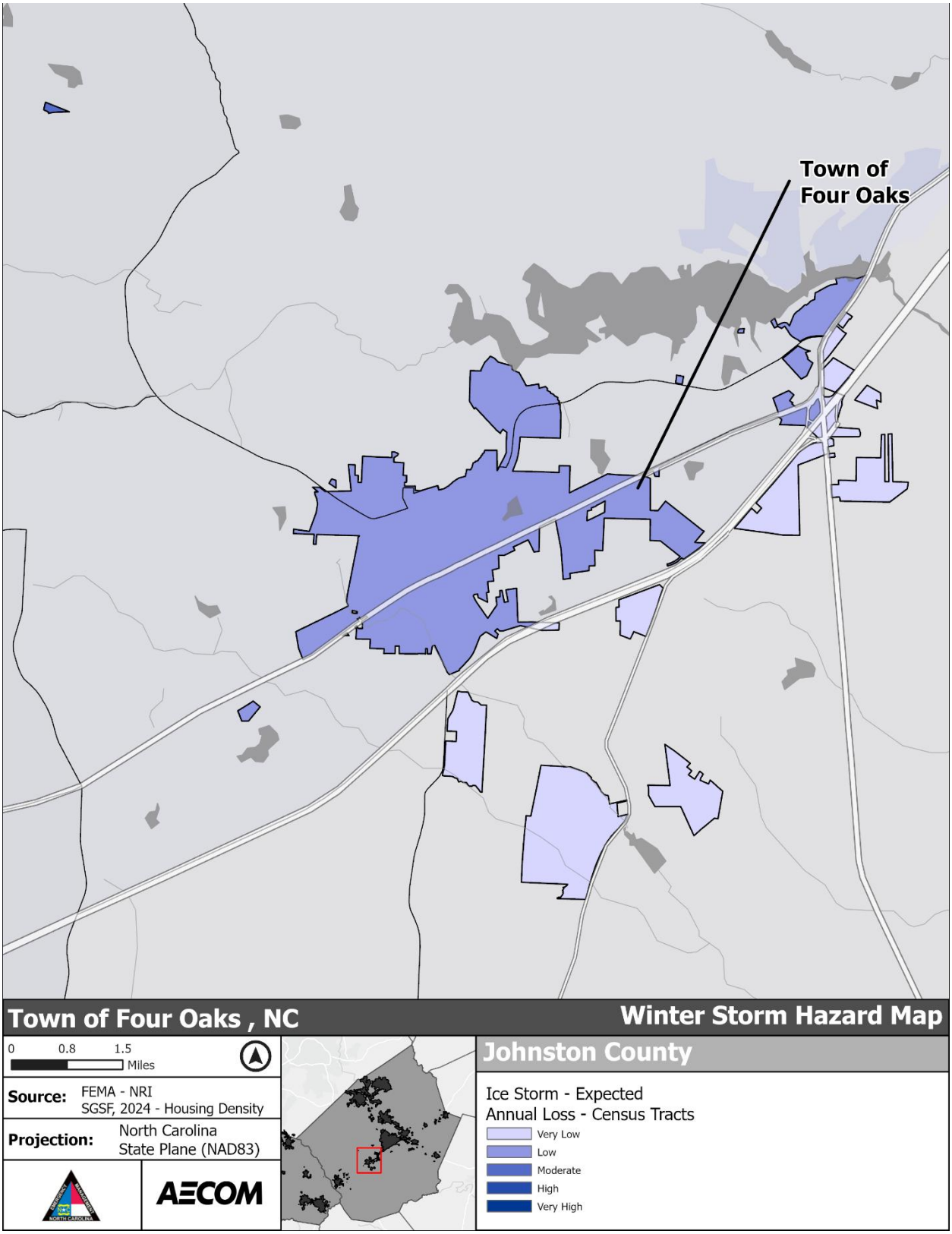


***Figure 5-164**: Ice Storm Hazard Area – Town of Four Oaks*

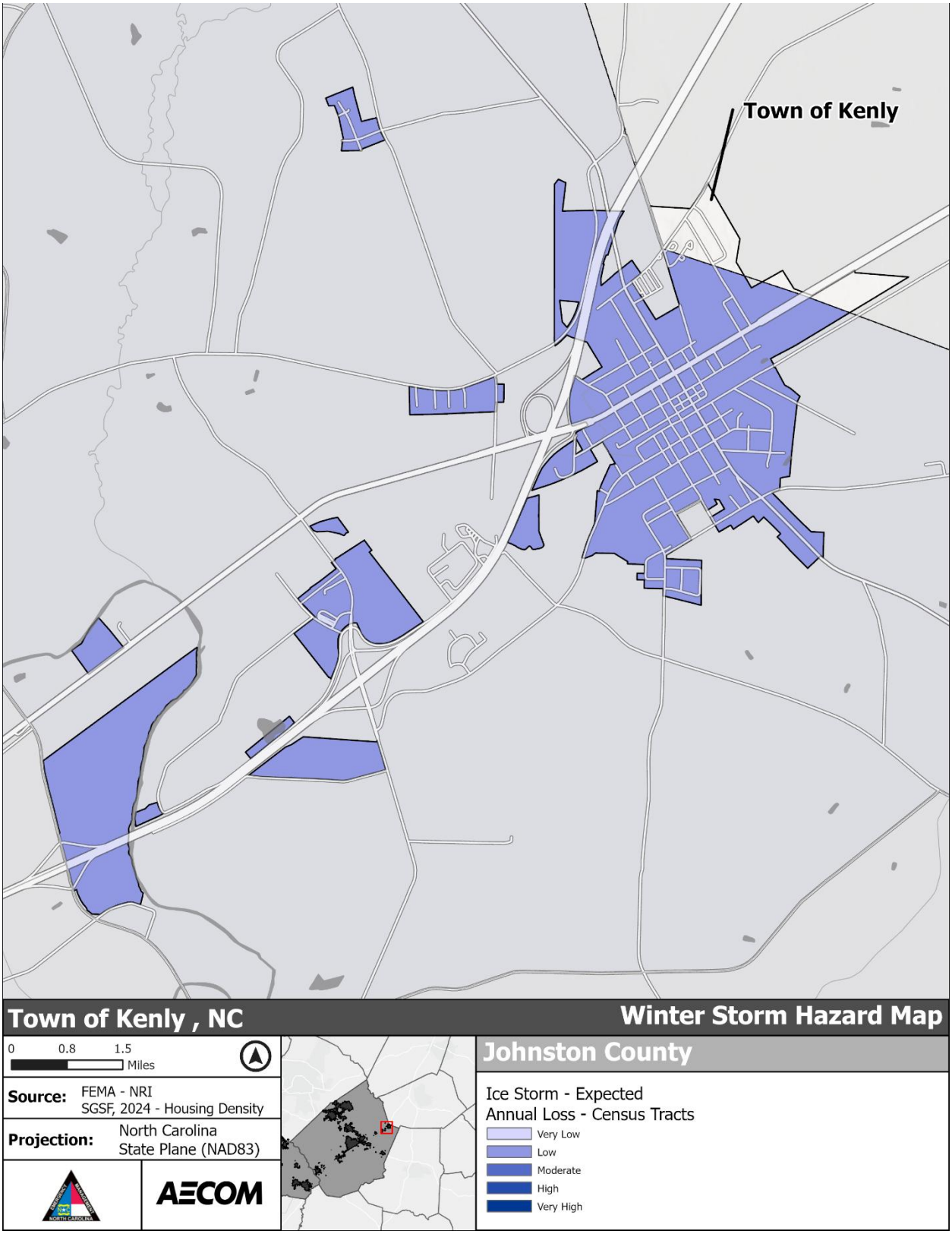


***Figure 5-165**: Ice Storm Hazard Area – Town of Kenly*

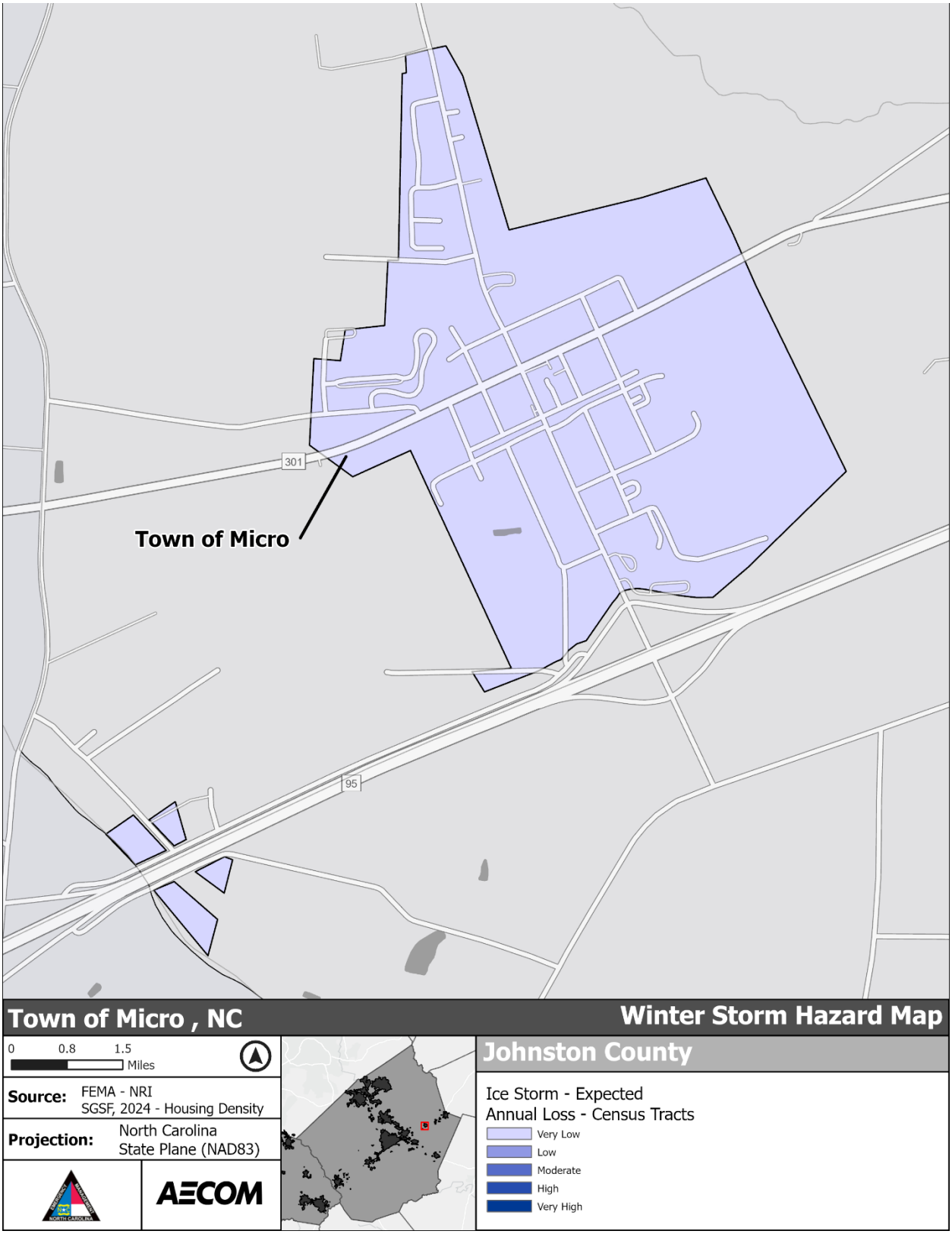


***Figure 5-166**: Ice Storm Hazard Area – Town of Micro*

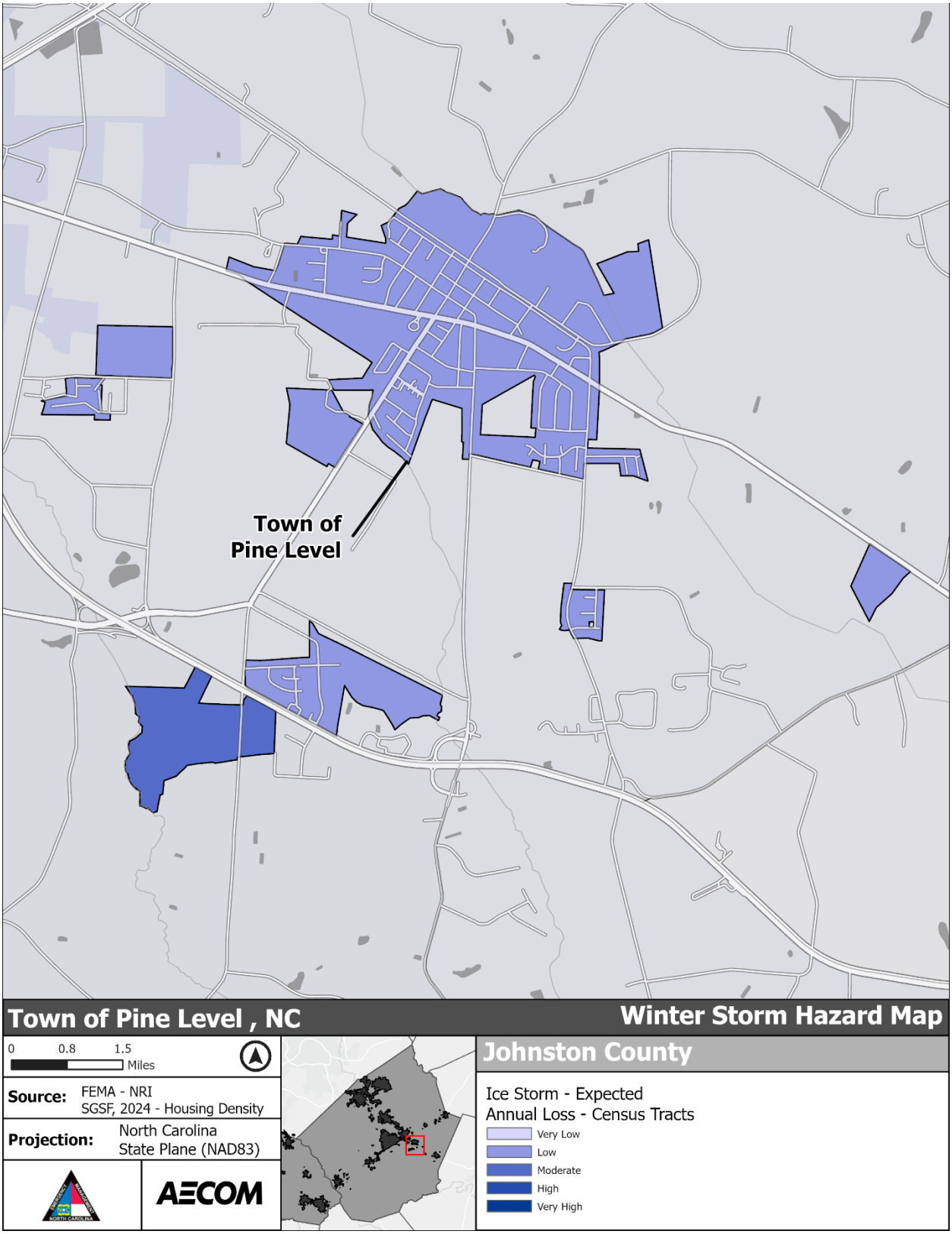


***Figure 5-167**: Ice Storm Hazard Area – Town of Pine Level*

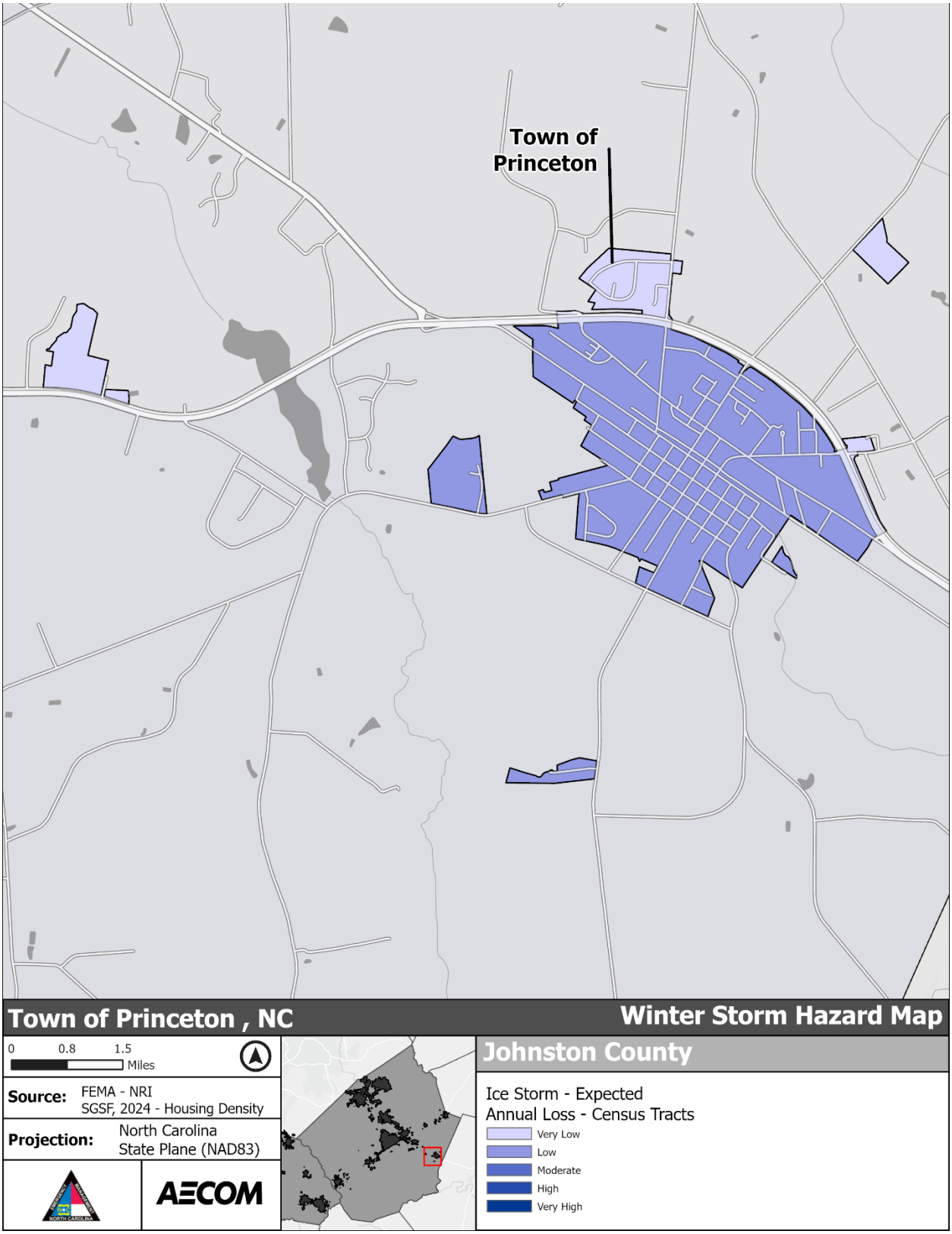


***Figure 5-168**: Ice Storm Hazard Area – Town of Princeton*

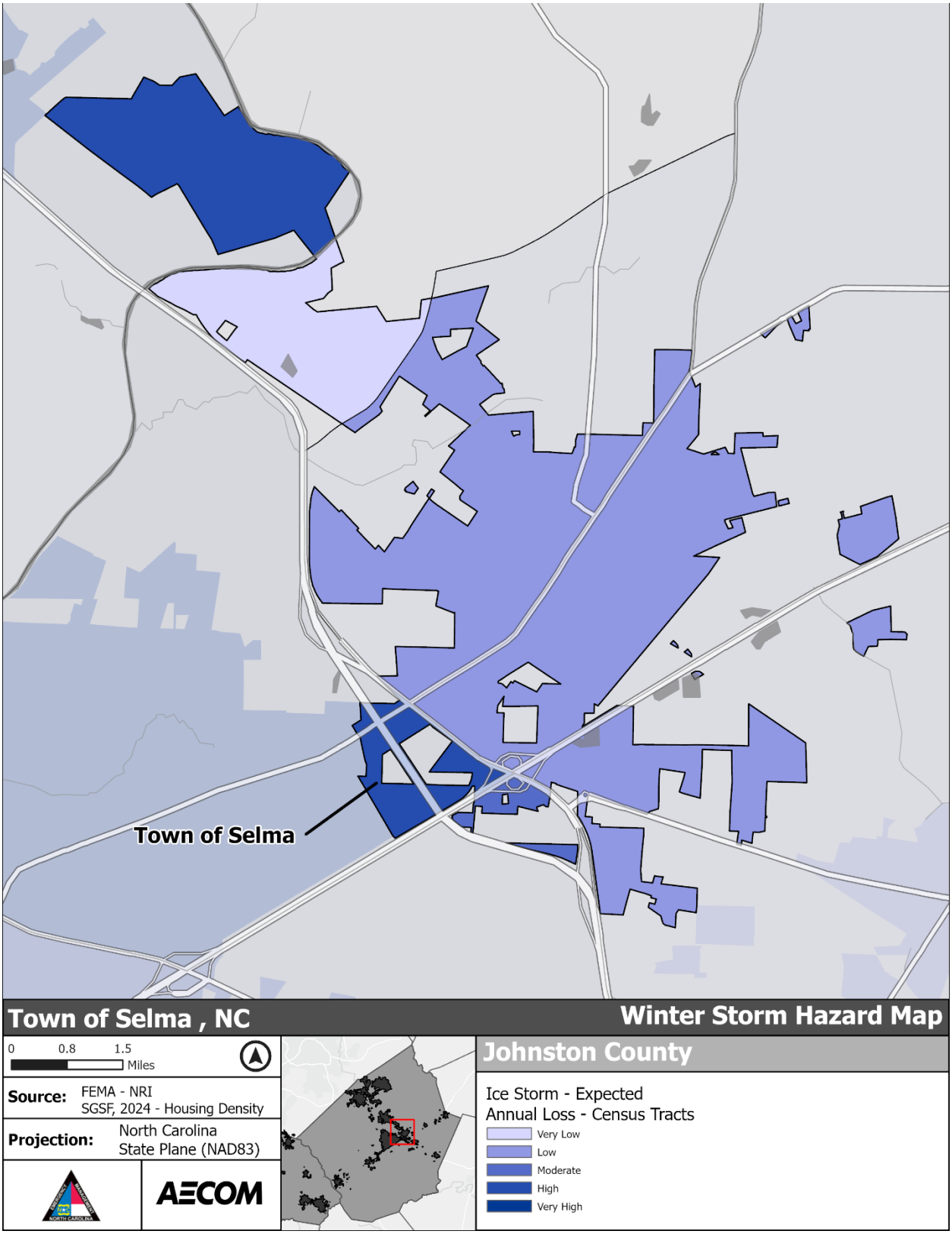


***Figure 5-169**: Ice Storm Hazard Area – Town of Selma*

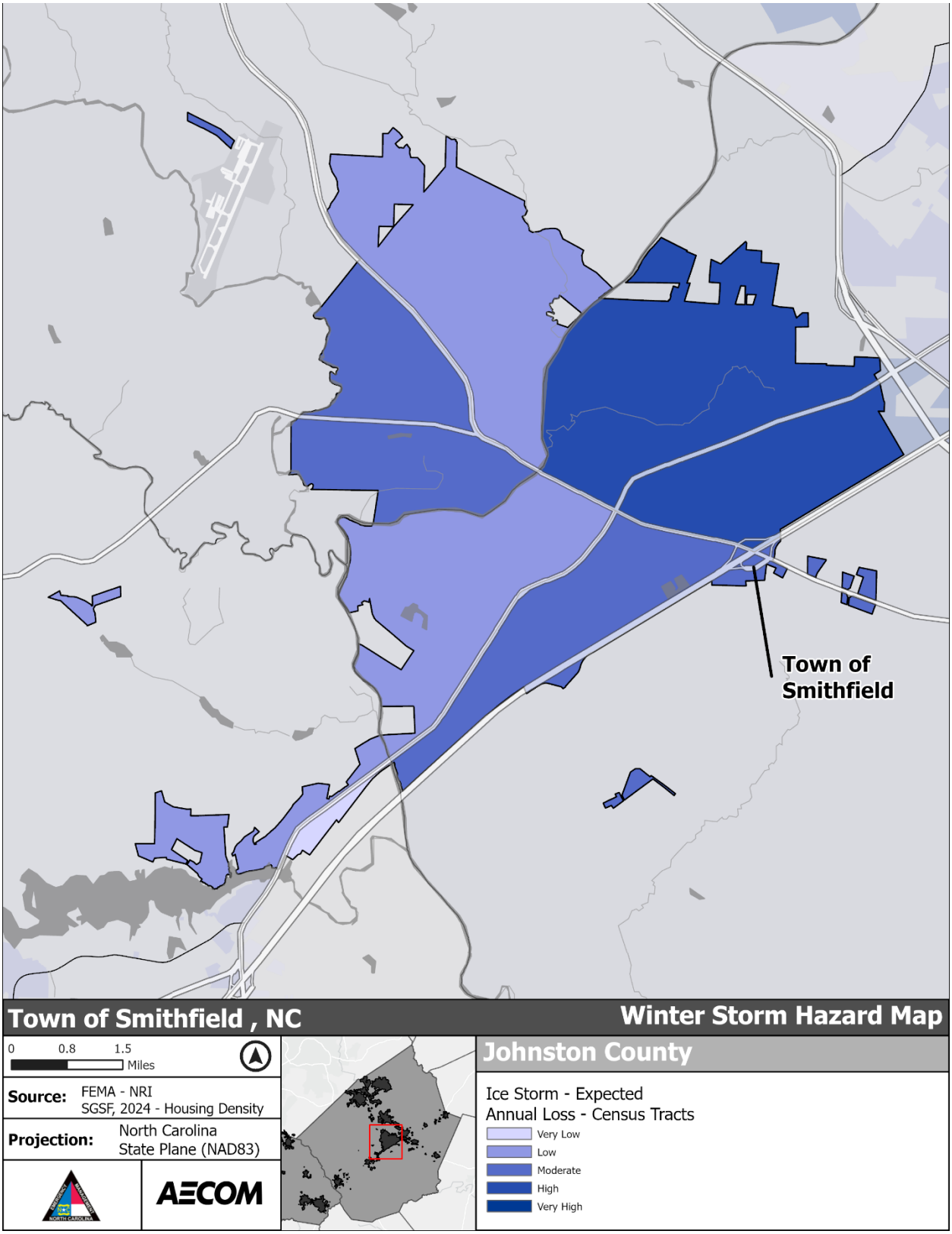


***Figure 5-170**: Ice Storm Hazard Area – Town of Smithfield*

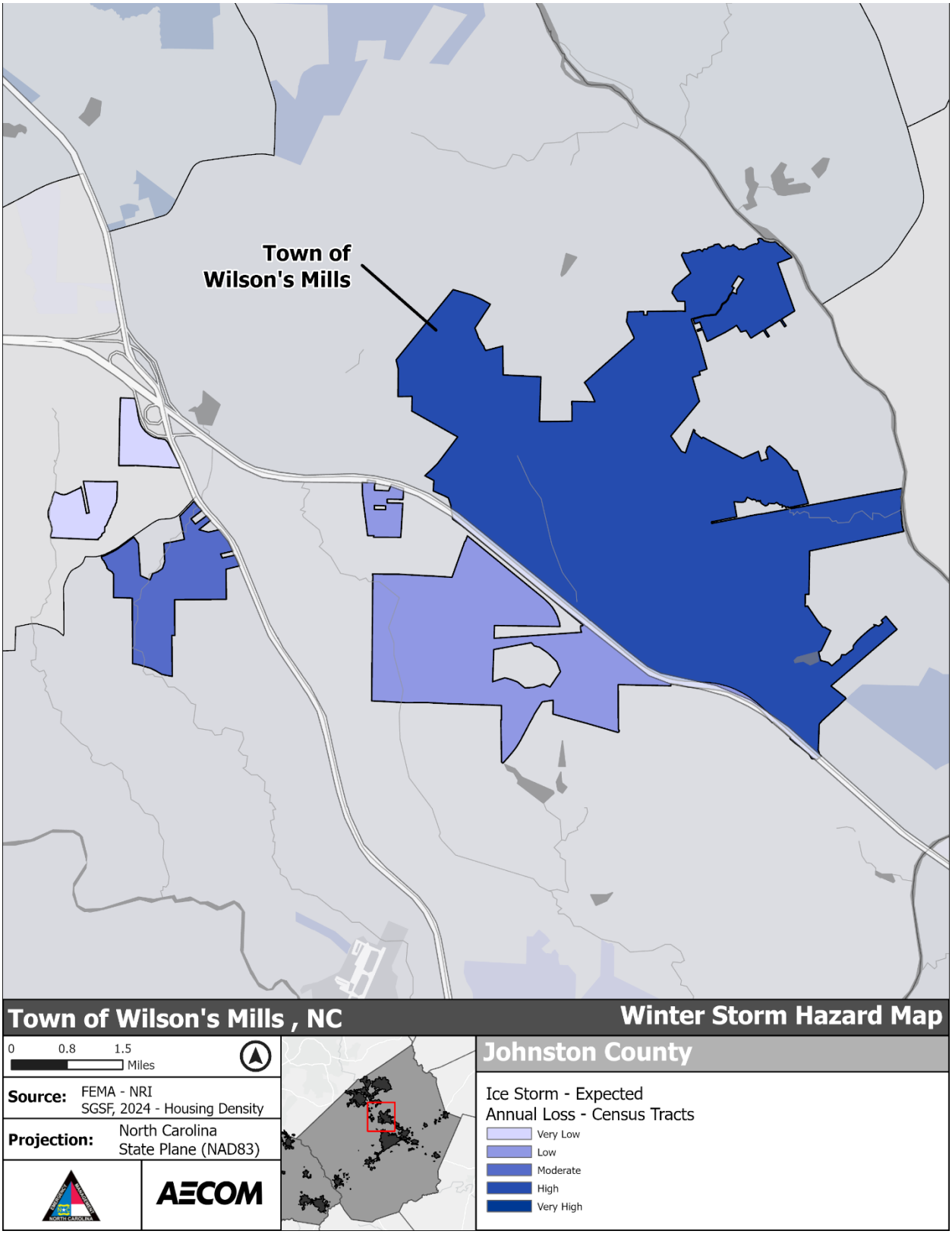


***Figure 5-171**: Ice Storm Hazard Area – Town of Wilson's Mills*

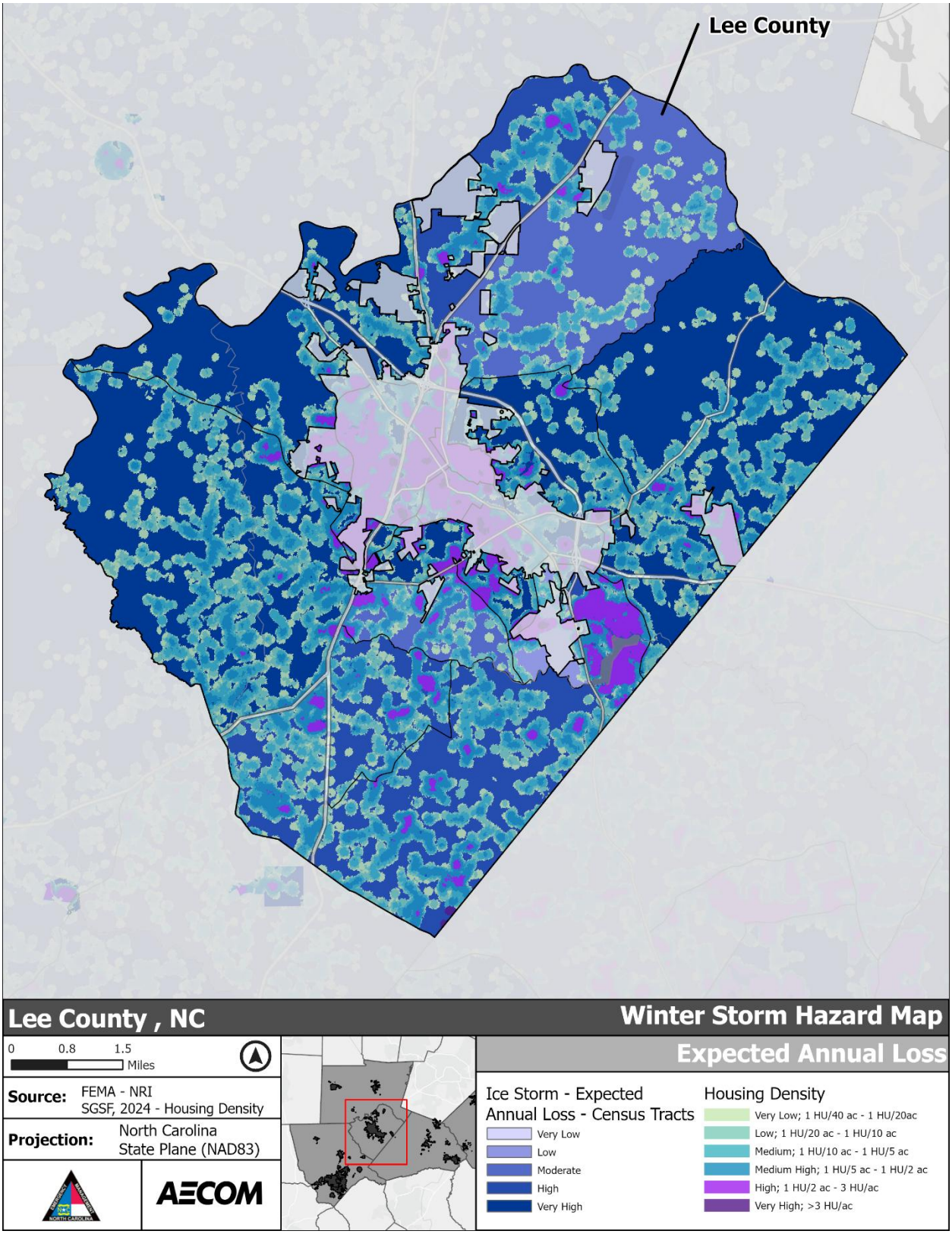


***Figure 5-172**: Ice Storm Hazard Area - Lee County*

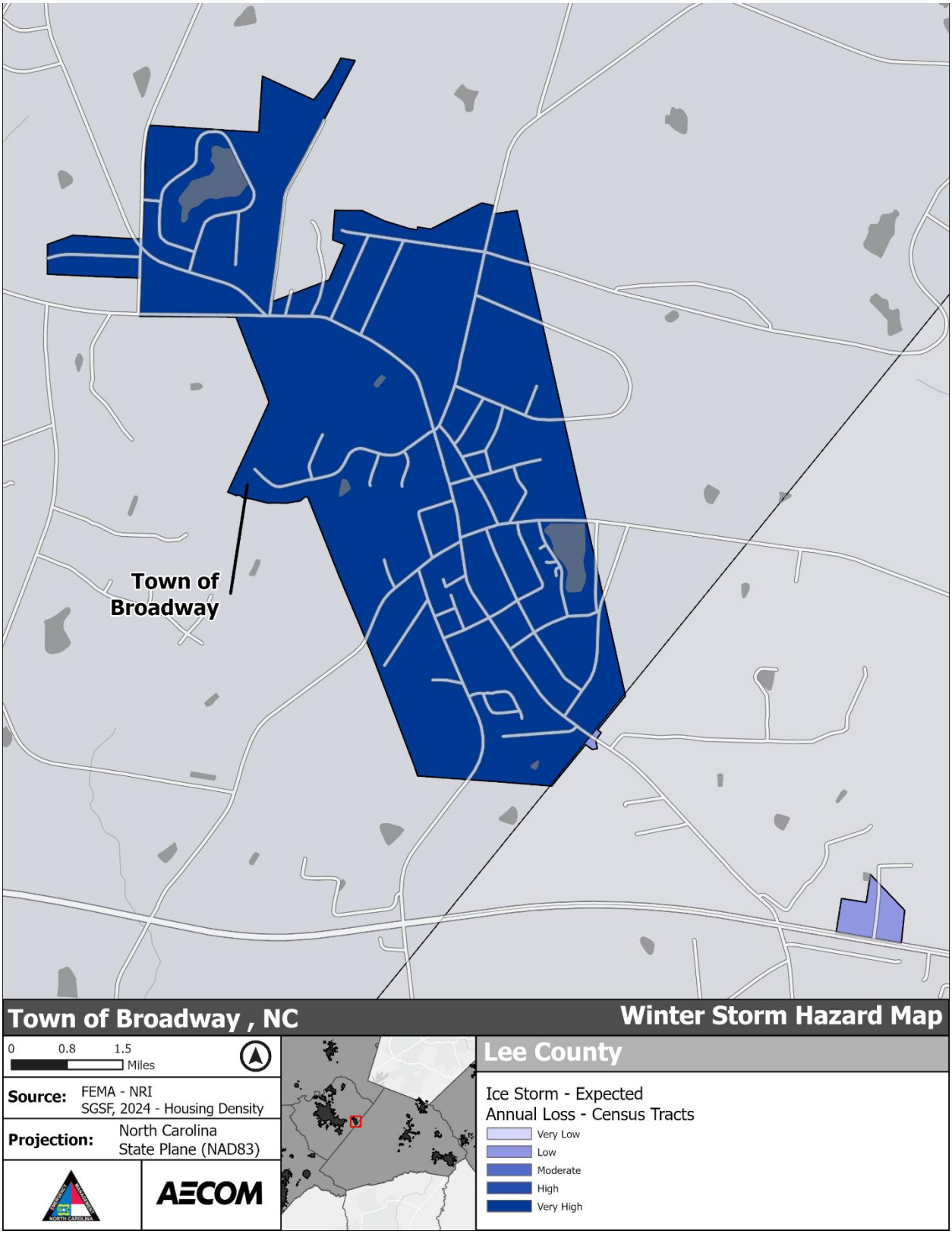


***Figure 5-173**: Ice Storm Hazard Area – Town of Broadway*

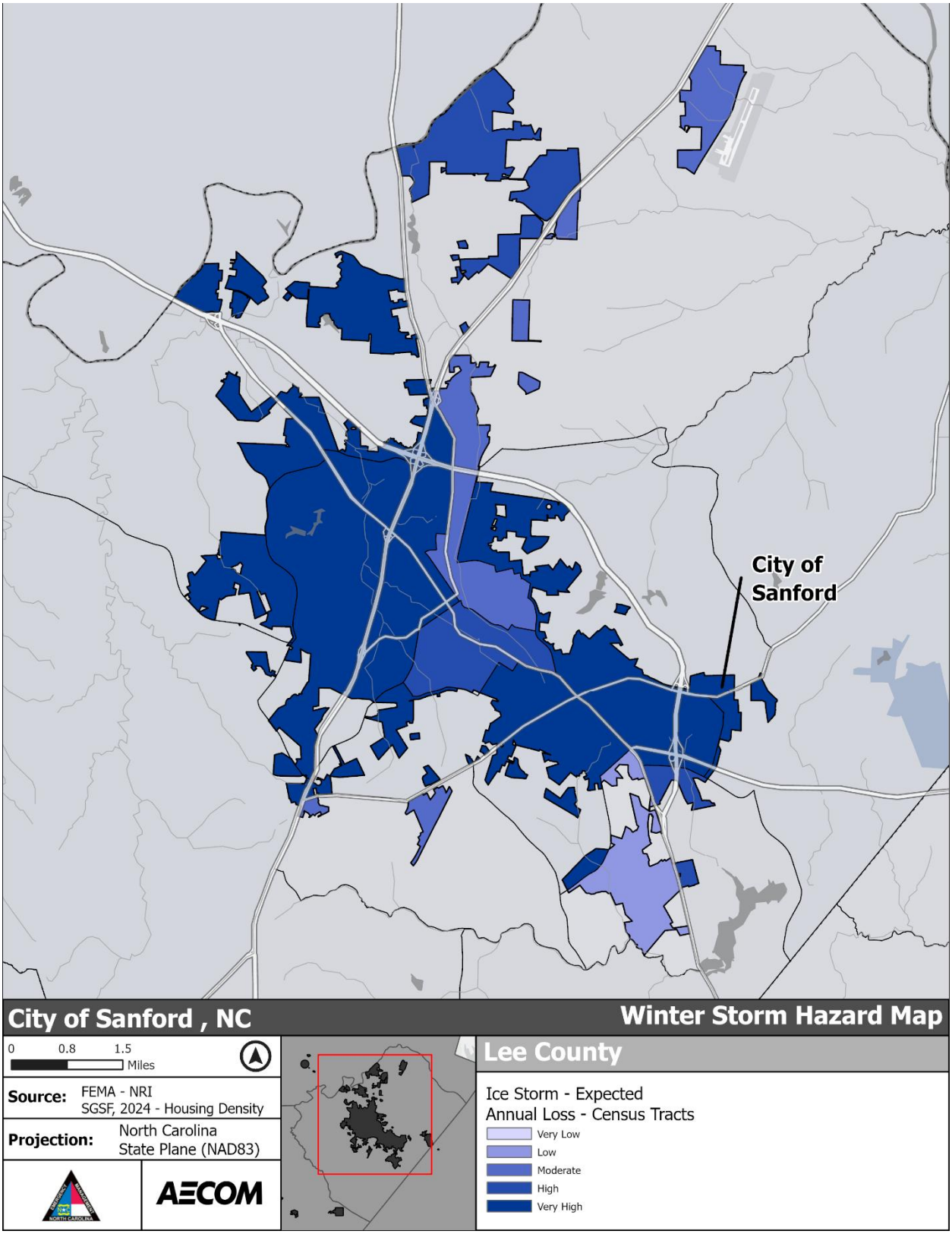


***Figure 5-174**: Ice Storm Hazard Area – City of Sanford*

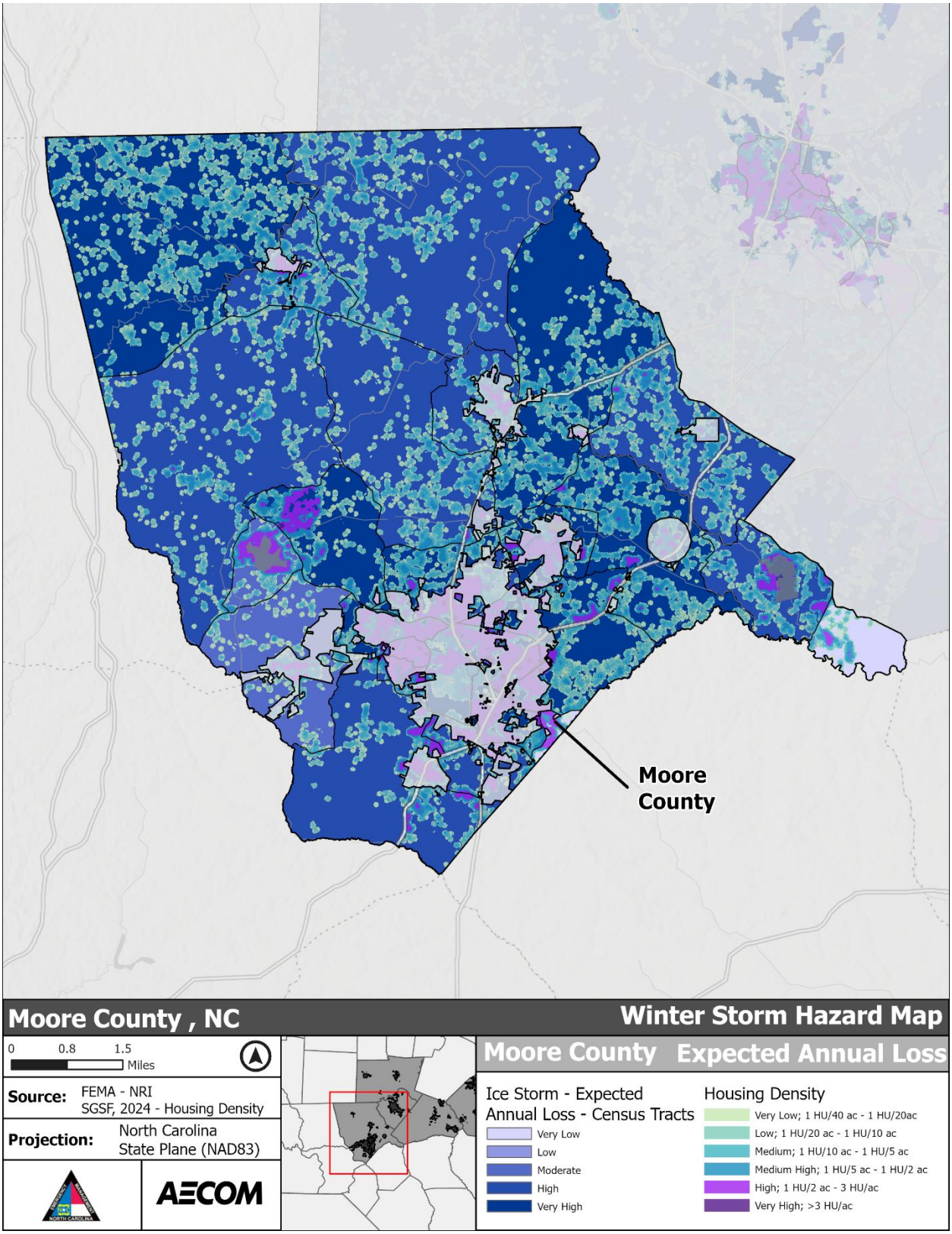


***Figure 5-175**: Ice Storm Hazard Area - Moore County*

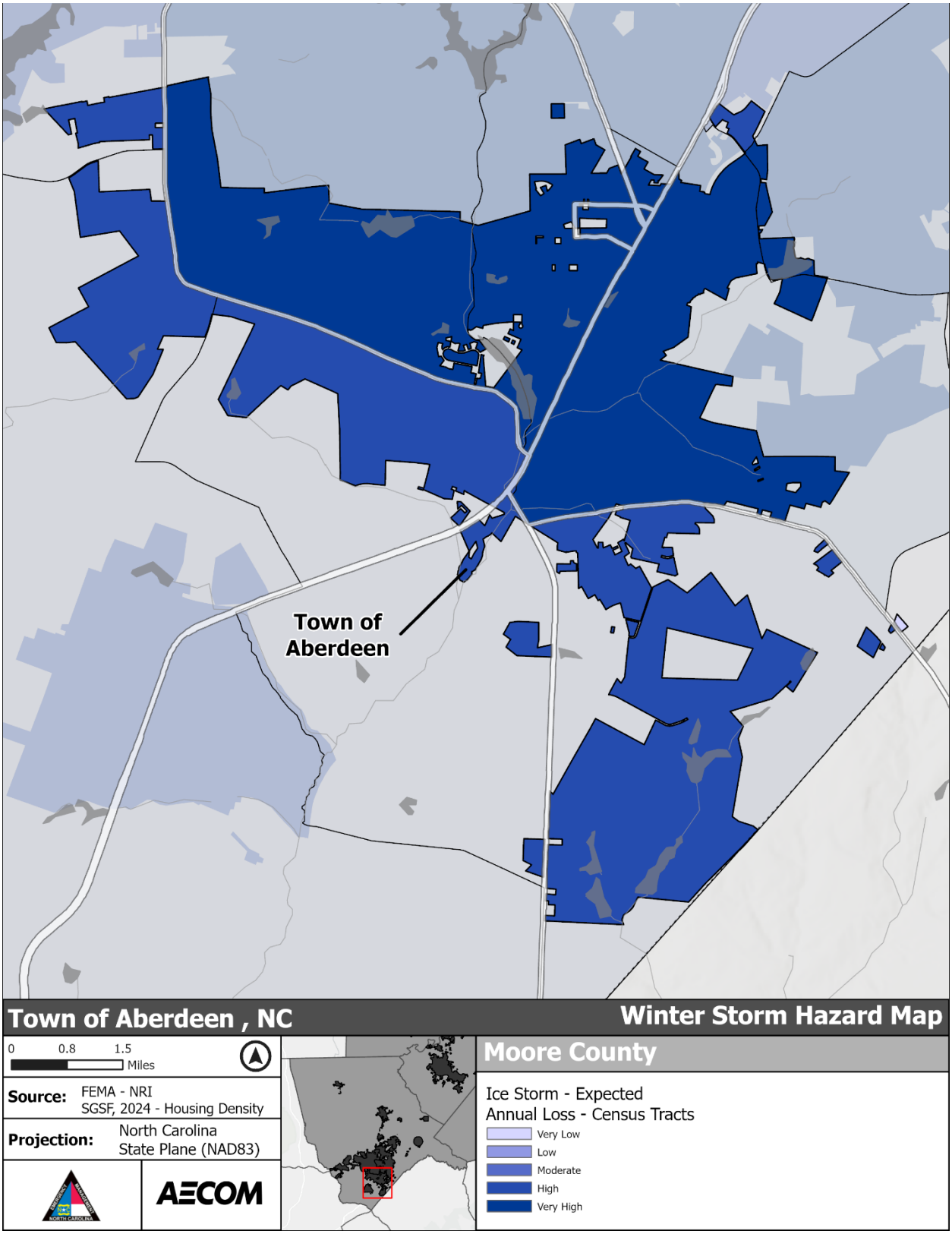


***Figure 5-176**: Ice Storm Hazard Area – Town of Aberdeen*

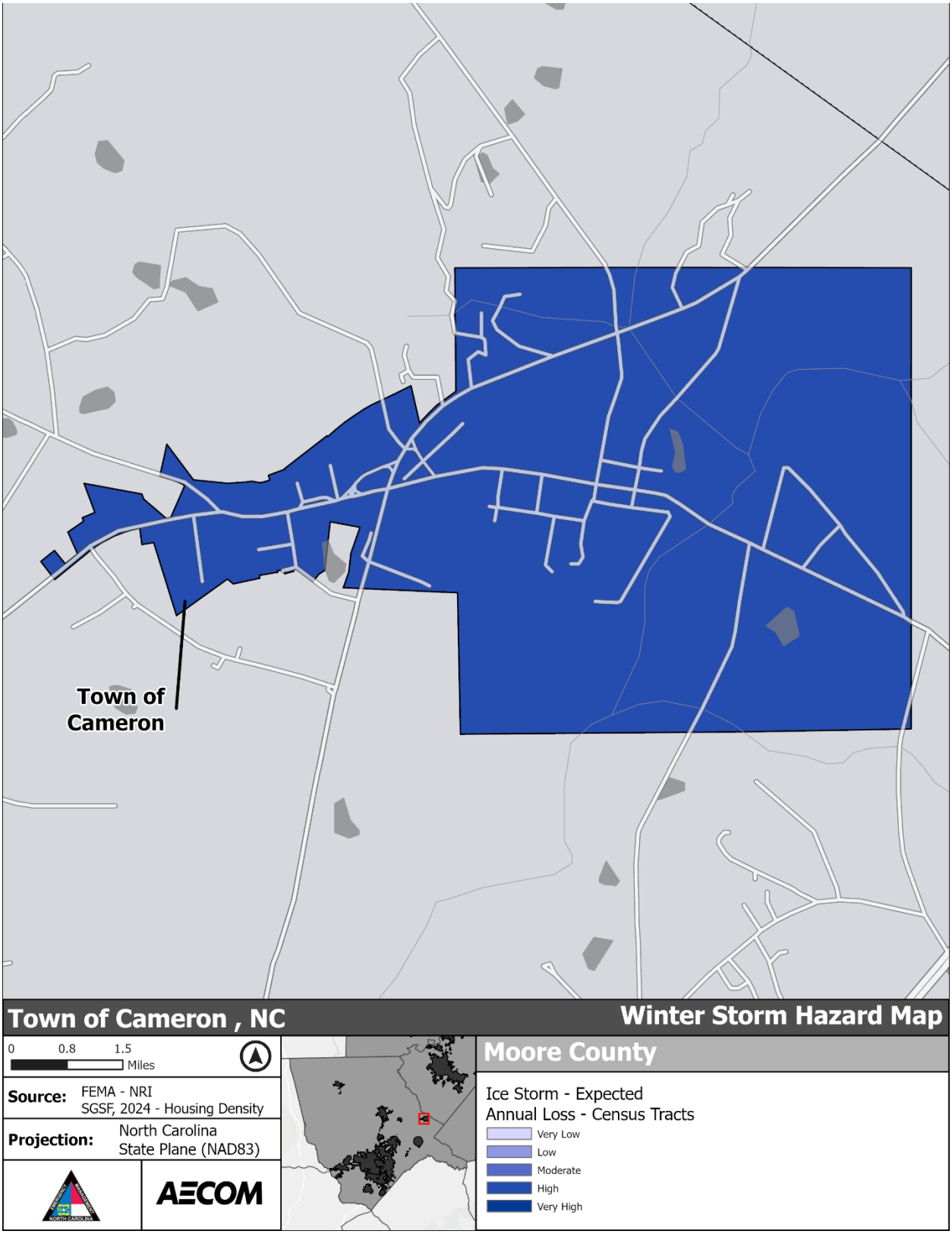


***Figure 5-177**: Ice Storm Hazard Area – Town of Cameron*

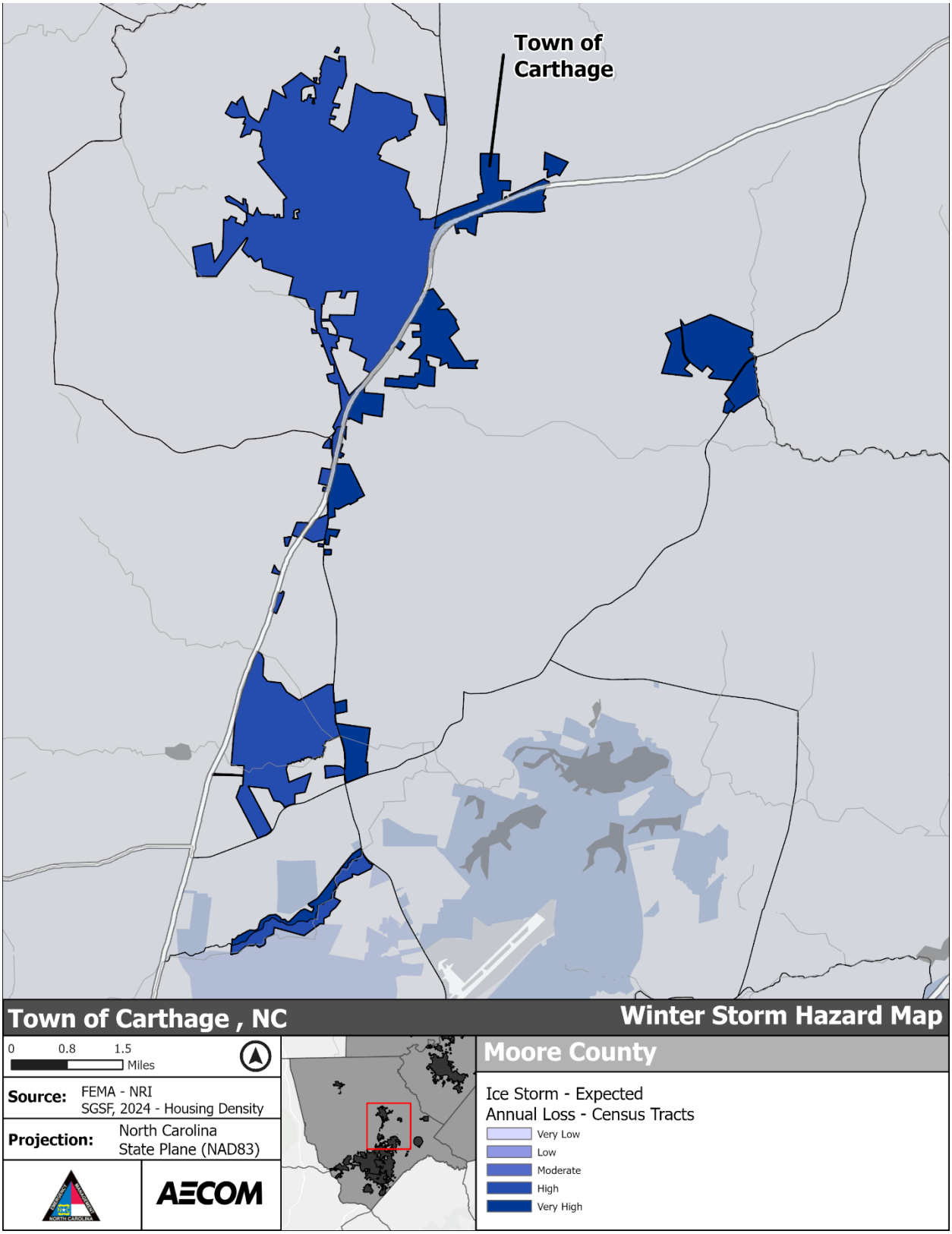


***Figure 5-178**: Ice Storm Hazard Area – Town of Carthage*

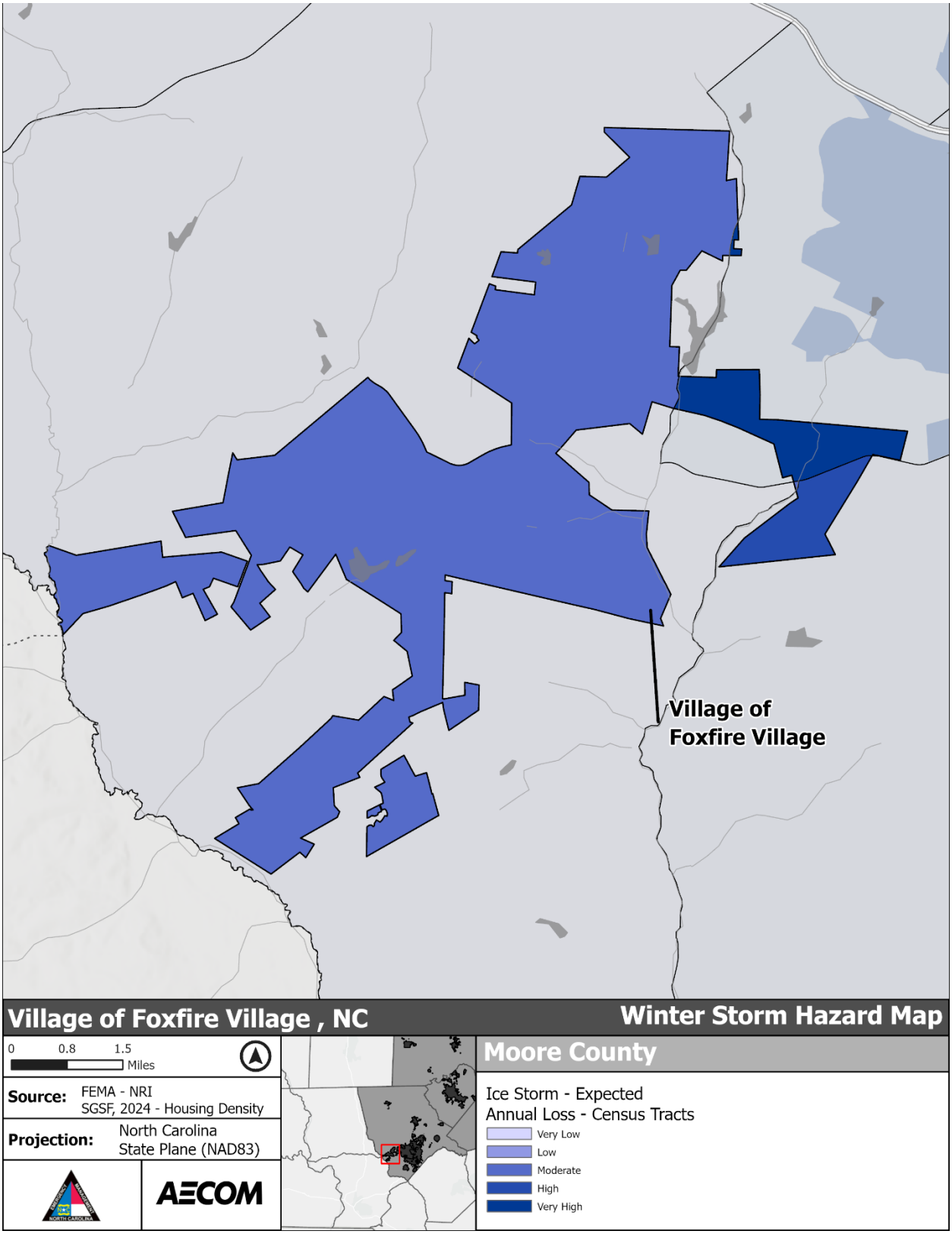


***Figure 5-179**: Ice Storm Hazard Areas – Village of Foxfire*

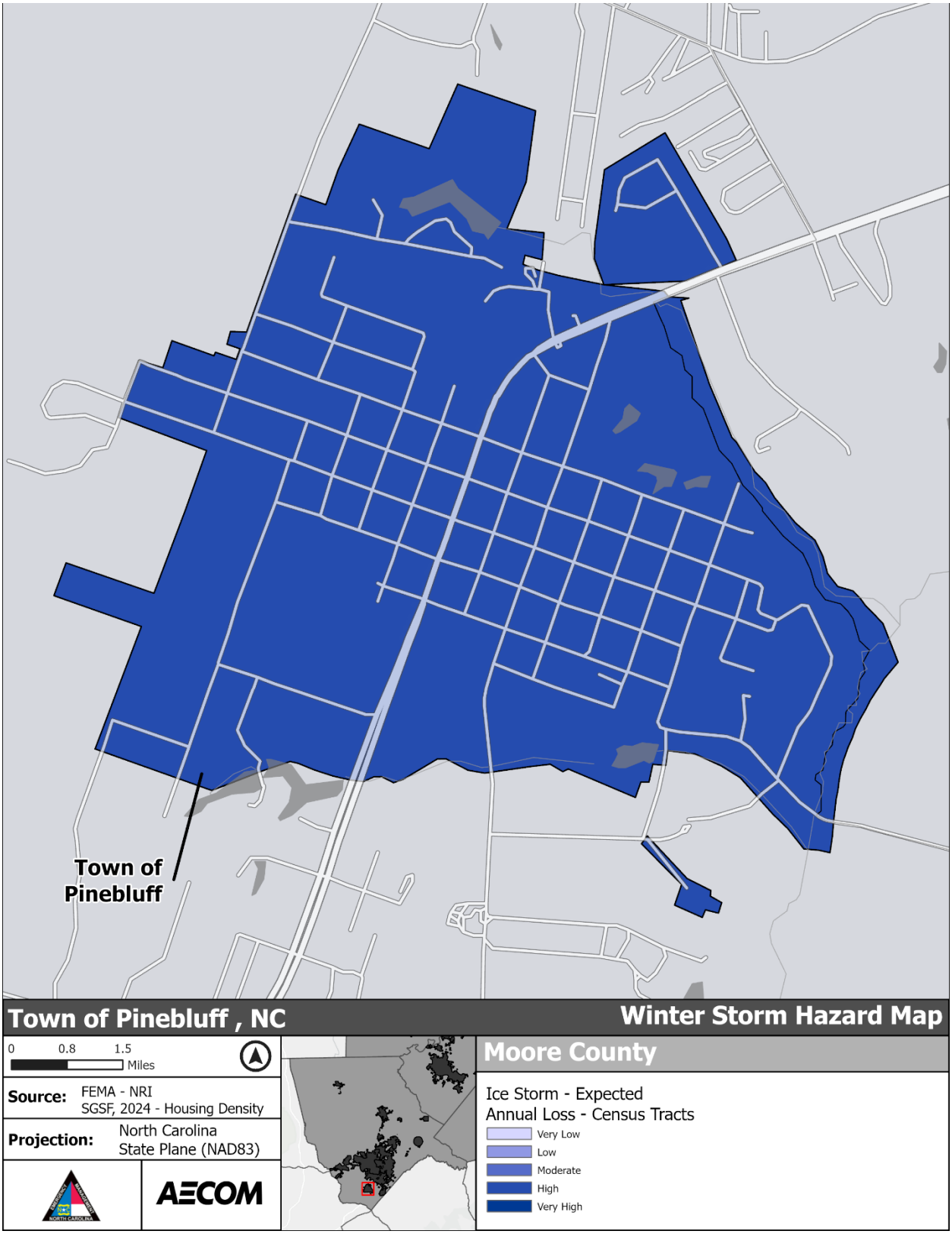


***Figure 5-180**: Ice Storm Hazard Area – Town of Pinebluff*

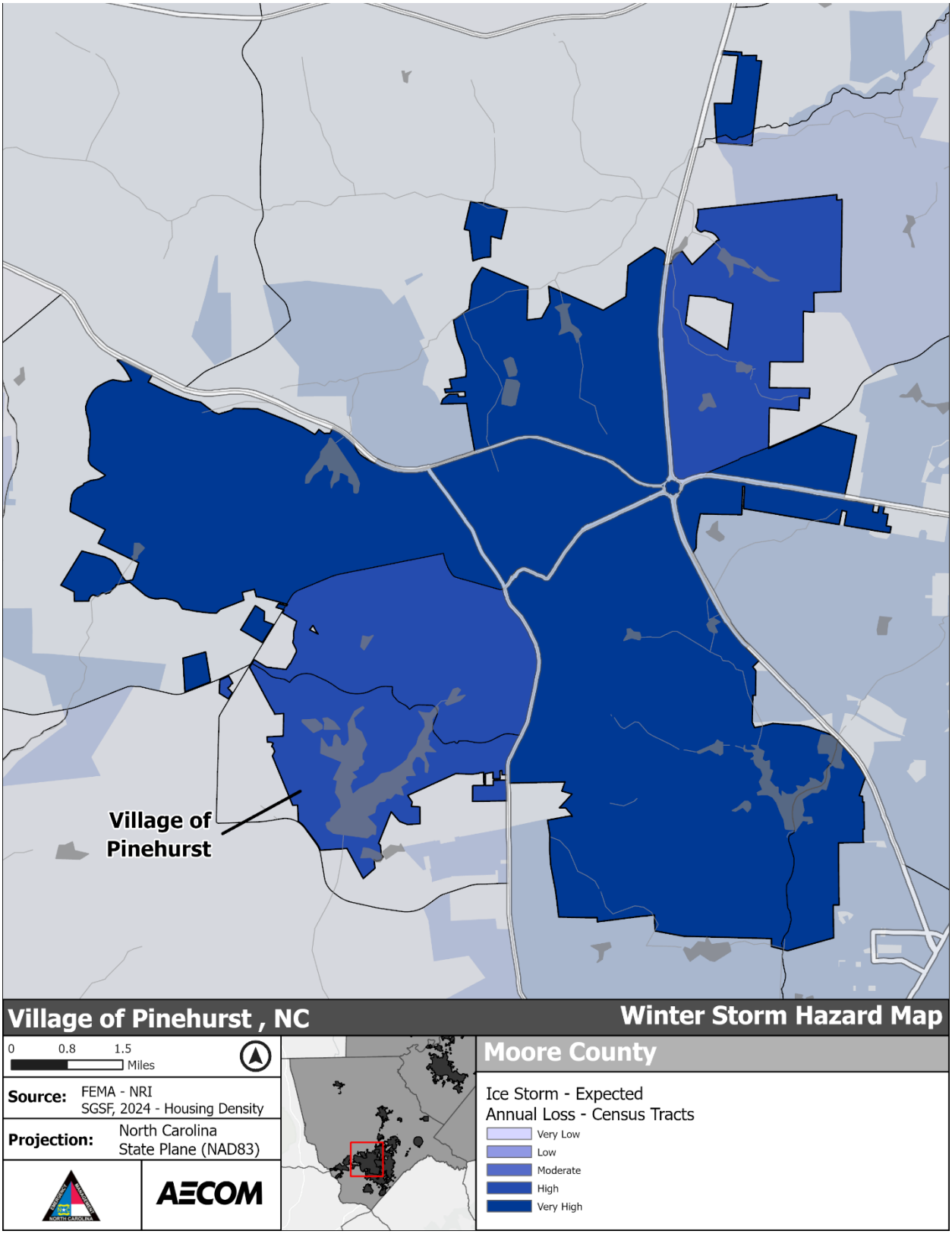


***Figure 5-181**: Ice Storm Hazard Areas – Village of Pinehurst*

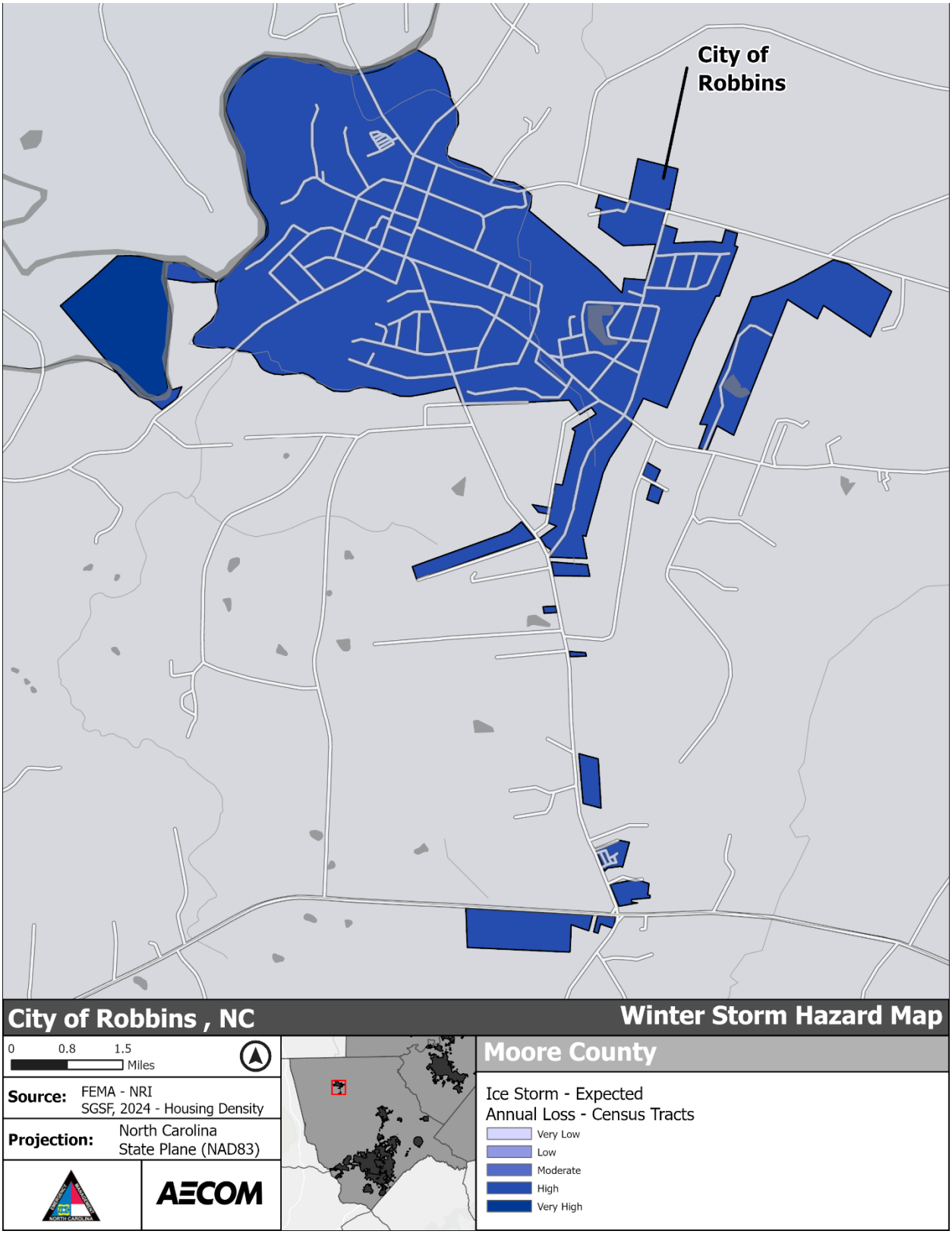


***Figure 5-182**: Ice Storm Hazard Areas – City of Robbins*

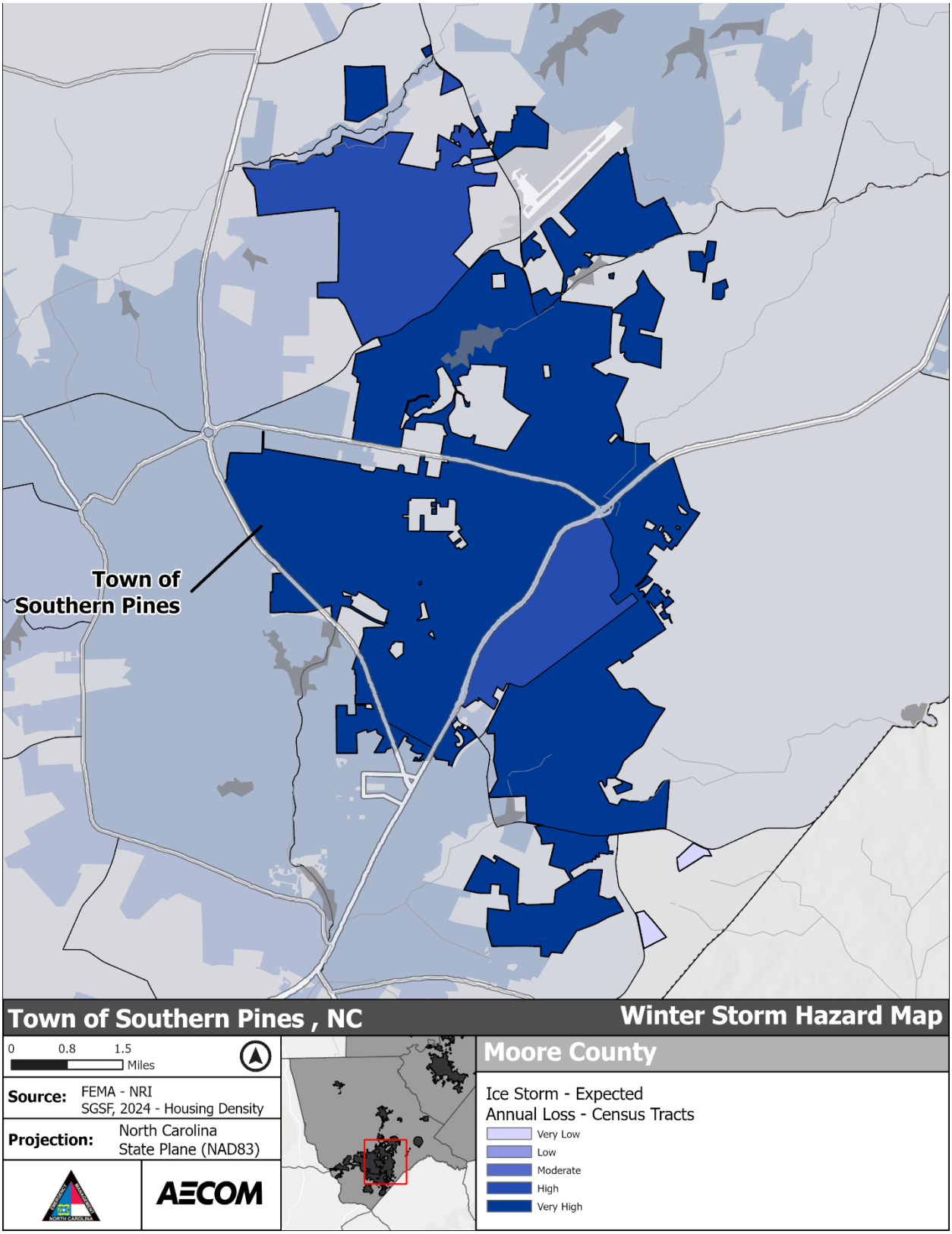


***Figure 5-183**: Ice Storm Hazard Area – Town of Southern Pines*

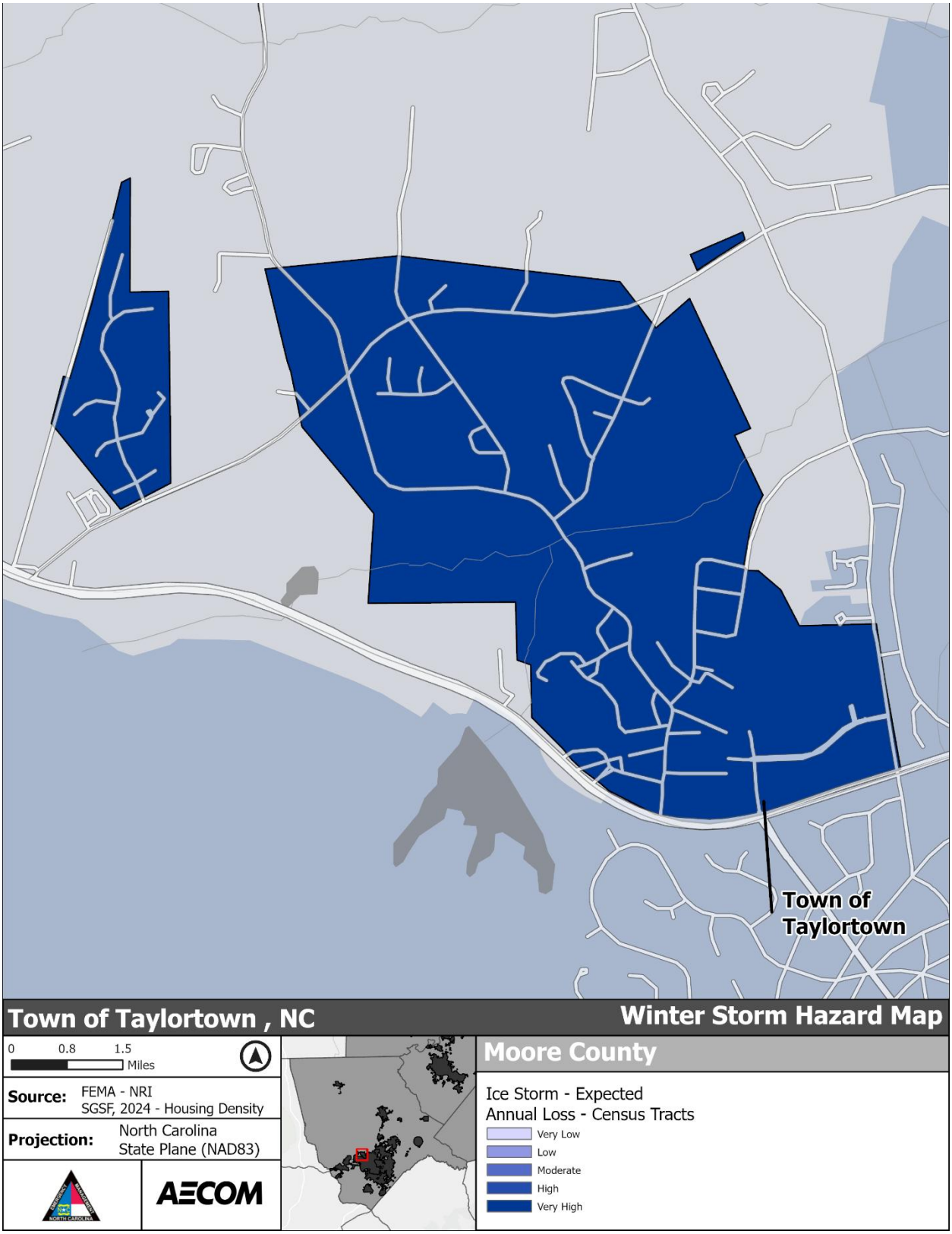


***Figure 5-184**: Ice Storm Hazard Area – Town of Taylortown*

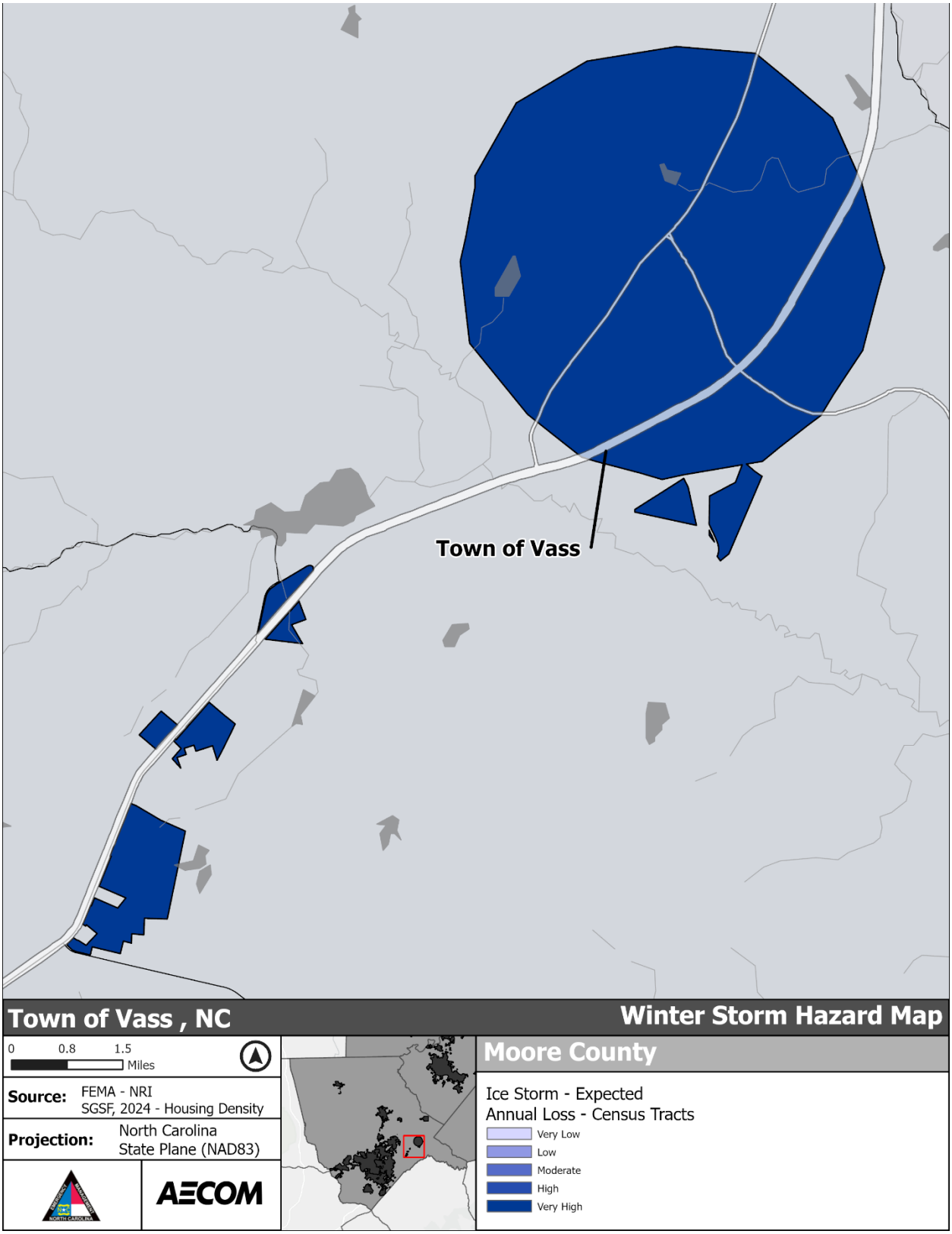


***Figure 5-185**: Ice Storm Hazard Area – Town of Vass*

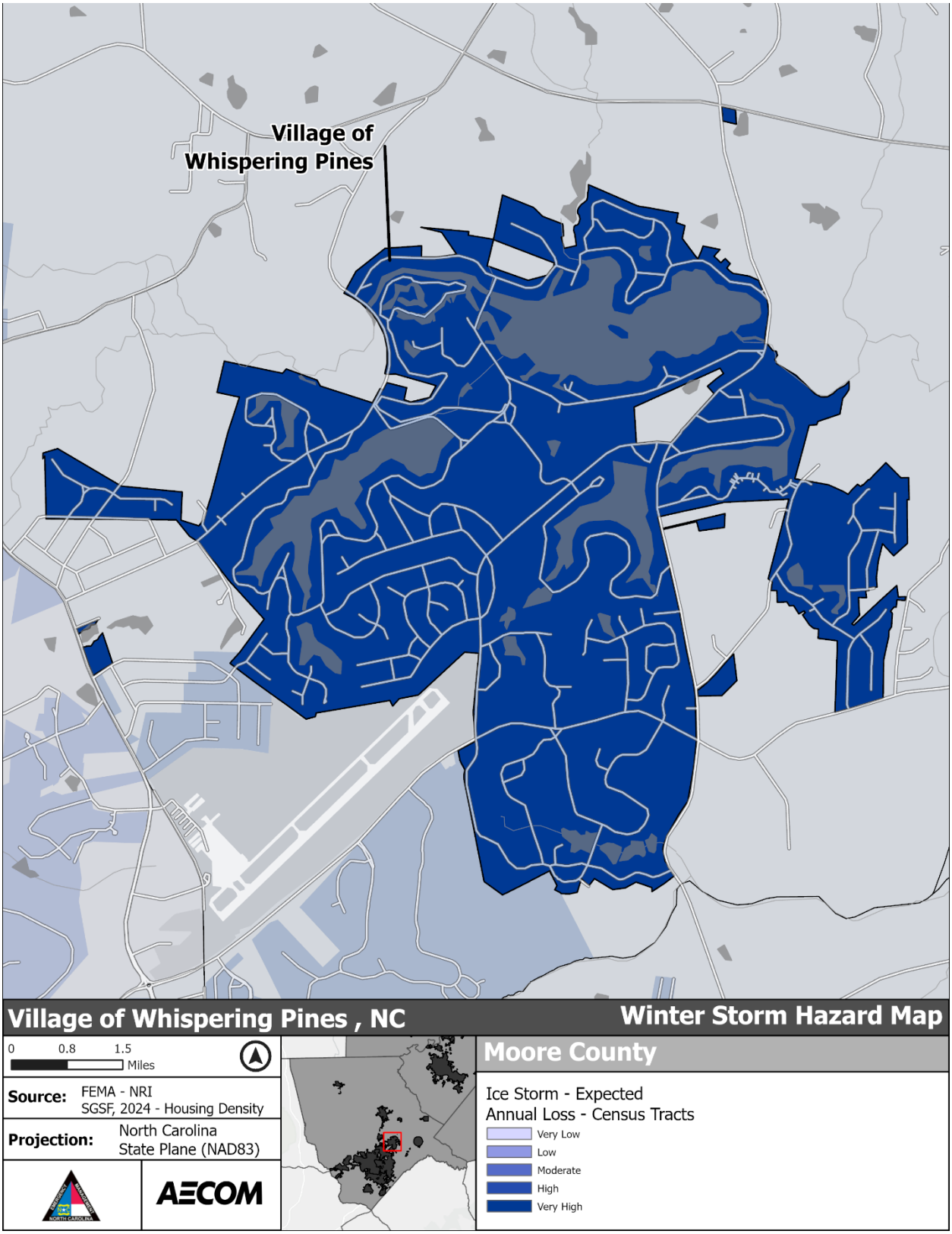


***Figure 5-186**: Ice Storm Hazard Areas – Village of Whispering Pines*

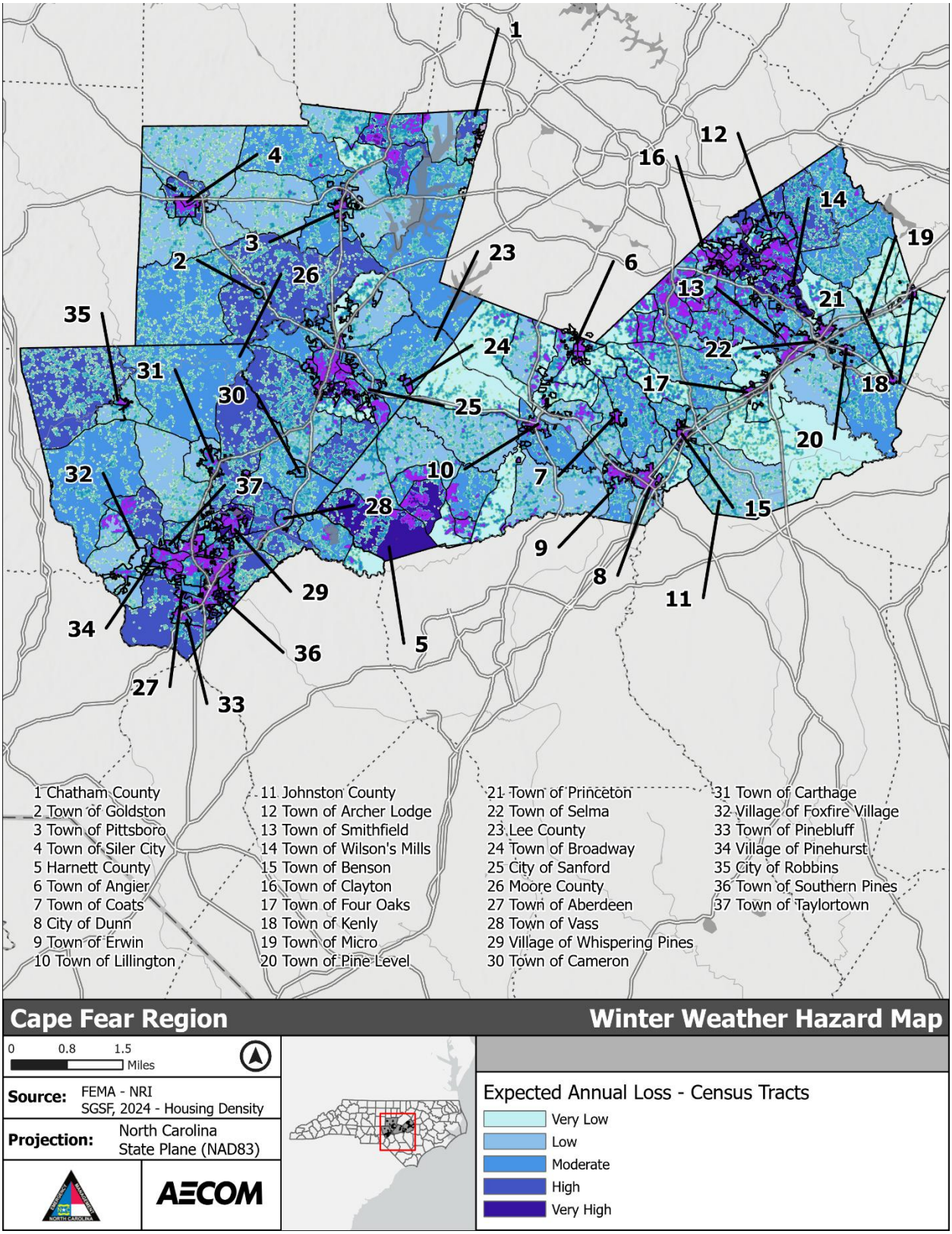


***Figure 5-187**: Winter Weather Hazard Area - Cape Fear Region*

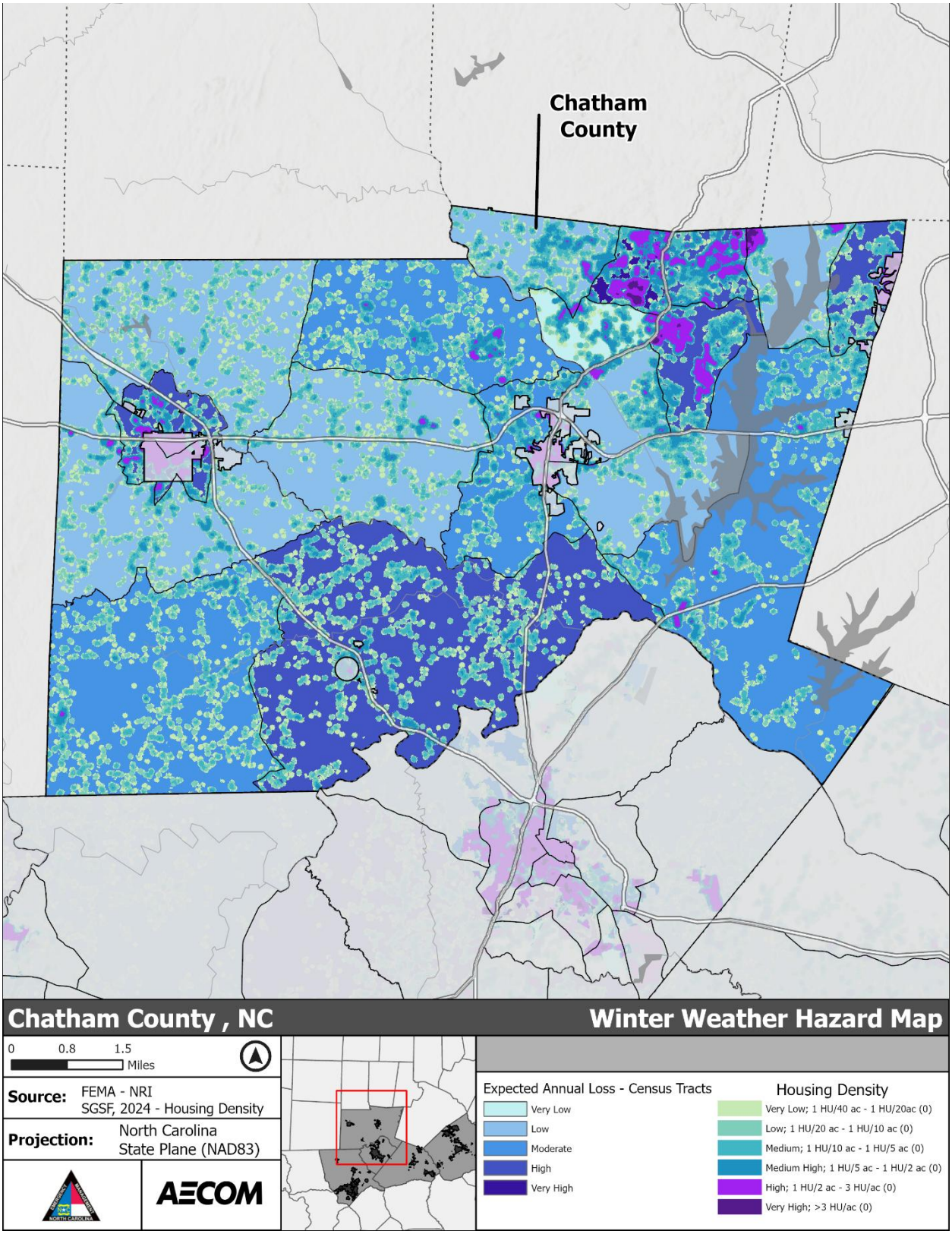


***Figure 5-188**: Winter Weather Hazard Area - Chatham County*

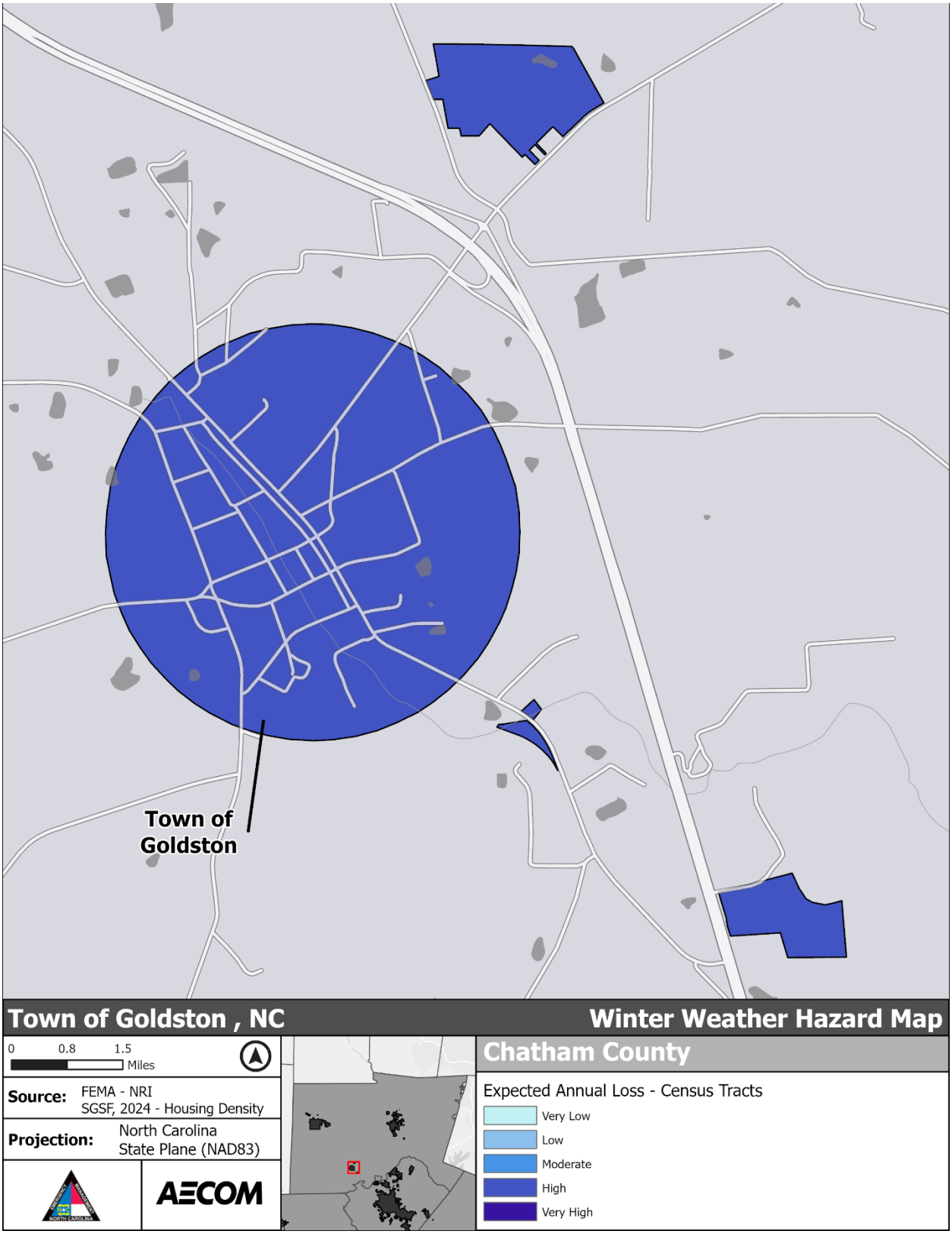


***Figure 5-189**: Winter Weather Hazard Area - Town of Goldston*

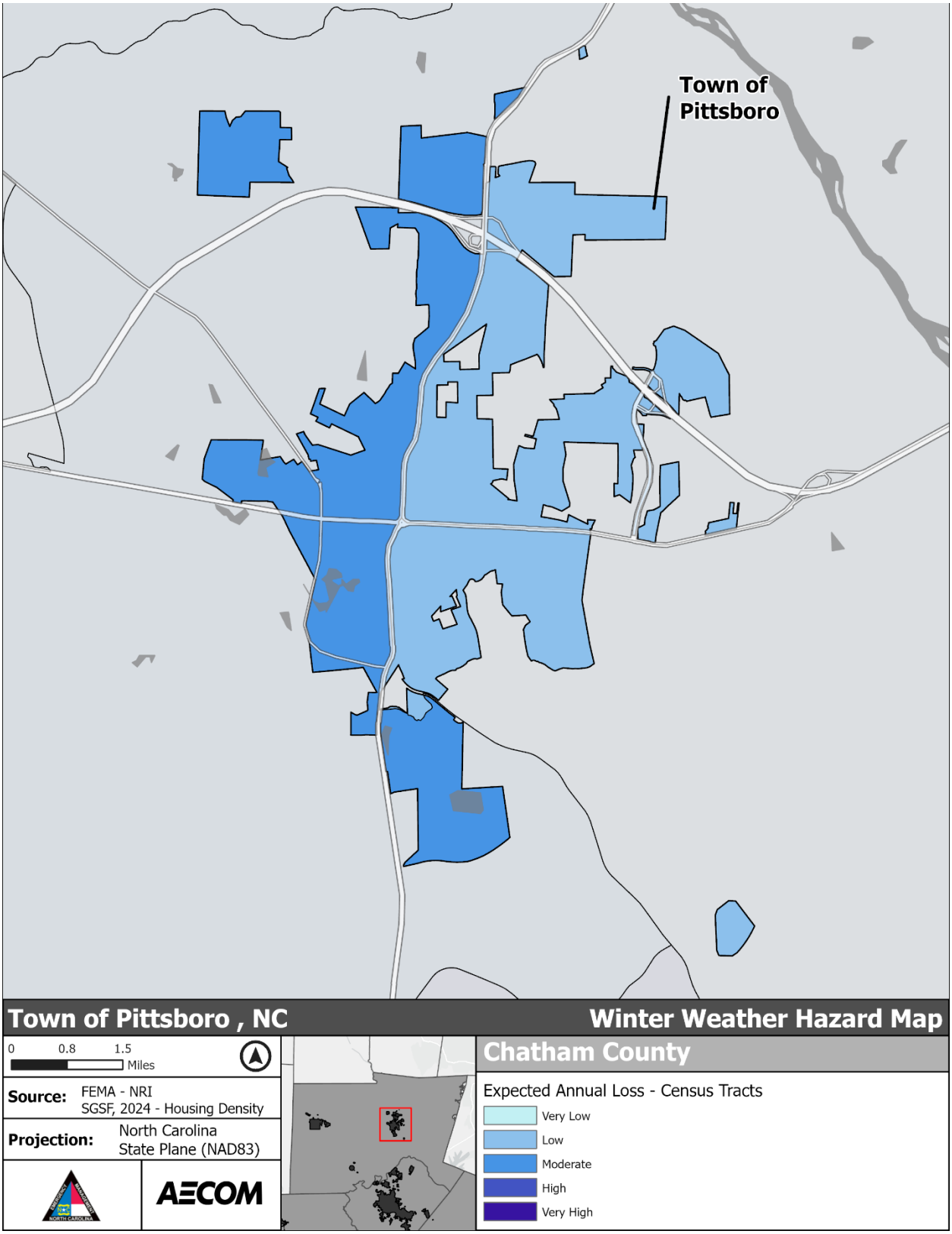


***Figure 5-190**: Winter Weather Hazard Area - Town of Pittsboro*

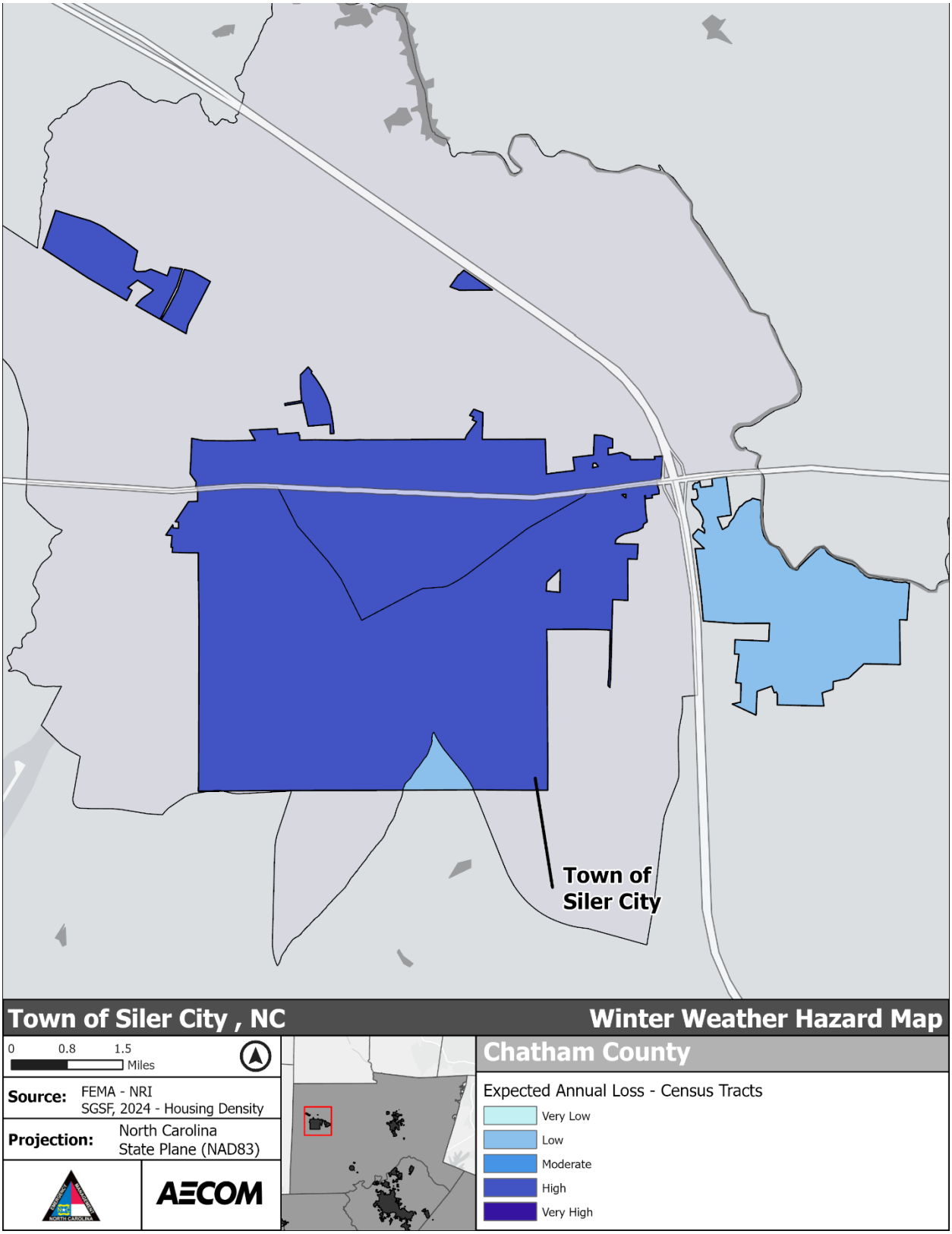


***Figure 5-191**: Winter Weather Hazard Area - Town of Siler City*

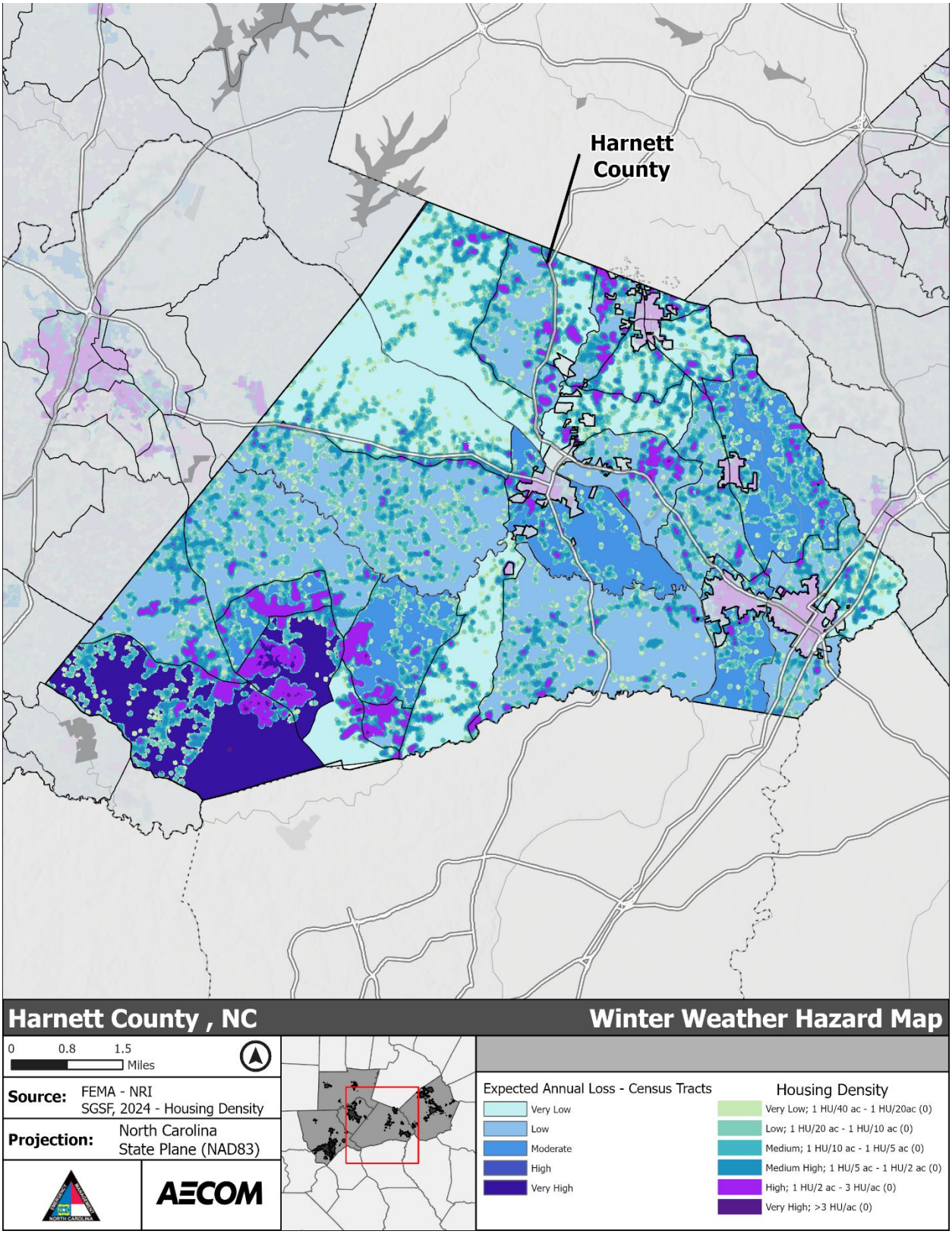


***Figure 5-192**: Winter Weather Hazard Area - Harnett County*

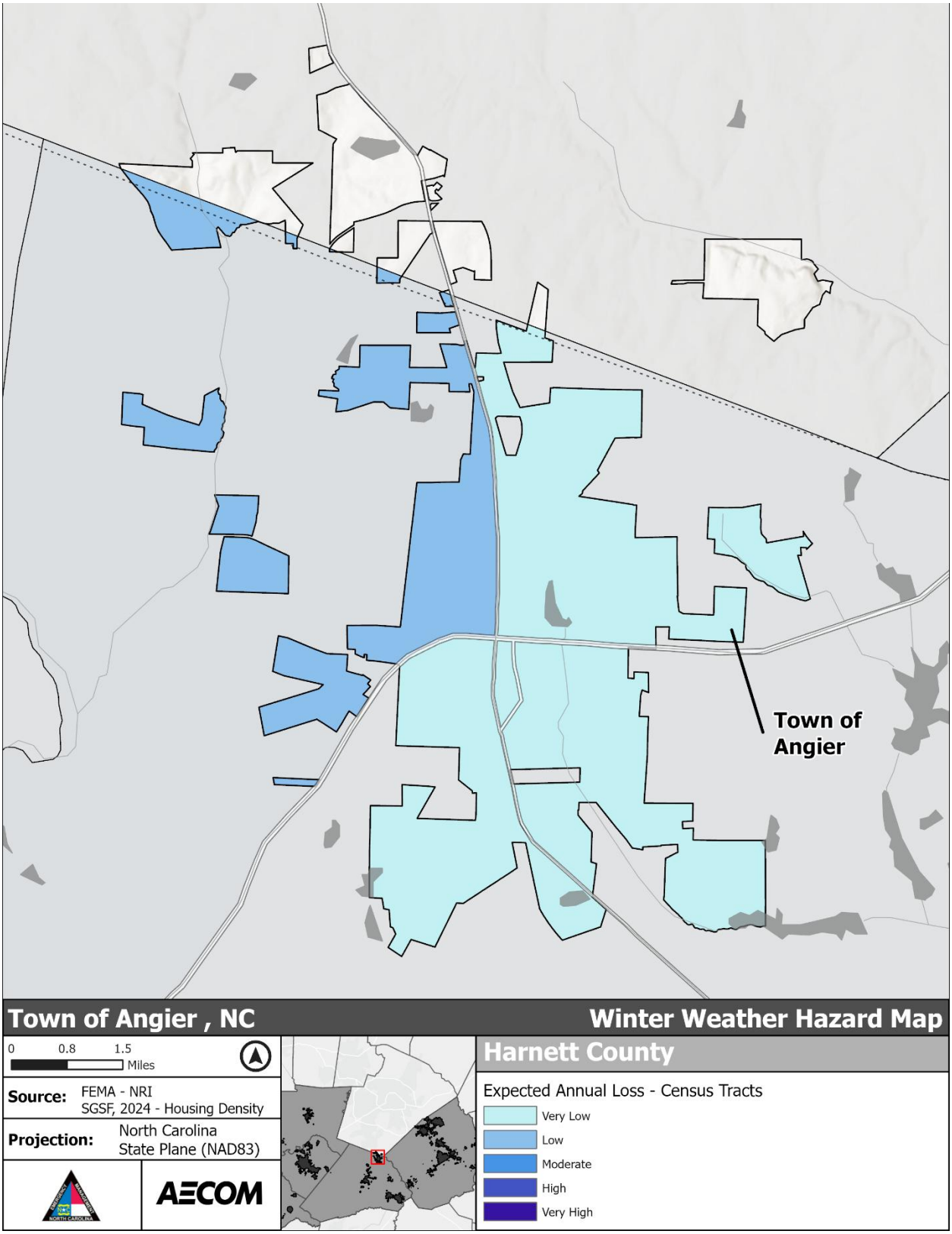


***Figure 5-193**: Winter Weather Hazard Area - Town of Angier*

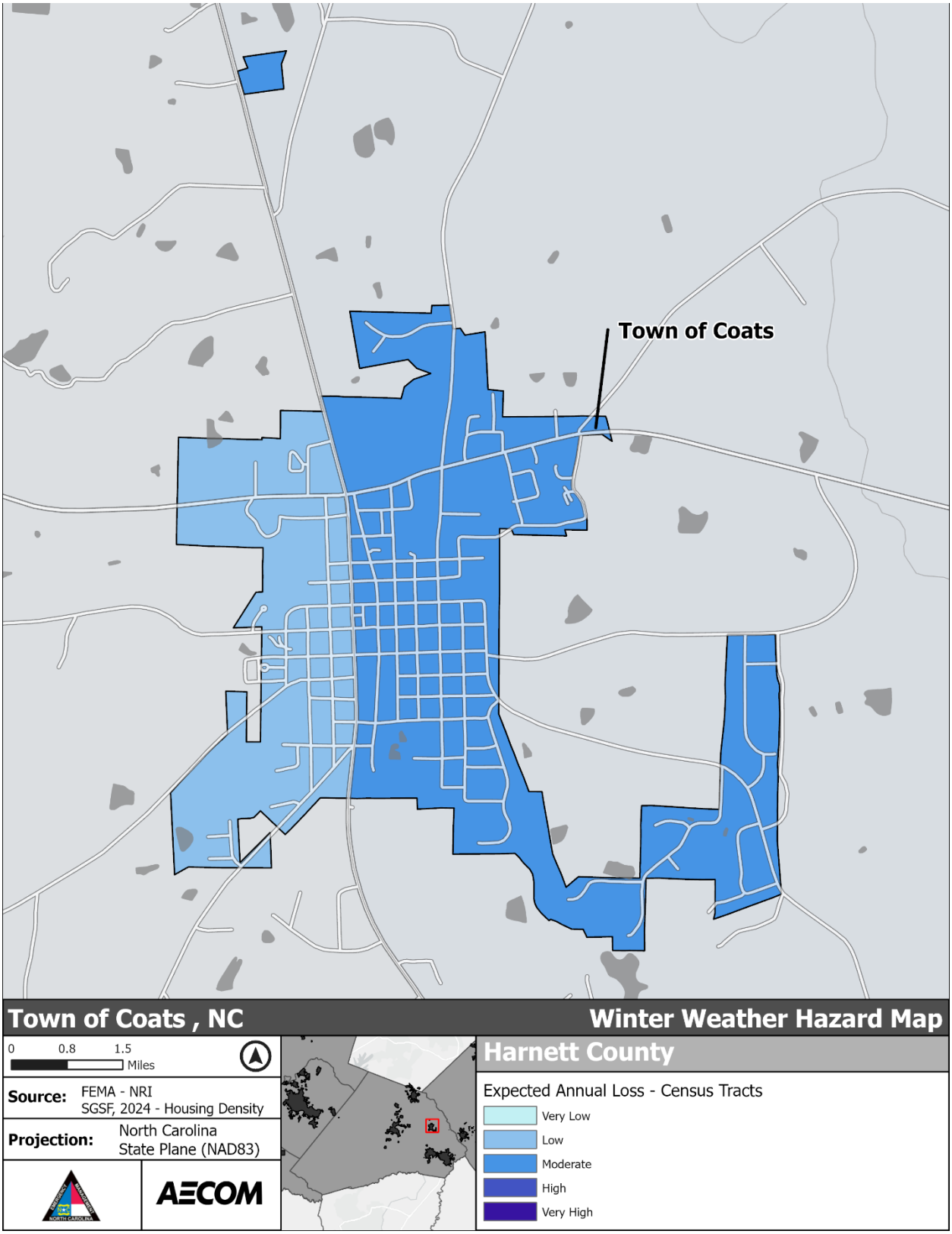


Figure 5-194: Winter Weather Hazard Area - Town of Coats

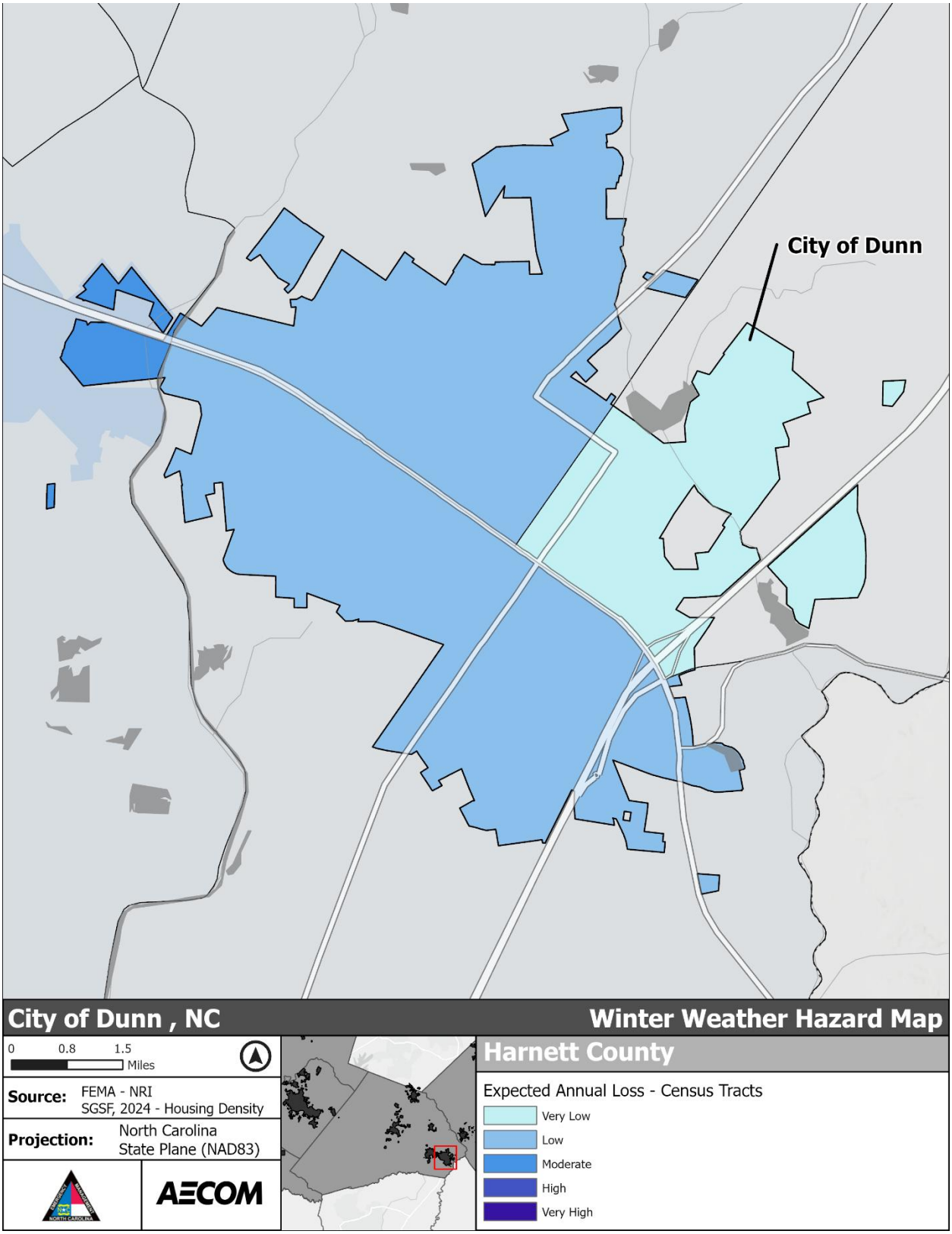


***Figure 5-195**: Winter Weather Hazard Area - City of Dunn*

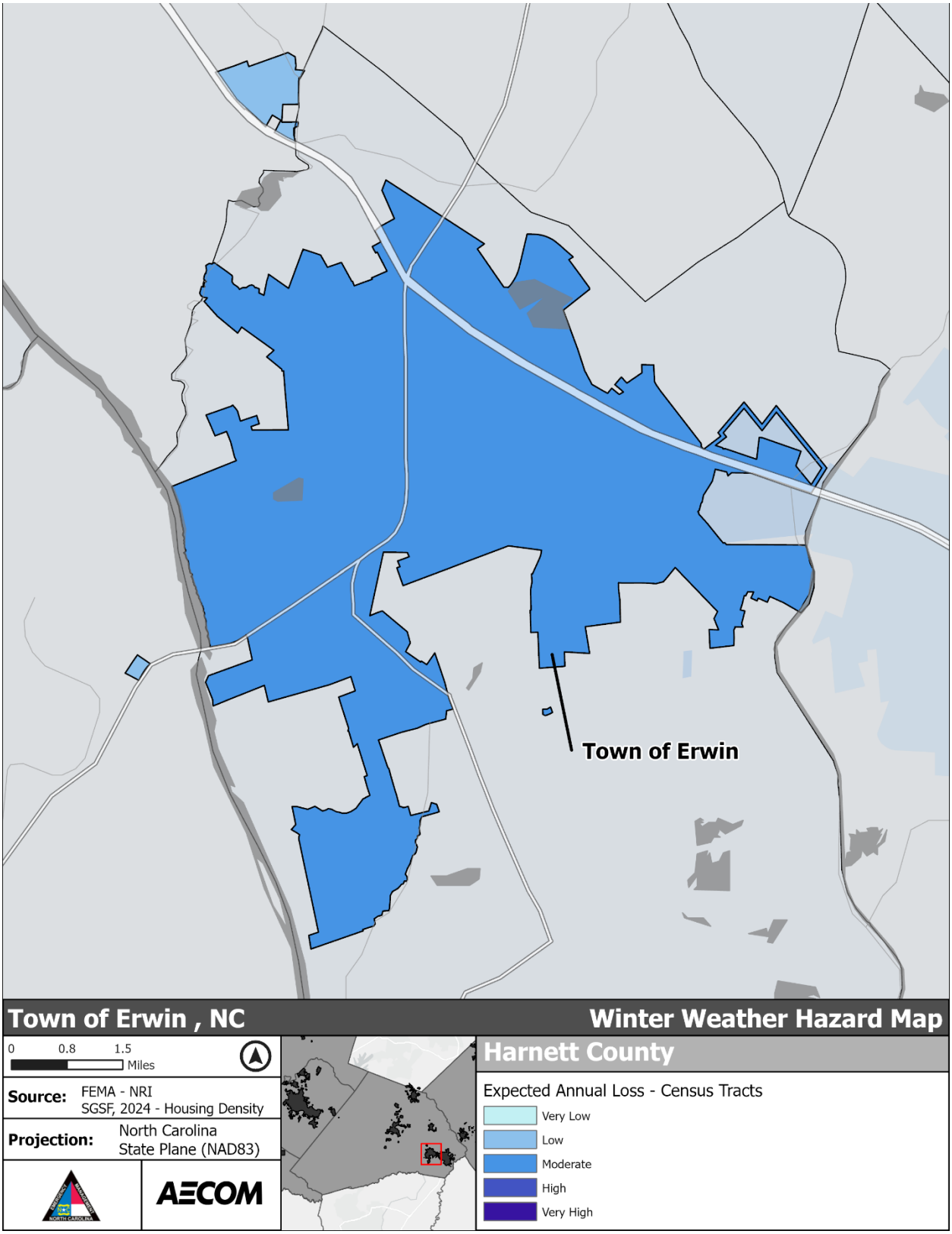


***Figure 5-196**: Winter Weather Hazard Area - Town of Erwin*

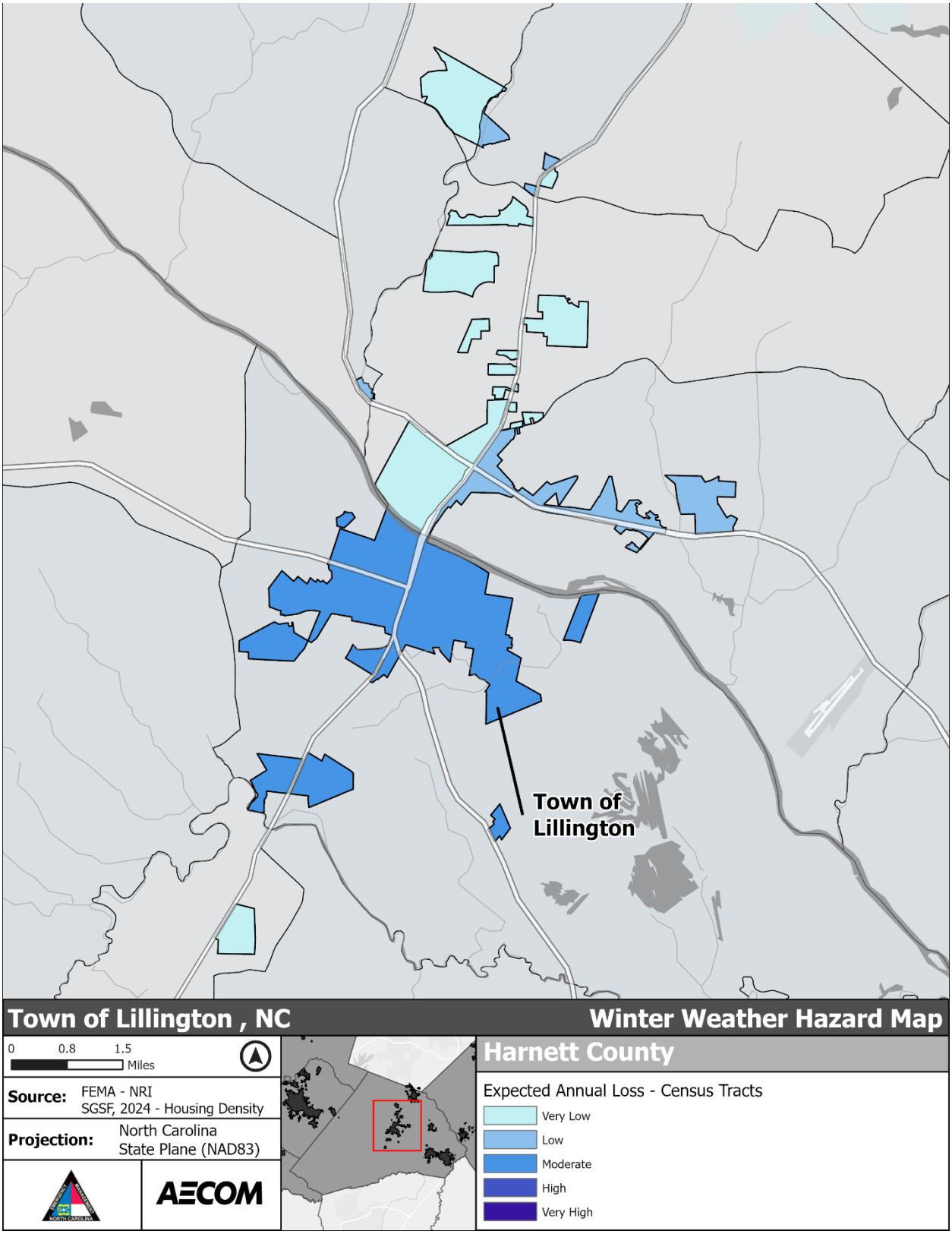


***Figure 5-197**: Winter Weather Hazard Area - Town of Lillington*

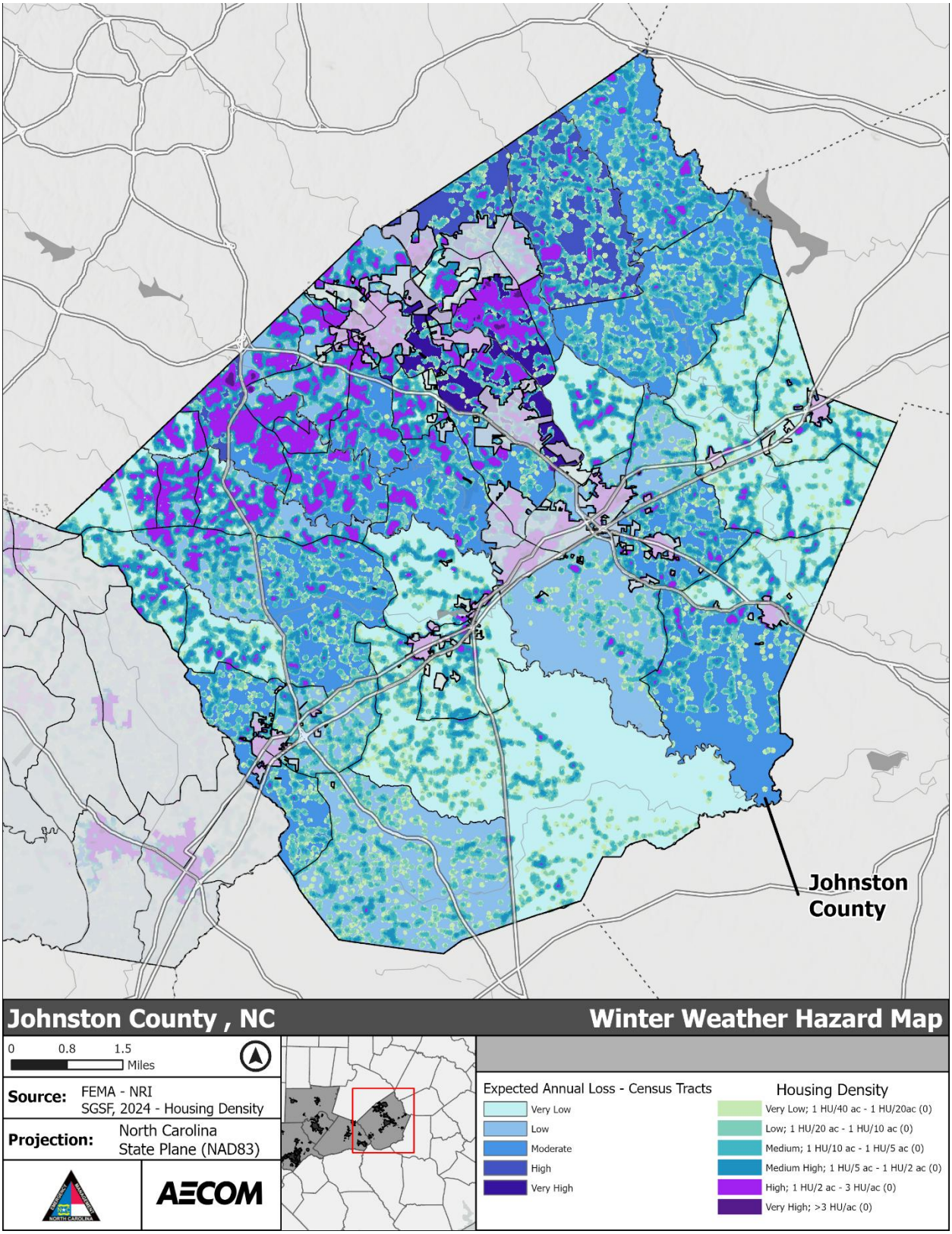


***Figure 5-198**: Winter Weather Hazard Area - Johnston County*

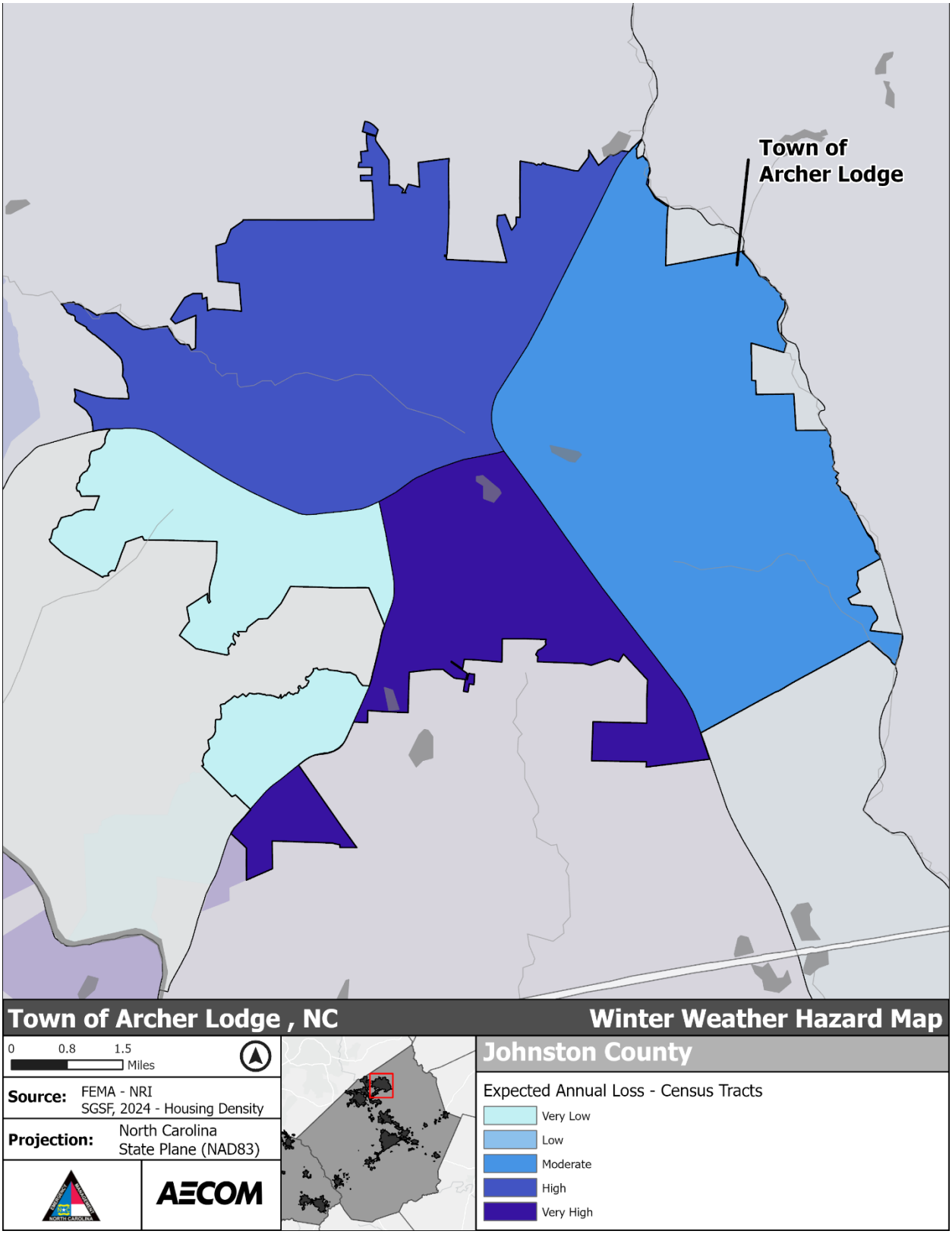


***Figure 5-199**: Winter Weather Hazard Area - Town of Archer Lodge*

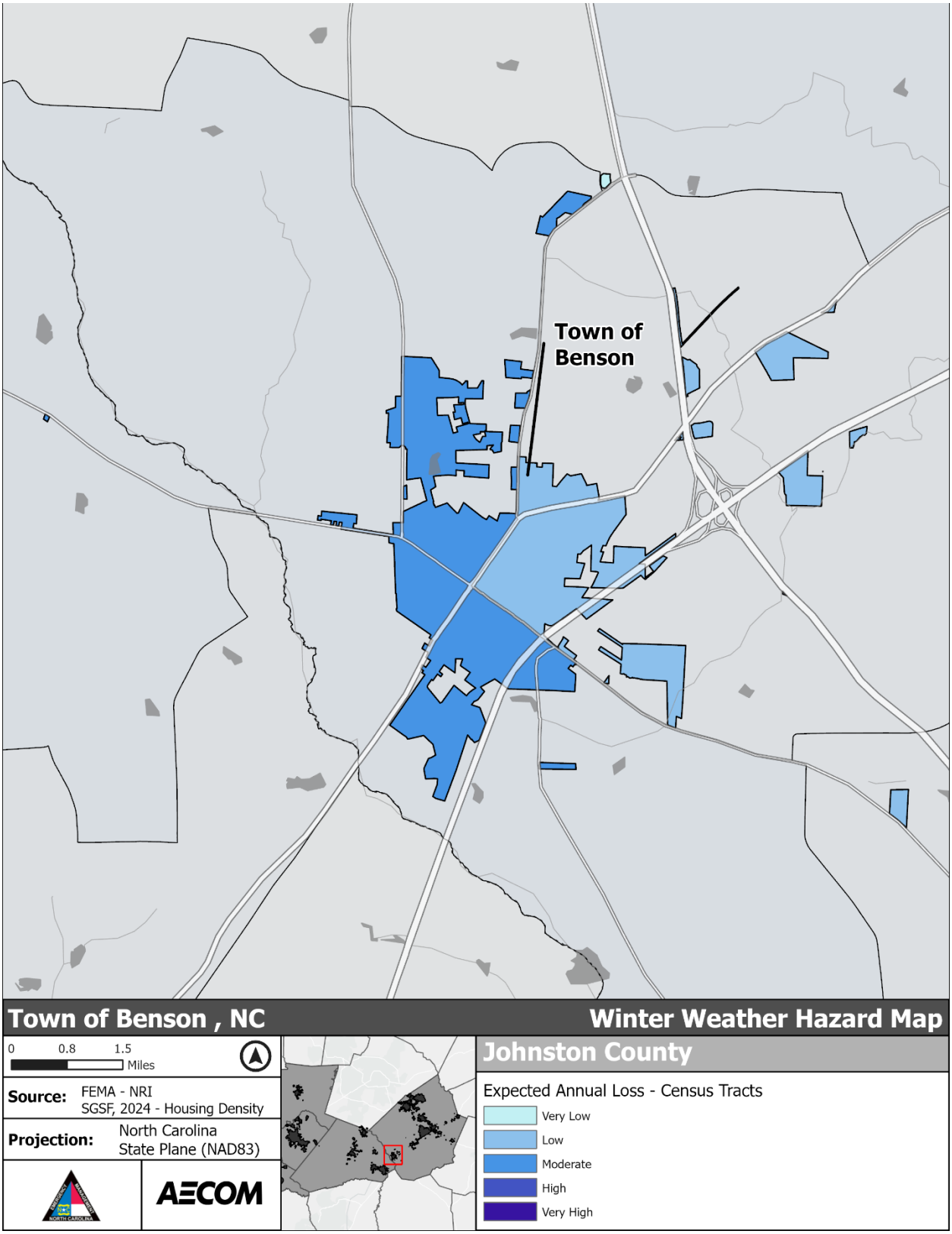


***Figure 5-200**: Winter Weather Hazard Area - Town of Benson*

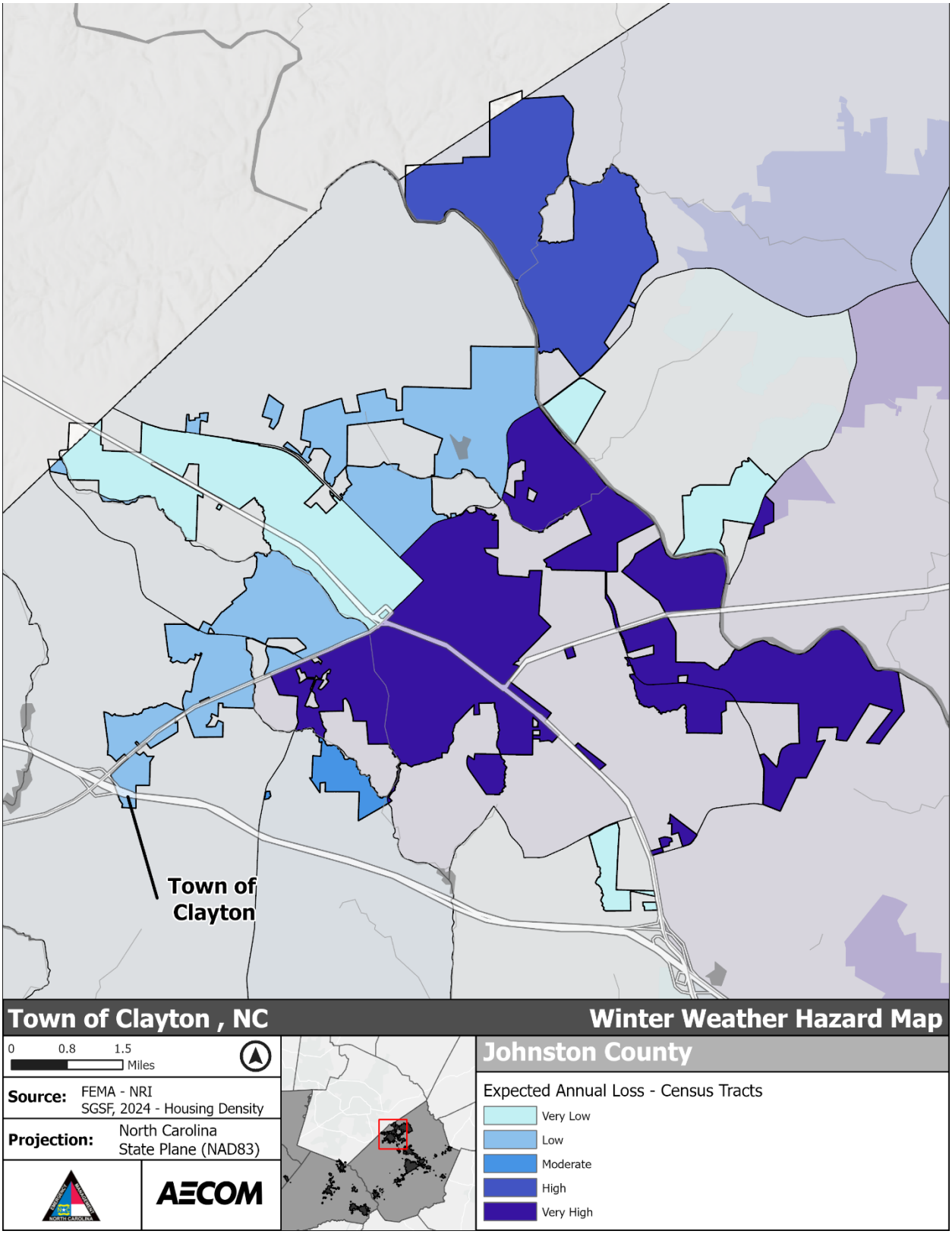


***Figure 5-201**: Winter Weather Hazard Area - Town of Clayton*

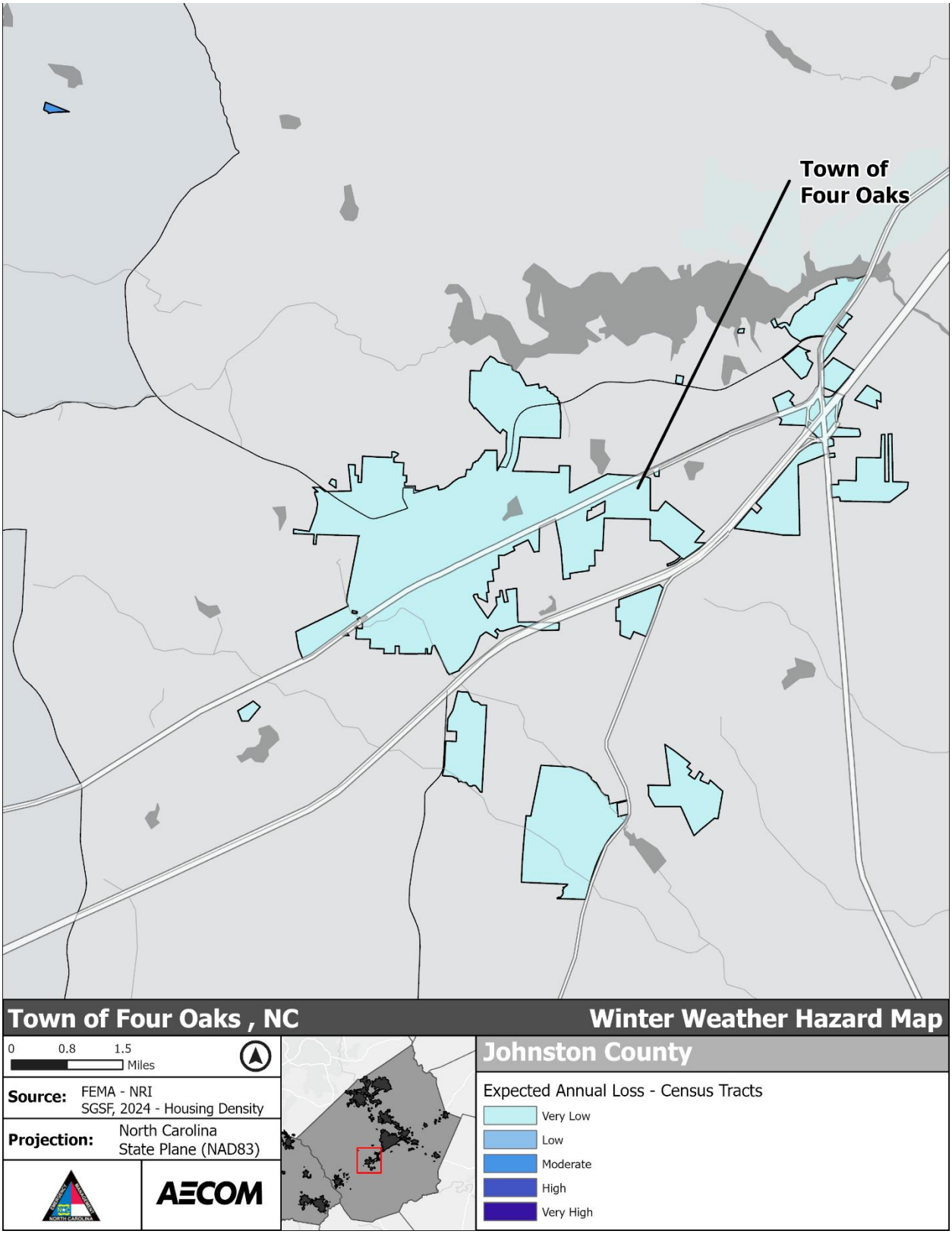


***Figure 5-202**: Winter Weather Hazard Area - Town of Four Oaks*

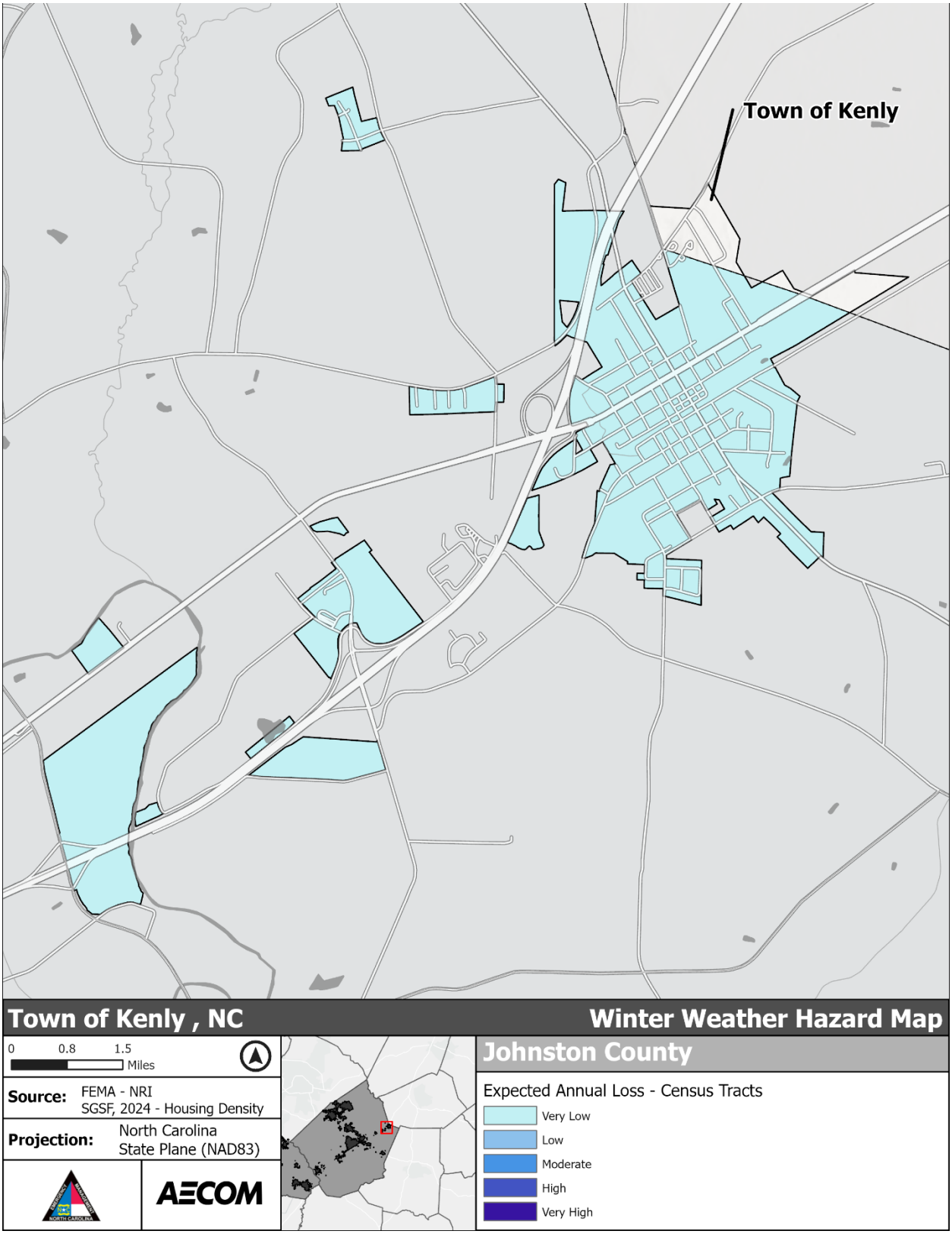


***Figure 5-203**: Winter Weather Hazard Area - Town of Kenly*

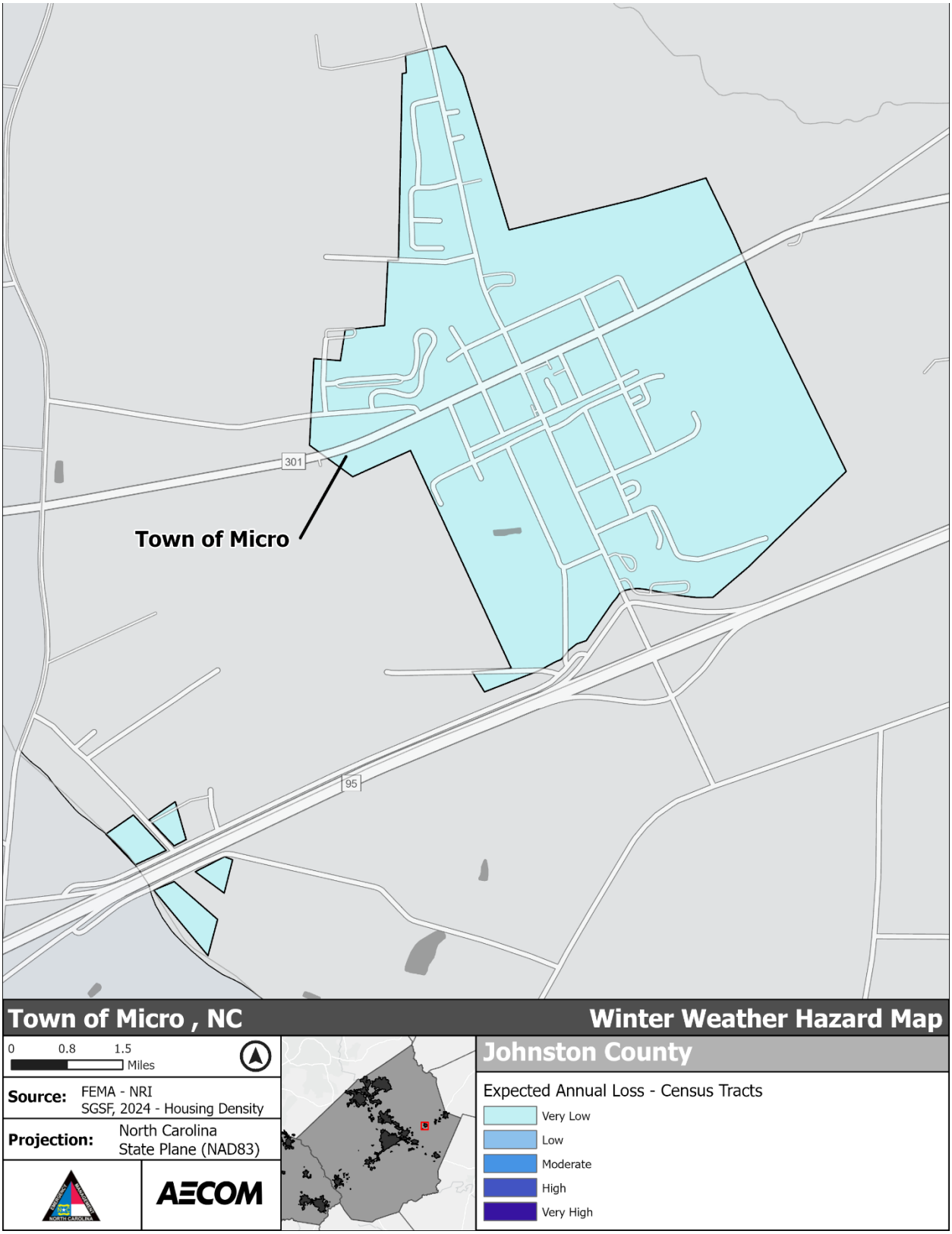


***Figure 5-204**: Winter Weather Hazard Area - Town of Micro*

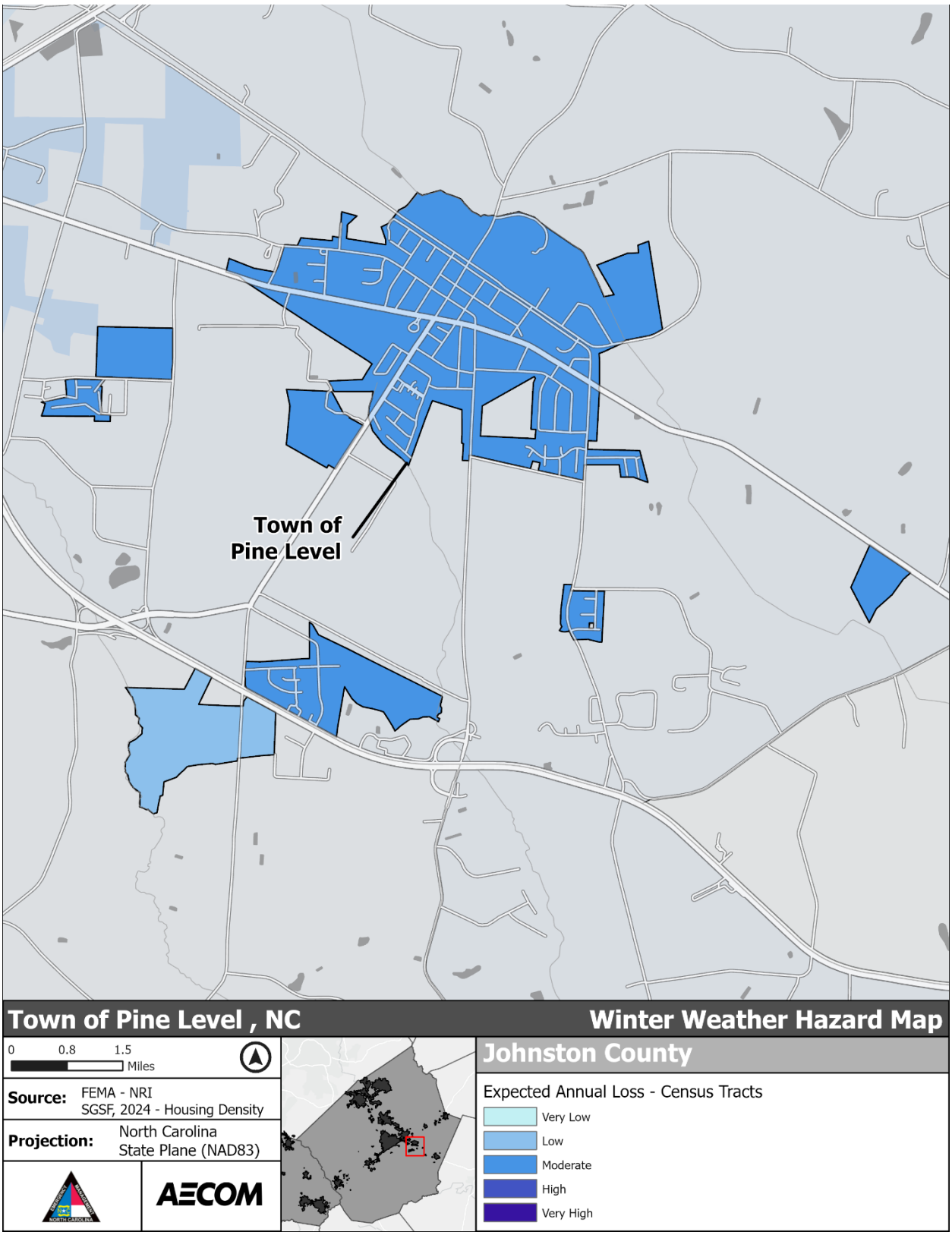


***Figure 5-205**: Winter Weather Hazard Area - Town of Pine Level*

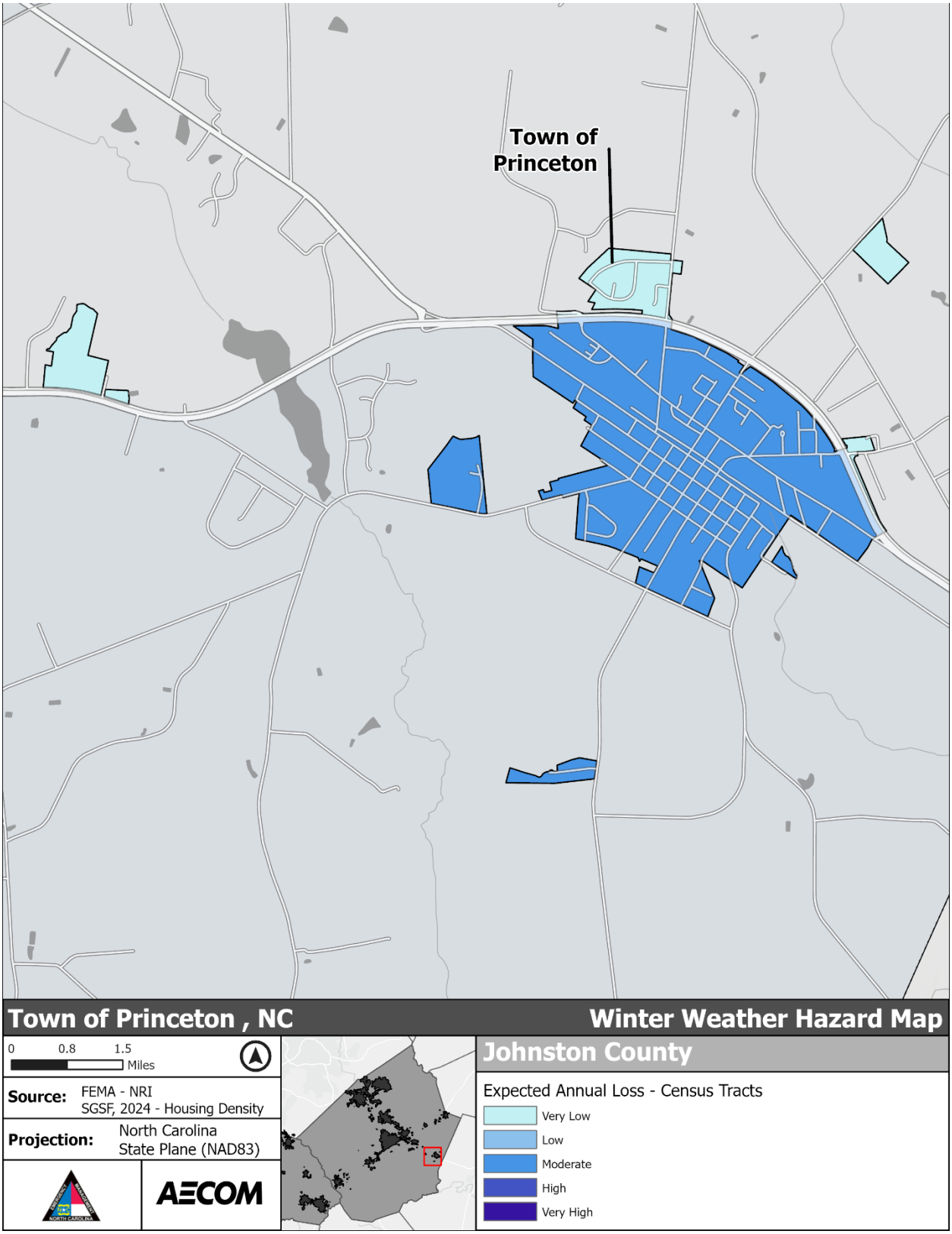


***Figure 5-206**: Winter Weather Hazard Area - Town of Princeton*

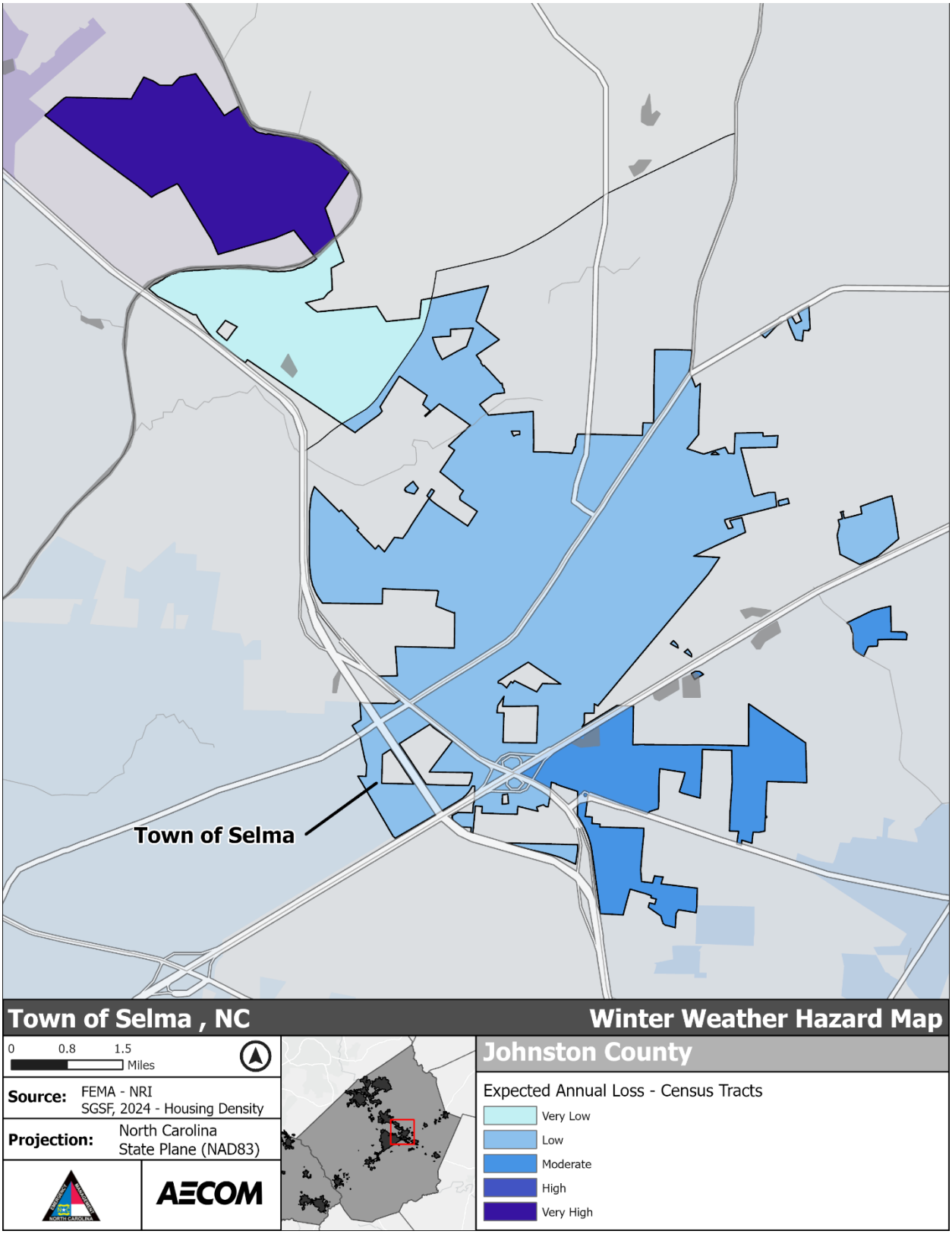


***Figure 5-207**: Winter Weather Hazard Area - Town of Selma*

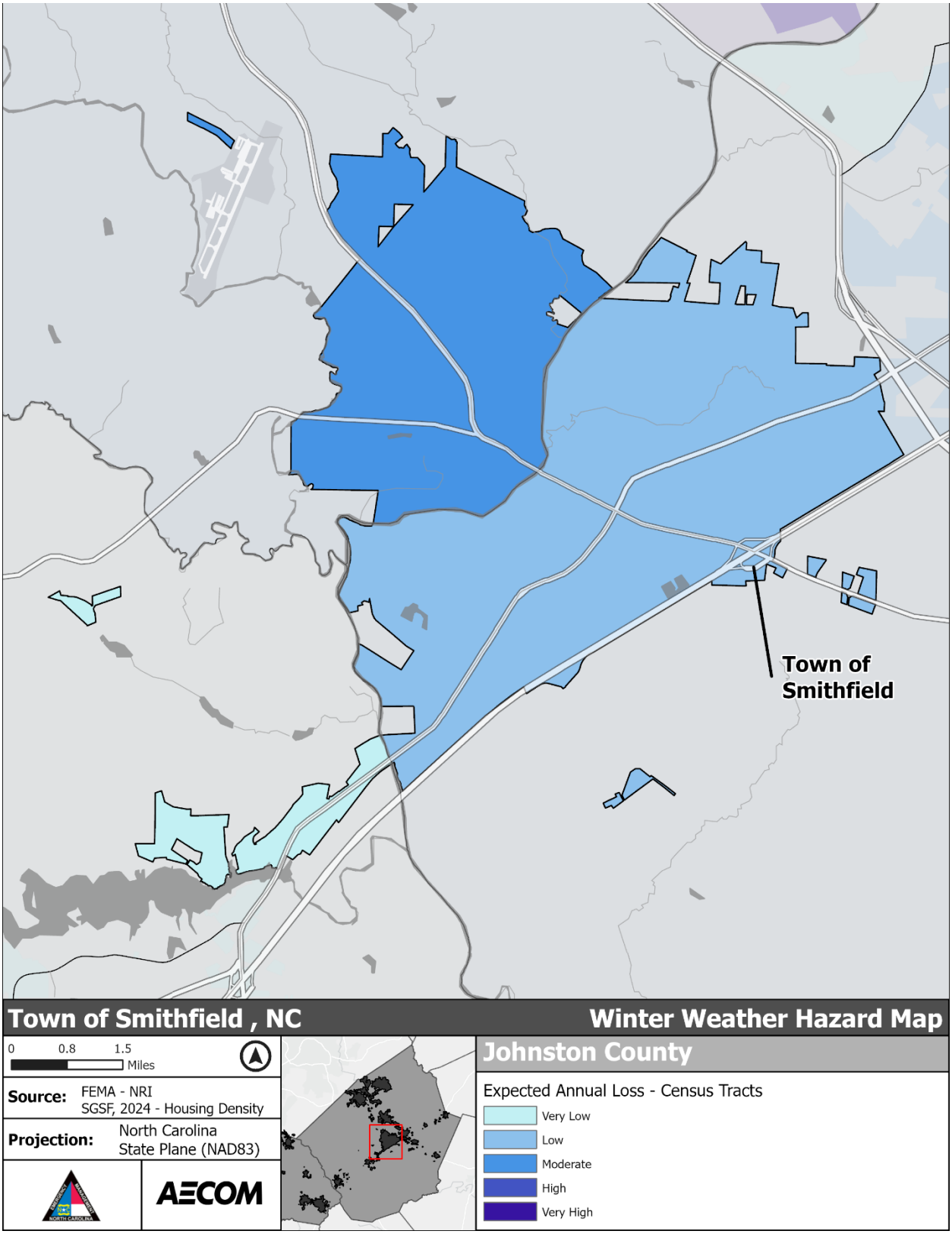


***Figure 5-208**: Winter Weather Hazard Area - Town of Smithfield*

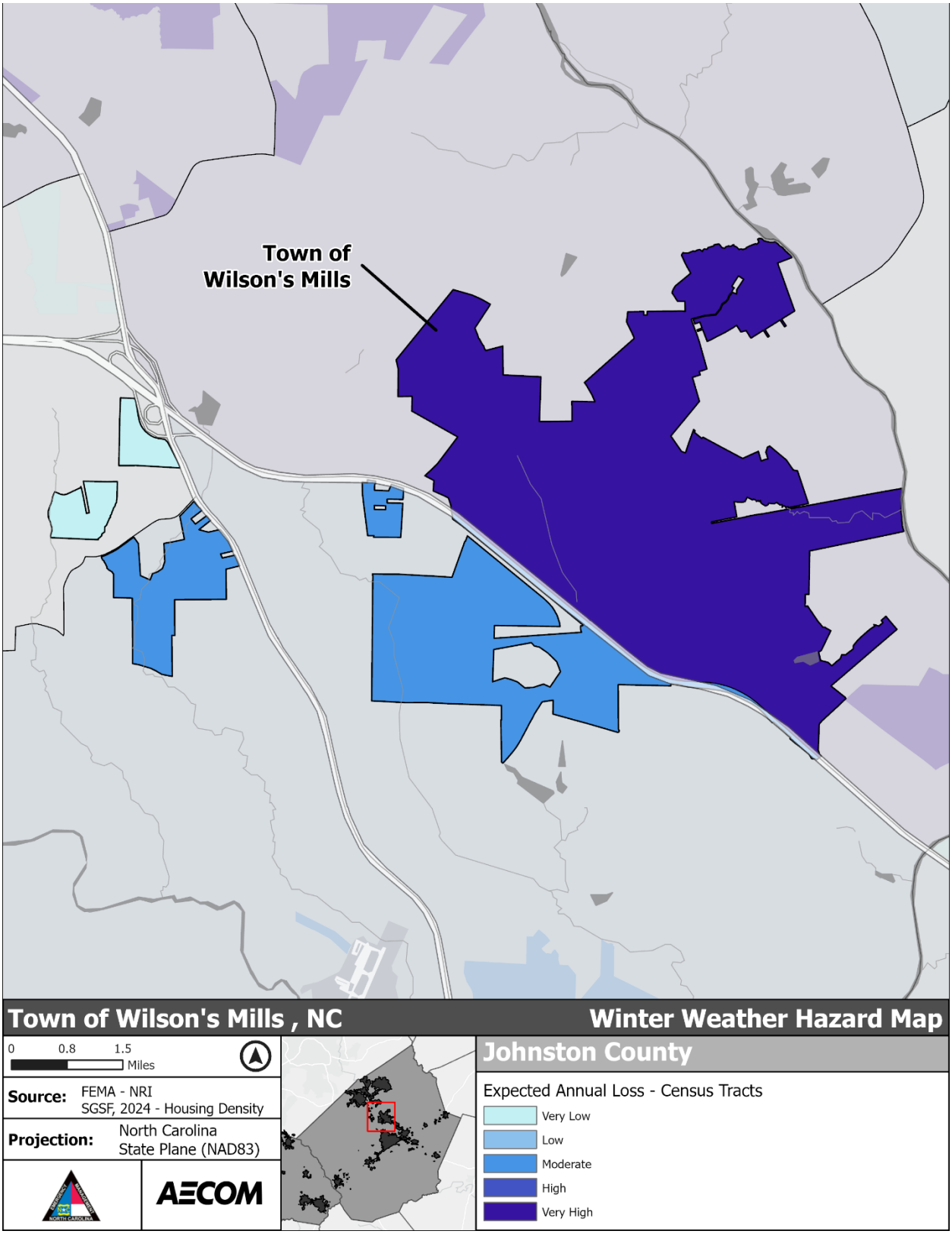


***Figure 5-209**: Winter Weather Hazard Area - Town of Wilson's Mills*

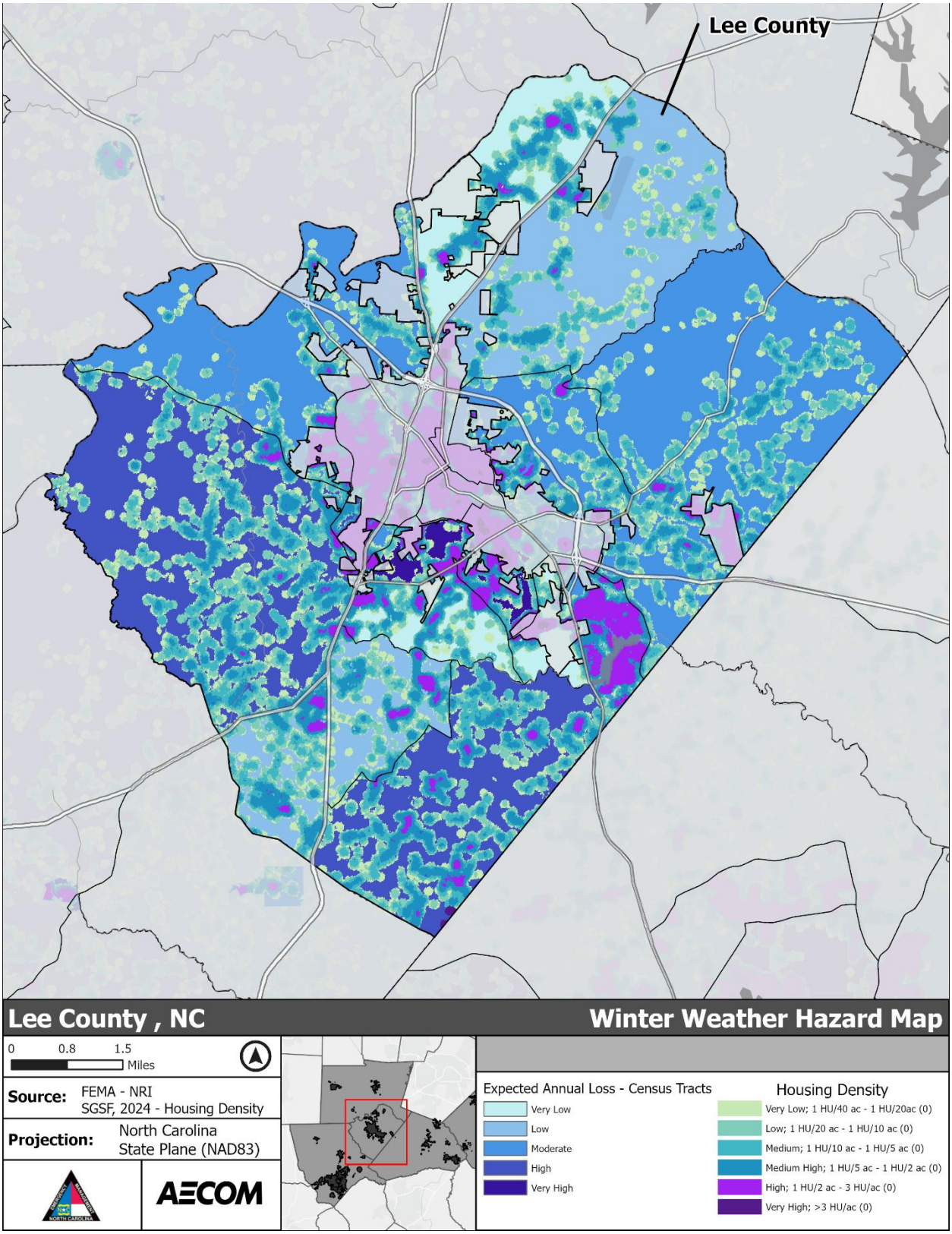


***Figure 5-210**: Winter Weather Hazard Area - Lee County*

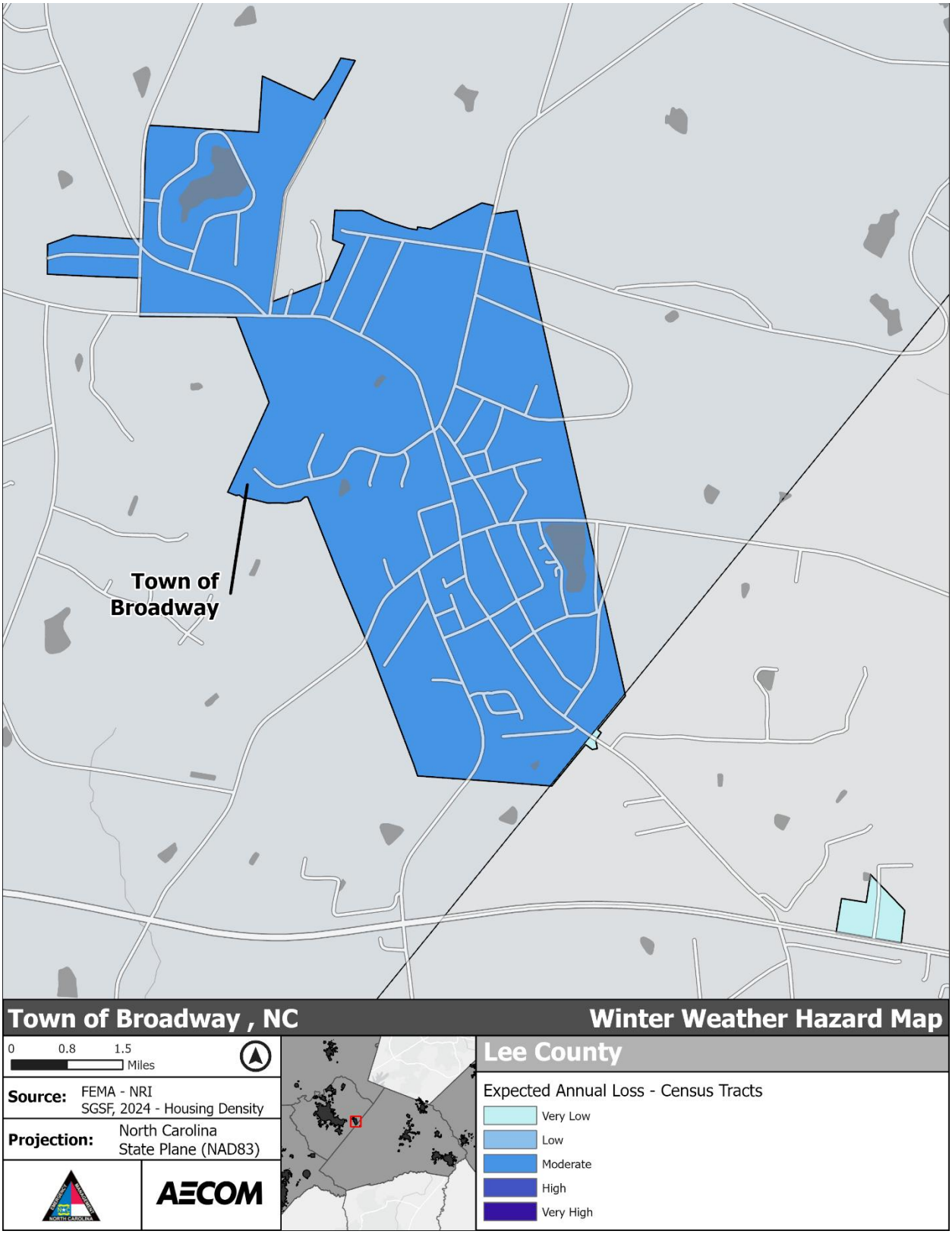


***Figure 5-211**: Winter Weather Hazard Area - Town of Broadway*

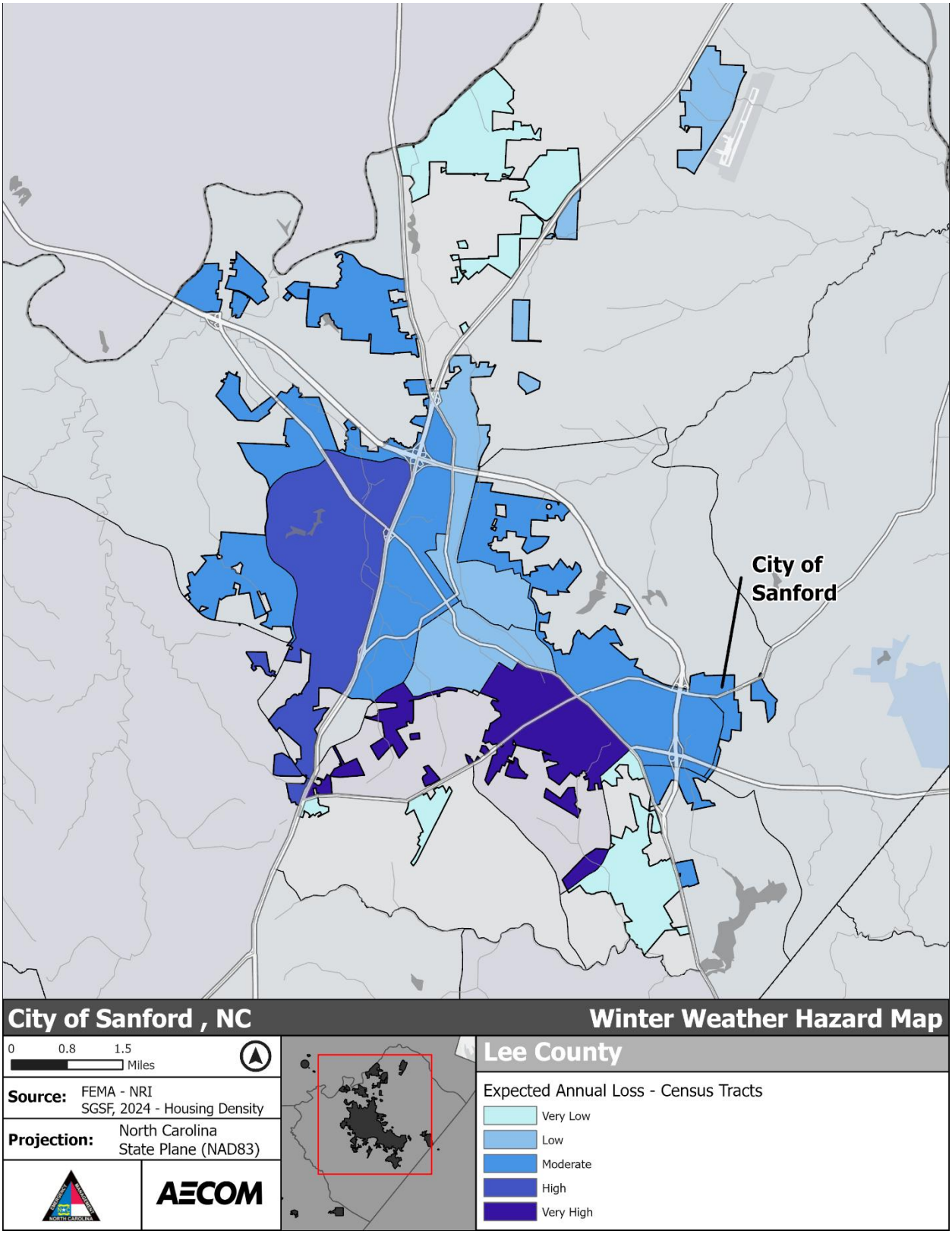


***Figure 5-212**: Winter Weather Hazard Area - City of Sanford*

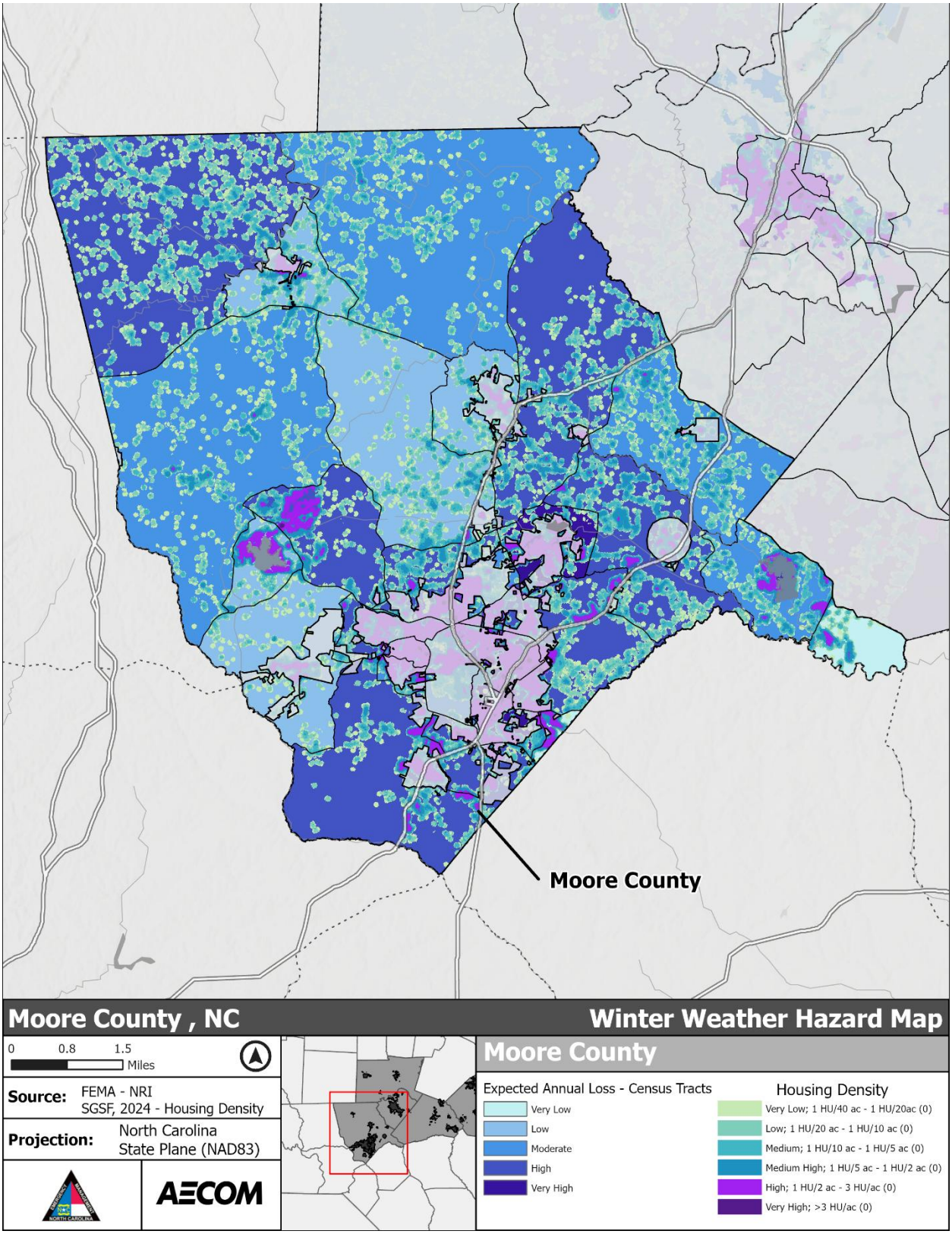


***Figure 5-213**: Winter Weather Hazard Area - Moore County*

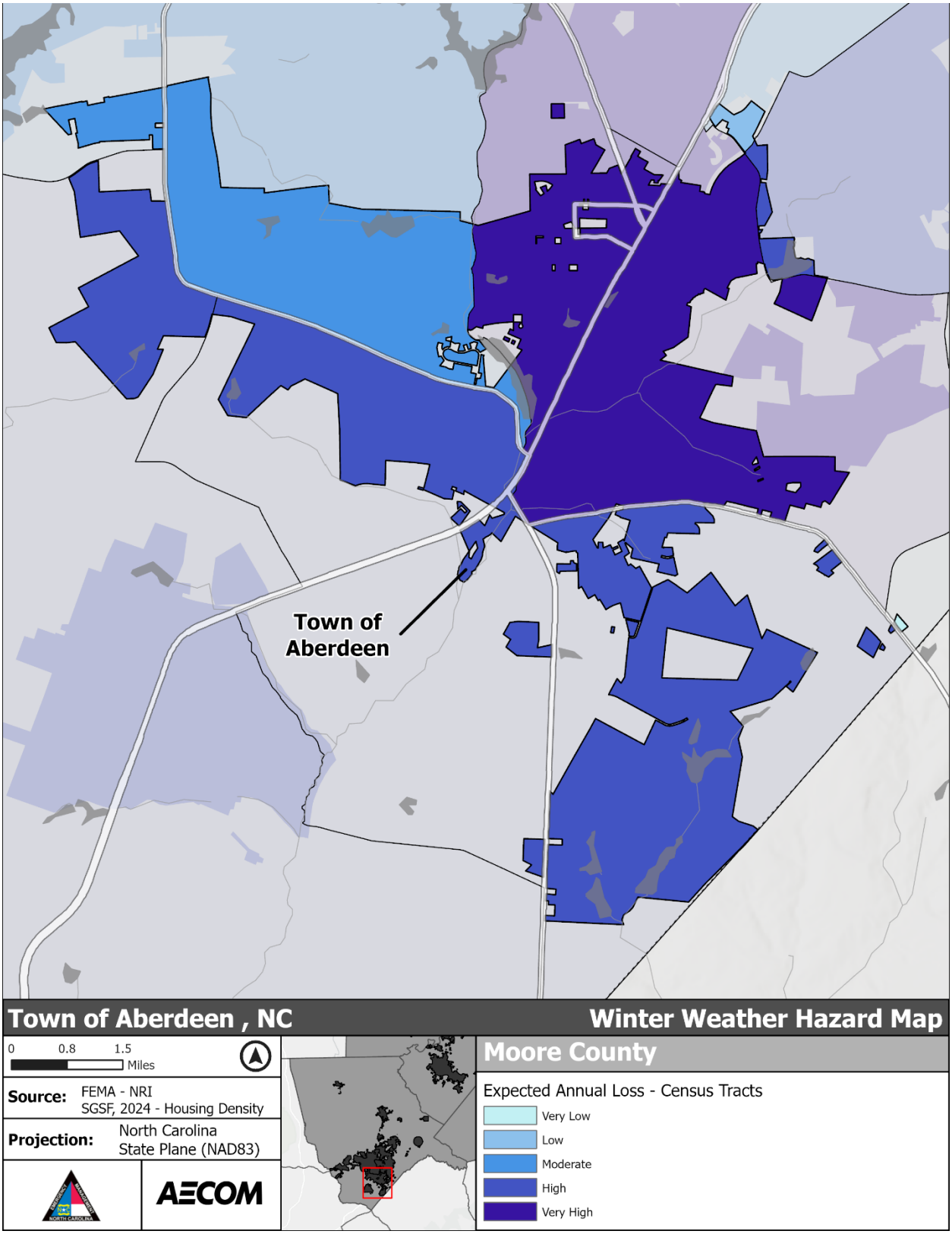


***Figure 5-214**: Winter Weather Hazard Area - Town of Aberdeen*

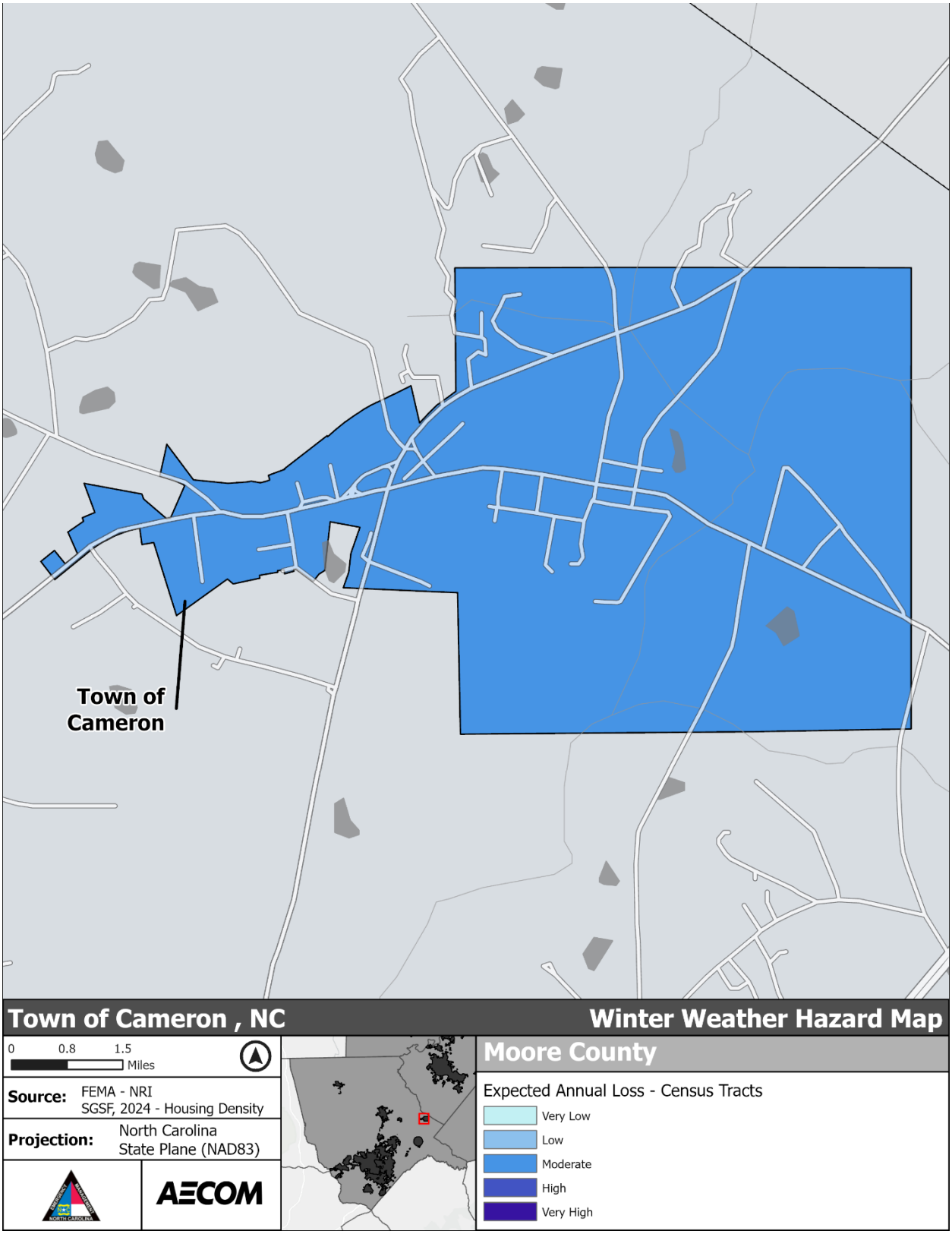


***Figure 5-215**: Winter Weather Hazard Area - Town of Cameron*

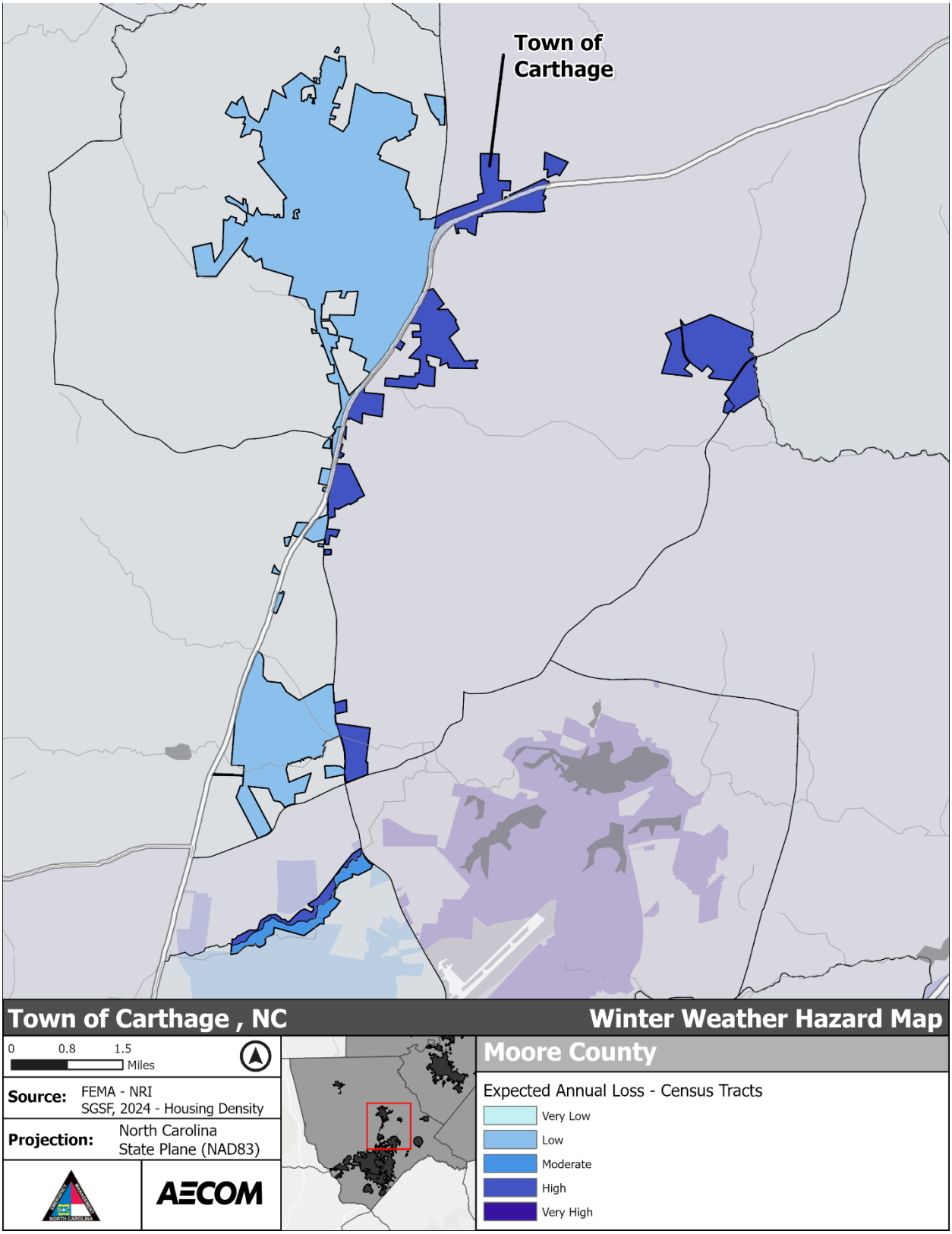


***Figure 5-216**: Winter Weather Hazard Area - Town of Carthage*

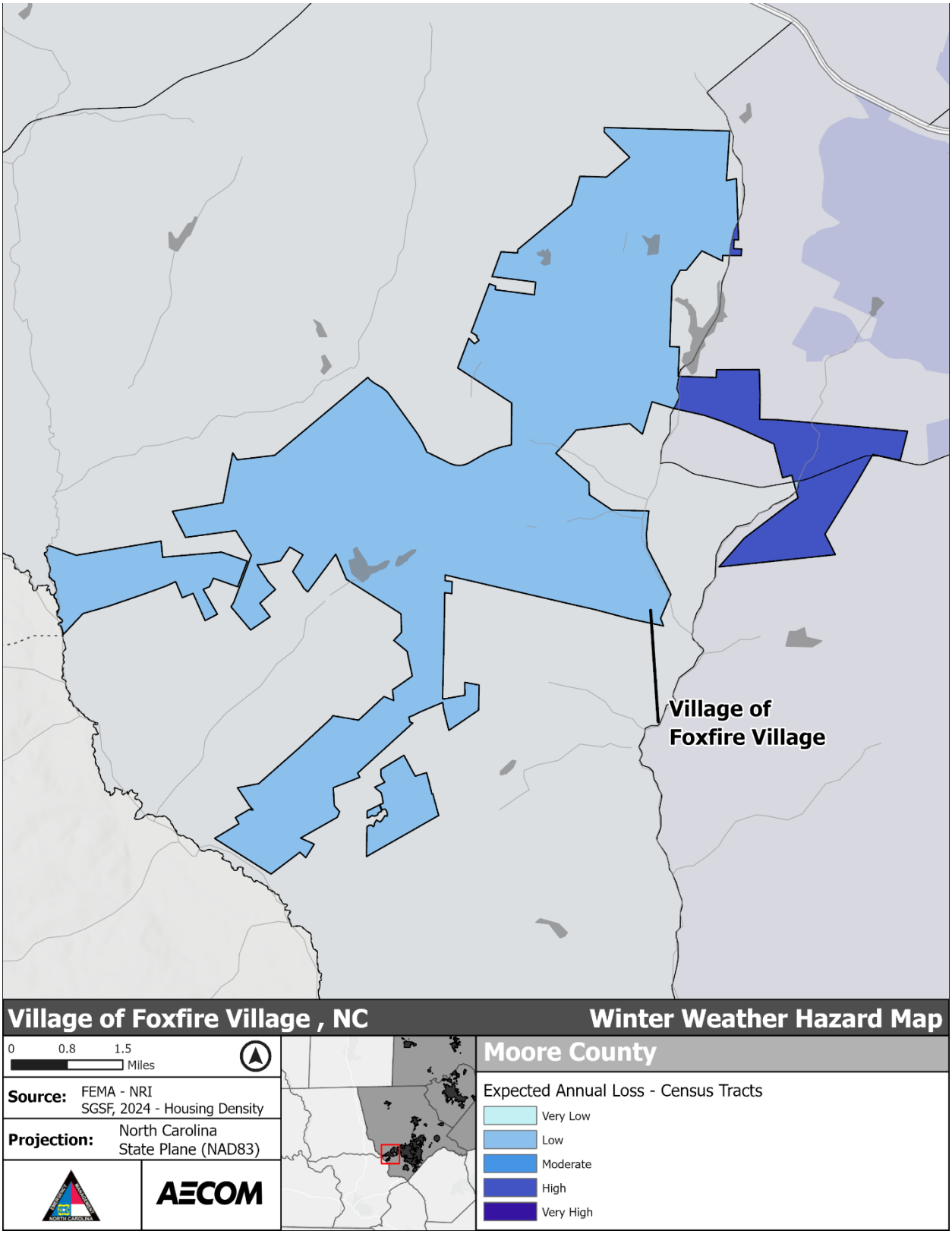


Figure 5-217: Winter Weather Hazard Area - Foxfire Village

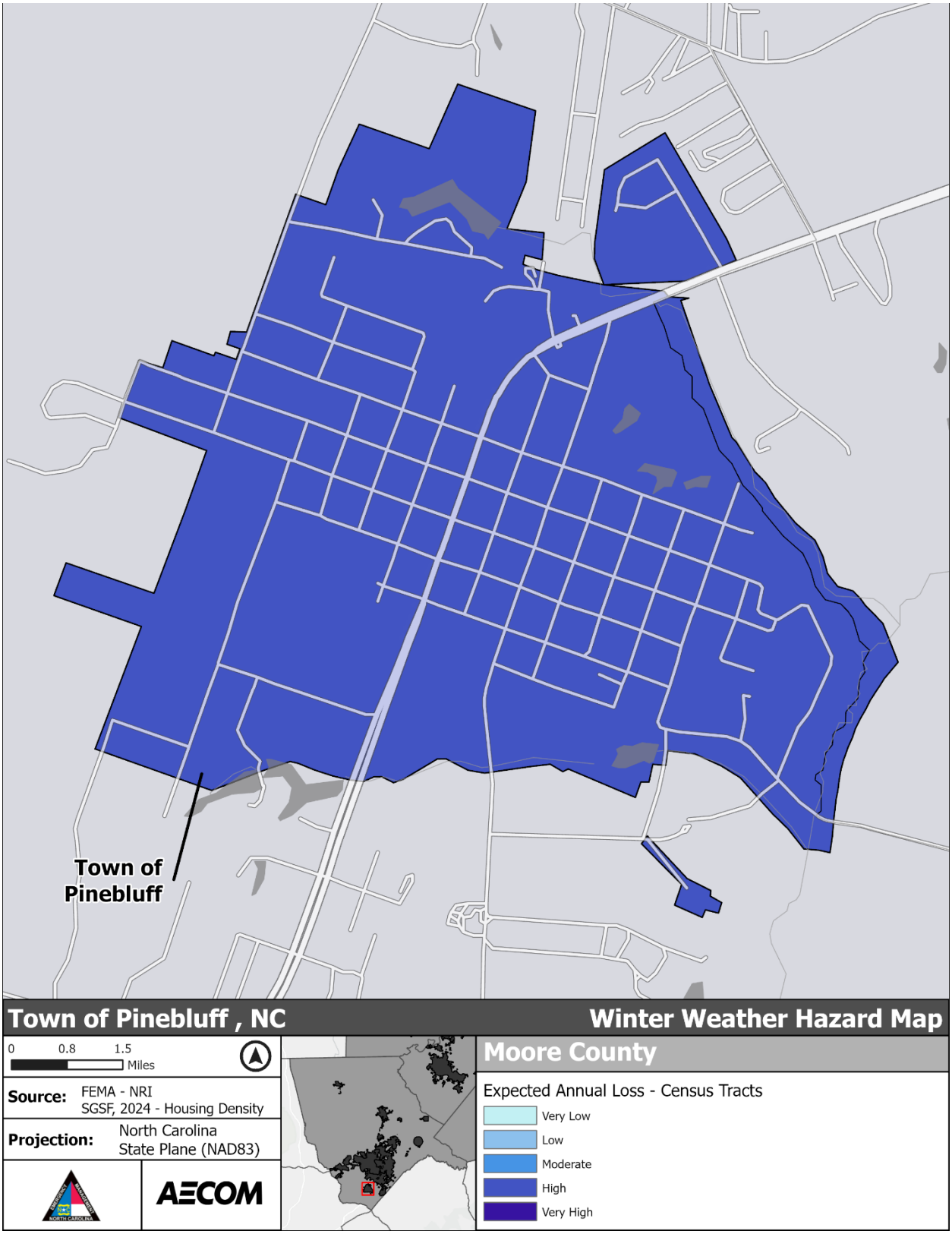


***Figure 5-218**: Winter Weather Hazard Area - Town of Pinebluff*

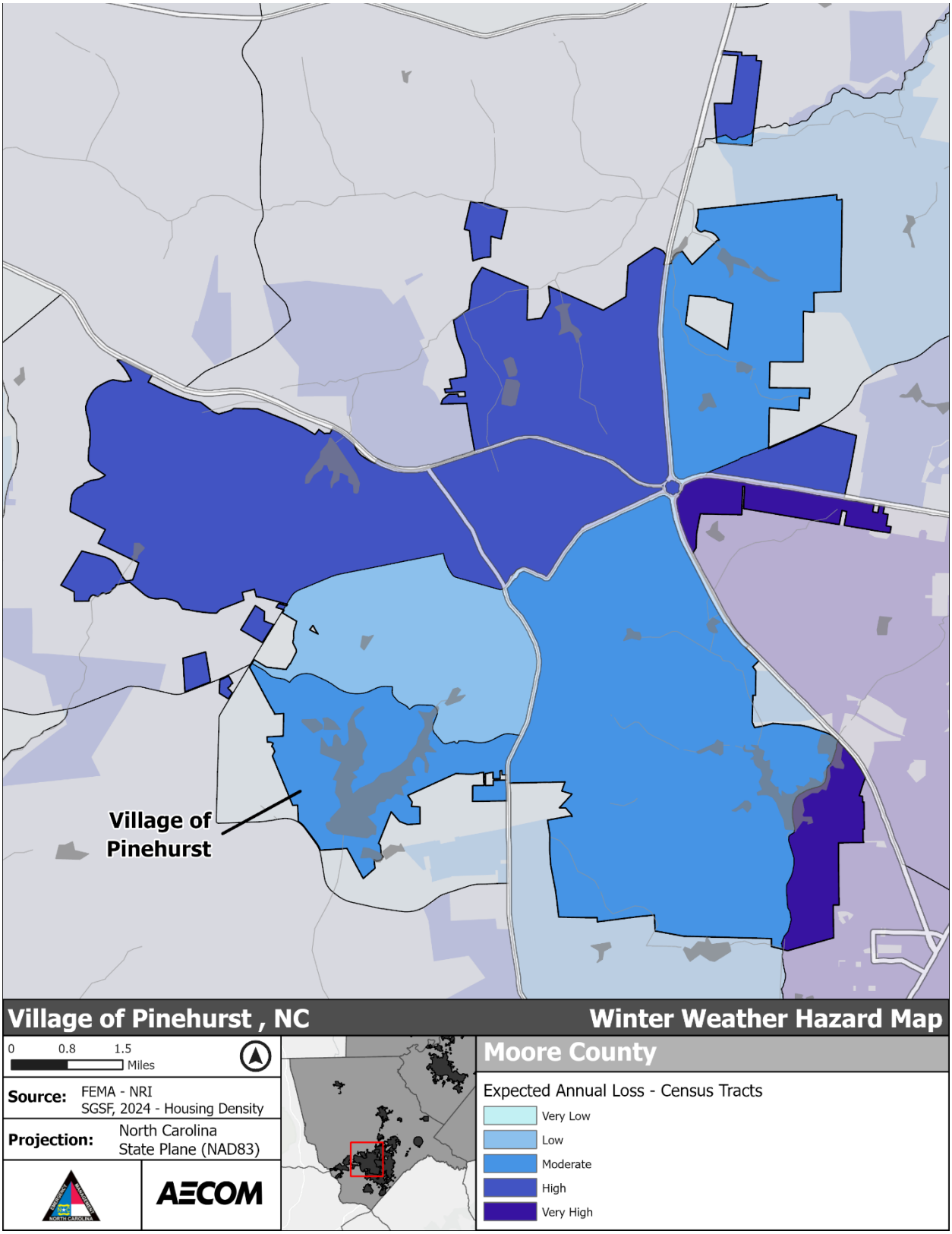


***Figure 5-219**: Winter Weather Hazard Area - Village of Pinehurst*

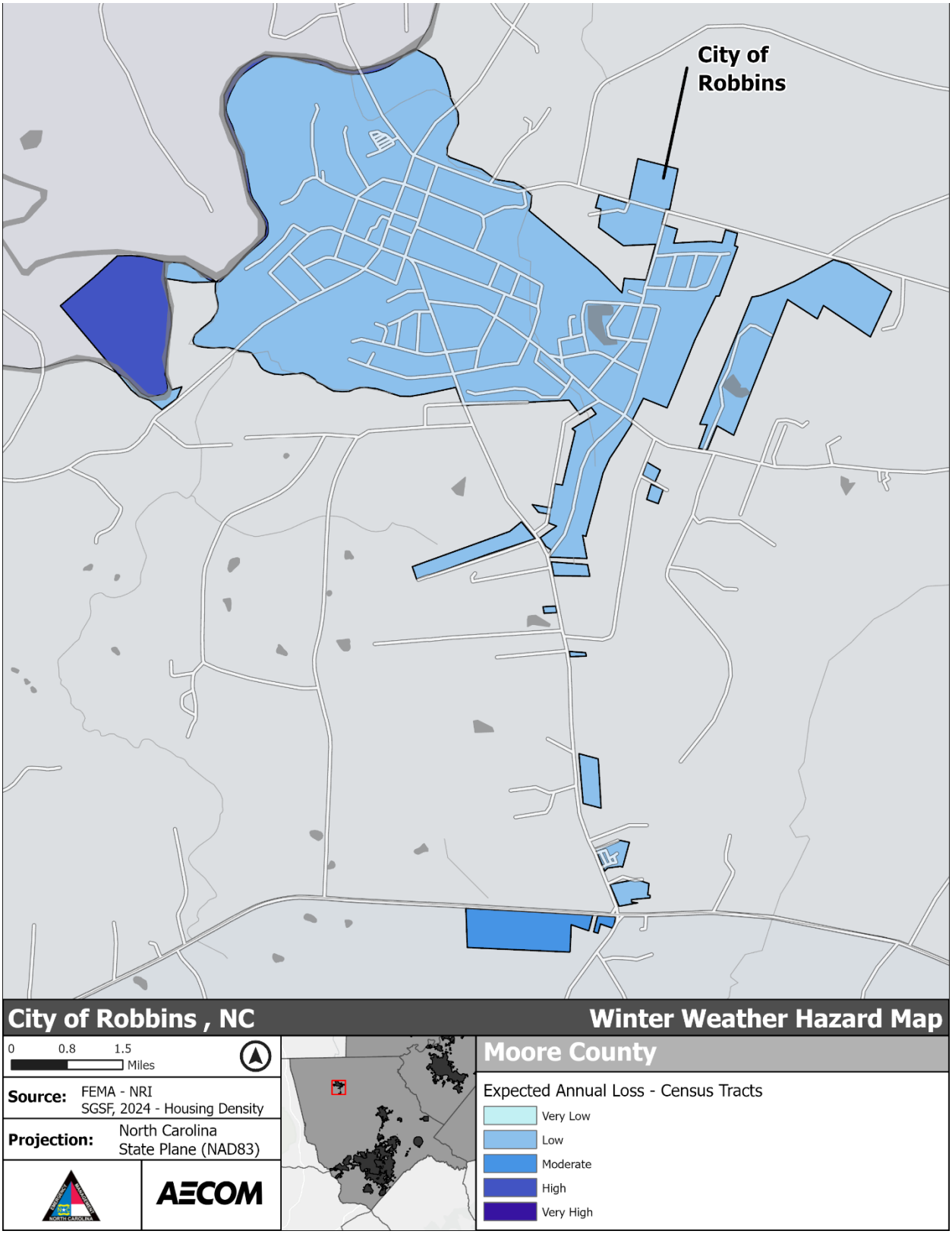


***Figure 5-220**: Winter Weather Hazard Area - City of Robbins*

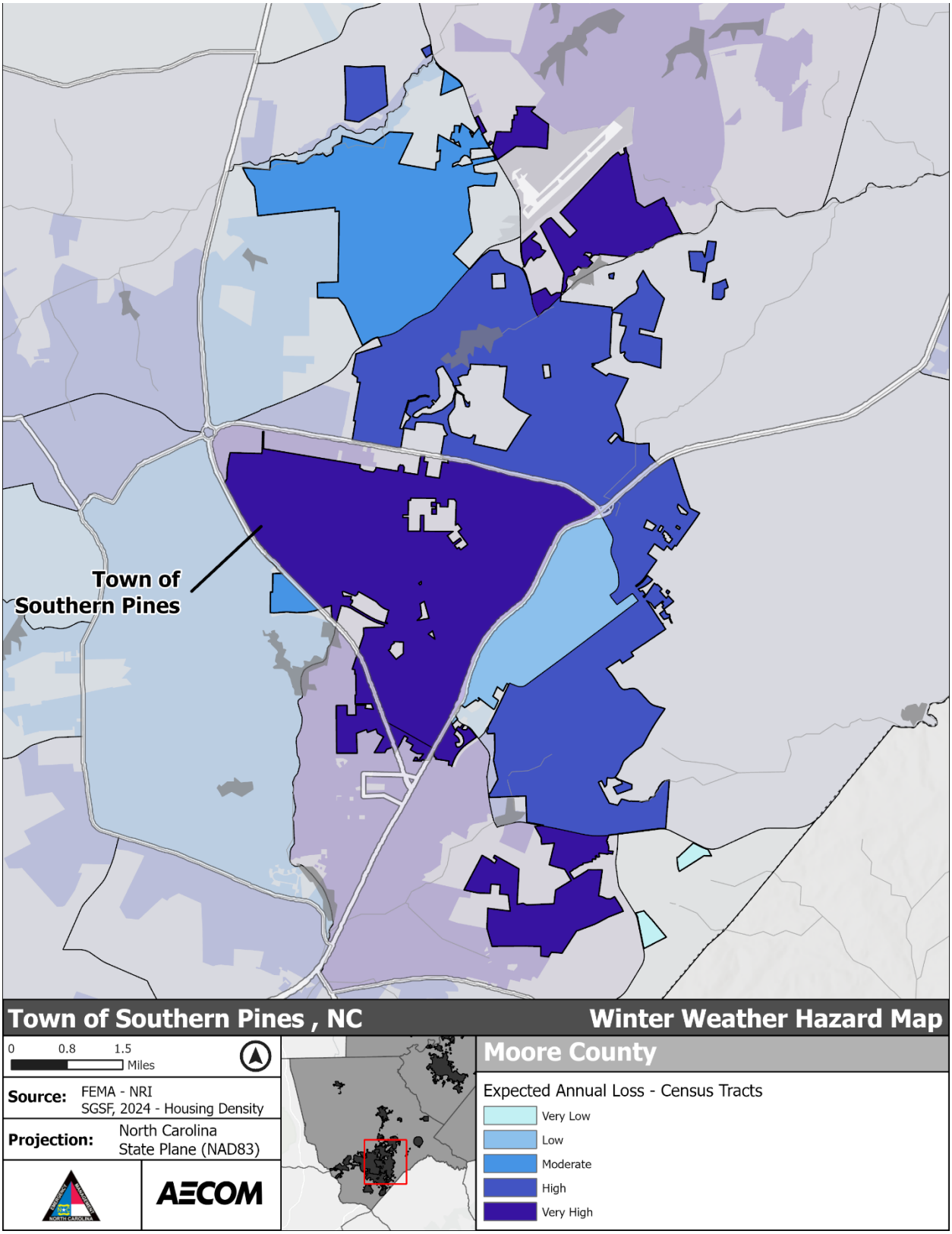


***Figure 5-221**: Winter Weather Hazard Area - Town of Southern Pines*

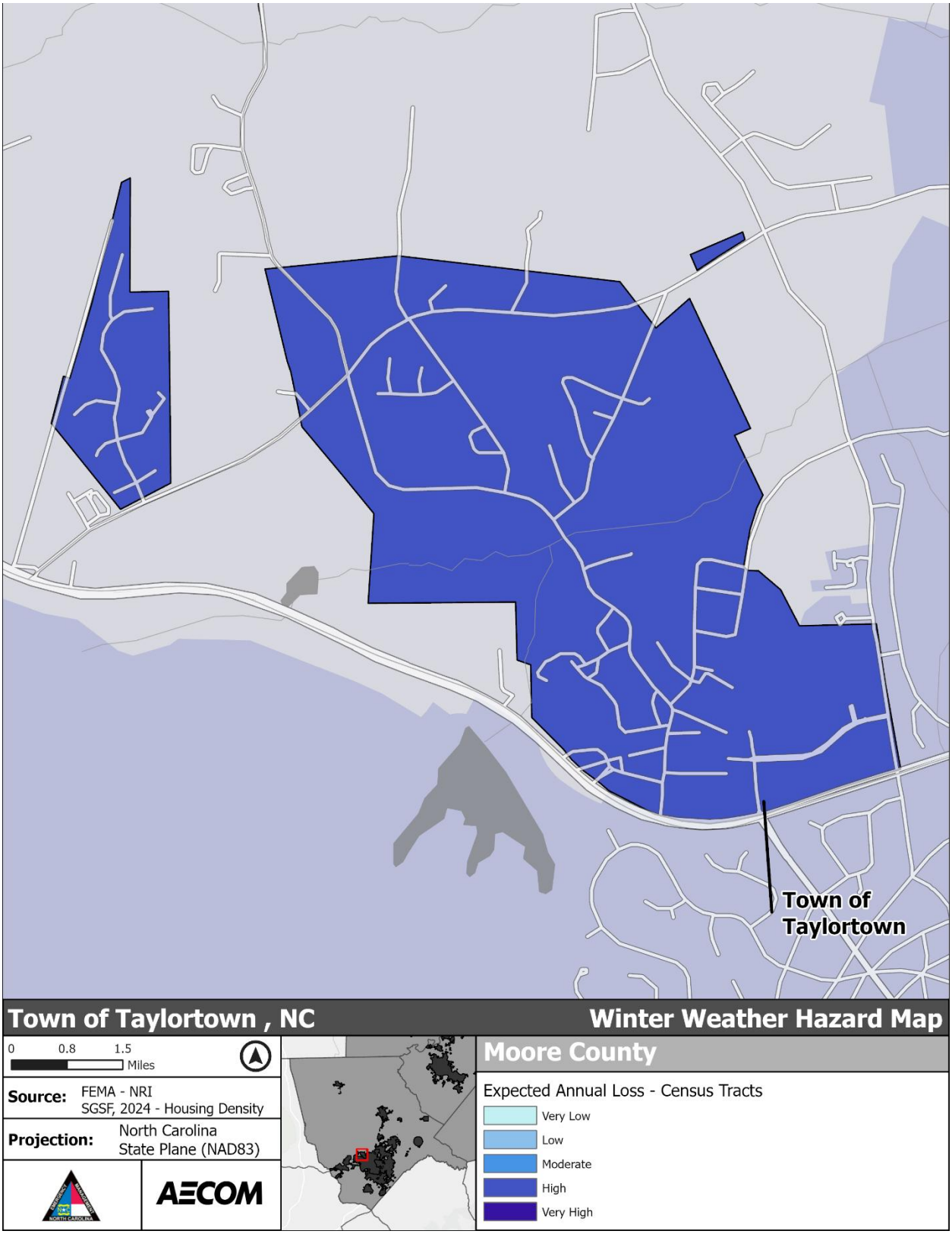


***Figure 5-222**: Winter Weather Hazard Area - Town of Taylortown*

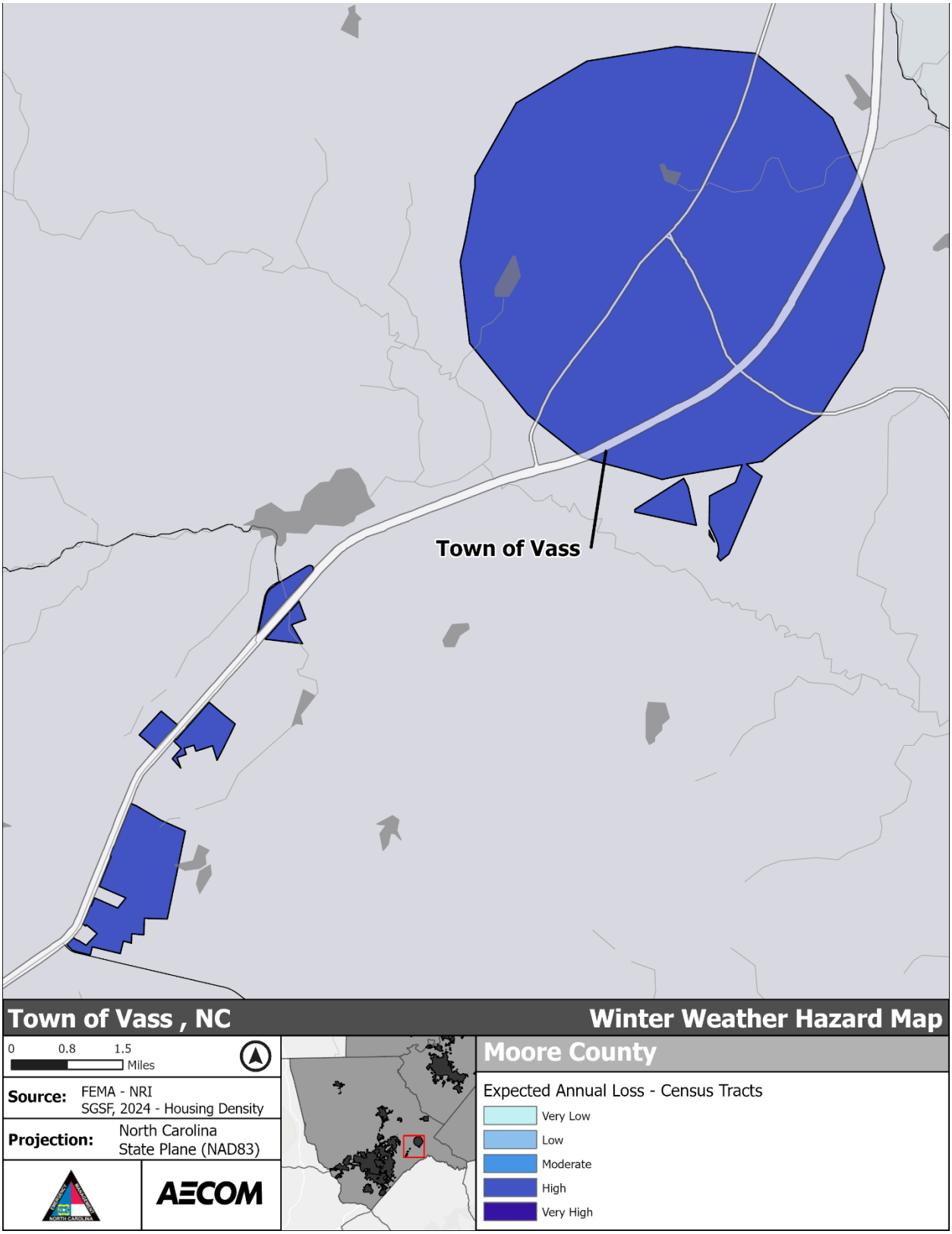


***Figure 5-223**: Winter Weather Hazard Area - Town of Vass*

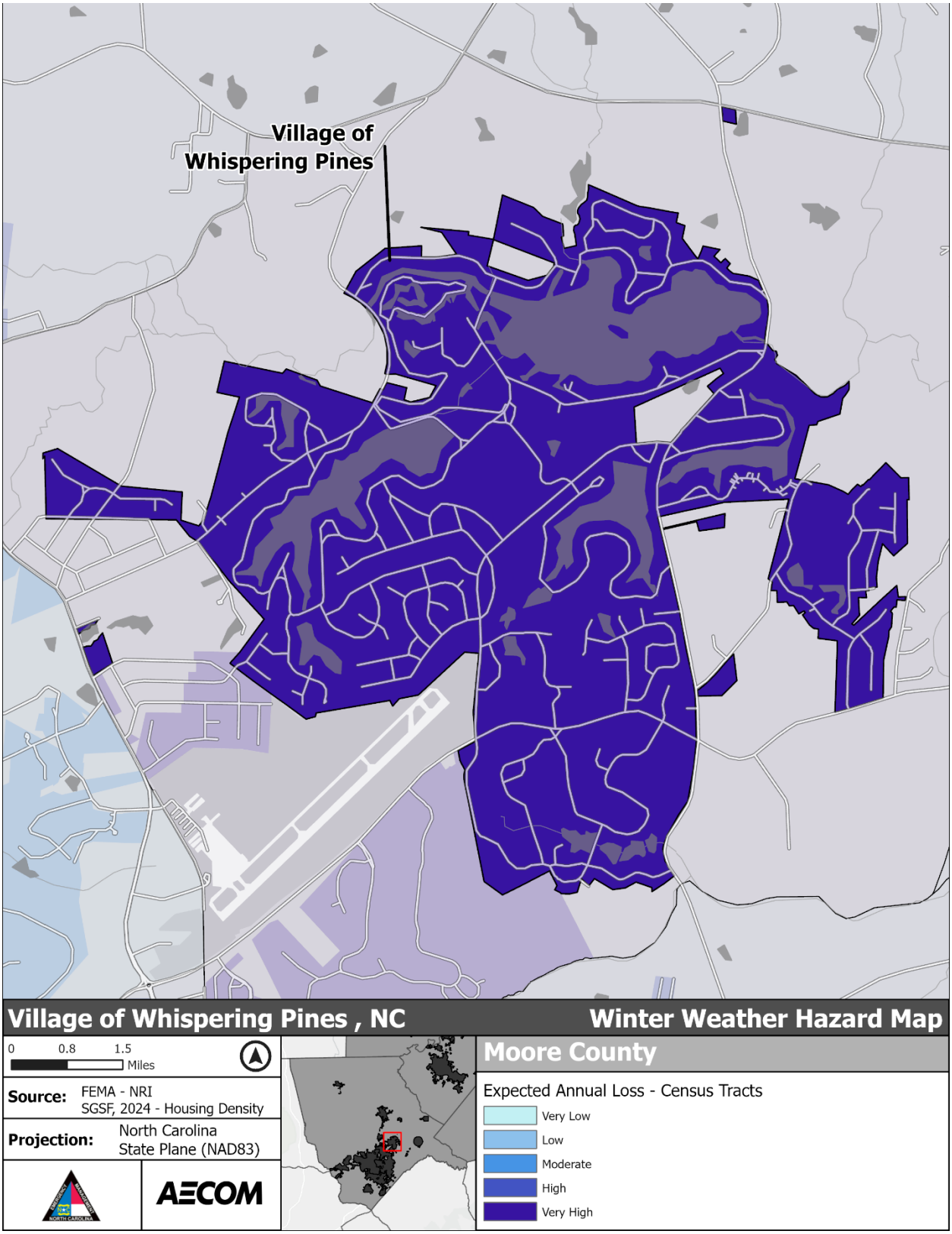


***Figure 5-224**: Winter Weather Hazard Area - Village of Whispering Pines*

5.8.3 Extent

There were 58 distinct events of heavy snow, winter storms, and winter weather in the planning area between 2000 and 2025, according to the NCEI Severe Storm Events Database. The following table summarizes the total property damage, indirect deaths, and indirect injuries reported. There were no direct injuries, direct deaths, or crop damage reported due to heavy snow, winter storms, or winter weather between 2000 and 2025.

__Table 5-34__: Winter storm, winter weather, and heavy snow event summary from the NCEI Storm Events Database between 2000 and 2025[90].

County	Event Type	Indirect Injuries	Indirect Deaths	Property Damage Total	Events Reported
Chatham	Heavy Snow	0	0	$0	1
	Winter Storm	0	0	$500,000	27
	Winter Weather	2	1	$20,000	23
Harnett	Heavy Snow	0	0	$0	1
	Winter Storm	0	0	$0	26
	Winter Weather	0	1	$25,000	22
Johnston	Heavy Snow	0	0	$0	1
	Winter Storm	0	2	$500,000	27
	Winter Weather	0	1	$70,000	24
Lee	Heavy Snow	0	0	$0	1
	Winter Storm	0	1	$0	26
	Winter Weather	3	0	$0	19
Moore	Heavy Snow	0	0	$0	1
	Winter Storm	0	2	$10,000	25
	Winter Weather	0	1	$0	15
Total		**5**	**9**	**$1,125,000**	**239**

5.8.4 Historical Occurrences

According to the National Climatic Data Center, there have been a total of 58 recorded winter storm-related events in the Cape Fear Region since 2000. These events resulted in over $1,125,000 in damages, five indirect injuries, and nine indirect deaths. The following are summaries of the four most recent winter storm-related events from the NCEI Storm Events Database:

<u>1/10/2025: Johnston County Winter Storm</u>

A low-pressure system along the northern Gulf coast tracked along the northeast and along the southern coastal plain of NC. The system brought moisture and cold air from the north, creating a mix of sleet, snow, and freezing rain in central NC. There was approximately half an inch to an

[90] National Center for Environmental Information [NCEI]. (n.d.-a). Storm Events Database (By National Oceanic and Atmospheric Administration [NOAA]). National Center for Environmental Information. https://www.ncdc.noaa.gov/stormevents/

inch of snow and sleet accumulation throughout the county. There were no injuries, deaths, property damage, or crop damage reported according to the NCEI database.



***Figure 5-225**: Roads in Johnston County following the 1/10/2025 winter storm events from the NCDOT Triangle Area*[91]

1/28/2022 to 1/29/2022: Winter Storm Event

An upper low system and an arctic cold front brought precipitation to central NC on January 28th and 29th. Precipitation started as rain on January 28th in the afternoon and gradually changed to snow as the arctic cold front passed through the area. The precipitation ended early in the morning of January 29th, and most locations in NC saw less than an inch of snow associated with the event. In Lee, Harnett, and Johnston County, approximately one inch of snow was reported, but in Chatham County, half an inch to 2 inches of snow was reported, and 1 to 3 inches of snow was reported in Moore County. There were no reports of property damage, crop damage, injuries, or deaths associated with the event. This event occurred approximately one week after a separate winter storm event on January 22, 2022.

[91] NC Department of Transportation: Triangle Area. (n.d.). Please be careful this morning in Johnston Co. Roads are mostly clear, but there are some icy spots, especially around bridges, which our maintenance crews are treating with salt. They are working to clear all road today. X. Retrieved July 28, 2025, from https://x.com/NCDOT_Triangle/status/1878056610645336356

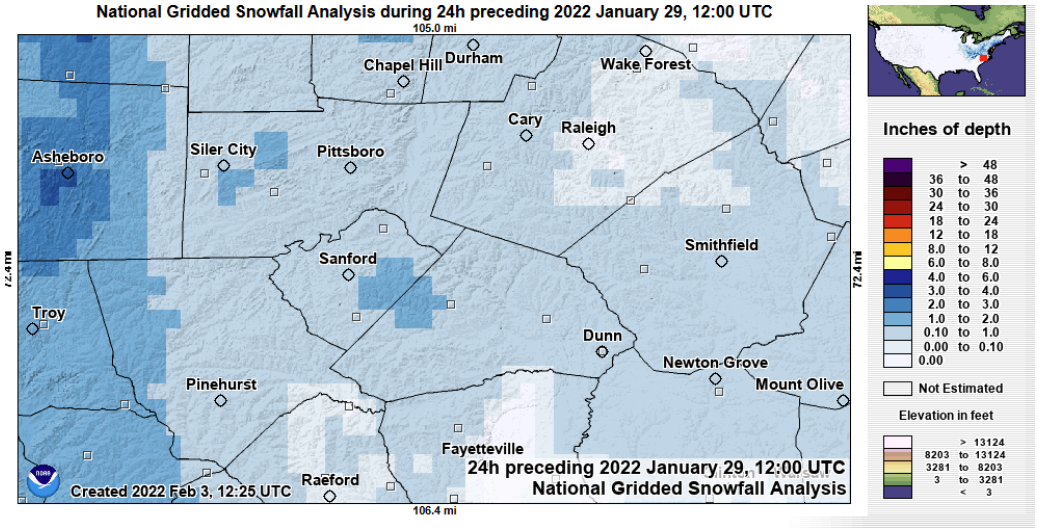


***Figure 5-226**: National Gridded Snowfall Analysis for the January 29th, 2022 winter weather event*[92]

1/21/2022: Winter Weather Event

Light snow developed over central NC in the afternoon of January 21, peaking in the late evening and early morning of January 22. The Coastal Plain and Sandhills had up to 5 inches of snowfall, while locations in the Piedmont region experienced 1 to 4 inches of snow. While the snow caused numerous power outages and accidents, no injuries or deaths were reported in the planning area attributed to the winter weather event. Harnett County, Chatham County, and Lee County had 2 to 4 inches of snowfall, while Johnston County experienced 2 to 5 inches, and Moore County experienced 2 to 3 inches of snowfall.

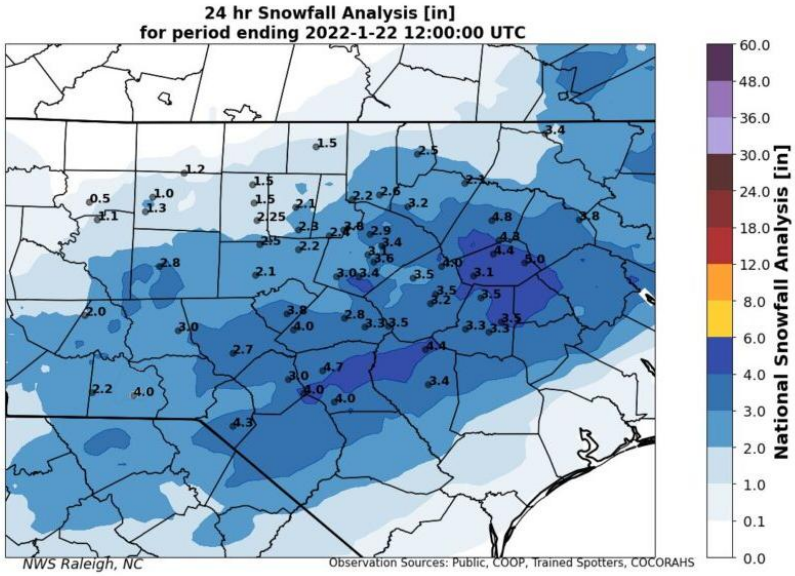


***Figure 5-227**: 24-Hour Snowfall Analysis for 1/22/2022 from NWS Raleigh*[93]

[92] NOAA's National Weather Service. (n.d.-g). NOHRSC Interactive Snow Information. Retrieved July 28, 2025, from https://www.nohrsc.noaa.gov/interactive/html/map.html

[93] NWS Raleigh. (2022, January 22). Thank you for the reports! Check out our preliminary snowfall map for central NC for last night's winter storm! A list of reports can also be found here: https://bit.ly/3FTiSsz. We are still looking for more reports from Warren, Halifax, Edgecombe, and Richmond counties!. #NCwx. X. Retrieved July 28, 2025, from https://x.com/NWSRaleigh/status/1484932479068876803



***Figure 5-228**: Photo of snow from the 1/21/2022 winter weather event in Southern Pines, Moore County*[94]

1/16/2022: Winter Storm Event

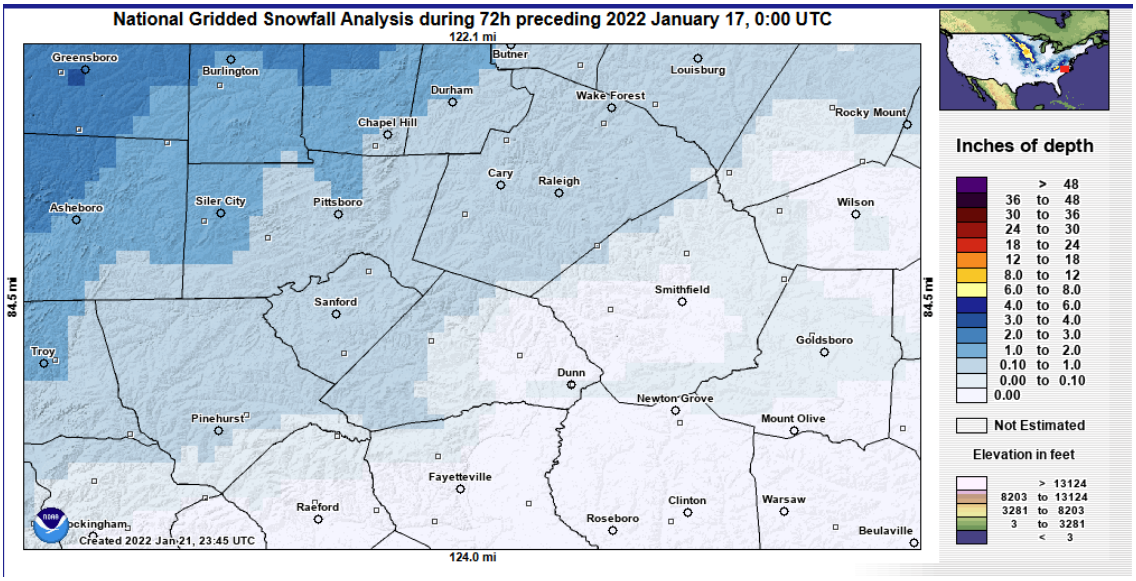


***Figure 5-229**: Snowfall Analysis 72-hours preceding January 17, 2022*[95]

A storm system developed and moved from the Central Plains to the Southeast, which brought wintery precipitation in a mix of snow, sleet, freezing rain, and rain across the region. There were 3-5 inches of snow and sleet accumulation across the Triad, 0.10 to 0.20 inches of ice from freezing rain across the Triangle, and a light glaze of ice across the Coastal Plain. In Lee County, a tenth to a quarter of an inch of freezing rain was reported. In Johnston County, traces

[94] The Pilot. (2022, January 21). Winter StoRm Update: Moore County blanketed with snow; shelter set to close. The Pilot Newspaper. https://www.thepilot.com/news/winter-storm-update-moore-county-blanketed-with-snow-shelter-set-to-close/article_d5ec0798-79f4-11ec-82f9-632d20d41808.html

[95] NOAA's National Weather Service. (n.d.-g). NOHRSC Interactive Snow Information. Retrieved July 28, 2025, from https://www.nohrsc.noaa.gov/interactive/html/map.html

of two-tenths of an inch were reported. In Moore County and Chatham County, snow and sleet were reported from trace amounts to two inches.

The following Table 5-35 is a summary of all the winter storm and winter weather events reported by the NCEI Storm Events Database between 2015 and 2025:

***Table 5-35**: NCEI Storm Events Database summary of winter weather events in the planning area from 2015 to 2025*

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Chatham	1/13/2015	Winter Weather	0	0	0	A thin glaze of ice was reported on trees and elevated surfaces. Icy bridges and overpasses created difficult travel conditions during the morning on the 14th, with several automobile accidents reported across the county.	Patchy light freezing rain began during the late evening hours on the 13th and continued overnight before ending as freezing drizzle through the late morning hours on the 14th. Ice amounts ranged from a trace to a tenth of an inch in a few spots with light glazing on elevated surfaces.
Johnston	1/13/2015	Winter Weather	0	0	0	A thin glaze of ice was reported on trees and elevated surfaces. Icy bridges and overpasses created difficult travel conditions during the morning on the 14th, with several automobile accidents reported throughout the county.	
Harnett	1/13/2015	Winter Weather	0	0	0	A thin glaze of ice was reported on trees and elevated surfaces. Icy bridges and overpasses created difficult travel conditions during the morning on the 14th, with several automobile accidents reported throughout the county.	
Lee	1/13/2015	Winter Weather	0	0	0	A thin glaze of ice was reported on trees and elevated surfaces. Icy bridges and overpasses created difficult travel conditions during the morning on the 14th, with several automobile accidents reported throughout the county.	
Johnston	2/16/2015	Winter Storm	0	0	0	Snowfall amounts of around an inch fell across the county. In addition, a tenth to a quarter of an inch of freezing rain accumulation was reported.	Very cold Arctic high pressure was in place over the region as a surface low developed along the southeast coast due to an eastward-moving shortwave. All of central North Carolina was under a winter storm warning. Snowfall totals ranged from 1-3 inches across the extreme northwestern Piedmont to a trace across the southeastern portion of the forecast area. Freezing rain also fell
Chatham		Winter Storm	0	0	0	Snowfall amounts of around an inch fell across the county. In addition, around a tenth of an inch of freezing rain accumulation was reported.	
Moore		Winter Storm	0	0	0	Snowfall amounts of a half an inch to an inch fell across the county. In addition, a tenth to a quarter of an inch of freezing rain accumulation was reported.	

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Lee		Winter Storm	0	0	0	Snowfall amounts of an inch to an inch and a half fell across the county. In addition, a tenth to a quarter of an inch of freezing rain accumulation was reported.	across all of the region, ranging from a quarter to a third of an inch across the south and east to just a trace further north and west.
Harnett		Winter Storm	0	0	0	Snowfall amounts of around a half inch to an inch fell across the county. In addition, a tenth to a quarter of an inch of freezing rain accumulation was reported.	
Moore	2/24/2015	Winter Weather	0	0	0	Snowfall amounts of 0.5 to 1 inch fell across the county.	An upper-level disturbance moving east across the southeast US caused a low-pressure system to develop off the southeast coast. With very cold air in place over the region, as this low tracked northeast, snow developed across the area. With a winter weather advisory in place, most of central North Carolina received 1-2 inches of snow.
Chatham		Winter Weather	0	0	0	Snowfall amounts of 1 to 2 inches fell across the county.	
Lee		Winter Weather	0	0	0	Snowfall amounts of 1 to 2 inches fell across the county.	
Johnston		Winter Weather	0	0	0	Snowfall amounts of 1.5 to 2.5 inches fell across the county.	
Harnett		Winter Weather	0	0	0	Snowfall amounts of 1 to 2 inches fell across the county.	
Chatham	2/25/2015	Winter Storm	$500,000	0	0	Snowfall/sleet amounts of 3 to 6 inches fell across the county. The heavy wet snow caused widespread power outages from falling trees and power lines. At the peak of the storm, over 8,000 customers were without power in the county.	As a low-pressure system tracked along the southeast coast, wintry precipitation spread into Central North Carolina. A winter storm warning was issued for the majority of the area, with the exception of a few counties in the extreme southeast, where a winter weather advisory was needed. Much of the warning area received 2-4 inches of snow and sleet, with the northern third tier of counties receiving 7-9 inches. In addition, some locations received a thin
Moore		Winter Storm	0	0	0	Snowfall/sleet amounts of 1 to 3 inches fell across the county.	

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Lee		Winter Storm	0	0	0	Snowfall/sleet amounts of 1 to 3 inches fell across the county.	glaze of ice on top of the snow. Precipitation amounts decreased towards the south, with the southern tier of counties receiving only a trace of snow and sleet. The heavy, wet snow caused extensive power outages in many of the hardest hit counties, with some power outages extending beyond 24 hours.
Johnston		Winter Storm	$500,000	0	0	Snowfall/sleet amounts of 1 to 3 inches fell across the county. The heavy wet snow caused numerous power outages from falling trees and power lines.	
Johnston	3/1/2015	Winter Weather	0	0	0	An NWS employee reported 0.06 inches of freezing rain.	A weak mid-level wave resulted in isentropic lift over a shallow layer of cold air. This resulted in a brief period of light freezing rain across much of the Piedmont and portions of the Sandhills. Amounts generally ranged from a trace to a couple of tenths of an ice. The main impact was numerous car accidents as the elevated surfaces became icy.
Lee	1/22/2016	Winter Storm	0	0	0	One-quarter to one-half of an inch of freezing rain accumulation was reported across the county.	A strong upper-level low induced a surface low-pressure system that tracked through the region. With a cold air mass already in place, a winter storm impacted the region. All of central North Carolina saw a mix of precipitation, with the northwestern Piedmont receiving mostly snow (3-5 inches) and further south and east receiving mostly freezing rain (1/4 to 1/3 of an inch). As the upper low tracked over the region the following day,
Johnston		Winter Storm	0	0	1	One-quarter to one-half of an inch of freezing rain accumulation was reported across the county. In addition, snowfall/sleet amounts of around one-half of an inch fell. Icy roads created difficult travel conditions during the morning of the 22nd, with numerous automobile accidents reported across the county. One of the accidents resulted in a fatality.	
Harnett		Winter Storm	0	0	0	One-quarter to one-third of an inch of freezing rain accumulation was reported across the county. In addition, snowfall/sleet amounts of a couple of tenths of an inch fell.	

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Chatham		Winter Storm	0	0	0	Snowfall/sleet amounts of 2 to 3 inches fell across the county.	additional minor snow accumulations were seen.
Moore		Winter Storm	0	0	0	A quarter of an inch of freezing rain accumulation was reported across the county. In addition, snowfall/sleet amounts of one-half to one inch fell.	
Johnston	2/7/2016	Winter Weather	$20,000	0	0	A quarter to a third of an inch of snow and sleet fell across the county.	A deepening low-pressure system tracking along the southeast coast spread precipitation into the eastern portions of North Carolina. Several counties in the Sandhills and southern Coastal Plain saw a brief wintry mix, with very minor accumulations (mainly under one-half of an inch). However, this brief burst of wintry weather caused numerous traffic accidents.
Harnett		Winter Weather	$10,000	0	0	A trace to a couple of tenths of an inch of snow and sleet fell across the county.	
Lee		Winter Weather	0	0	0	A trace of snow and sleet fell across the county.	
Harnett	2/15/2016	Winter Weather	0	0	0	A trace of snow/sleet fell across the county.	A very cold air mass (highs below freezing) was in place across Central North Carolina when an upper-level disturbance approached the region and induced low-level cyclogenesis along the Gulf Coast. A pair of lows tracked up the east coast, resulting in winter precipitation across all of the forecast, with winter storm warning criteria being met across the Northwest Piedmont.
Johnston		Winter Weather	0	0	0	One-tenth of an inch of freezing rain accumulation was reported across the county. In addition, a trace of snow/sleet fell across the county.	
Lee		Winter Weather	0	0	0	A couple of tenths of an inch of snow/sleet fell across the county.	
Harnett	1/7/2017	Winter Weather	0	0	0	Snowfall amounts averaged between 0.50 to 1 inch. There was also a 0.10 of an inch of ice from freezing rain.	A low-pressure system tracking north along the Carolina coast and interacting with an arctic airmass moving into the

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Lee		Winter Weather	0	0	0	Snowfall amounts averaged around 1.0 inches across the county. There was also 0.10 of an inch of ice from freezing rain.	area from the central CONUS produced wintry precipitation across central North Carolina during the late evening hours on the 6th and continuing until the early afternoon hours on the 7th. A swath of heavy to moderate snow of 6 to 11 inches fell across the western and central Piedmont of North Carolina, with a mixture of 1 to 2 inches of snow and 0.15 inches of ice across the Sandhills and Coastal Plain.
Moore		Winter Weather	0	0	0	Snowfall amounts ranged from a dusting across southern portions of the county to 1 inch across the north. There was also 0.10 of an inch of ice from freezing rain.	
Chatham		Winter Weather	0	0	0	Snowfall amounts averaged around 2.0 inches across the county. There was also 0.10 of an inch of ice from freezing rain.	
Harnett		Winter Weather	0	0	0	Snowfall amounts averaged around 0.50 of an inch across northern portions of the county.	
Johnston		Winter Weather	0	0	0	Snowfall amounts ranged from 0.50 of an inch across southern portions of the county to 1.0 inch across the north. There was also a tenth of an inch of ice from freezing rain.	
Moore	1/3/2018	Winter Storm	$10,000	0	2	Average snowfall totals across the county ranged from 4 to 6 inches. Broadcast media reported two men were killed when their pick-up truck slid off a bridge and into a creek on Dowd Road near Mount Carmel Road.	A surface low intensified off the Carolina coast, resulting in snow occurring over much of Central North Carolina. Bands of heavy snow developed, resulting in snowfall totals of 3 to 6 inches in some locations.
Lee		Winter Storm	0	0	0	Total snowfall averaged 4 to 6 inches across the county.	
Harnett		Winter Storm	0	0	0	Up to 3.5 inches of snow fell across the county, with the highest amounts in the western portions of the county.	
Chatham		Winter Storm	0	0	0	Total snowfall averaged 2 to 4 inches across the county, with the highest amounts across the southern half of the county.	
Johnston		Winter Weather	0	0	0	Up to 2.3 inches of snow fell across the county, with an average snowfall total of 1 to 2 inches.	
Chatham	1/17/2018	Winter Storm	0	0	0	Seven to ten inches of snow fell across the county.	A powerful upper-level low-pressure area crossed Central North Carolina in

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Moore		Winter Storm	0	0	0	Five to seven inches of snow fell across the county.	the wake of an arctic surface cold front. A slow-moving, intense band of snow moved through the area along an axis of increased frontogenesis. Combined with cold ground temperatures and high snow-to-liquid ratios, the snow band resulted in significant snow accumulation across much of Central North Carolina.
Lee		Winter Storm	0	0	0	Snowfall totals ranged from 5 to 9 inches across the county.	
Harnett		Winter Storm	0	0	0	Up to 5 inches of snow fell across the county.	
Johnston		Winter Storm	0	0	0	Up to 5 inches of snow fell across the county.	
Harnett	3/12/2018	Winter Weather	0	0	0	Half an inch to an inch and a half of snow fell across the county.	A vigorous upper-level trough and associated mid-level deformation band produced one to four inches of wet snow across northern portions of the North Carolina Piedmont. Across the eastern Piedmont and central Coastal Plain counties, snowfall amounts were less, averaging between half an inch to an inch.
Johnston		Winter Weather	0	0	0	Half an inch to an inch and a half of snow fell across the county.	
Johnston	12/9/2018	Winter Storm	0	0	0	Snowfall amounts ranged from a dusting across southern portions of the county to 5 inches across northern portions of the county.	Strong Cold Air Damming and a Miller-A storm track from the northern Gulf of Mexico to off the NC coast, brought record early heavy snowfall of 8 to 15 inches to parts of central NC on December 9th and 10th. There was also a narrow swath of 0.1 to 0.2 inches of freezing rain across portions of the western Piedmont counties.
Chatham	12/9/2018	Winter Storm	0	0	0	Snowfall amounts ranged from 3 inches across southern portions of the county to 8 inches across northern portions of the county. One-tenth of an inch of ice from freezing rain was also reported.	Strong Cold Air Damming and a Miller-A storm track from the northern Gulf of Mexico to off the NC coast, brought record early heavy snowfall of 8 to 15

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Moore		Winter Weather	0	0	0	Snowfall amounts ranged from 1 to 2 inches, mostly across the northern part of the county.	inches to parts of central NC on December 9th and 10th. There was also a narrow swath of 0.1 to 0.2 inches of freezing rain across portions of the western Piedmont counties.
Lee		Winter Weather	0	0	0	Snowfall amounts ranged from 1 to 2 inches, mostly across central and northern portions of the county.	
Harnett		Winter Weather	0	0	0	Snowfall amounts ranged from 1 to 2 inches, mostly across central and northern portions of the county.	
Harnett	2/20/2020	Winter Weather	0	0	0	Snowfall amounts ranged from 1 inch across southern portions of the county to 2 inches across northern portions of the county.	A cold high-pressure system arriving from the north, coinciding with the approach of a mid and upper-level trough from the west, allowed for winter weather to develop over central North Carolina. As precipitation developed during the day on February 20, colder air continued to be advected into North Carolina courtesy of strong high pressure located over the Great Lakes. A brief mixture of rain and snow changed to snow as the precipitation spread east throughout central NC during the late afternoon and early evening. Temperatures were near or slightly above freezing during the late afternoon, limiting accumulations.
Lee		Winter Weather	0	0	0	Snowfall amounts ranged from 1 inch across southern portions of the county to 2 inches across northern portions of the county.	
Chatham		Winter Weather	0	0	0	Snowfall amounts ranged from 1 to 3 inches across the county.	
Moore		Winter Weather	0	0	0	Snowfall amounts ranged from 1 inch across southern portions of the county to 2 inches across northern portions of the county.	

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Johnston		Winter Storm	0	0	0	Snowfall amounts ranged from 2 inches across southern portions of the county to 4 inches across northern portions of the county.	Temperatures fell below freezing during the evening, and the snow accumulated rapidly. By late evening, light snow was falling over much of central North Carolina. The snow ended shortly after midnight at most locations. Storm total snowfall amounts ranged between one and four inches, with most Triad and Triangle locations receiving between two and three inches.
Johnston	1/28/2021		0	0	0	Snowfall amounts ranged from 1 to 2 inches across the county, with locally higher amounts.	A strong upper-level disturbance and a developing storm system spread rain across central NC during the early evening of January 27th. Initially the precipitation fell as rain with surface temperatures in the mid-40s to the lower 50s. As the precipitation persisted and intensified, colder air aloft made it to the surface, resulting in a changeover to snow after midnight before the precipitation ended by daybreak. A total of 2 to 5 inches of snow was observed near the Virginia border, with 2 to 3 inches of snow observed in the Triangle and Triad areas, and only a trace or no snow across the south.
Chatham		Winter Weather	0	0	0	Snowfall amounts ranged from 1 to 2 inches across the county, with locally higher amounts.	
Harnett		Winter Weather	0	0	0	Snowfall amounts ranged from a Trace across southern portions of the county to around 1 inch across northern portions of the county.	
Lee		Winter Weather	0	0	0	Snowfall amounts ranged from a Trace across southern portions of the county to around 1 inch across northern portions of the county.	

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Chatham	2/12/2021	Winter Weather	0	0	0	A trace to one-tenth of an inch of ice from freezing rain was reported across the county, with the most ice accrual reported across northern portions of the county.	An area of low pressure tracked along a stalled frontal zone to the south of central NC and eventually north-northeastward along the North Carolina coast. Meanwhile, strong surface high pressure extended south-southwestward and into central North Carolina from the northeast United States. This setup resulted in widespread precipitation developing on the morning of the 12th and continuing into the 13th, with a cold air damming airmass developing. This allowed for temperatures to evaporatively cool, with temperatures falling below freezing across the northern Piedmont and northern Coastal Plain. This allowed for freezing rain to occur in this area. Ice accrual range from trace amounts to a couple of hundredths of an inch around the Triangle area, to a quarter to a half inch of ice accrual in Triad region and along/near the North Carolina-Virginia border. Impacts were limited to the Triad and North Carolina-Virginia border counties, where numerous accidents, power outages, and tress down were reported.

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Chatham	2/18/2021	Winter Weather	0	0	0	A trace to one-tenth of an inch of ice from freezing rain was reported across the county, with the most ice accumulation reported across northern portions of the county.	An area of low pressure tracked across the Deep South and eventually along the coast of the Carolinas. Meanwhile, cold surface high pressure to the north continued to extend into the area. This resulted in a cold air damming airmass developing across central North Carolina, with freezing rain developing across the northern Piedmont. Ice accruals ranged from trace amounts across southern portions of the Piedmont to a couple of tenths of an inch near the North Carolina-Virginia border and in the northwest Piedmont. Impacts ranged from a glaze of ice accumulation in the trees to multiple slick spots with several accidents and scattered power outages.

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Lee	1/16/2022	Winter Weather	0	0	0	A tenth to two-tenths of an inch of freezing rain was reported across the county.	A storm system moved from the central Plains into the Southeast, bringing widespread wintry precipitation to the central Piedmont of central North Carolina. A mix of snow, sleet, freezing rain, and rain was observed across the region, with 3-5 inches of snow and sleet accumulation across the Triad, and around 0.10 to 0.20 inch of ice accumulation from freezing rain across the Triangle, and a light glaze of ice across the Coastal Plain. This resulted in difficult travel across the Piedmont, with numerous accidents across the northwest Piedmont, where the heavies snow fell.
Lee	1/16/2022	Winter Storm	0	0	0	A tenth inch to up to a quarter inch of freezing rain was reported across the county.	A storm system moved from the central Plains into the Southeast, bringing widespread wintry precipitation to the central Piedmont of central North Carolina. A mix of snow, sleet, freezing rain, and rain was observed across the region, with 3-5 inches of snow and sleet accumulation across the Triad, and around 0.10 to 0.20 inch of ice accumulation from freezing rain across the Triangle, and a light glaze of ice across the Coastal Plain. This resulted in difficult travel across the Piedmont, with numerous accidents across the
Johnston		Winter Weather	0	0	0	A trace to one-tenth of an inch of freezing rain was reported across the county.	
Harnett		Winter Weather	0	0	0	A tenth to two-tenths of an inch of freezing rain was reported across the county.	
Moore		Winter Weather	0	0	0	Snow and sleet amounts ranged from around a trace to two inches across the county, with up to a tenth of an inch of freezing rain.	
Chatham		Winter Weather	0	0	0	Snow and sleet amounts ranged from a trace to one inch across the county, with up to a tenth of an inch of freezing rain.	
Chatham		Winter Storm	0	0	0	Snow amounts ranged from a trace to one inch across the county, one-half inch of sleet across the county, with up to a tenth of an inch of freezing rain.	

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Moore		Winter Storm	0	0	0	Snow and sleet amounts ranged from around a trace to two inches across the county, with up to a quarter of an inch of freezing rain.	northwest Piedmont, where the heavies snow fell.
Chatham	1/21/2022	Winter Weather	0	0	0	Around two inches of Snow was reported across the county.	Light snow developed over central North Carolina during the afternoon of January 21, peaked in the late evening and early overnight hours, and ended the morning of January 22. The highest totals occurred over the Coastal Plain and Sandhills, where up to 5 inches fell, while locations across the Piedmont received around 1 to 4 inches of snow. The snow caused numerous accidents and scattered power outages, especially across the eastern and southern half of the area, where snowfall totals were the greatest.
Lee		Winter Storm	0	0	0	Snowfall amounts range from 2 to 4 inches across the county.	
Moore		Winter Storm	0	0	0	Snowfall amounts range from 2 to 3 inches across the county.	
Johnston		Winter Storm	0	0	0	Snowfall amounts range from 2 to 5 inches across the county.	
Chatham		Winter Storm	0	0	0	Snowfall amounts range from 2 to 4 inches across the county.	
Harnett		Winter Storm	0	0	0	Snowfall amounts range from 2 to 4 inches across the county.	
Chatham	1/28/2022- 1/29/2022	Winter Weather	0	0	0	Snowfall amounts ranged from half an inch to around two inches across the county.	An upper low and associated arctic cold front brought precipitation to central North Carolina on the 28th and 29th. Precipitation began as rain on the afternoon of the 28th with a gradual mix and changeover to snow as the front moved through the area. Precipitation wrapped up early on the morning of the 29th. Most locations saw less than 1 inch of snowfall with this event, although there were some locations from Guilford to Randolph County that saw over 3 inches of snow.
Moore		Winter Weather	0	0	0	Snowfall amounts ranged from around 1 to 3 inches across the county.	
Lee		Winter Weather	0	0	0	Snowfall amounts ranged from half an inch to around one inch across the county.	
Harnett		Winter Weather	0	0	0	Snowfall amounts ranged from a trace to around one inch across the county.	
Johnston		Winter Weather	0	0	0	Snowfall amounts ranged from a trace to around one inch across the county.	

Location	Date	Event Type	Property Damage	Indirect Injuries	Indirect Deaths	Event Narrative	Episode Narrative
Johnston	1/10/2025	Winter Storm	0	0	0	Snow and sleet accumulation of half an inch to an inch over the county.	An area of low pressure along the northern Gulf coast tracked northeast along the southern Coastal Plain of North Carolina. The system brought in moisture from the Gulf and cold air from the north for a mixture of snow, sleet, and freezing rain to much of central North Carolina.

5.8.5 Probability of Future Occurrences

The NRI reports on risk data for winter storm events, which include precipitation such as snow, sleet, or freezing rain and are generated from the NWS Winter Weather Alerts compiled by Iowa State University's Iowa Environmental Mesonet. These include the alert area and attributes for the winter weather events, which range from 2005 to 2017. The NRI also reports on Ice Storms, which include freezing rain events with significant ice accumulations of 0.25 inches or greater and are reported from historical events from the USACE Cold Regions Research Engineering Laboratory Damaging Ice Storm GIS, where ice-damaged ice-sensitive structures between 1946 to 2014.

The highest expected annualized frequency for winter storms in the planning area is Chatham County (1.55 Annualized Frequency), followed by Lee County (1.42), Moore County (1.36), Johnston County (1.3), and Harnett County (1.11). Each county in the planning area has an Average EAL Rating and Average Hazard Risk Index Rating of "Very High." The total EAL is $229,154 in Chatham County, $239,248 in Harnett County, $493,930 in Johnston County, $174,152.18 in Lee County, and $375,248.52 in Moore County.

The probability of future winter storm impacts from the NRI is shown in the table below, by jurisdiction.

__Table 5-36__: NRI Winter Storm Annualized Frequency, EAL total, EAL score, and Hazard Risk Score

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Chatham County	**1.55**	**$229,154.84**	**88.07**	**Very High**	**87.06**	**Very High**
Goldston	1.55	$16,490.57	92.62	Very High	93.06	Very High
Pittsboro	1.55	$28,744.42	85.97	Very High	83.40	Very High
Siler City	1.55	$38,822.76	89.44	Very High	92.43	Very High
Area outside Jurisdictional Boundaries	1.55	$145,097.09	87.88	Very High	86.12	Very High
Harnett County	**1.11**	**$239,248.44**	**82.87**	**Very High**	**84.77**	**Very High**
Angier	1.11	$21,301.02	76.85	Relatively High	79.87	Relatively High
Coats	1.11	$19,369.62	86.29	Very High	88.77	Very High
Dunn	1.11	$31,547.02	83.16	Very High	88.11	Very High
Erwin	1.11	$33,388.47	84.50	Very High	87.56	Very High
Lillington	1.11	$51,833.93	79.31	Relatively High	79.59	Relatively High
Area outside Jurisdictional Boundaries	1.11	$86,490.40	86.73	Very High	87.87	Very High
Johnston County	**1.30**	**$493,930.84**	**84.15**	**Very High**	**83.93**	**Very High**
Archer Lodge	1.30	$74,245.08	88.80	Very High	84.72	Very High
Benson	1.25	$34,450.00	83.61	Very High	85.77	Very High
Clayton	1.30	$153,009.32	86.78	Very High	84.79	Very High
Four Oaks	1.30	$26,469.34	79.79	Relatively High	82.74	Very High
Kenly	1.30	$12,159.77	79.57	Relatively High	81.76	Very High
Micro	1.30	$19,780.02	80.07	Very High	83.41	Very High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Pine Level	1.30	$19,986.63	87.13	Very High	89.74	Very High
Princeton	1.30	$15,832.66	82.36	Very High	81.25	Very High
Selma	1.30	$72,215.11	85.90	Very High	88.66	Very High
Smithfield	1.30	$58,926.50	83.59	Very High	87.23	Very High
Wilson's Mill	1.30	$49,156.73	87.40	Very High	88.18	Very High
Area outside Jurisdictional Boundaries	1.30	$141,798.10	83.44	Very High	81.23	Very High
Lee County	**1.42**	**$174,152.18**	**86.58**	**Very High**	**88.35**	**Very High**
Broadway	1.27	$18,152.59	84.70	Very High	86.84	Very High
Sanford	1.42	$149,562.59	86.27	Very High	87.98	Very High
Areas Outside Jurisdictional Boundaries	1.42	$24,589.59	88.81	Very High	90.93	Very High
Moore County	**1.36**	**$375,248.52**	**88.54**	**Very High**	**86.84**	**Very High**
Aberdeen	1.36	$104,906.12	88.33	Very High	86.28	Very High
Cameron	1.36	$11,717.19	89.32	Very High	89.44	Very High
Carthage	1.36	$89,785.16	89.68	Very High	89.09	Very High
Foxfire Village	1.36	$39,574.33	89.10	Very High	87.00	Very High
Pinebluff	1.36	$31,863.98	92.19	Very High	92.30	Very High
Pinehurst	1.36	$153,712.30	91.19	Very High	89.90	Very High
Robbins	1.36	$35,642.71	88.81	Very High	90.55	Very High
Southern Pines	1.36	$156,342.15	90.09	Very High	88.44	Very High
Taylortown	1.36	$31,532.16	92.21	Very High	91.65	Very High
Vass	1.36	$15,991.39	92.35	Very High	93.49	Very High
Whispering Pines	1.36	$24,945.08	95.51	Very High	92.68	Very High
Areas Outside Jurisdictional Boundaries	1.36	$35,111.25	82.87	Very High	78.01	Relatively High

The highest expected annualized frequency for Ice Storms in the planning area is Lee County (1.84 Annualized Frequency), followed by Moore County (1.81), Chatham County (1.79), Harnett County (1.36), and Johnston County (1.17). Each county in the planning area has an Average EAL Rating and Average Hazard Risk Index Rating of "Relatively High," except for Johnston County, which has an Average EAL Rating of "Relatively Moderate." The total EAL is $168,169 in Chatham County, in Harnett County, in Johnston County, in Lee County, and in Moore County.

***Table 5-37**: NRI Ice Storm annualized frequency, EAL total, EAL score, and Hazard Risk Score*

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Chatham County	**1.79**	**$168,169.07**	**74.15**	**Relatively High**	**73.64**	**Relatively High**
Goldston	1.80	$14,554.49	83.24	Very High	84.49	Very High
Pittsboro	1.80	$20,945.95	72.03	Relatively High	69.70	Relatively High
Siler City	1.80	$26,307.98	75.11	Relatively High	80.68	Very High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Area outside Jurisdictional Boundaries	1.79	$106,360.65	73.68	Relatively High	71.96	Relatively High
Harnett County	**1.36**	**$157,996.39**	**66.44**	**Relatively High**	**69.63**	**Relatively High**
Angier	1.62	$16,895.17	62.68	Relatively High	66.72	Relatively High
Coats	1.23	$10,014.71	66.29	Relatively High	71.05	Relatively High
Dunn	1.19	$30,328.89	73.17	Relatively High	79.40	Relatively High
Erwin	1.19	$25,682.58	68.84	Relatively High	73.45	Relatively High
Lillington	1.39	$39,935.23	64.28	Relatively High	65.33	Relatively High
Area outside Jurisdictional Boundaries	1.39	$50,818.42	69.00	Relatively High	71.44	Relatively High
Johnston County	**1.17**	**$233,289.16**	**59.38**	**Relatively Moderate**	**60.15**	**Relatively High**
Archer Lodge	0.86	$26,510.74	61.62	Relatively High	56.42	Relatively Moderate
Benson	1.29	$18,483.99	62.42	Relatively High	66.26	Relatively High
Clayton	1.30	$77,499.77	67.34	Relatively High	65.26	Relatively High
Four Oaks	0.99	$11,312.58	51.49	Relatively Moderate	56.36	Relatively Moderate
Kenly	0.79	$4,498.52	47.23	Relatively Moderate	50.90	Relatively Moderate
Micro	0.79	$5,764.40	42.77	Relatively Moderate	48.46	Relatively Moderate
Pine Level	0.79	$7,531.60	60.21	Relatively High	65.59	Relatively High
Princeton	0.80	$4,384.09	45.80	Relatively Moderate	46.76	Relatively Moderate
Selma	0.79	$27,802.26	58.33	Relatively Moderate	63.77	Relatively High
Smithfield	0.80	$24,701.75	56.87	Relatively Moderate	63.39	Relatively High
Wilson's Mill	0.84	$16,218.49	59.44	Relatively Moderate	62.02	Relatively High
Area outside Jurisdictional Boundaries	1.48	$82,008.23	62.45	Relatively High	60.38	Relatively High
Lee County	**1.84**	**$143,966.84**	**74.34**	**Relatively High**	**77.46**	**Relatively High**
Broadway	1.51	$12,336.34	64.97	Relatively High	68.91	Relatively High
Sanford	1.83	$131,500.21	74.85	Relatively High	77.85	Relatively High
Areas Outside Jurisdictional Boundaries	1.85	$12,466.63	70.76	Relatively High	74.70	Relatively High
Moore County	**1.81**	**$262,308.16**	**74.02**	**Relatively High**	**72.54**	**Relatively High**
Aberdeen	1.70	$69,063.49	72.15	Relatively High	70.29	Relatively High
Cameron	1.85	$8,548.83	75.93	Relatively High	76.78	Relatively High
Carthage	1.85	$63,788.74	76.55	Relatively High	76.70	Relatively High
Foxfire Village	1.60	$26,522.12	73.55	Relatively High	72.06	Relatively High
Pinebluff	1.27	$13,528.88	72.03	Relatively High	73.22	Relatively High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Pinehurst	1.78	$106,135.05	77.75	Relatively High	77.19	Relatively High
Robbins	1.88	$29,891.73	77.08	Relatively High	79.95	Relatively High
Southern Pines	1.85	$106,518.84	76.17	Relatively High	74.73	Relatively High
Taylortown	1.85	$21,721.23	79.39	Relatively High	79.37	Relatively High
Vass	1.85	$11,773.61	80.61	Very High	83.01	Very High
Whispering Pines	1.85	$11,895.32	80.75	Very High	75.32	Relatively High
Areas Outside Jurisdictional Boundaries	1.85	$22,582.54	63.94	Relatively High	58.01	Relatively Moderate

5.8.6 Impact

5.8.6.1 People

Winter storms are considered to be 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. Exhaustion and heart attacks caused by overexertion are the two most likely causes of winter storm-related deaths.

Power outages during very cold winter storm conditions can result in a potentially dangerous situation. 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 a lack of proper safety precautions when using an alternative heating source.

- Individuals with disabilities (11.8% in Chatham County, 15.5% in Harnett County, 13% in Johnston County, 17.7% in Lee County, and 14% in Moore County[96]) and individuals with an independent living difficulty (4.8% in Chatham County, 6.4% in Harnett County, 5.1% in Johnston County, 6.4% in Lee County, and 5.9% in Moore County[97]) may be at an increased risk of impacts as a result of winter weather events. It is important that the planning area develops educational materials to ensure residents are able to safely heat their homes and remain safe during winter weather events.

5.8.6.2 Changes in Development or Housing Characteristics

As the planning area increases in population (16.54% increase in Moore County, 11.58% in Lee County, 34.19% in Johnston County, 19.03% in Harnett County, and 23.33% in Chatham County between 2010 and 2023[98]), more development and housing units should be expected in

[96] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810
[97] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810
[98] U.S. Census Bureau. (n.d.). TOTAL POPULATION. Decennial Census, DEC Summary File 1, Table P1. Retrieved June 16, 2025, from https://data.census.gov/table/DECENNIALSF12010.P1

the planning area. All counties in the planning area have experienced an increase in housing units between 2013 and 2023, increasing in Chatham County by 20.8%, Harnett County by 14.08%, Johnston County by 29.87%, Lee County by 11.35%, Moore County by 11.92%, and the planning area by 19.3% total. In the event of winter weather events, there are more residents who might be at risk of adverse impacts of winter weather. There may also be an increase in roads to maintain in the event of winter weather events, which would require an increase in capabilities in the planning area to prepare roads and clear roads when winter precipitation impacts the planning area.

5.8.6.3 Economy

Local economy and finances may be adversely affected, depending on the damage. Utility companies will strive to restore power as quickly as possible; however, businesses without power may be forced to close for an extended period, resulting in financial losses for the local economy.

5.8.6.4 Natural 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 residential homes, cars, or power lines. This potential for winter debris creates a dangerous environment to be outside in; significant injury may occur if a large limb snaps while a local resident is out driving or walking underneath it.

5.8.6.5 First Responders

Adverse impact expected to be severe for unprotected personnel and moderate to light for trained, equipped, and protected personnel. Clearing ice- or snow-covered roads is also a problem; with limited equipment in North Carolina due to the relative infrequency of events, priority is given to main thoroughfares, and secondary roads are largely untouched during the initial hours after a storm has passed. First responders may be at an increased risk of injury when traveling on roads with ice or winter precipitation impeding the roadway.

5.8.6.6 Future Conditions

According to the NC Climate Science Report, it is likely that snowfall and the number of heavy snowstorms in NC will decrease due to increasing winter temperatures.

GEOLOGIC HAZARDS

5.9 Earthquake

5.9.1 Hazard Description and Background

An earthquake is a movement or trembling of the ground produced by the sudden displacement of rock in the Earth's crust. Earthquakes result from crustal strain, volcanism, landslides, or the collapse of caverns. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in loss of life and injury to hundreds of thousands of persons, and disrupt the social and economic functioning of the affected area.

Most property damage and earthquake-related deaths are caused by the failure and collapse of structures due to ground shaking. The level of damage depends upon the amplitude and duration of the shaking, which are directly related to the earthquake size, distance from the fault, site, and regional geology. Other damaging earthquake effects include landslides, the down-slope movement of soil and rock (mountain regions and along hillsides), and liquefaction, in which ground soil loses the ability to resist shear and flows much like quicksand. In the case of liquefaction, anything relying on the substrate for support can shift, tilt, rupture, or collapse.

Most earthquakes are caused by the release of stress accumulated as a result of the rupture of rocks along opposing fault planes in the Earth’s outer crust. These faulty planes are typically found along the 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 rock's 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.

The greatest earthquake threat in the United States is along tectonic plate boundaries and seismic fault lines located in the central and western states; however, the Eastern United States does face a moderate risk of less frequent, less intense earthquake events. Figure 5-230 shows relative seismic risk for the United States.

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 (Table 5-38). Each unit increase in magnitude on the Richter Scale corresponds to a 10-fold increase in wave amplitude, or a 32-fold increase in energy. Intensity is most commonly measured using the Modified Mercalli Intensity (MMI) Scale based on direct and indirect measurements of seismic effects. The scale levels are typically described using Roman numerals, ranging from “I” corresponding to imperceptible (instrumental) events to “XII” for catastrophic (total destruction). A detailed description of the Modified Mercalli Intensity Scale of earthquake intensity and its correspondence to the Richter Scale is given in Table 5-39.

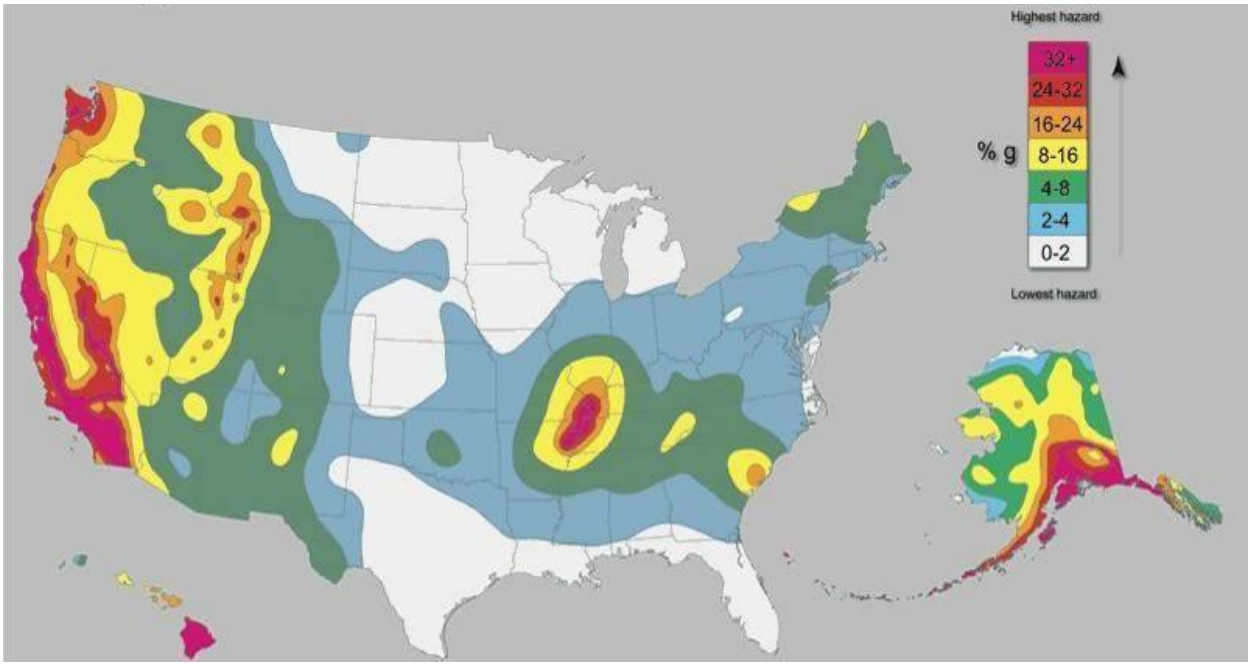


***Figure 5-230**: United States Earthquake Hazard Map from USGS*

***Table 5-38**: Richter Scale*

RICHTER MAGNITUDES	EARTHQUAKE EFFECTS
< 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. It can cause major damage to poorly constructed buildings over small regions.
6.1 - 6.9	Can be destructive in areas up to about 100 kilometers across where people live.
7.0 - 7.9	Major earthquake. It can cause serious damage over larger areas.
8 or >	Great earthquake. Can cause serious damage in areas several hundred kilometers across.

Source: Federal Emergency Management Agency

***Table 5-39**: Modified Mercalli Intensity Scale for Earthquakes*

SCALE	INTENSITY	DESCRIPTION OF EFFECTS	CORRESPONDING RICHTER SCALE MAGNITUDE
I	Not felt	Not felt except by a very few under especially favorable conditions.	-
II	Weak	Felt only by a few persons at rest, especially on the upper floors of buildings.	< 4.2

SCALE	INTENSITY	DESCRIPTION OF EFFECTS	CORRESPONDING RICHTER SCALE MAGNITUDE
III	Weak	Felt quite noticeably by persons indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.	-
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, and doors are disturbed; the walls make a cracking sound. A sensation like a heavy truck striking a building. Standing motor cars rocked noticeably.	-
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.	< 4.8
VI	Strong	Felt by all, many frightened. Some heavy furniture moved; a few instances of fallen plaster. Damage slight.	< 5.4
VII	Very Strong	Damage is negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys are broken.	< 6.1
VIII	Severe	Damage is slight in specially designed structures; considerable damage in ordinary substantial buildings with partial collapse. Damage is great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, and walls. Heavy furniture overturned.	-
IX	Violent	Damage is considerable in specially designed structures; well-designed frame structures are thrown out of plumb. Damage is great in substantial buildings, with partial collapse. Buildings shifted off their foundations.	< 6.9
X	Extreme	Some well-built wooden structures were destroyed; most masonry and frame	< 7.3

SCALE	INTENSITY	DESCRIPTION OF EFFECTS	CORRESPONDING RICHTER SCALE MAGNITUDE
		structures were destroyed with their foundations. Rails bent.	
I	Not felt	Not felt except by a very few under especially favorable conditions.	< 8.1
II	Weak	Felt only by a few persons at rest, especially on the upper floors of buildings.	> 8.1

Source: Federal Emergency Management Agency

5.9.2 Location and Spatial Extent

Approximately two-thirds of North Carolina is subject to earthquakes, with the western and southeast regions most vulnerable to a very damaging earthquake. The state is affected by both the Charleston Fault in South Carolina and the New Madrid Fault in Tennessee. Both of these faults have generated earthquakes measuring greater than eight on the Richter Scale during the last 200 years. In addition, there are several smaller fault lines throughout North Carolina.

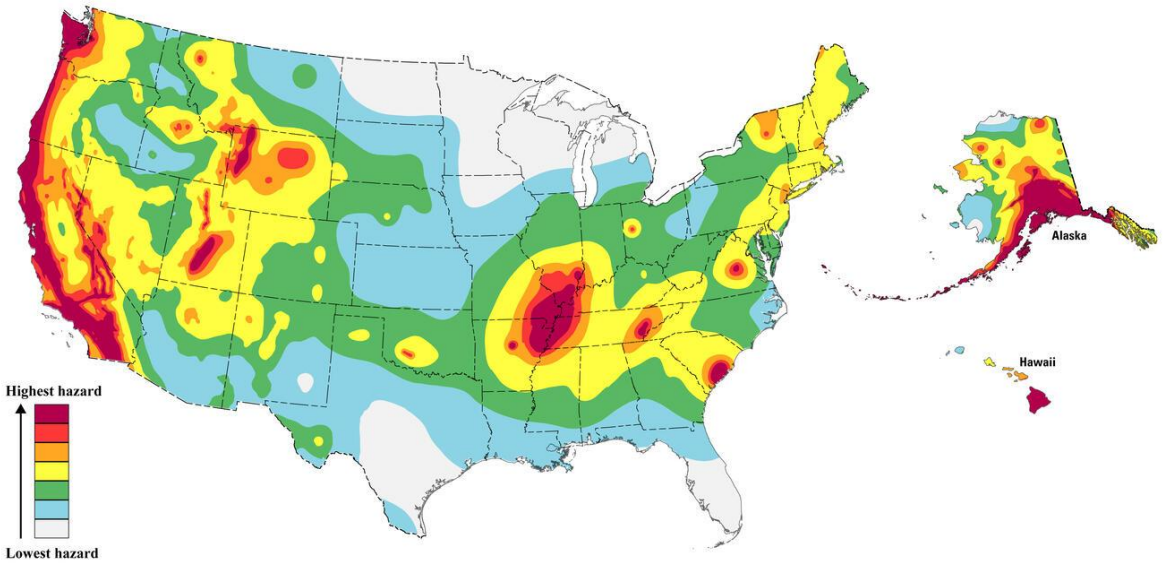


***Figure 5-231**: Hazard Map from the 2023 50-state update of the National Seismic Hazard Model Project from USGS*[99]

In order to represent the risk of earthquake hazards, the 2023 50-State US National Seismic Hazard Model (NSHM) was used to define potential for earthquake ground shaking and

[99] National Seismic Hazard Model Project [NSHMP]. (2024, January 10). Hazard map from the 2023 50-state update of the National Seismic Hazard Model Project (By U.S. Geological Survey [USGS]). https://www.usgs.gov/media/images/hazard-map-2023-50-state-update-national-seismic-hazard-model-project

probability in the US[100]. The data is a time-independent, probabilistic seismic hazard model that is developed with data and methods which include earthquake catalogs, new geodetic-based and geologic-based fault and deformation models, earthquake rupture forecast models, and spatially smoothed seismicity. The following maps show the Predicted Horizontal Acceleration (PGA), or the estimated maximum absolute value of ground acceleration, which is expected to occur at a specific location in the horizontal direction during an earthquake as a percentage of the standard acceleration of the earth due to earth's gravity (%g). The faults displayed on the earthquake hazard maps are from a database of geological maps in North America.[101]

[100] National Seismic Hazard Model Project [NSHMP]. (2024, January 10). Hazard map from the 2023 50-state update of the National Seismic Hazard Model Project (By U.S. Geological Survey [USGS]). https://www.usgs.gov/media/images/hazard-map-2023-50-state-update-national-seismic-hazard-model-project

[101] Garrity, C. P., & Soller, D. (2009). Database of the geologic map of North America— Adapted from the map by J.C. Reed, Jr. and others (2005). Data Series. https://doi.org/10.3133/ds424

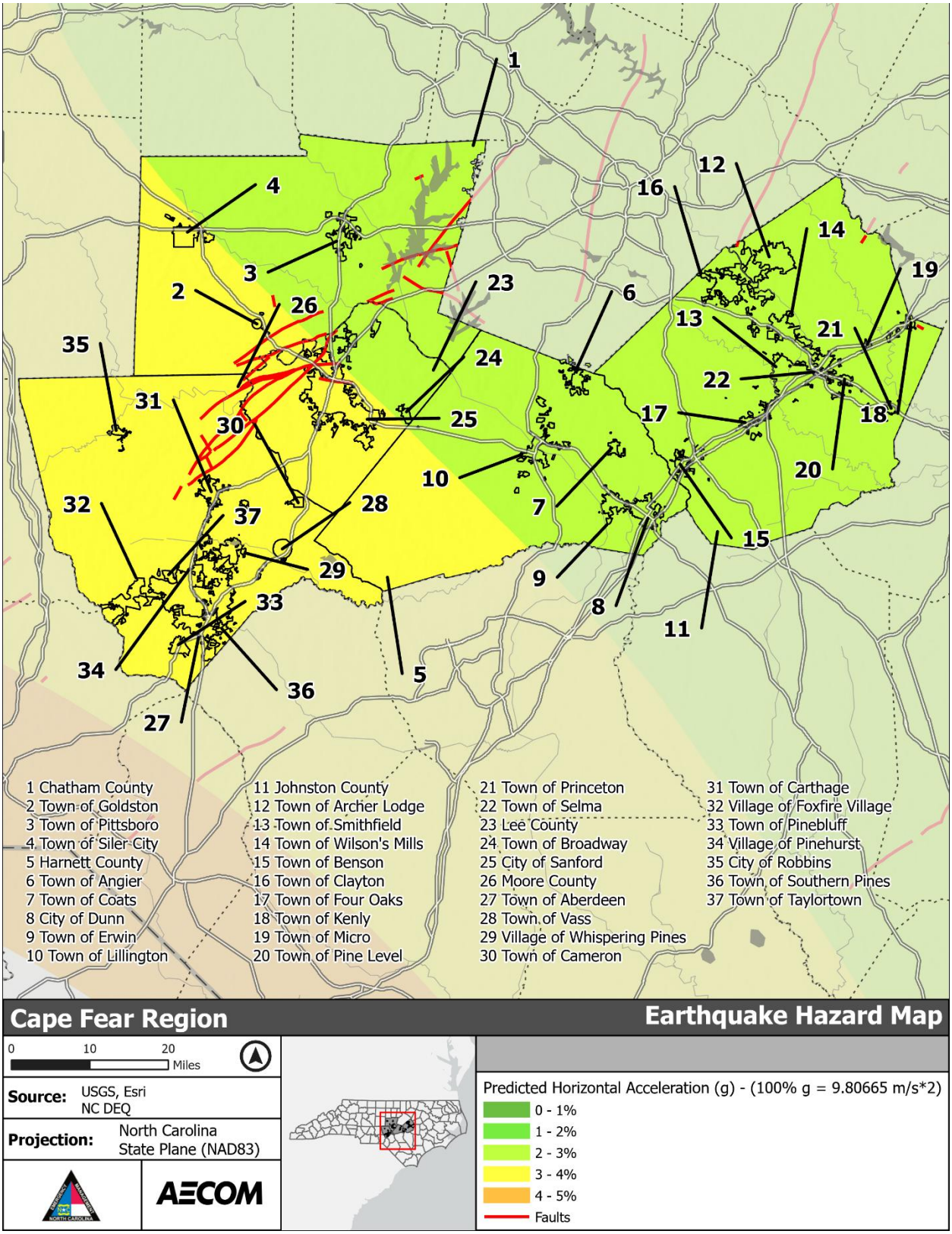


***Figure 5-232**: Earthquake Hazard Areas – Cape Fear Region*

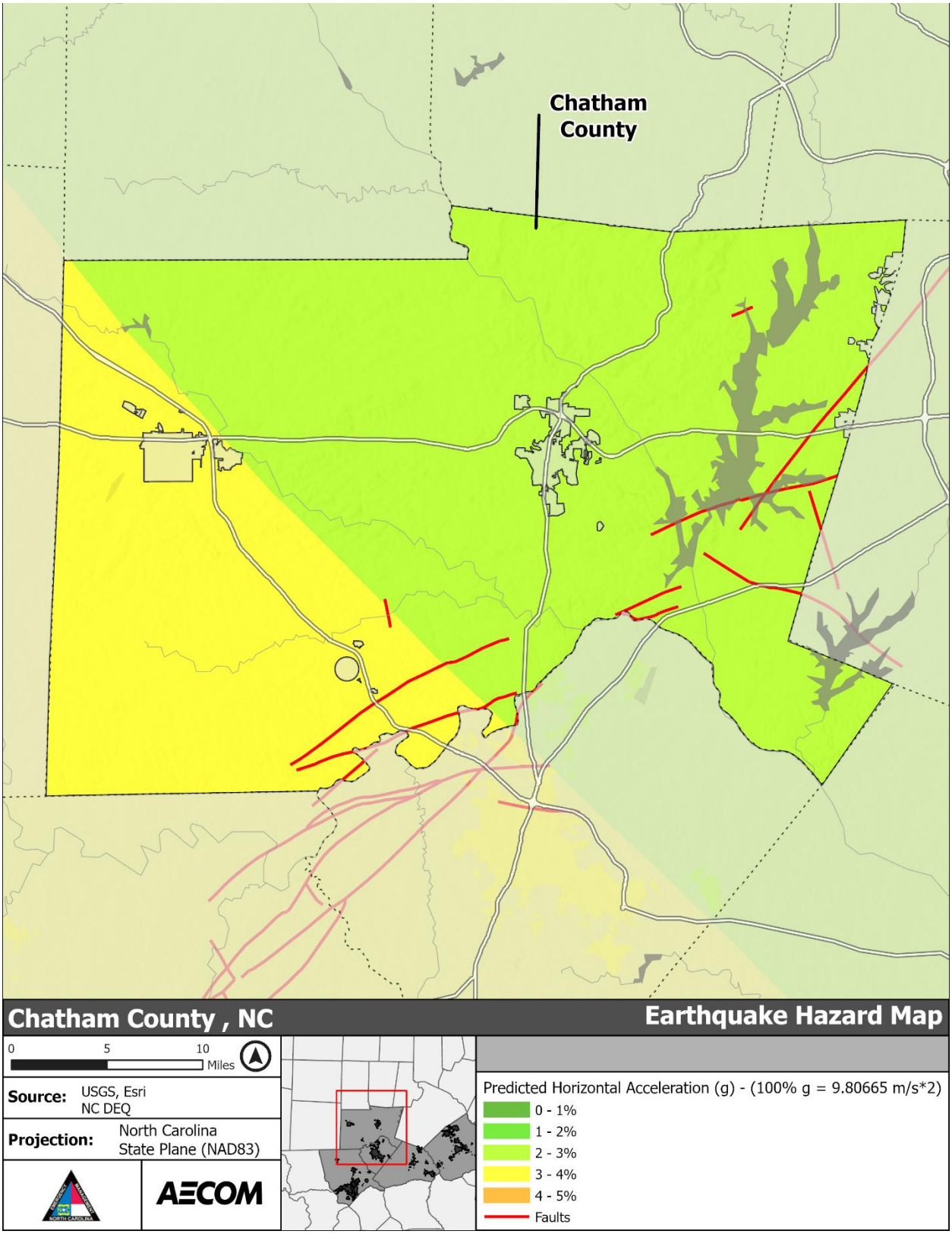


***Figure 5-233**: Earthquake Hazard Area – Chatham County*

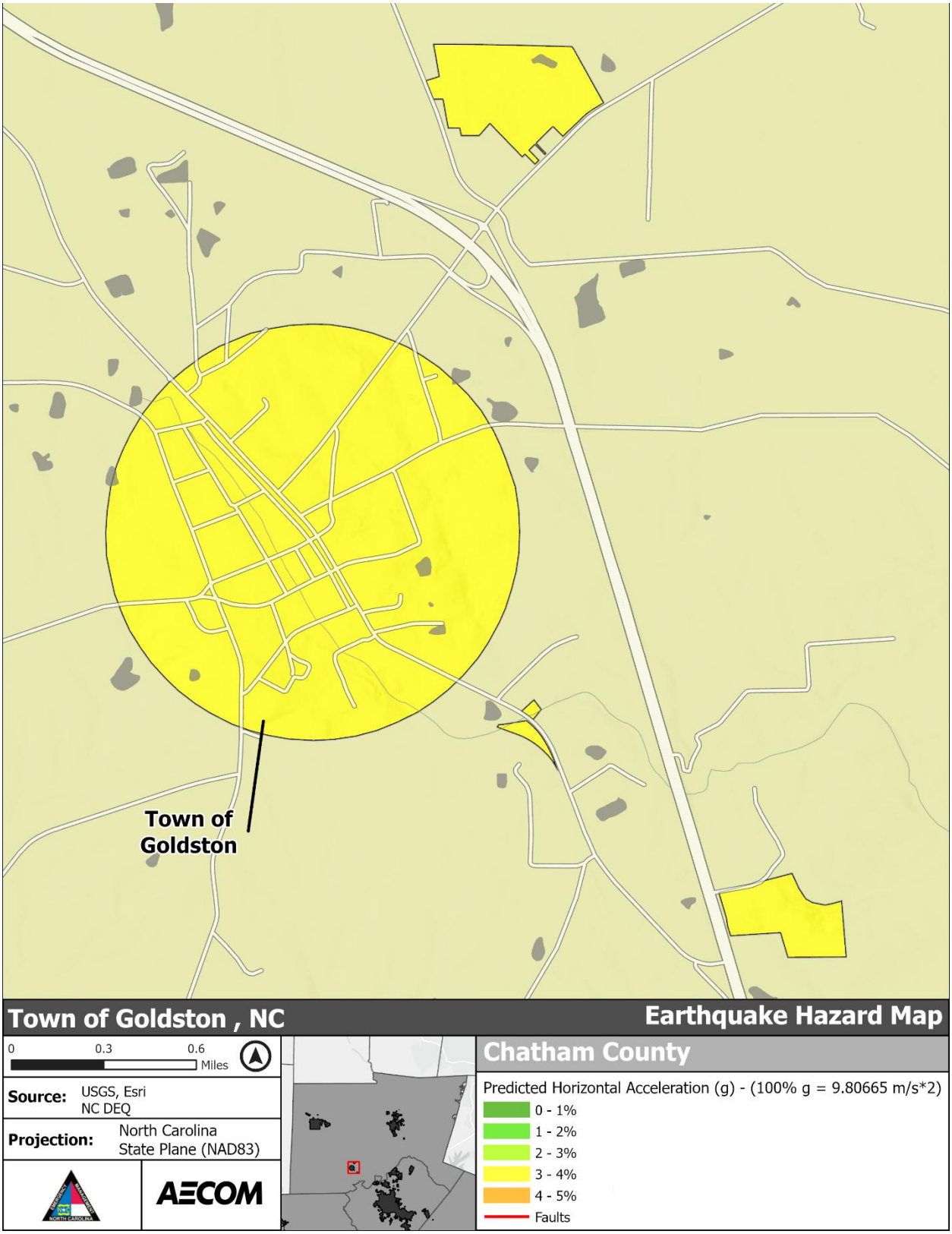


***Figure 5-234**: Earthquake Hazard Area – Town of Goldston*

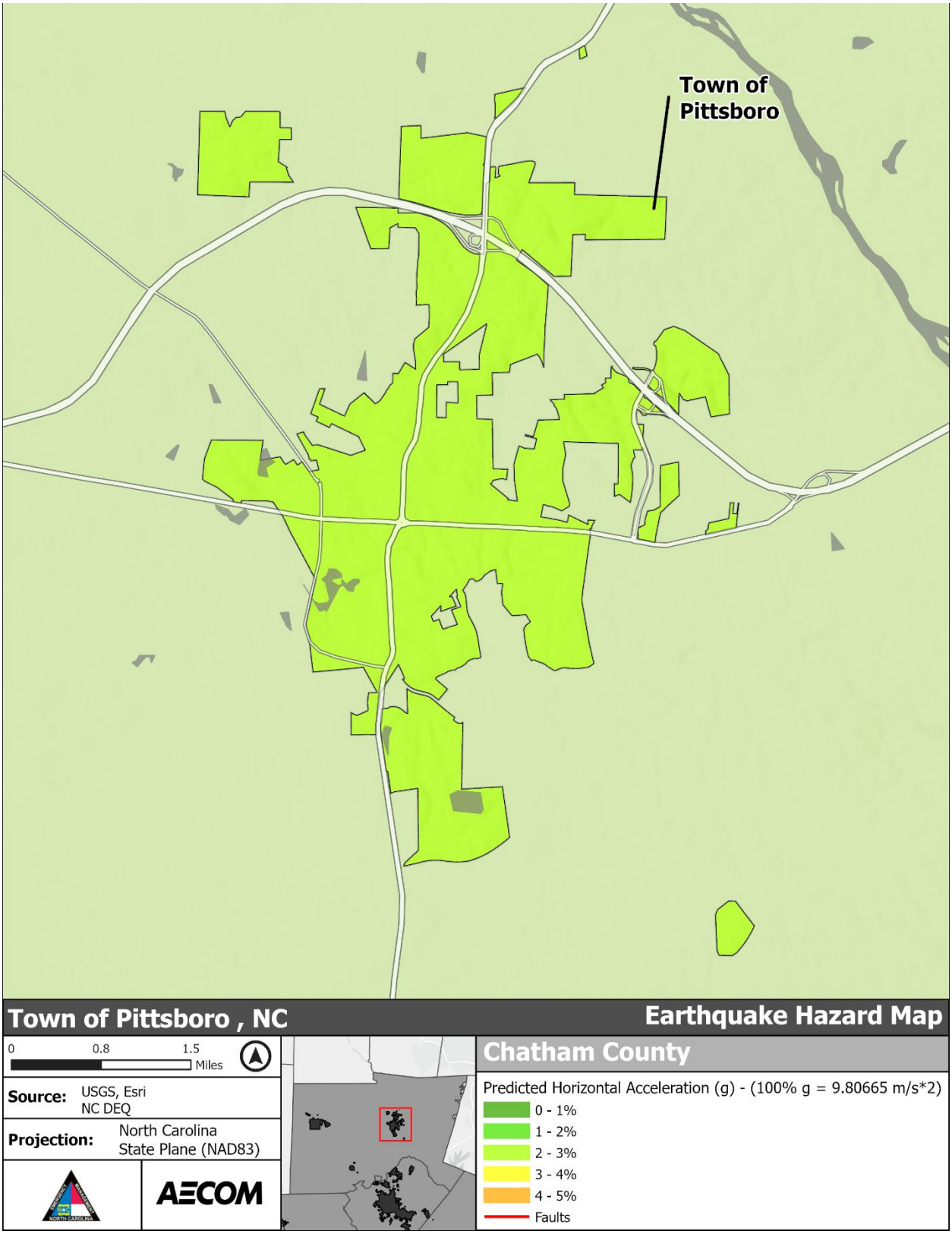


***Figure 5-235**: Earthquake Hazard Area – Town of Pittsboro*

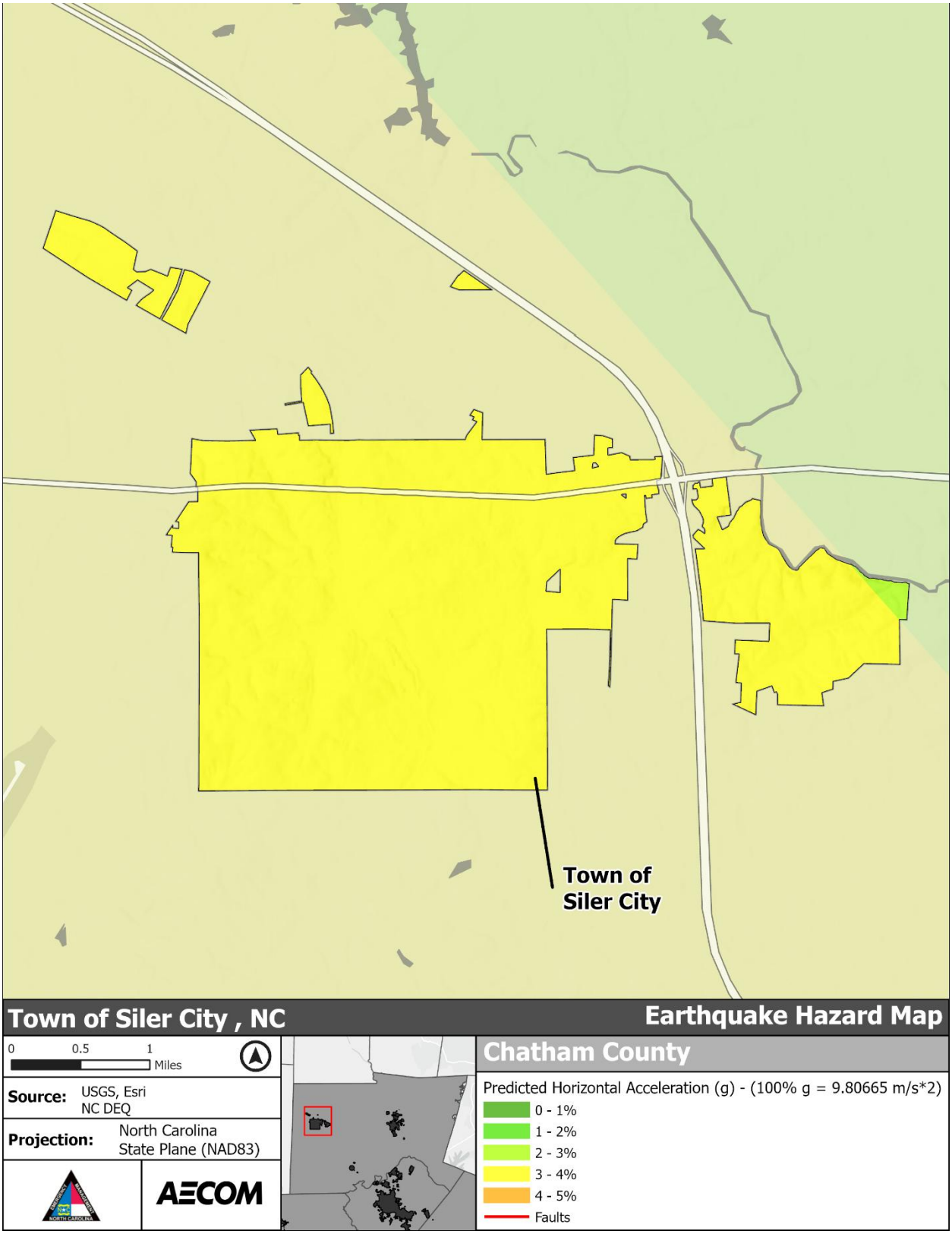


***Figure 5-236**: Earthquake Hazard Area – Town of Siler City*

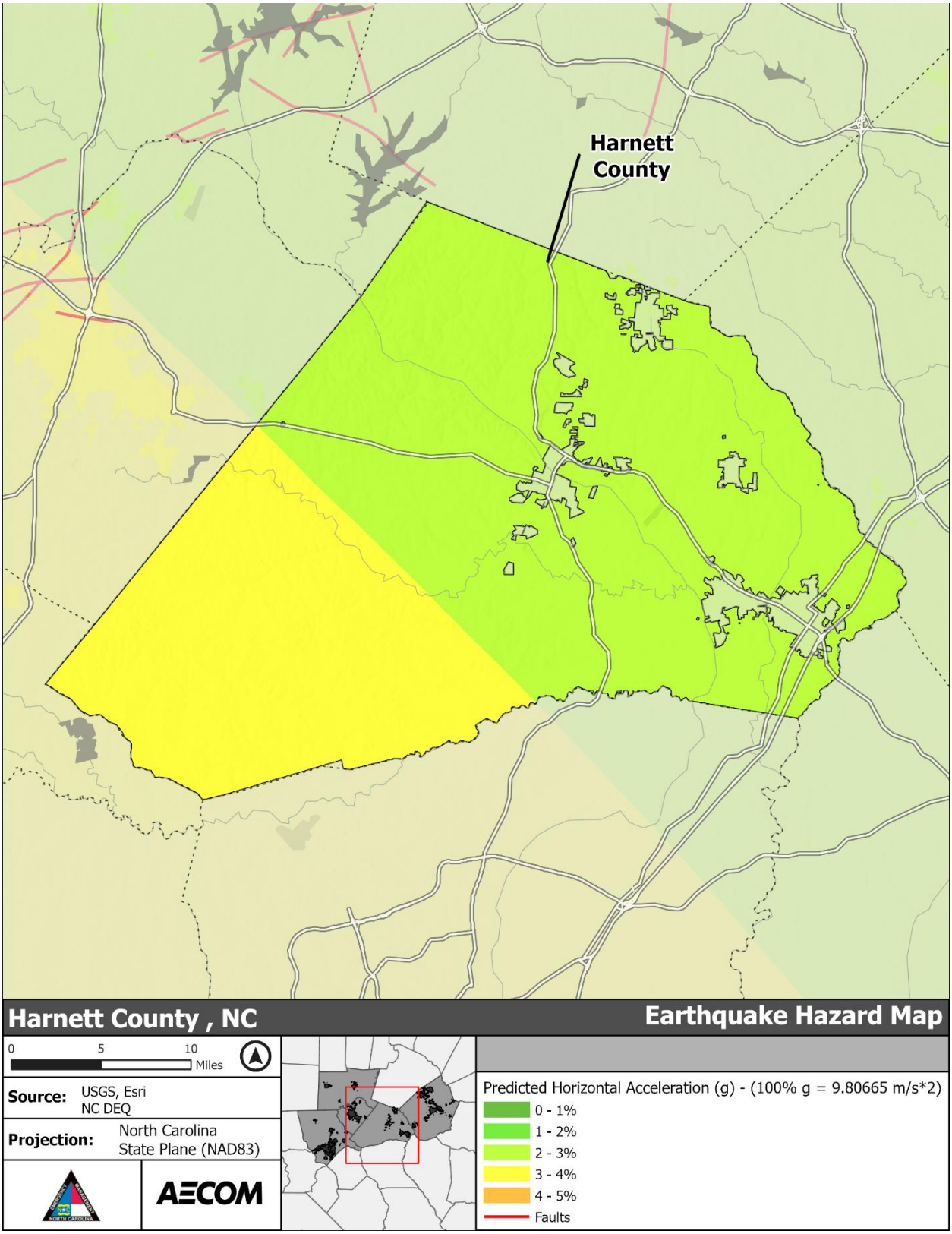


***Figure 5-237**: Earthquake Hazard Area – Harnett County*

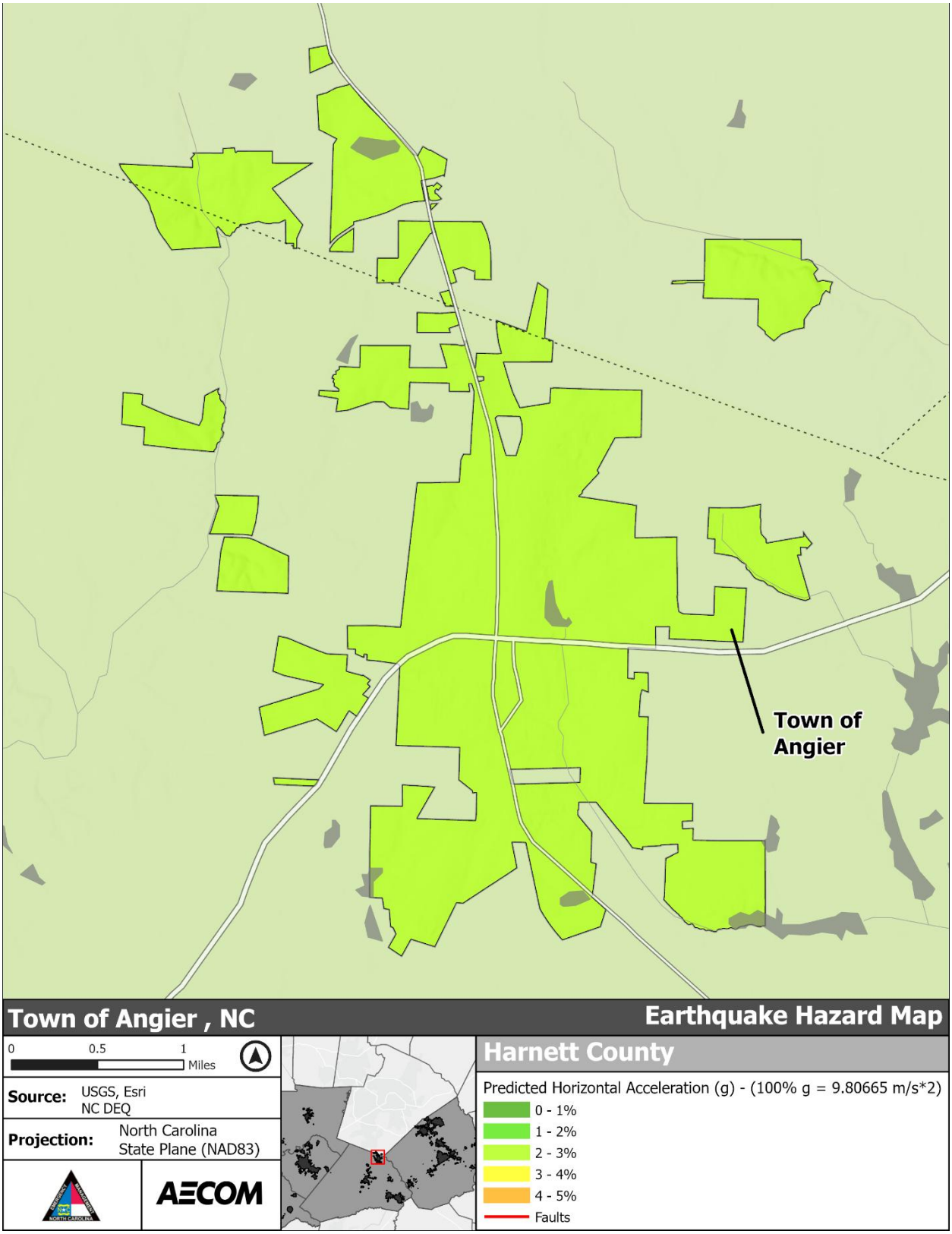


***Figure 5-238**: Earthquake Hazard Area – Town of Angier*

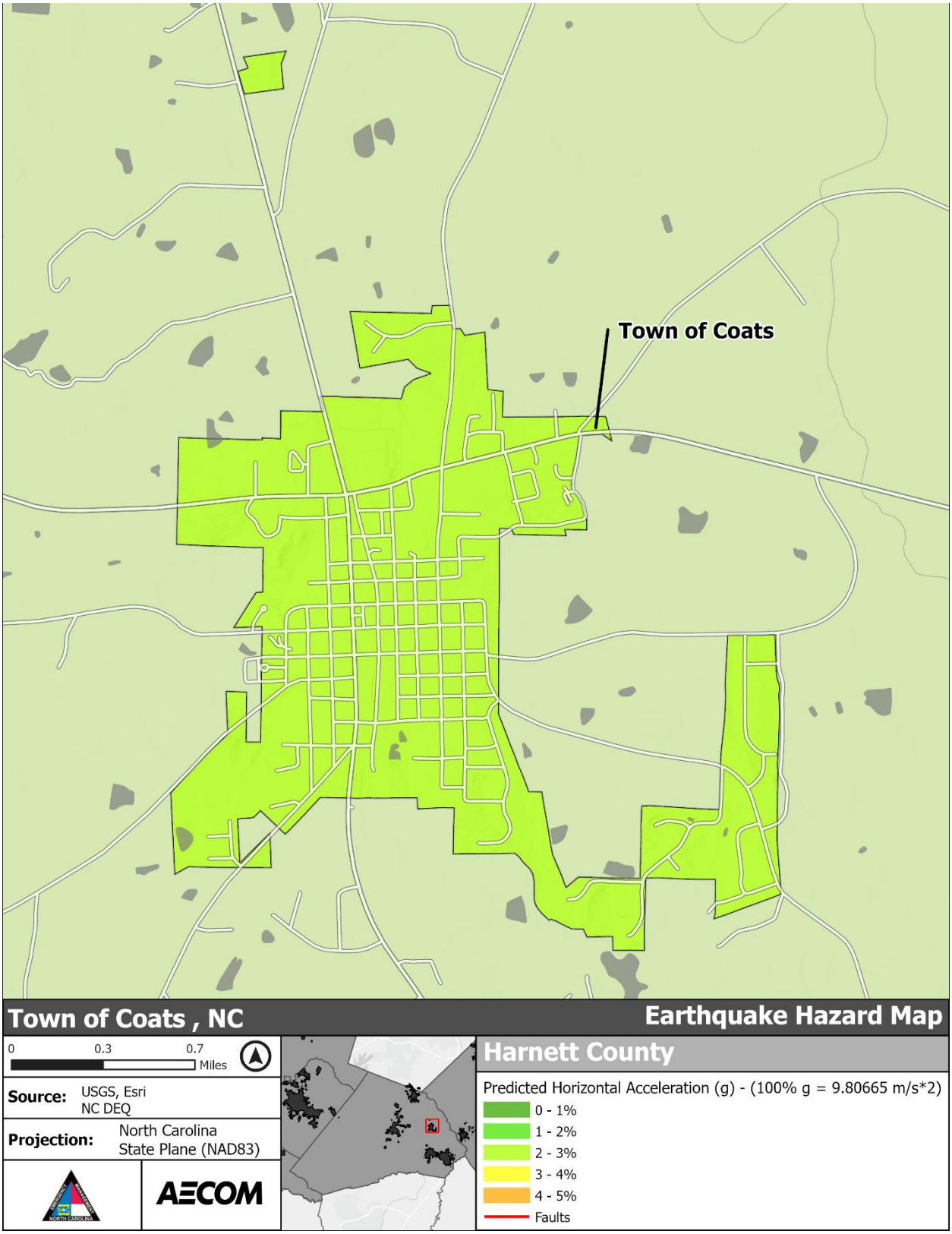


***Figure 5-239**: Earthquake Hazard Area – Town of Coats*

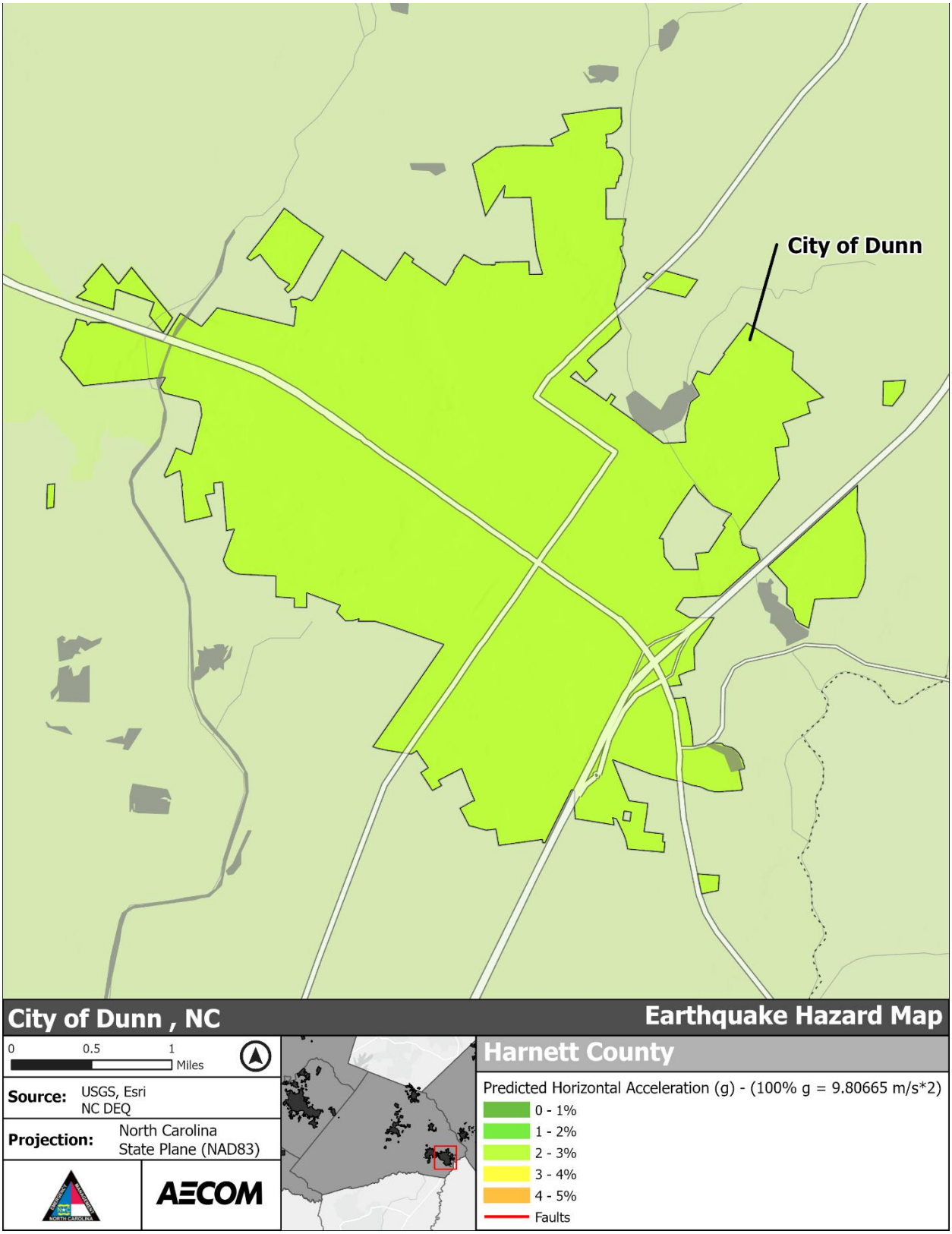


***Figure 5-240**: Earthquake Hazard Area – City of Dunn*

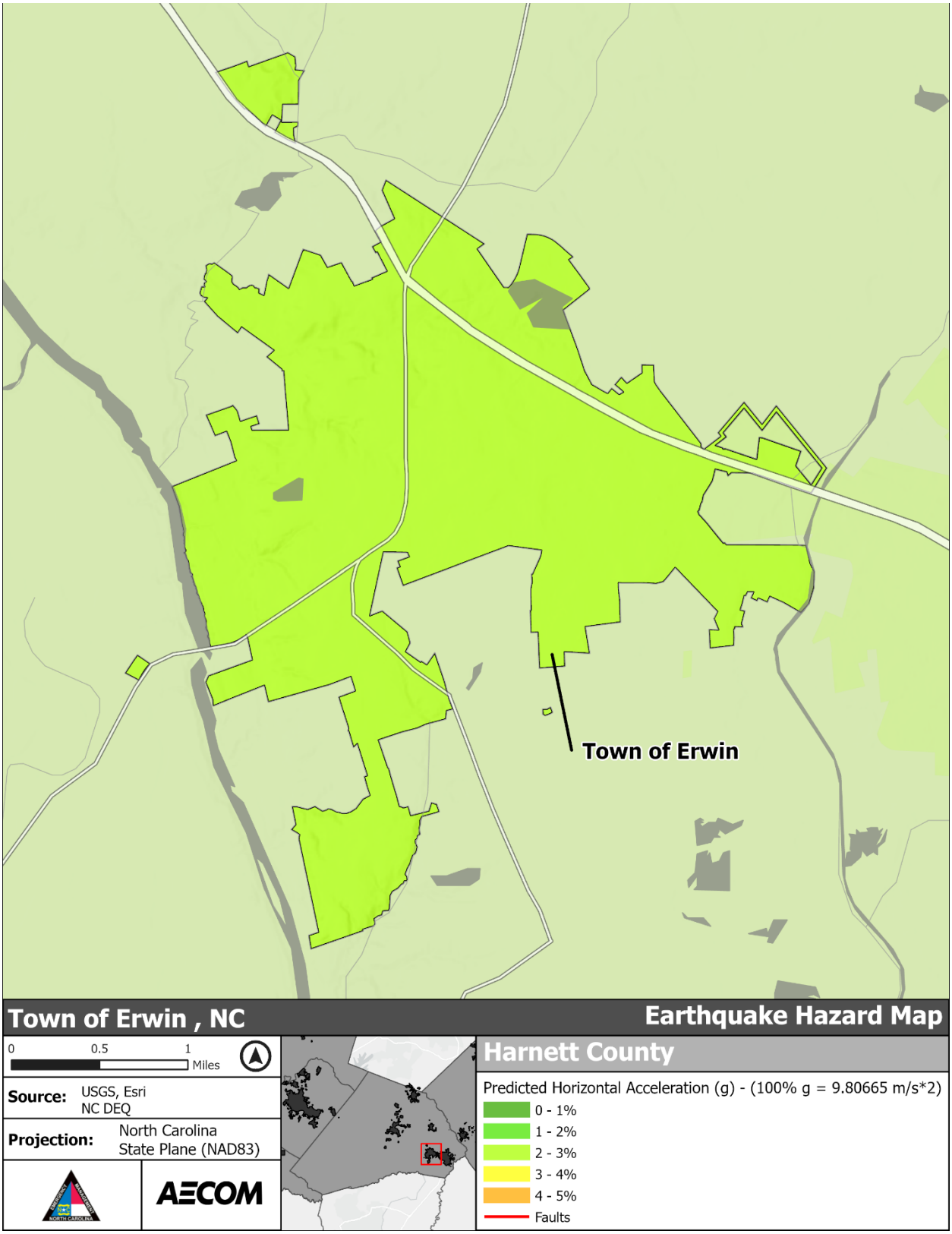


***Figure 5-241**: Earthquake Hazard Area – Town of Erwin*

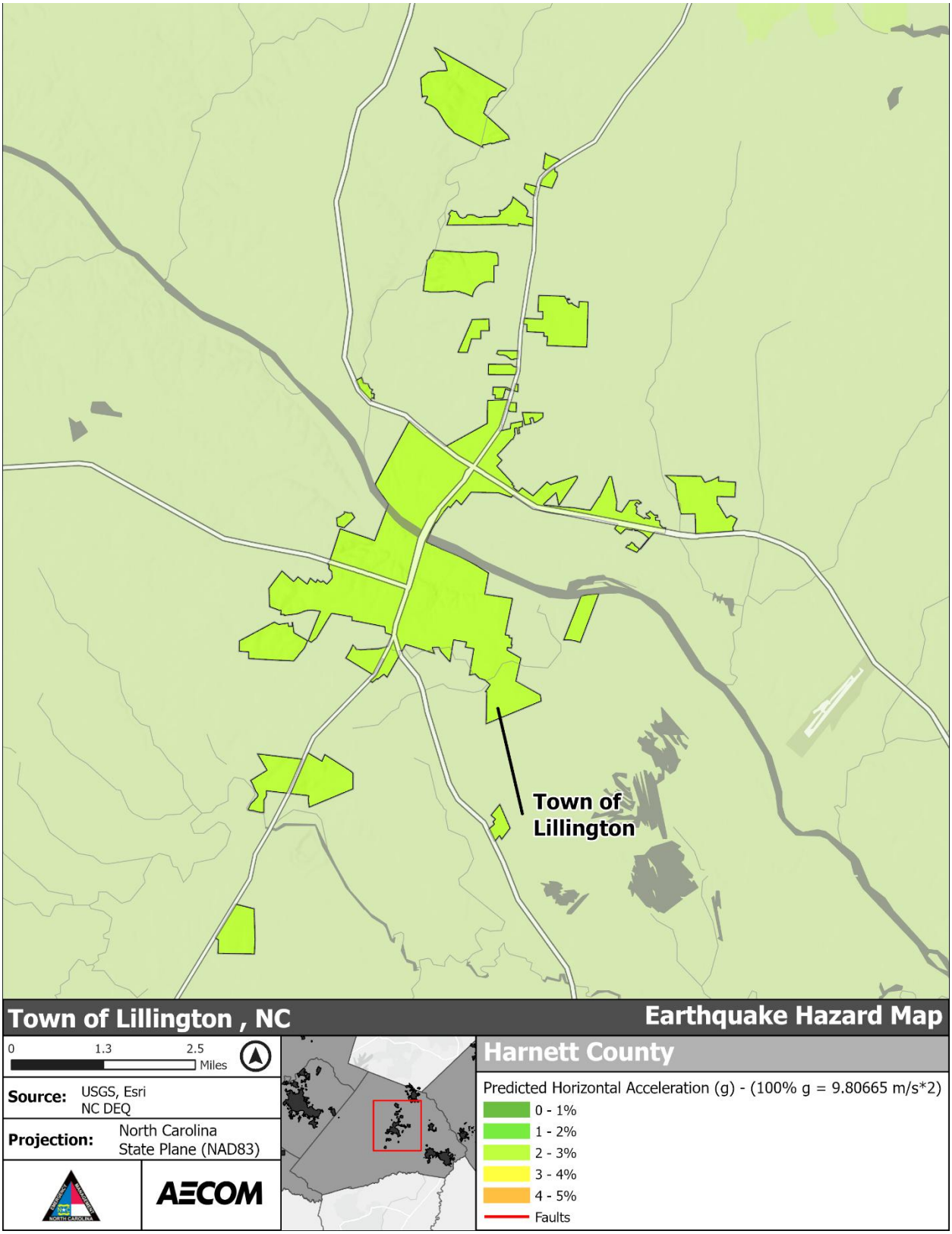


***Figure 5-242**: Earthquake Hazard Area – Town of Lillington*

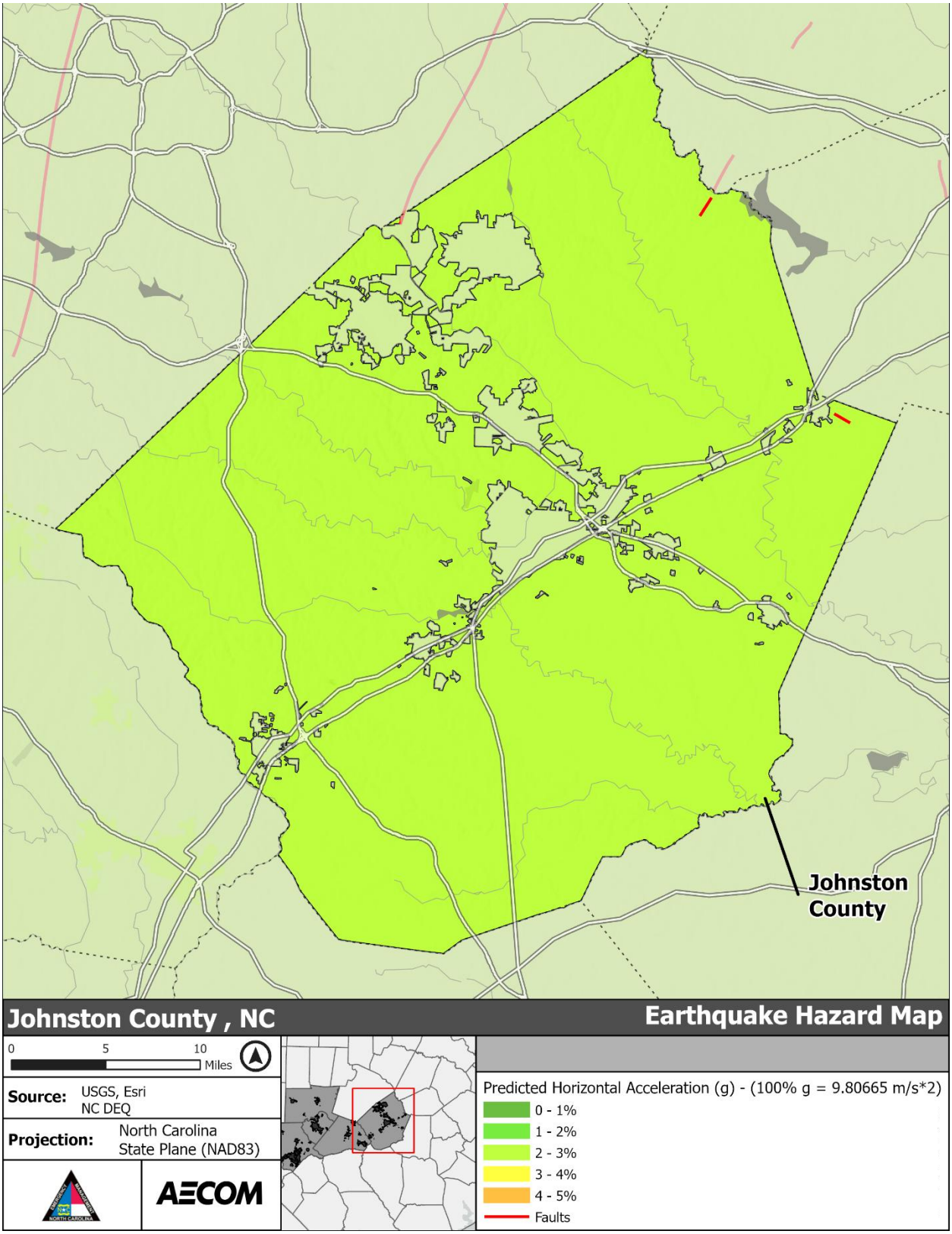


***Figure 5-243**: Earthquake Hazard Area – Johnston County*

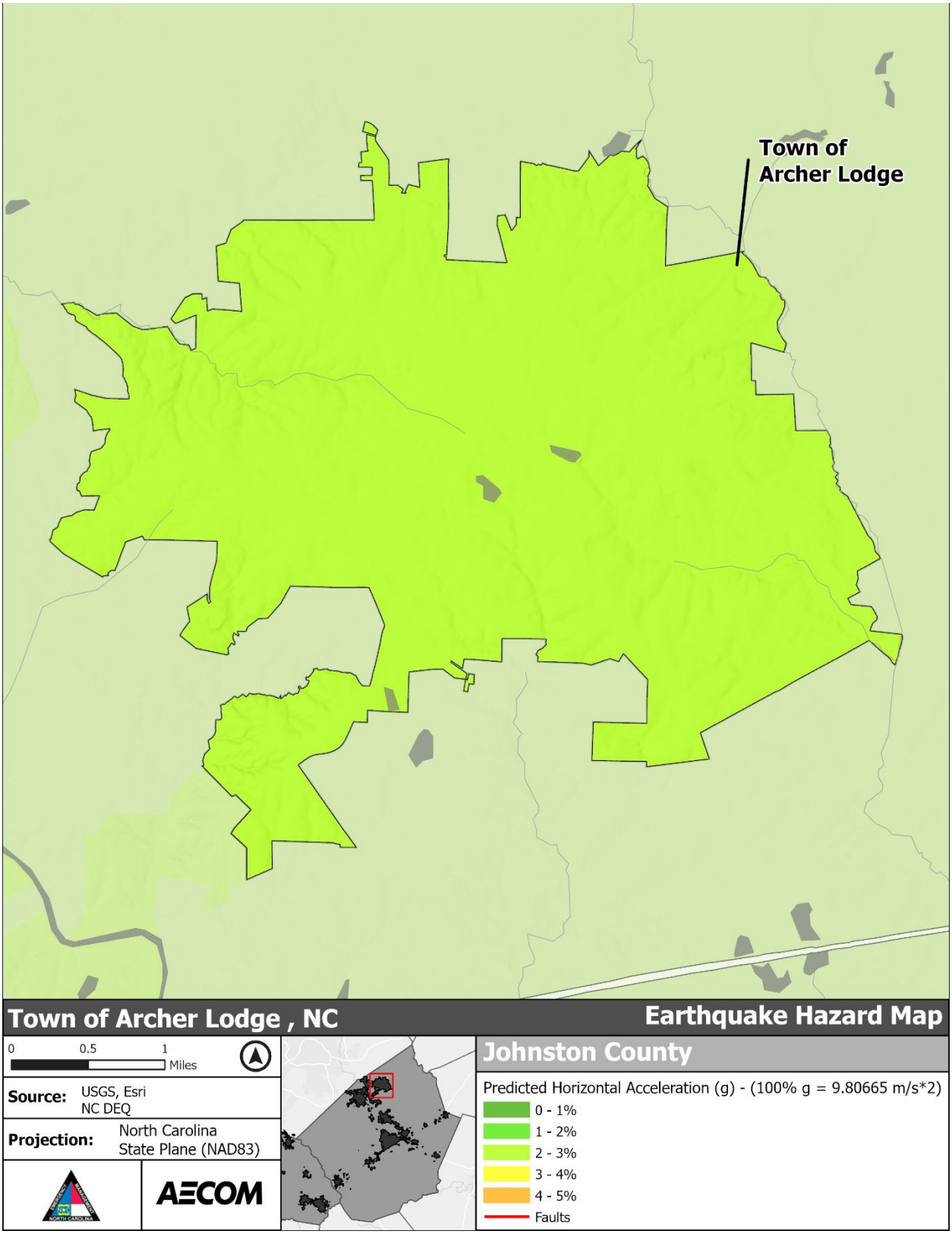


***Figure 5-244**: Earthquake Hazard Area – Town of Archer Lodge*

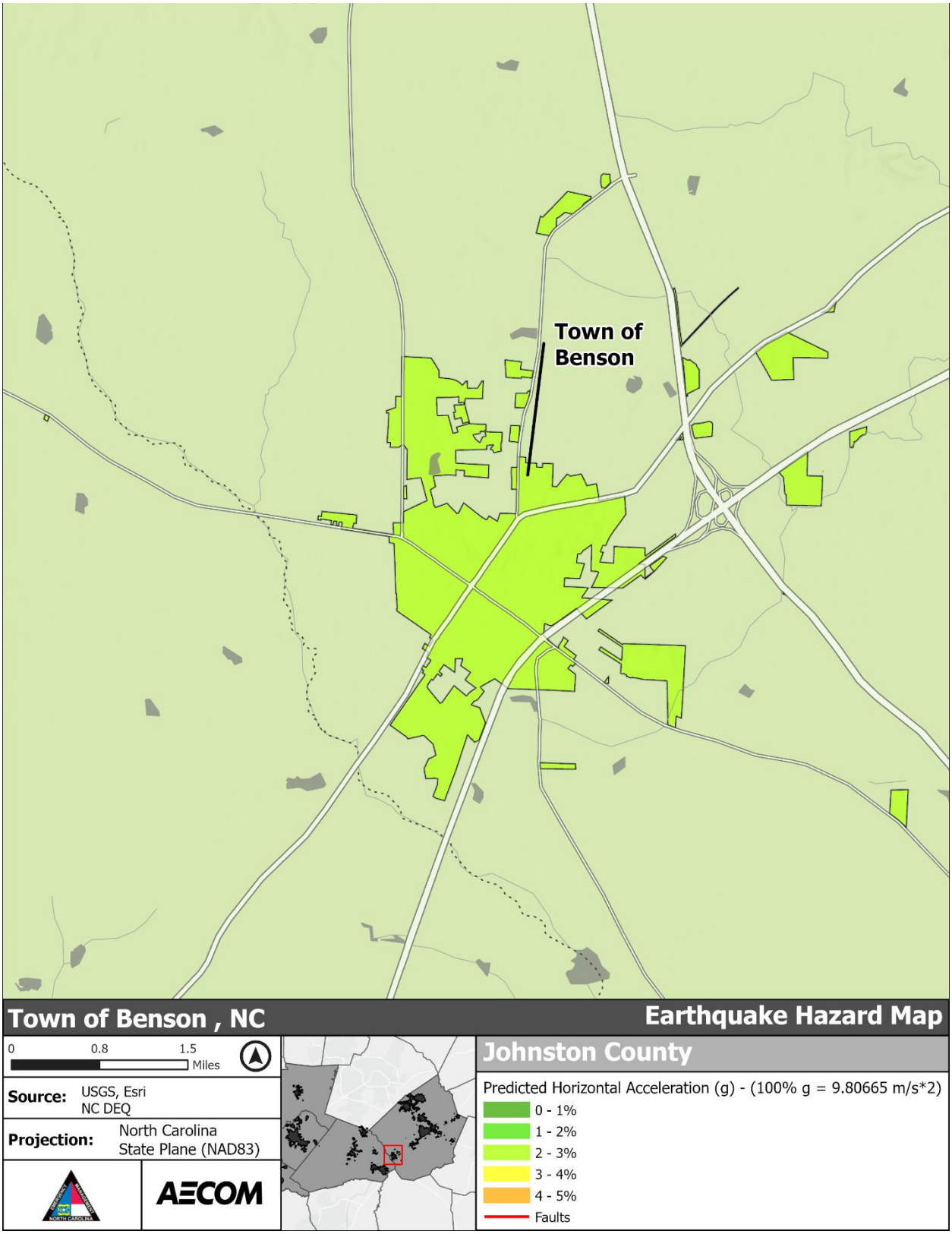


***Figure 5-245**: Earthquake Hazard Area – Town of Benson*

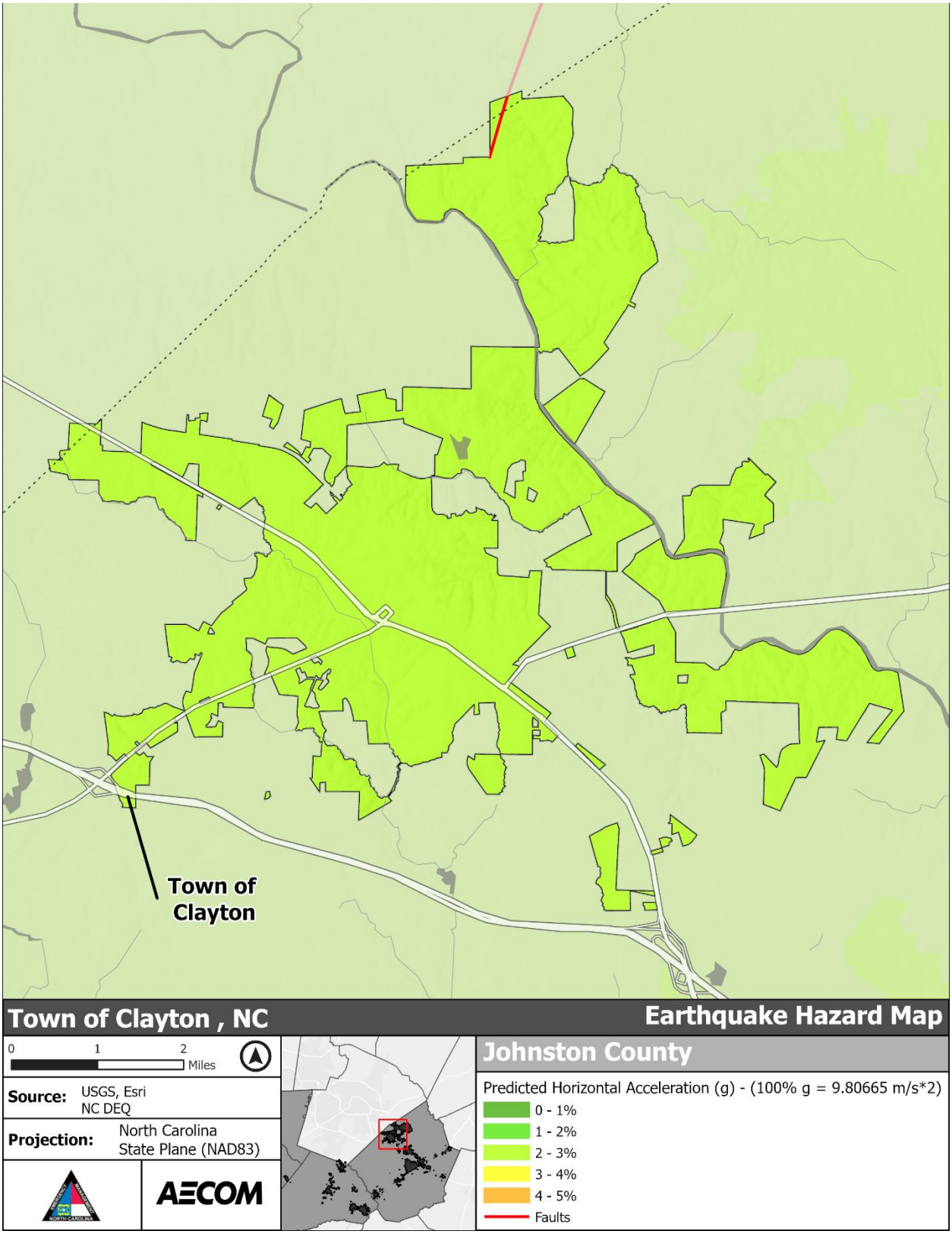


***Figure 5-246**: Earthquake Hazard Area – Town of Clayton*

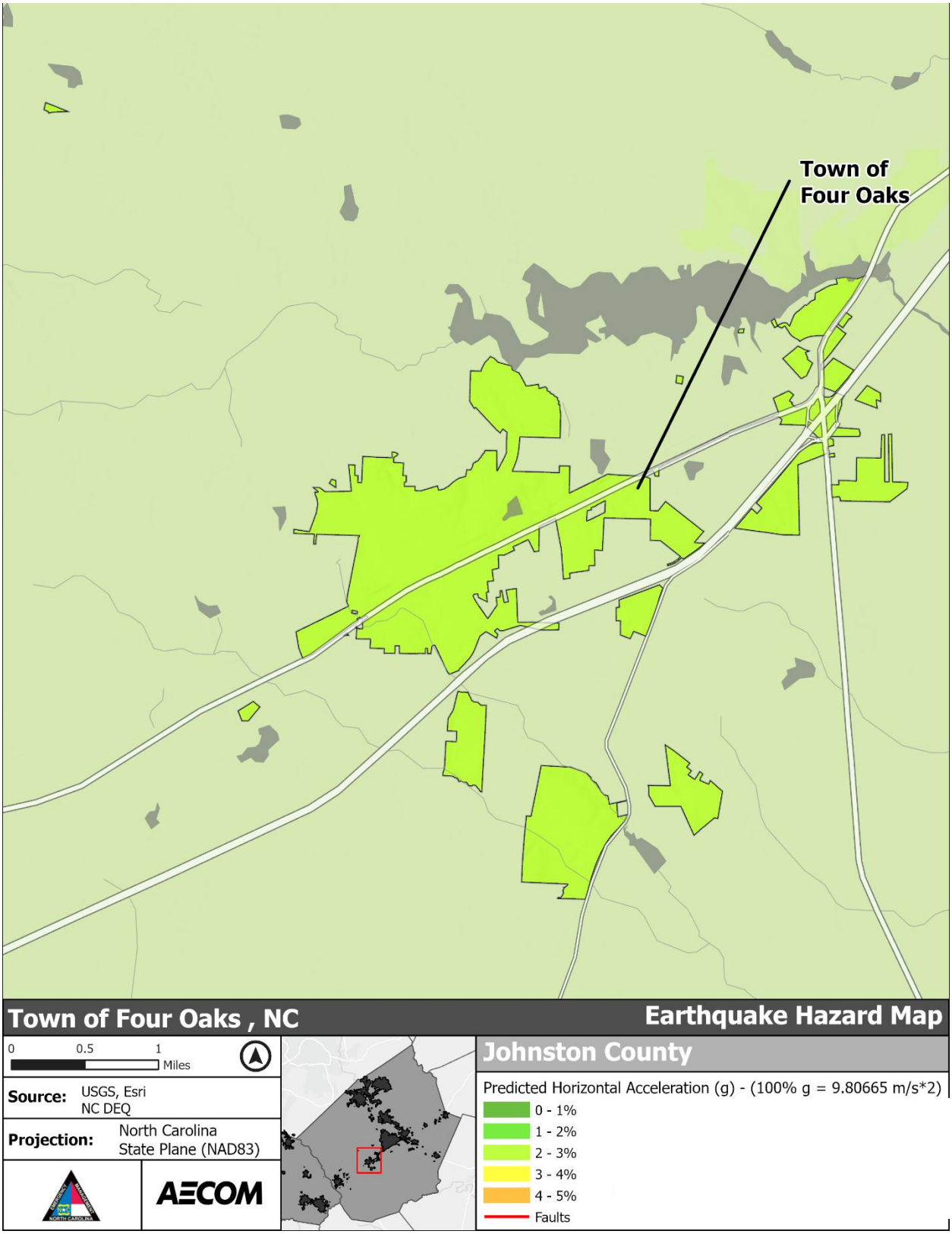


***Figure 5-247**: Earthquake Hazard Area – Town of Four Oaks*

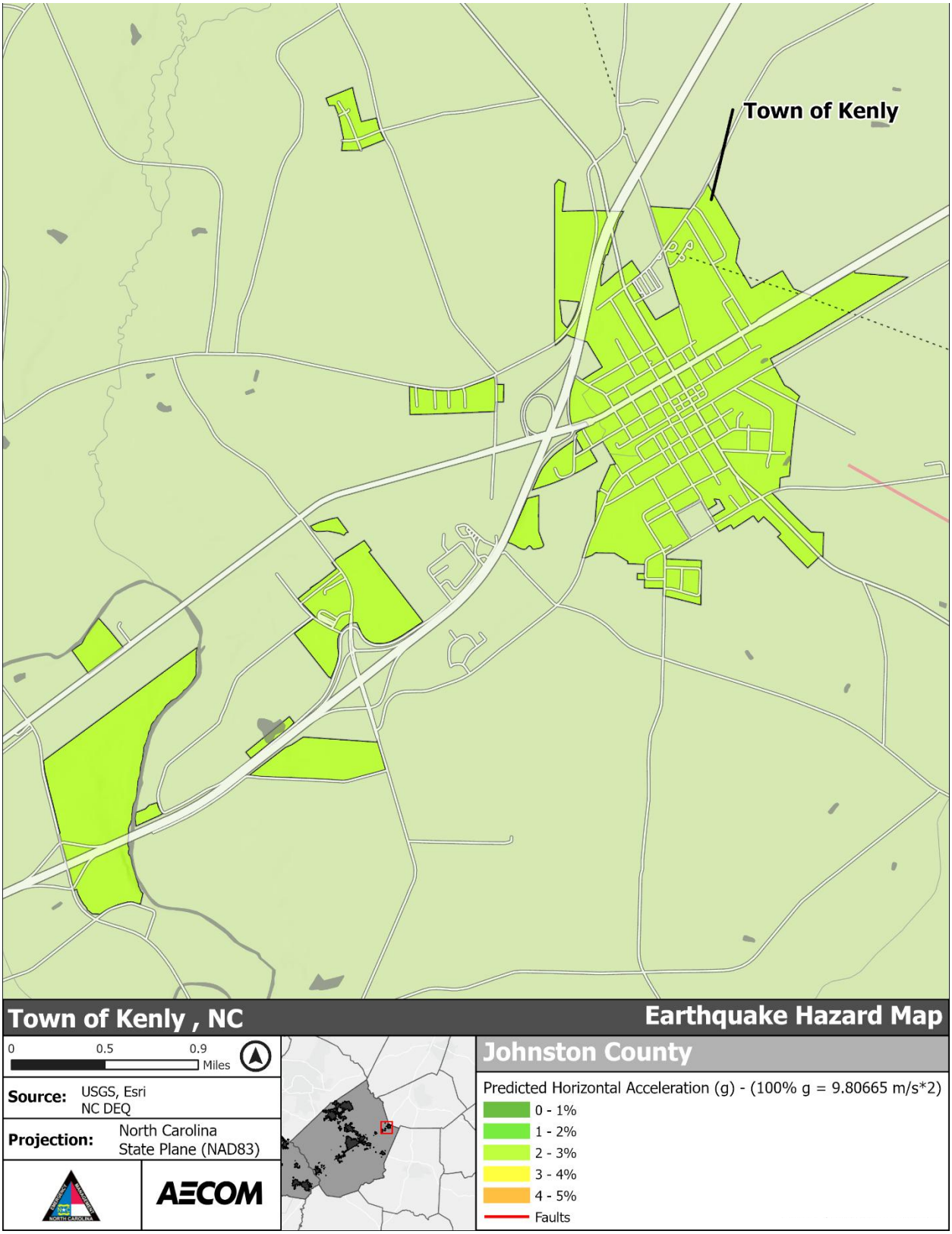


***Figure 5-248**: Earthquake Hazard Area – Town of Kenly*

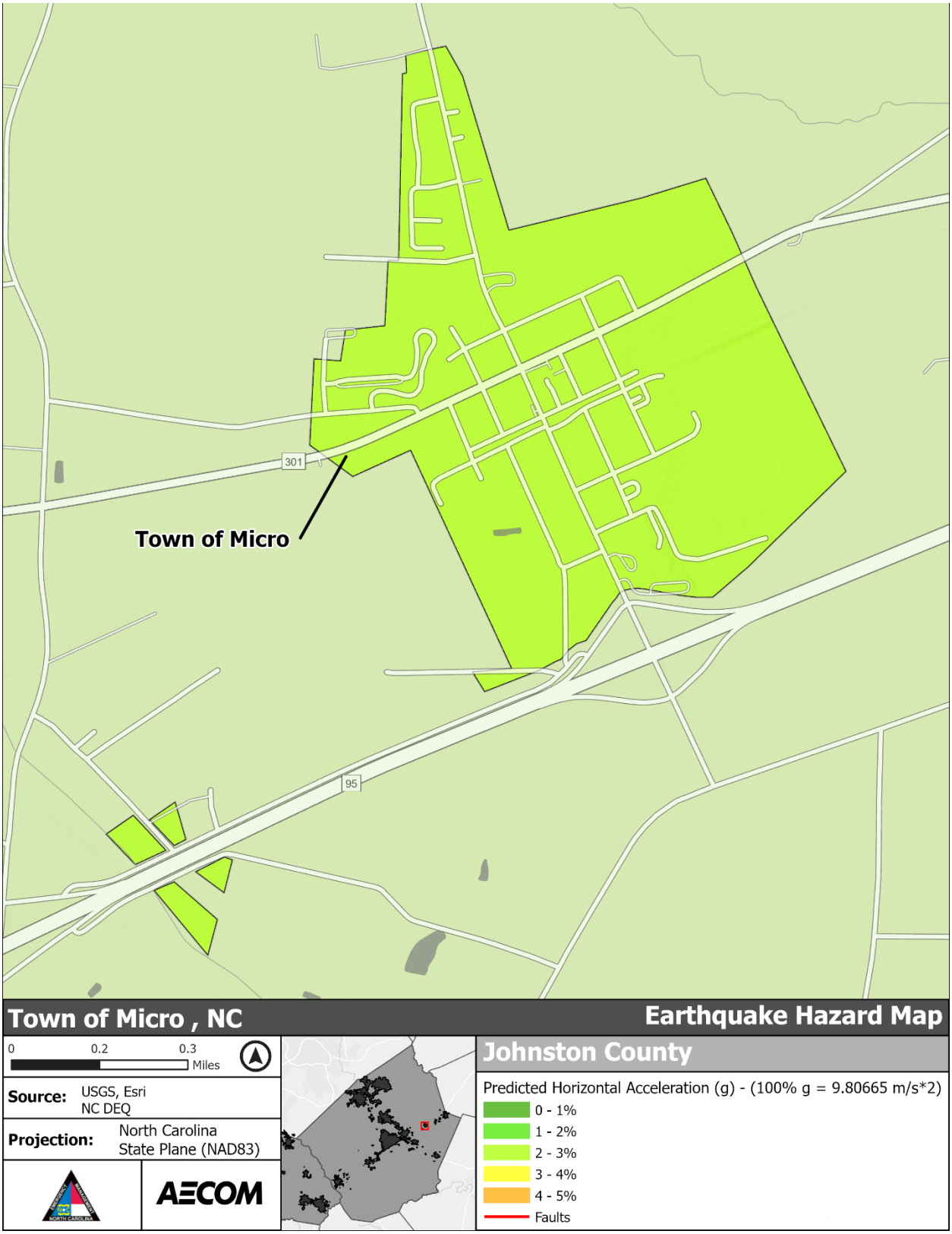


***Figure 5-249**: Earthquake Hazard Area – Town of Micro*

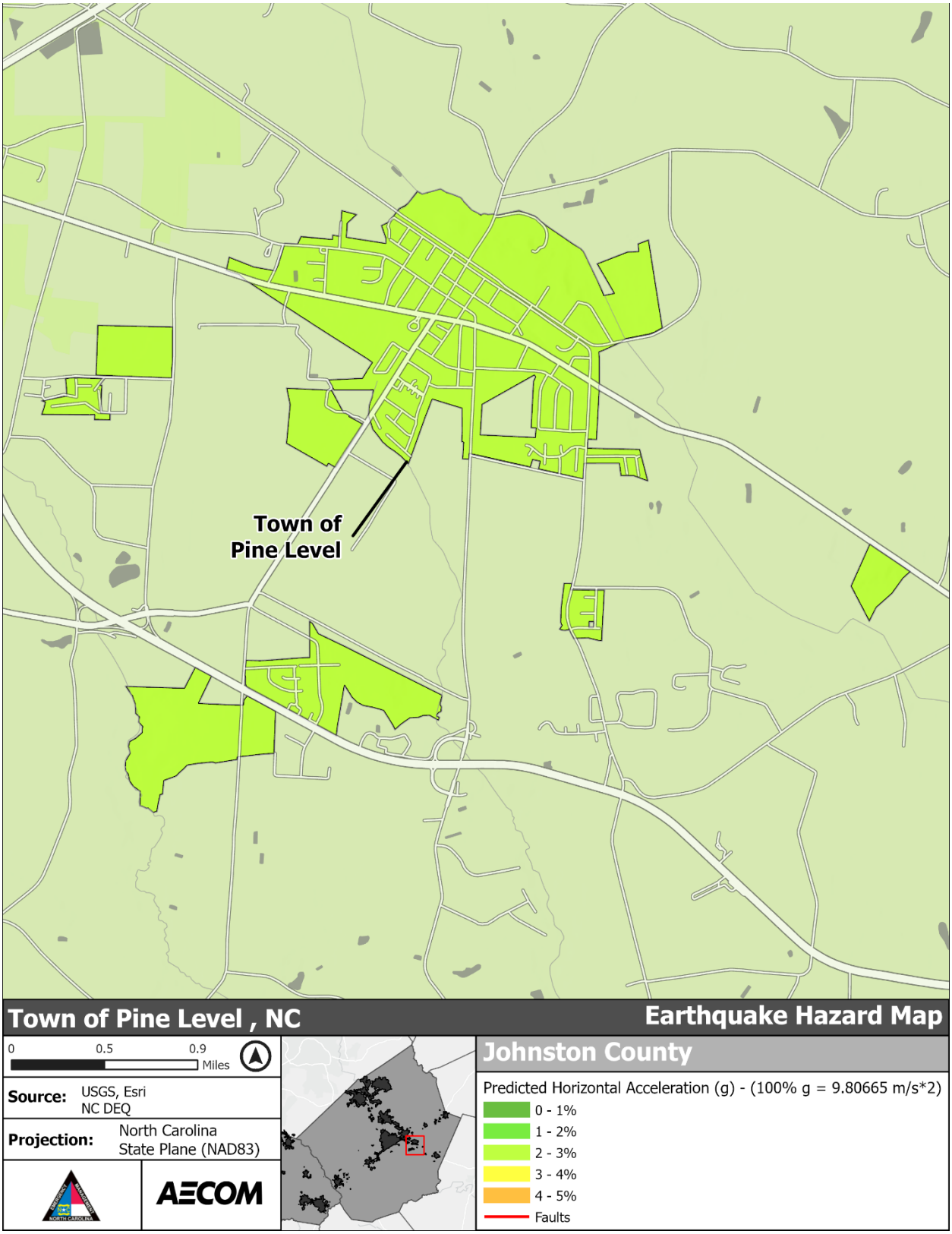


***Figure 5-250**: Earthquake Hazard Area – Town of Pine Level*

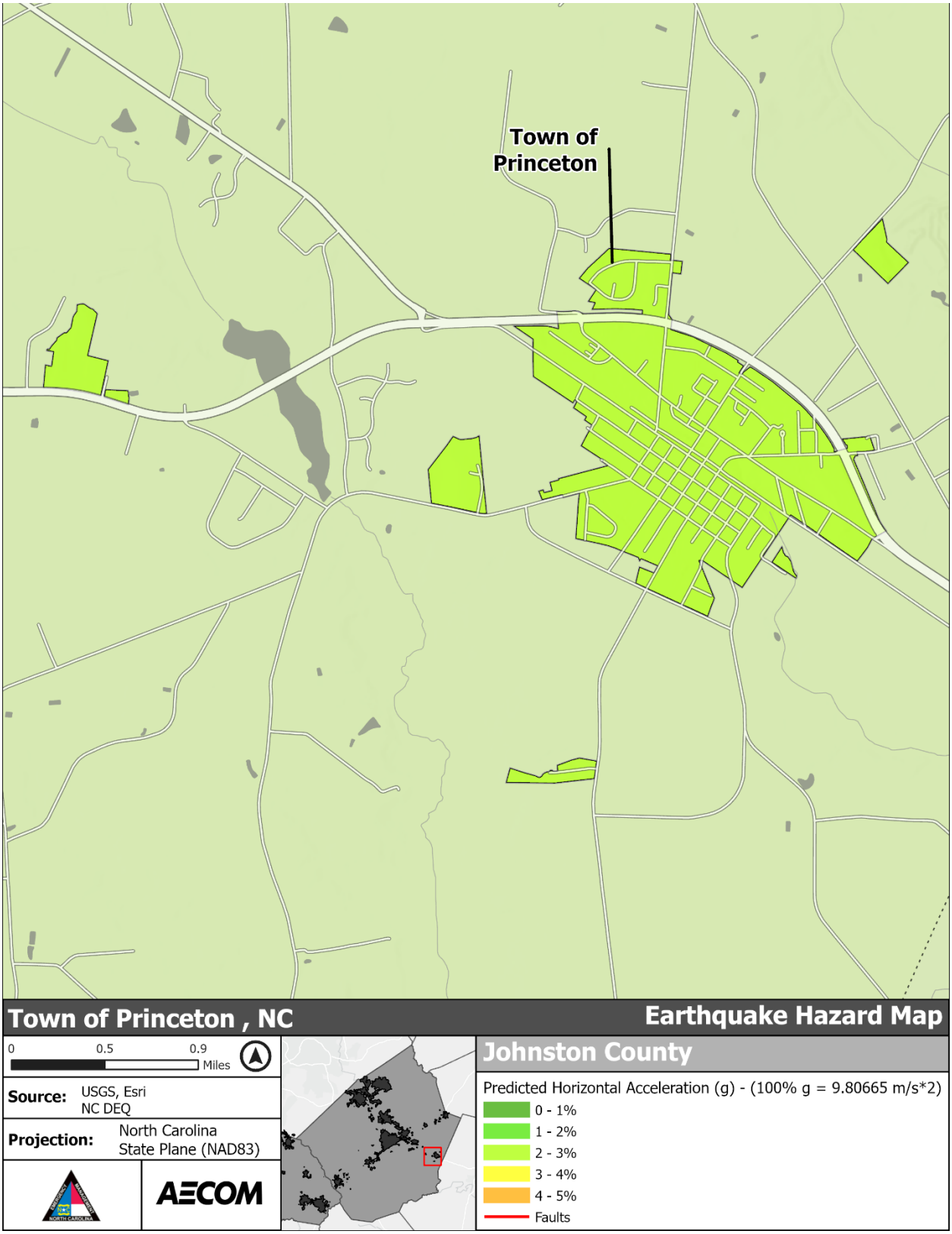


***Figure 5-251**: Earthquake Hazard Area – Town of Princeton*

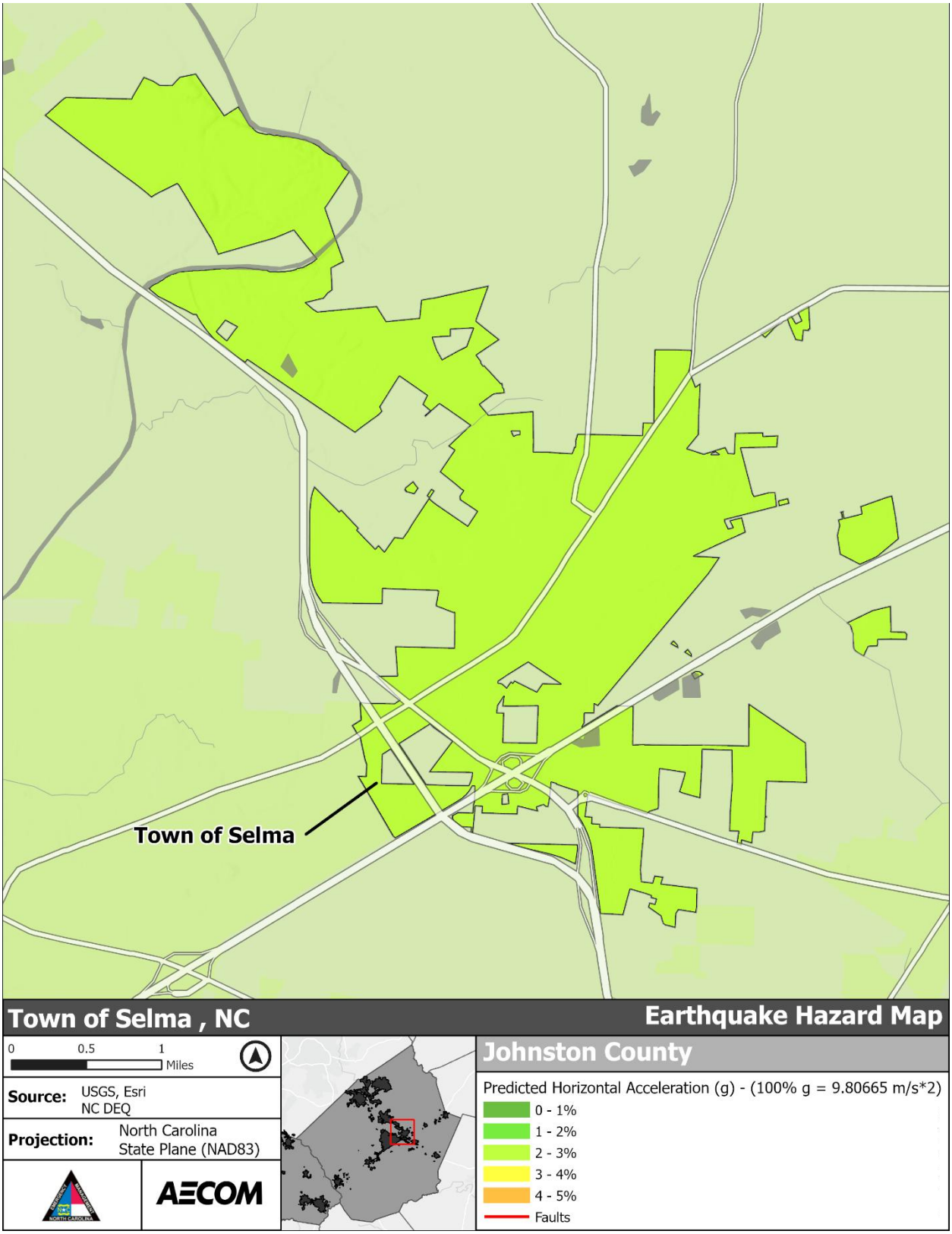


***Figure 5-252**: Earthquake Hazard Area – Town of Selma*

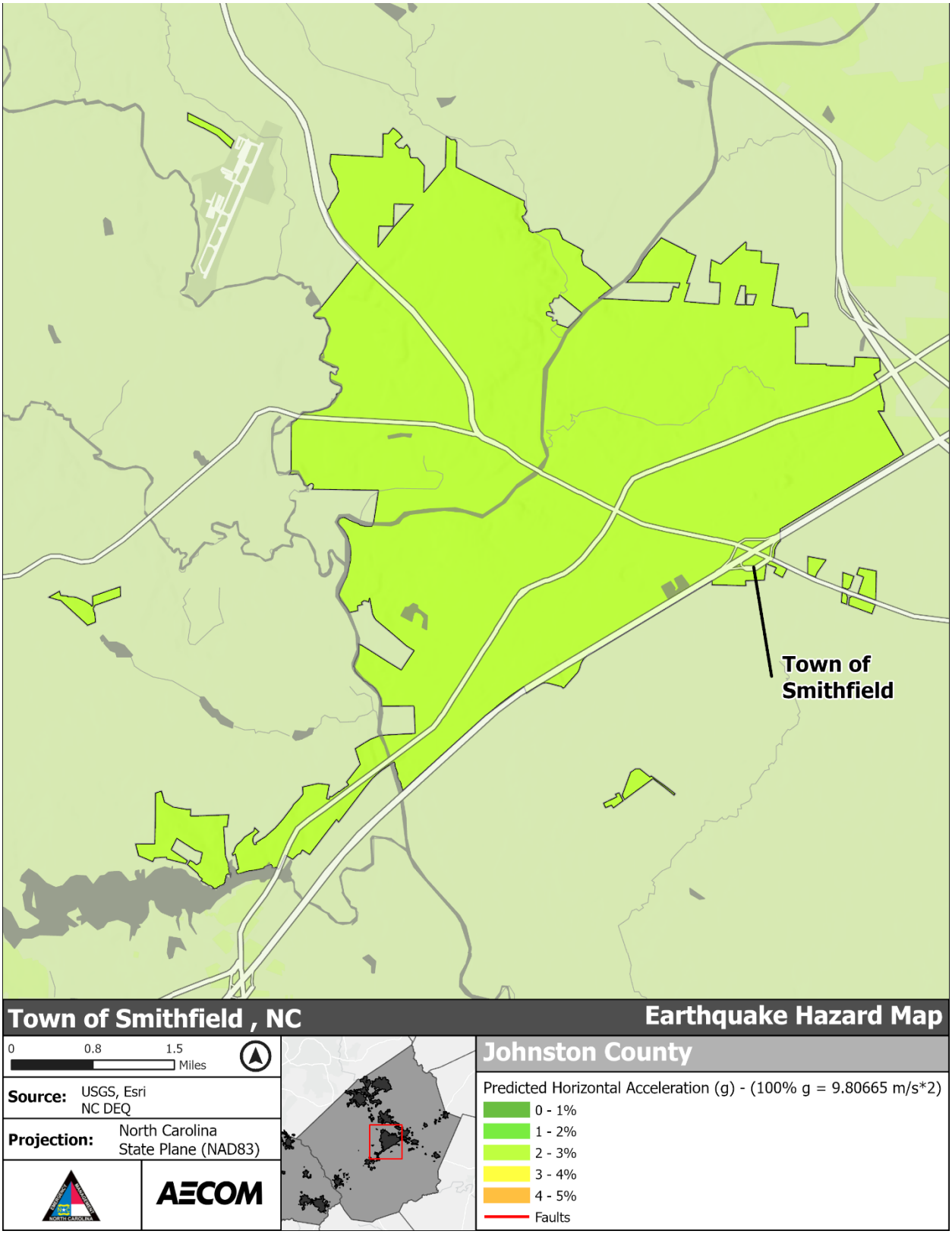


Figure 5-253: Earthquake Hazard Area – Town of Smithfield

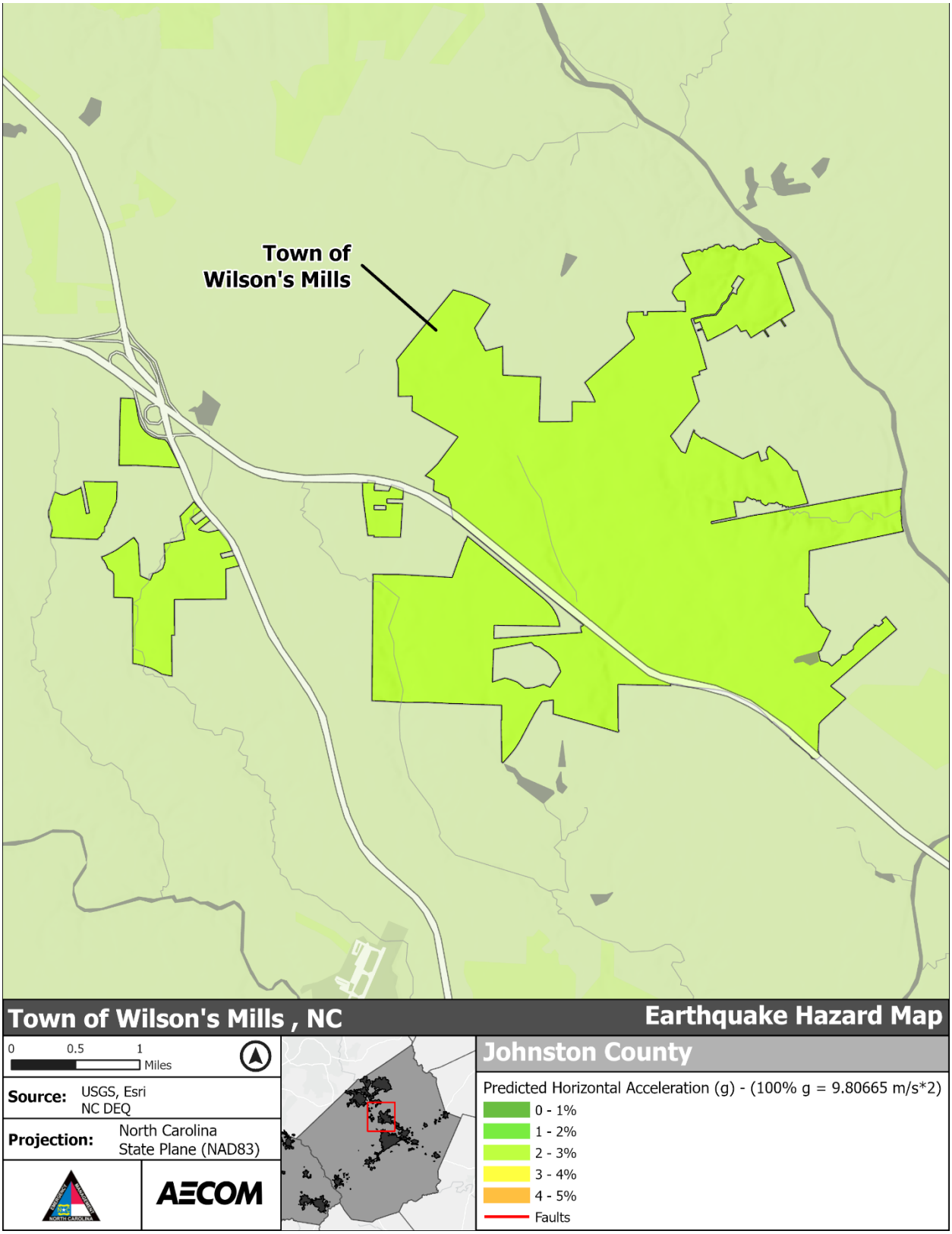


***Figure 5-254**: Earthquake Hazard Area – Town of Wilson's Mills*

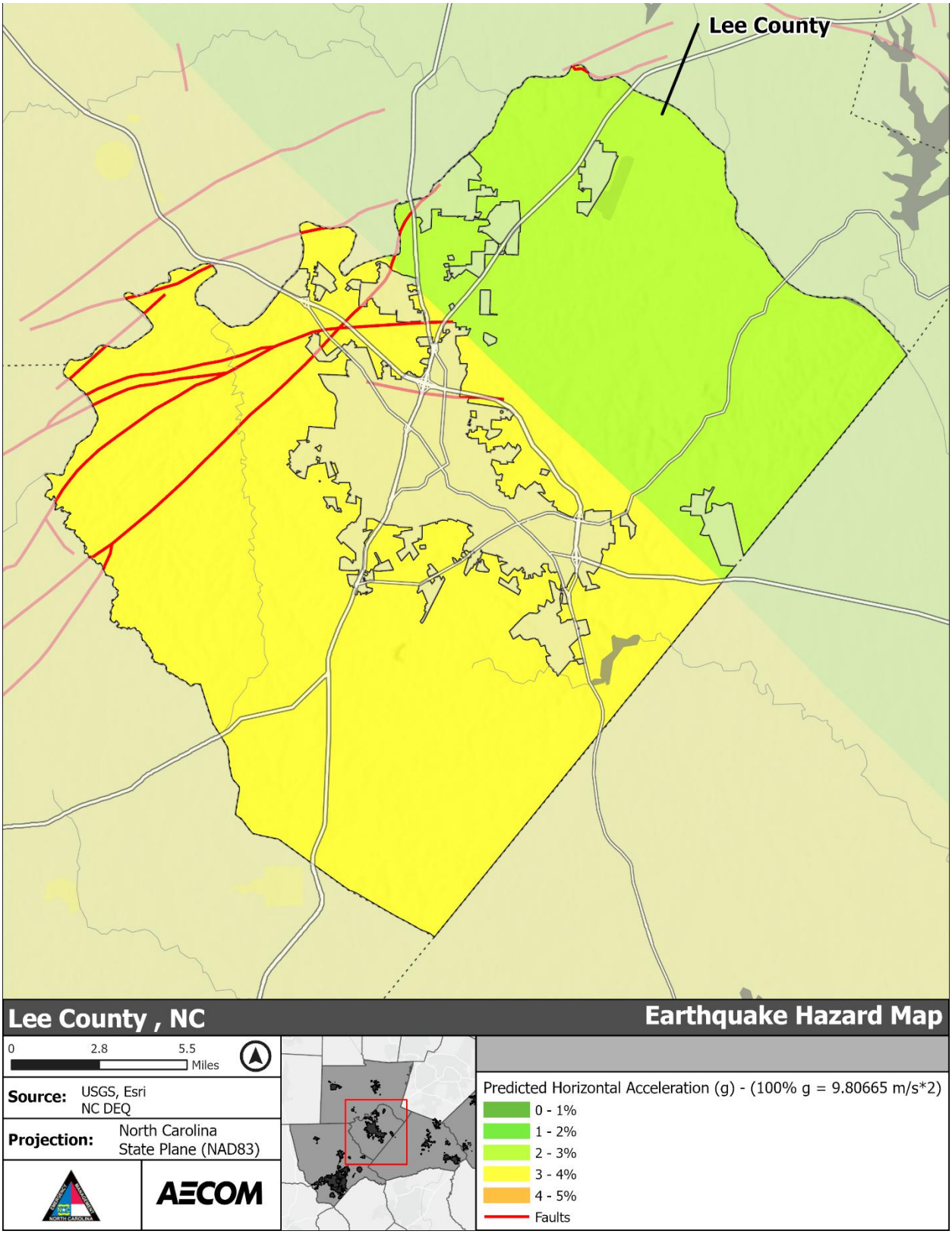


***Figure 5-255**: Earthquake Hazard Area – Lee County*

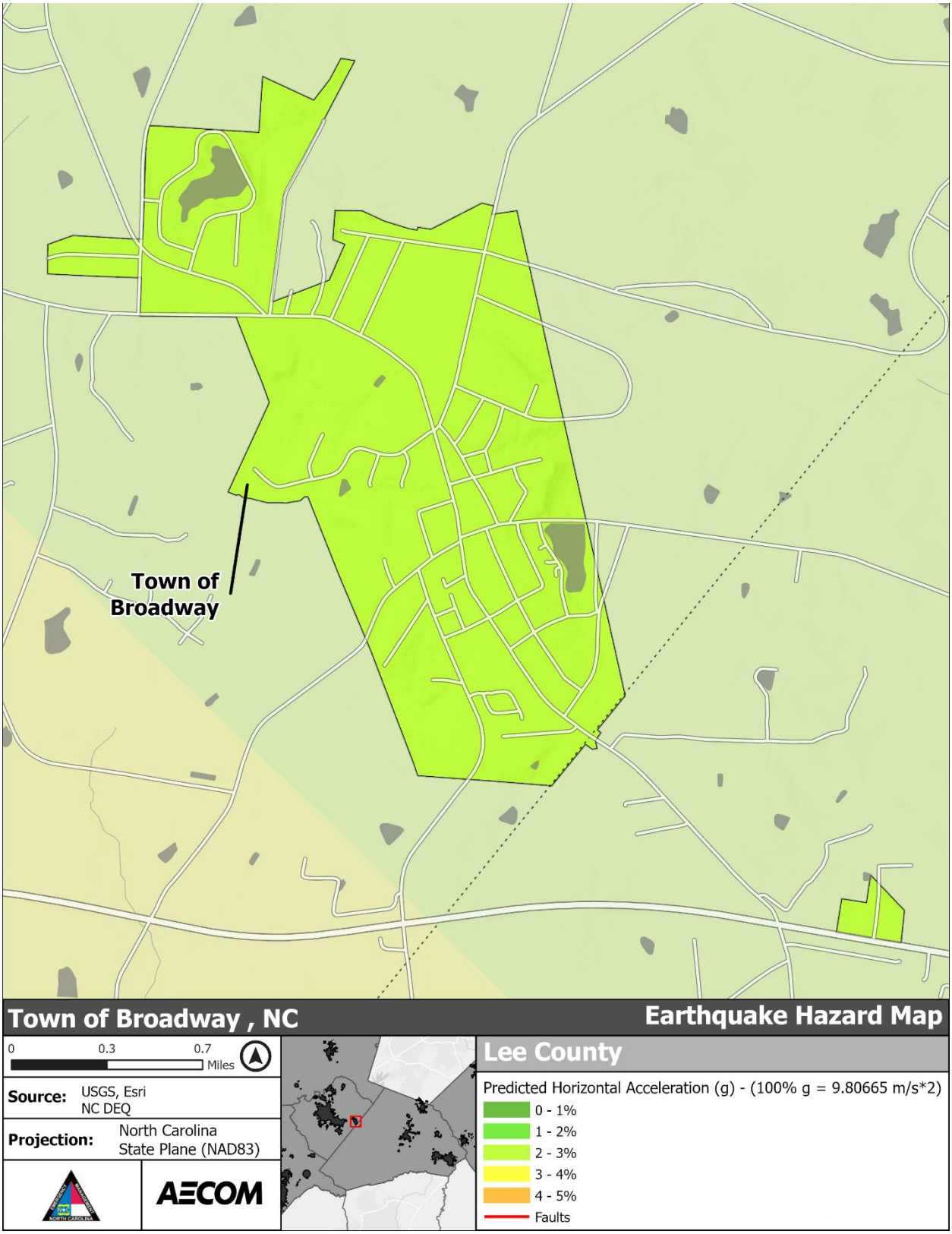


***Figure 5-256**: Earthquake Hazard Area – Town of Broadway*

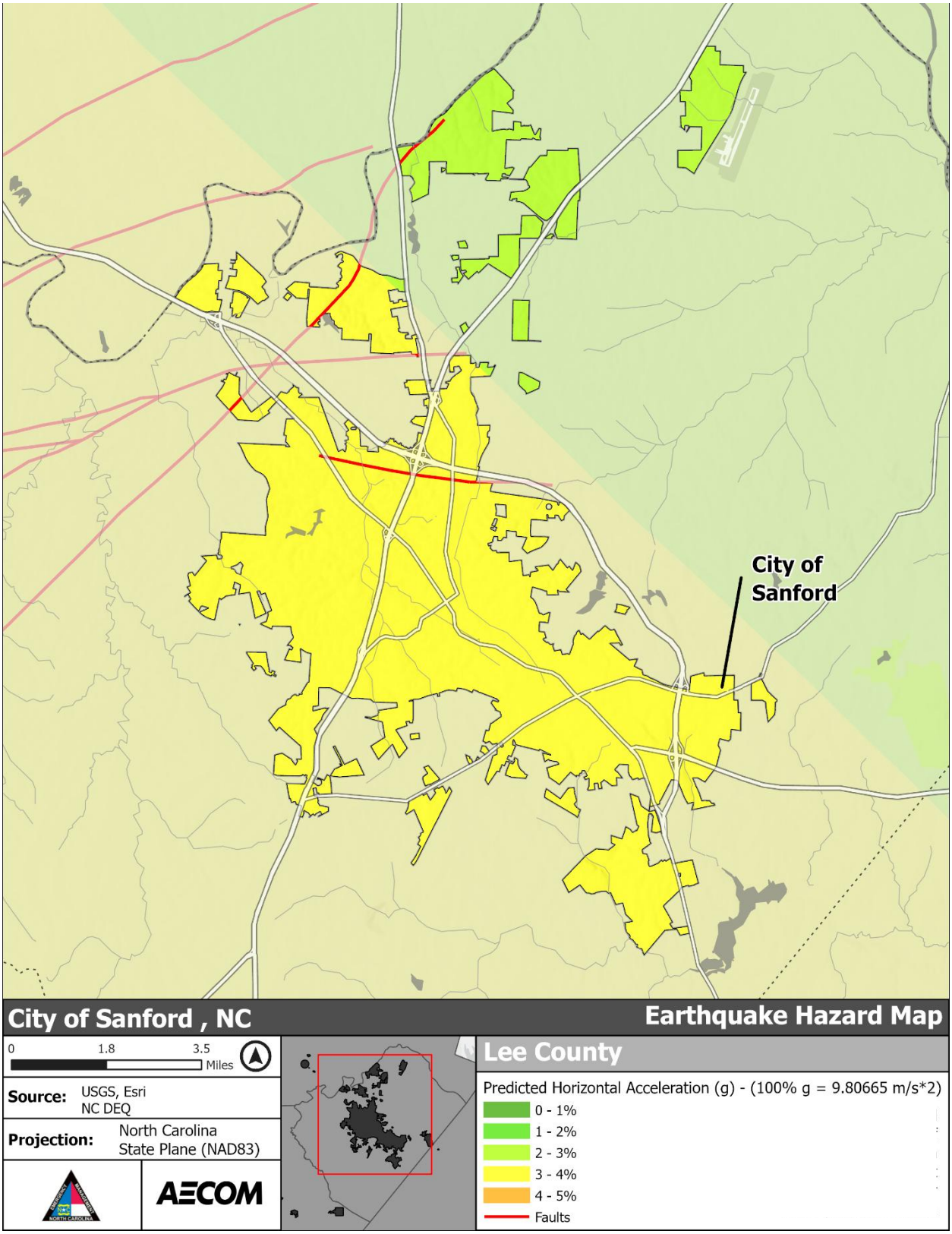


***Figure 5-257**: Earthquake Hazard Area – City of Sanford*

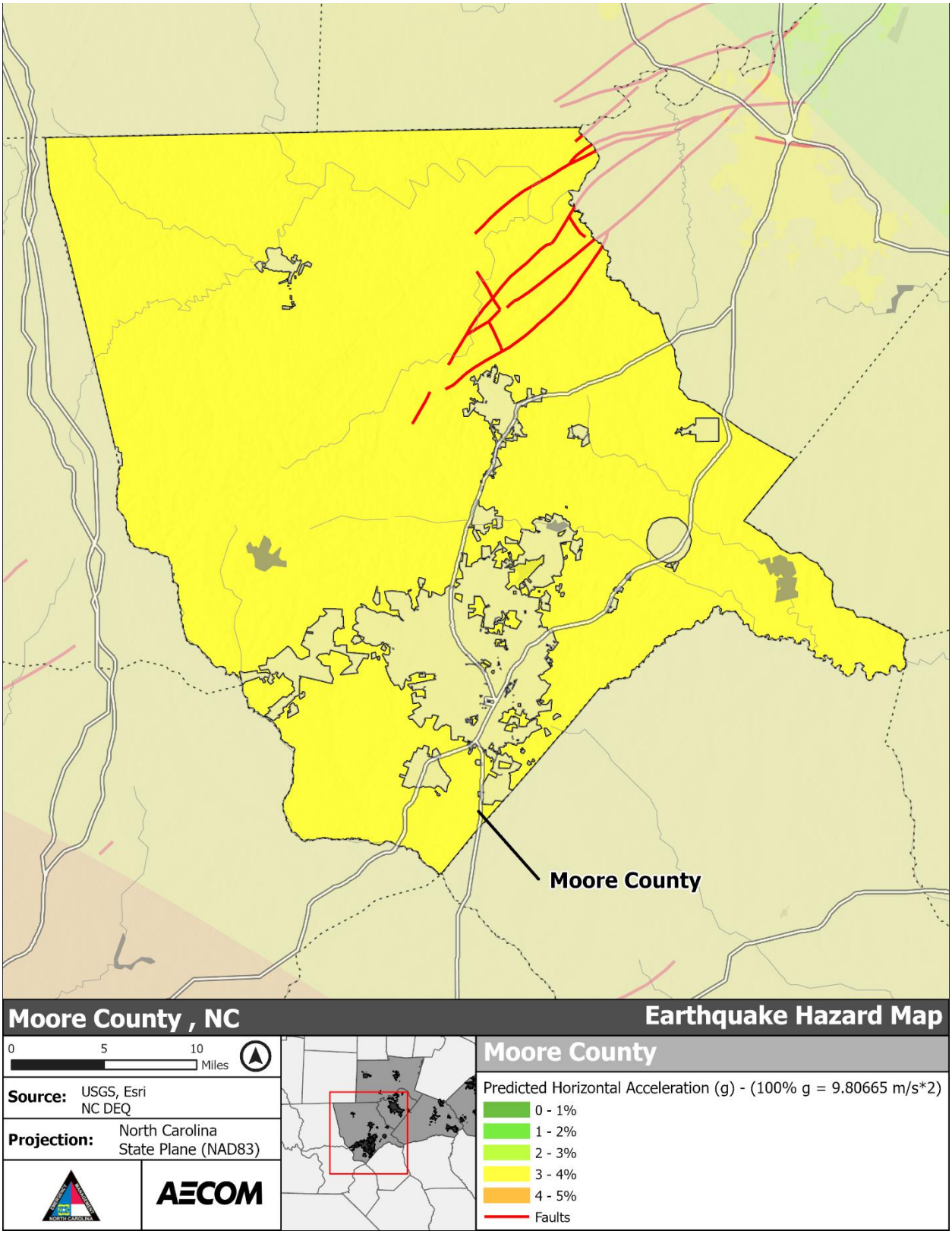


***Figure 5-258**: Earthquake Hazard Area – Moore County*

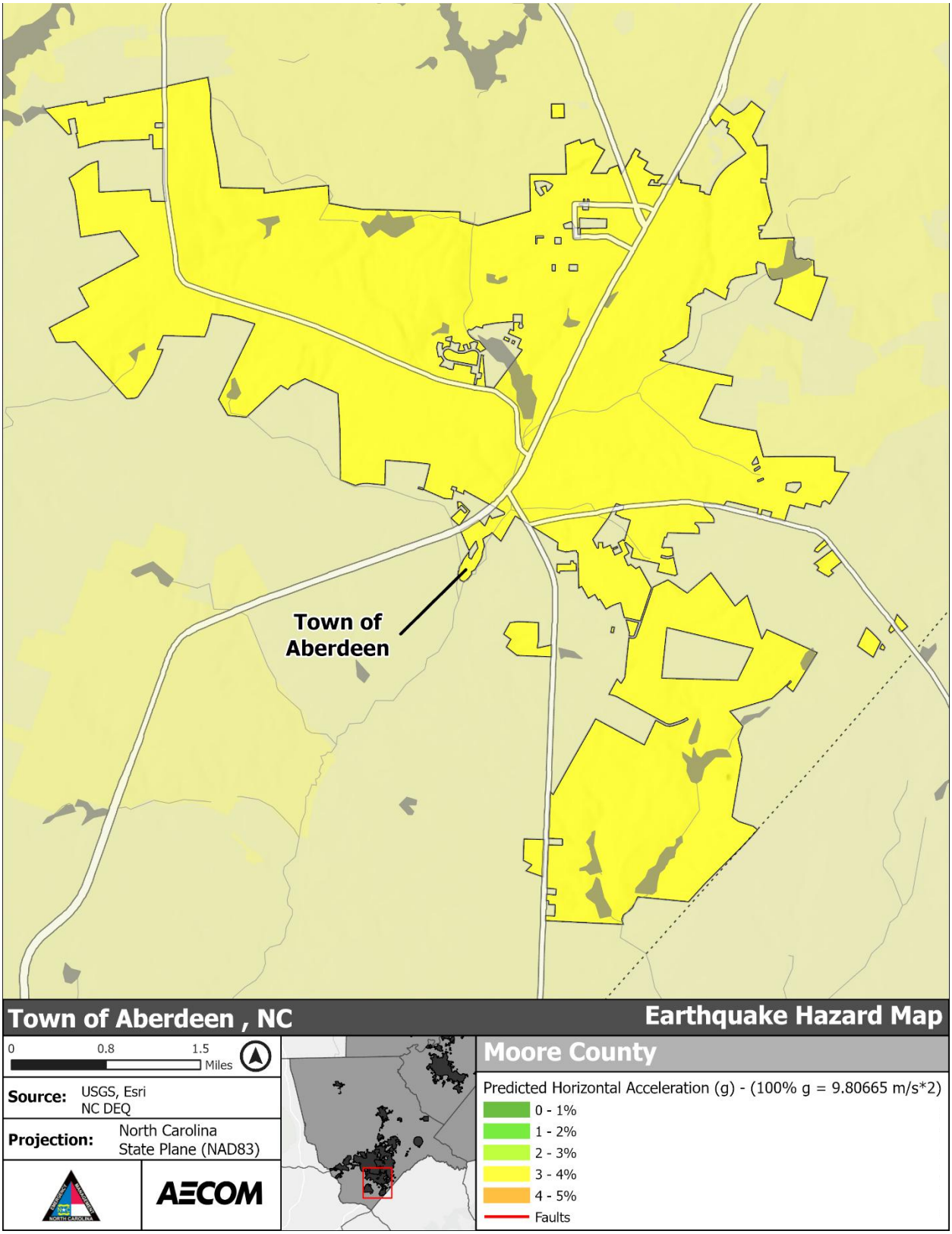


***Figure 5-259**: Earthquake Hazard Area – Town of Aberdeen*

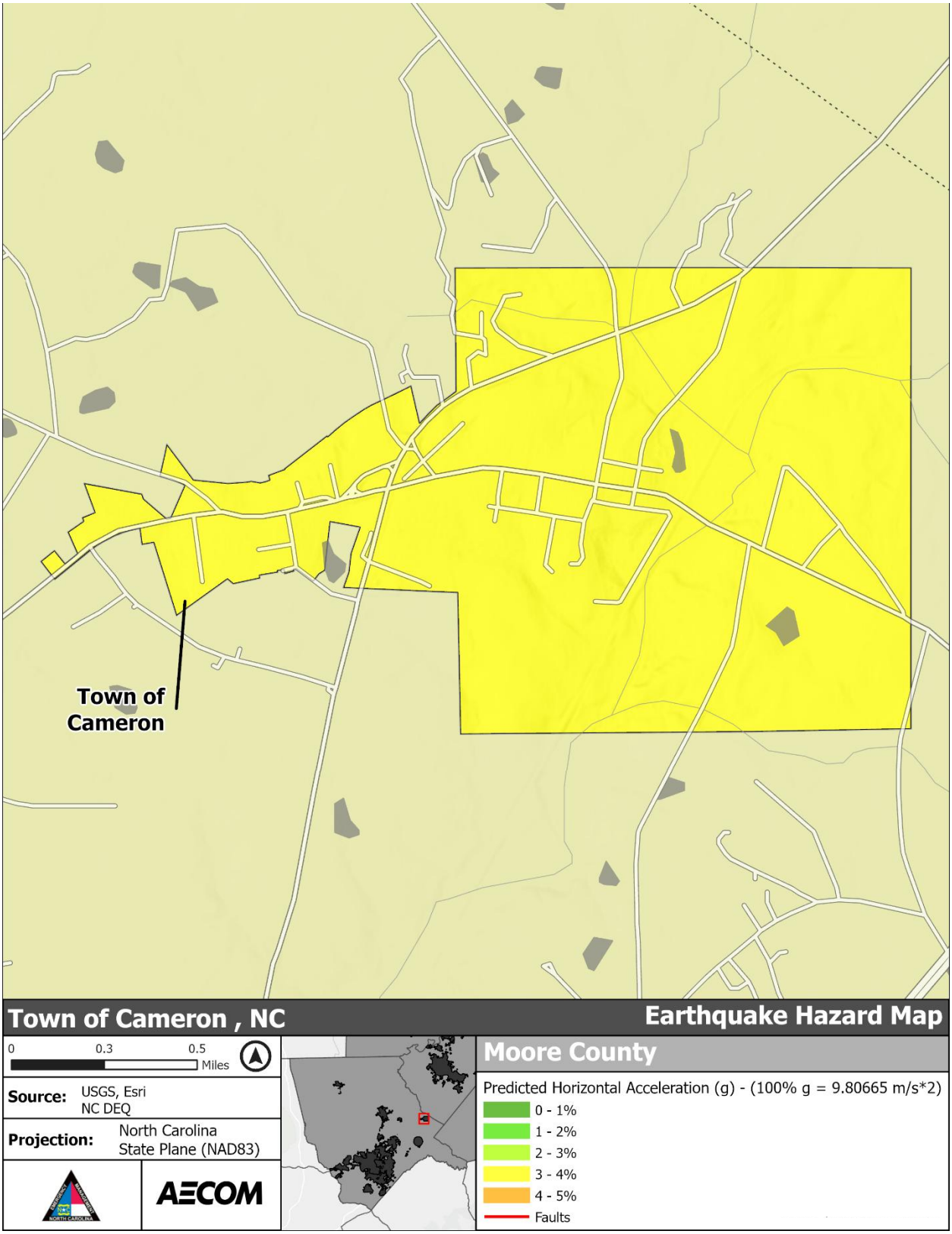


***Figure 5-260**: Earthquake Hazard Area – Town of Cameron*

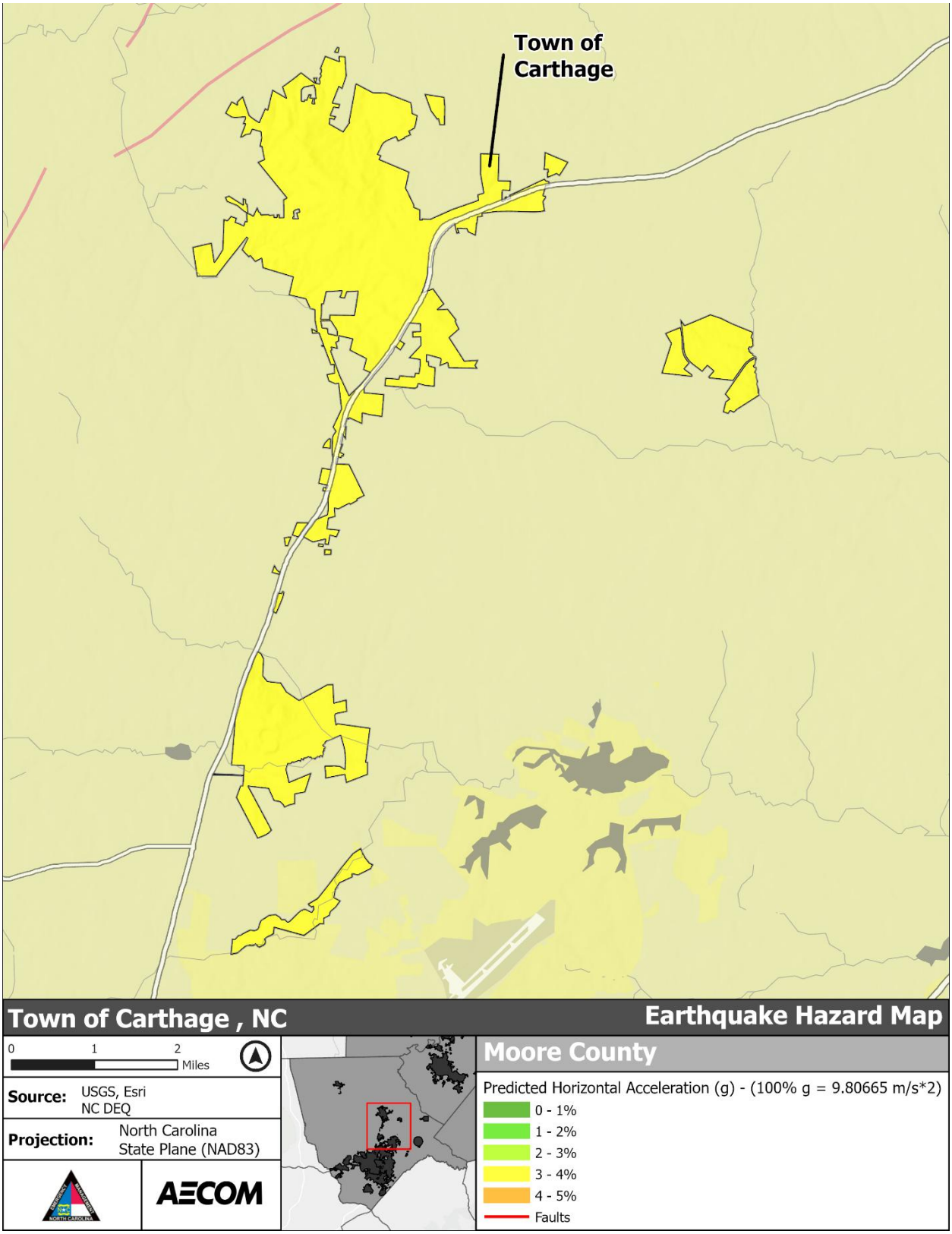


***Figure 5-261**: Earthquake Hazard Area – Town of Carthage*

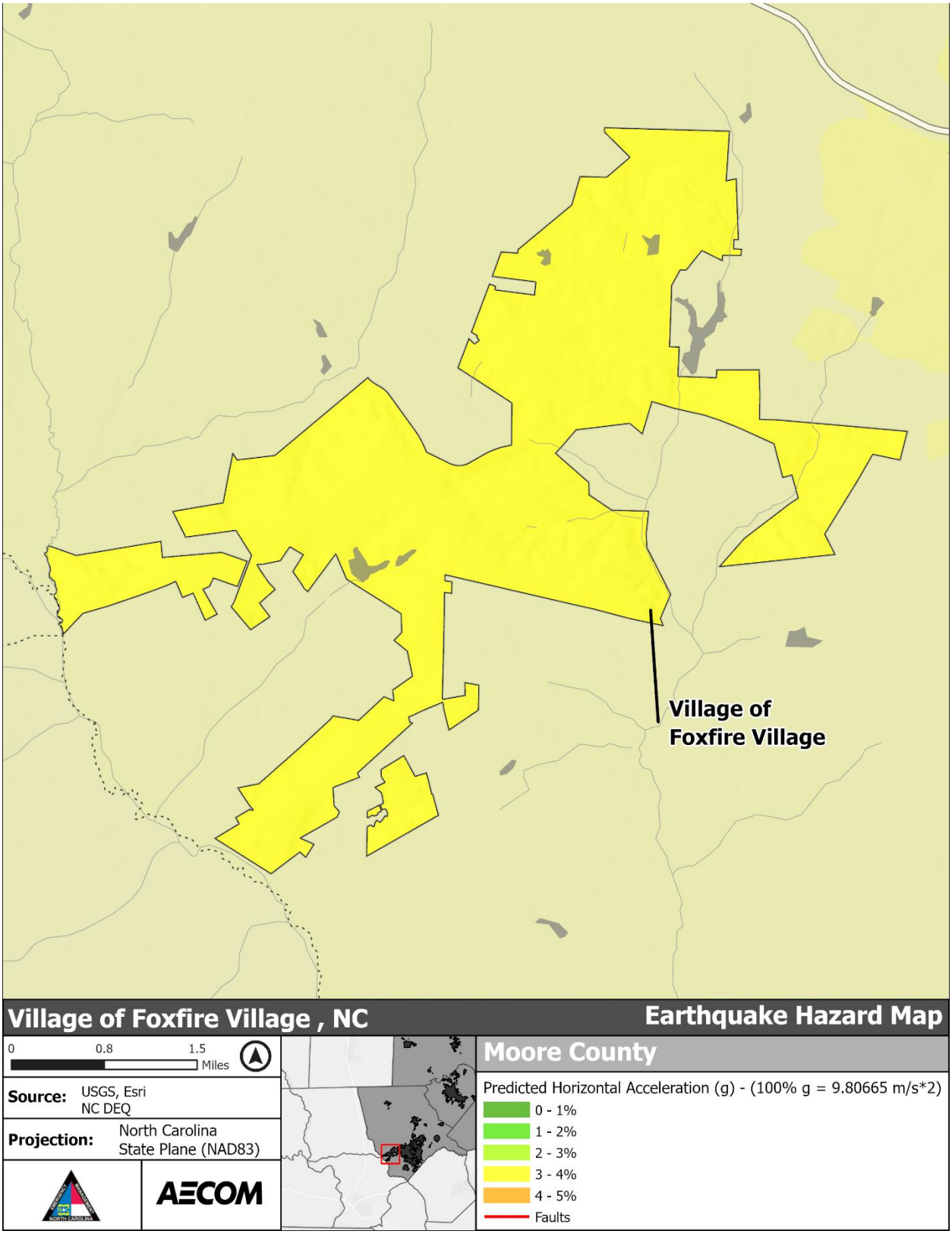


***Figure 5-262**: Earthquake Hazard Area – Village of Foxfire*

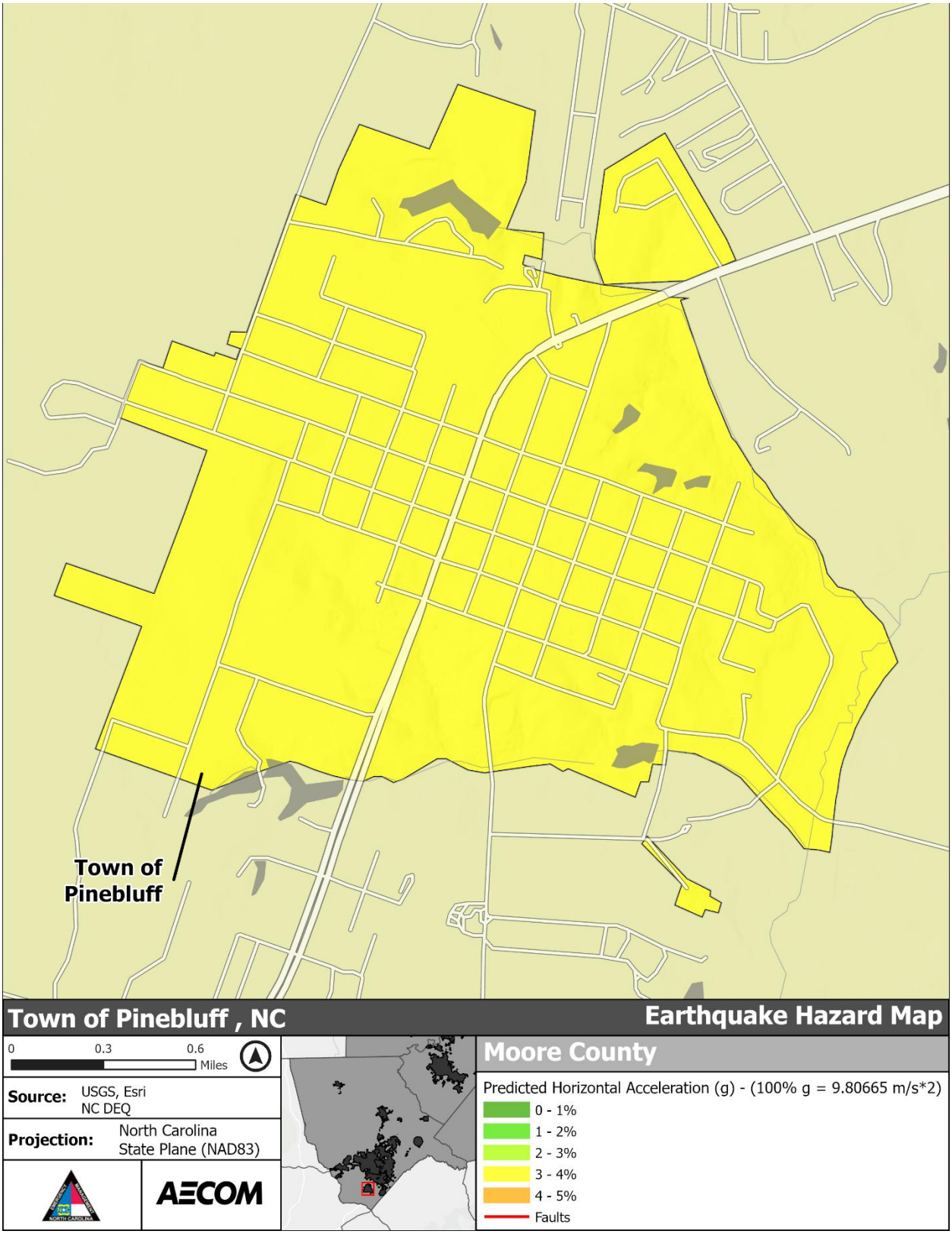


***Figure 5-263**: Earthquake Hazard Area – Town of Pinebluff*

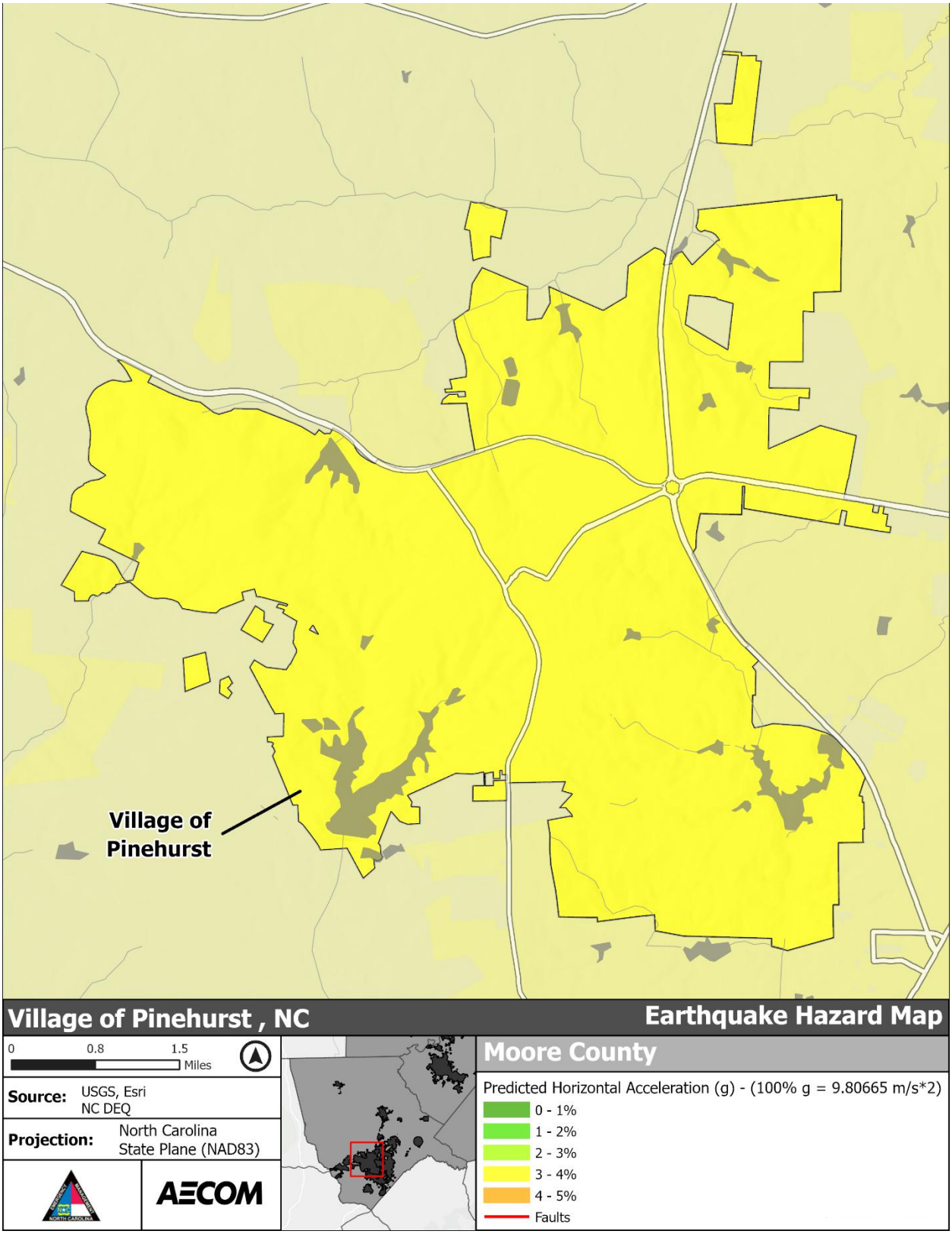


***Figure 5-264**: Earthquake Hazard Area – Village of Pinehurst*

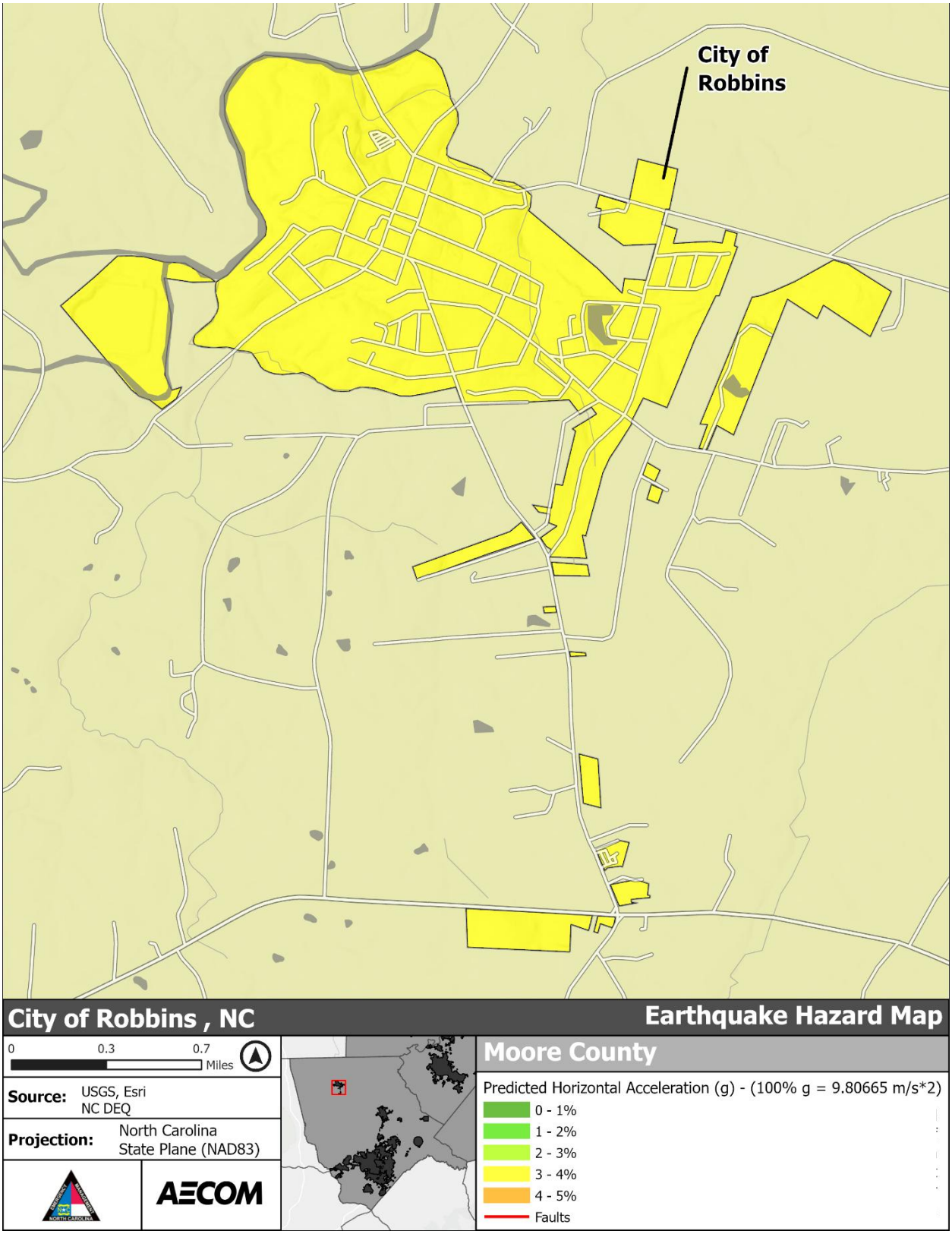


***Figure 5-265**: Earthquake Hazard Area – City of Robbins*

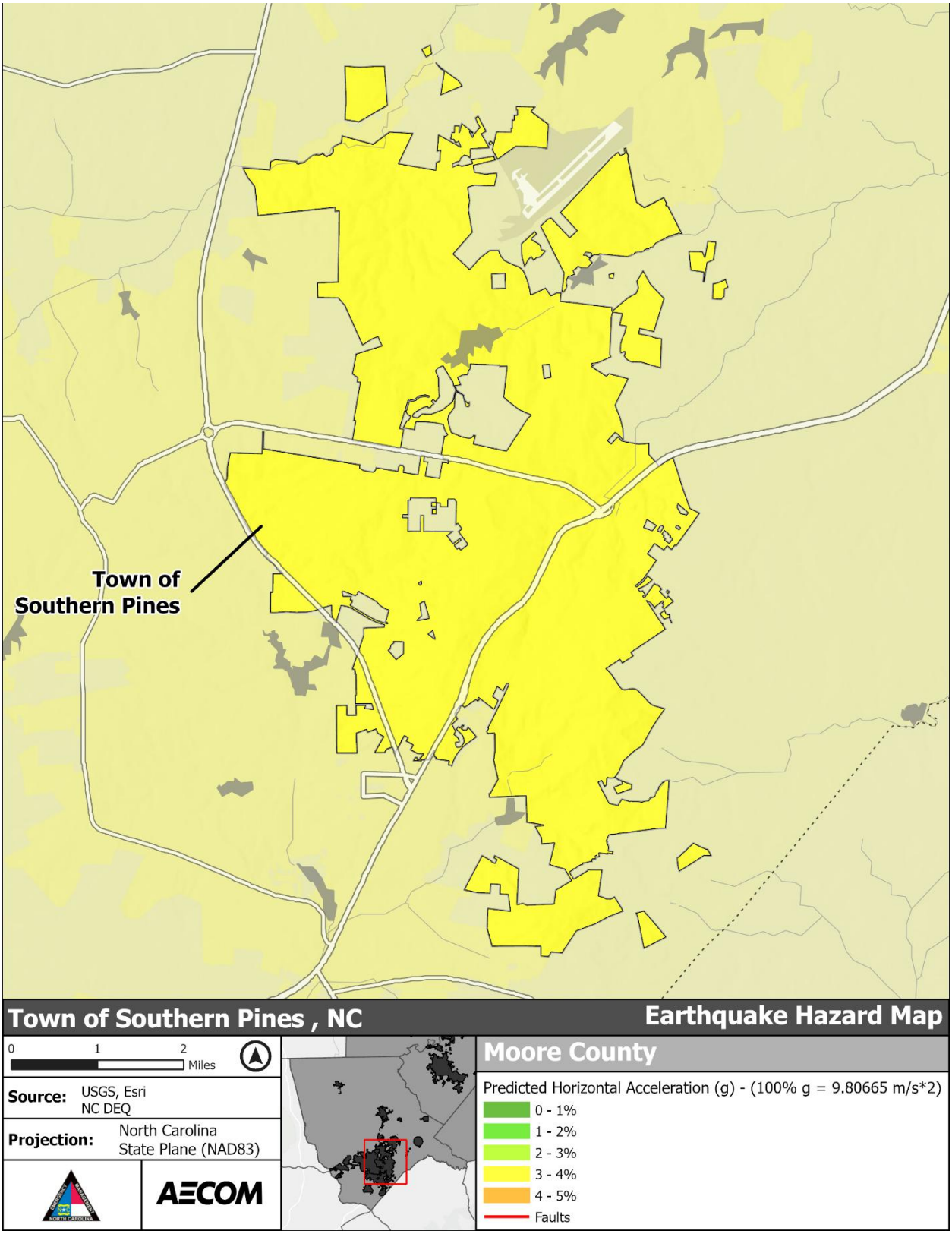


***Figure 5-266**: Earthquake Hazard Area – Town of Southern Pines*

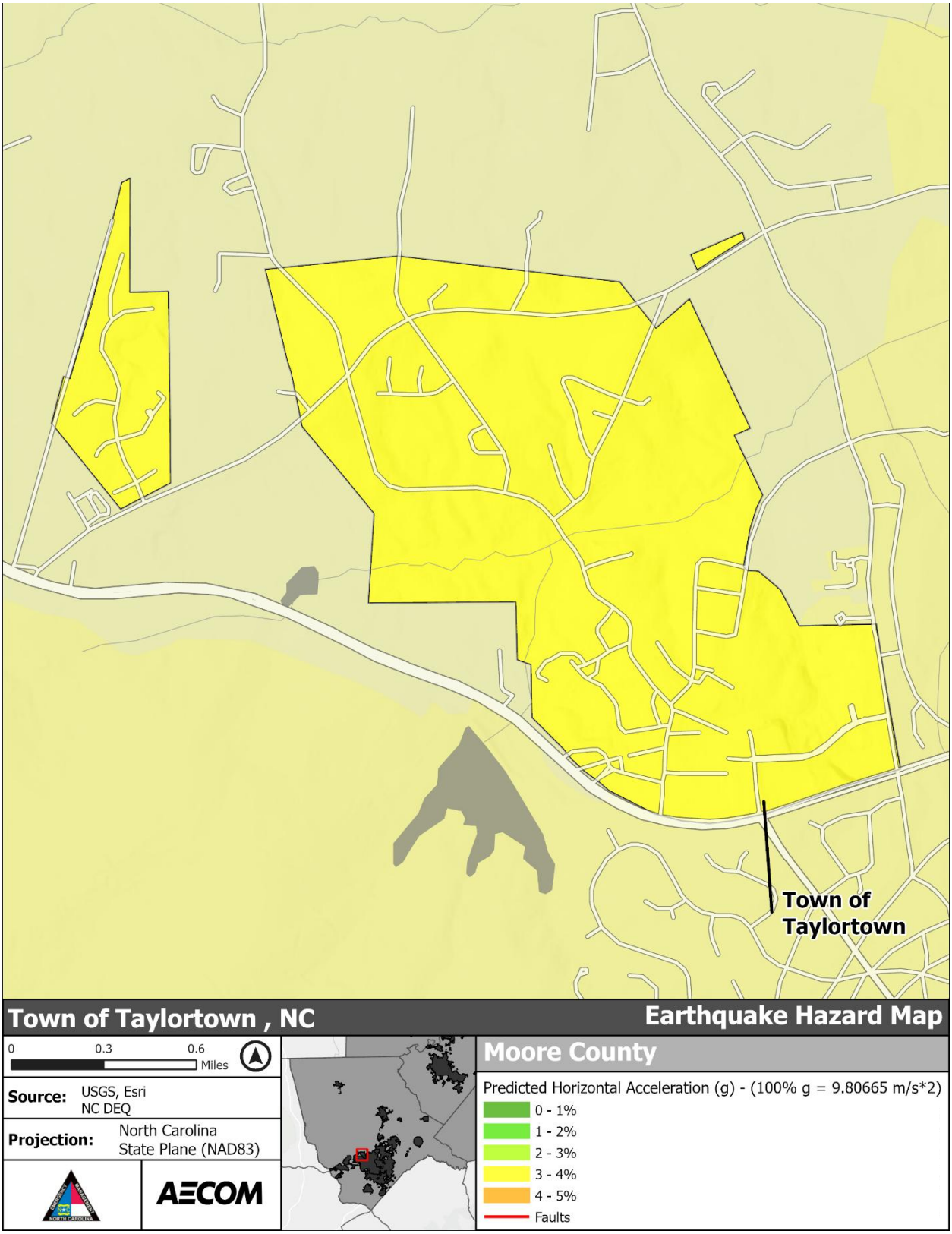


***Figure 5-267**: Earthquake Hazard Area – Town of Taylortown*

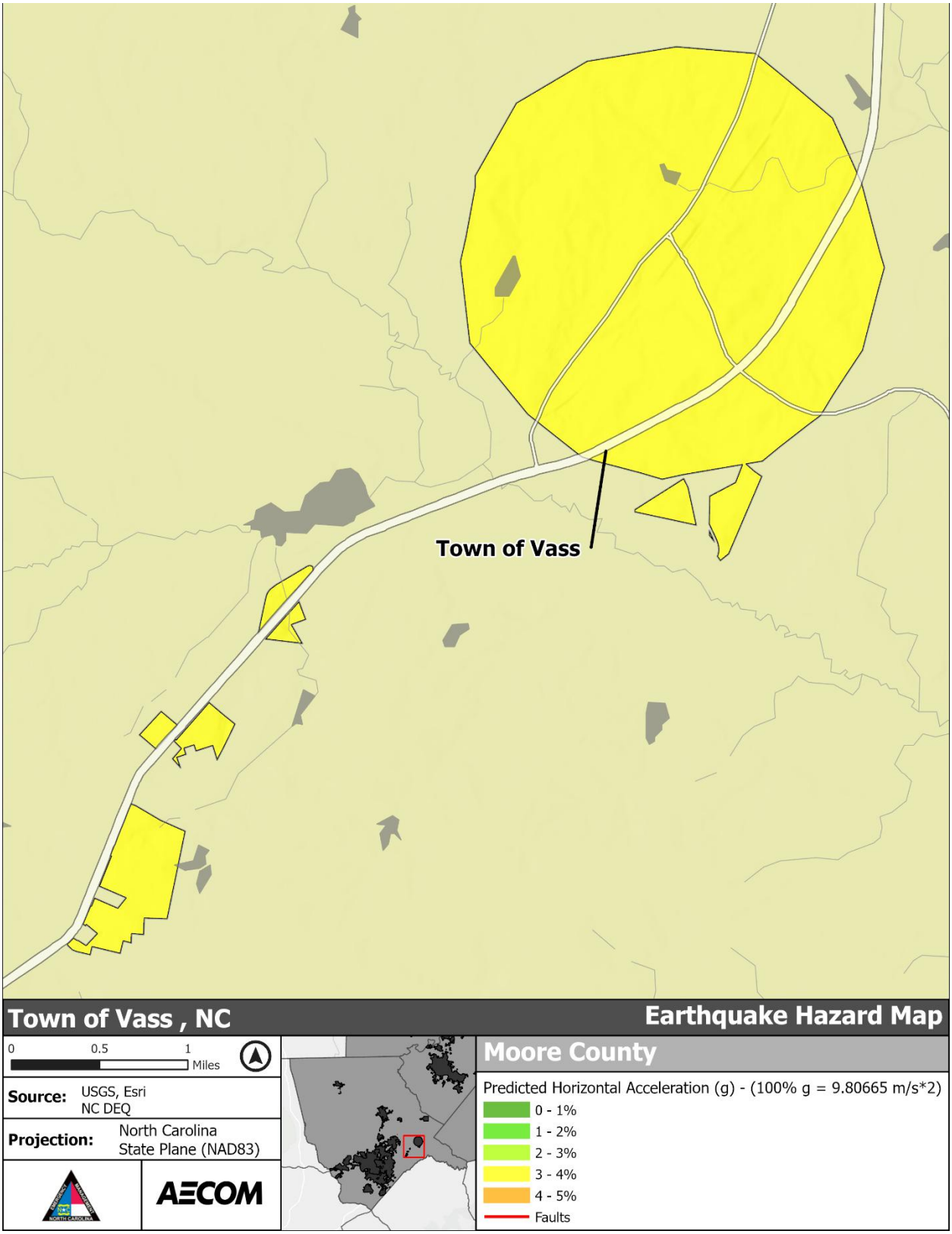


***Figure 5-268**: Earthquake Hazard Area – Town of Vass*

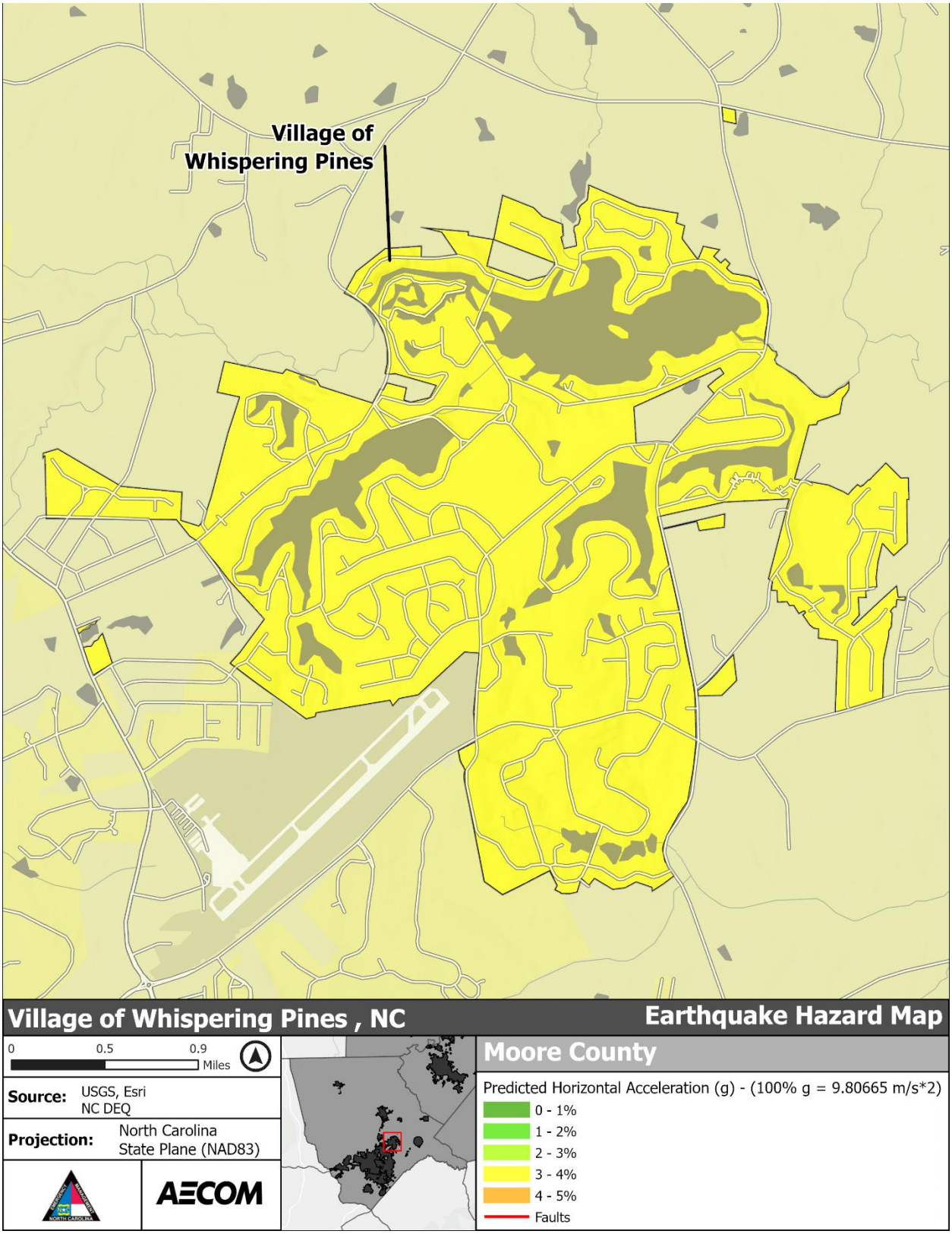


***Figure 5-269**: Earthquake Hazard Area – Village of Whispering Pines*

5.9.3 Extent

Figure 5-270 shows the intensity level associated with the Cape Fear Region, based on the Global Earthquake Model (GEM) Seismic Hazard map of peak ground acceleration (PGA) with 10 percent probability of exceedance in 50 years. The PGA shows the value expected during a strong earthquake with a specific probability of being exceeded over a given amount of time. According to this map, all of the Cape Fear Region lies within an approximate zone of 0.02-0.05 peak ground acceleration, which means that, in the event of a significant earthquake, the ground would be expected to experience shaking forces that are equivalent to 2% to 5% of the force of gravity.

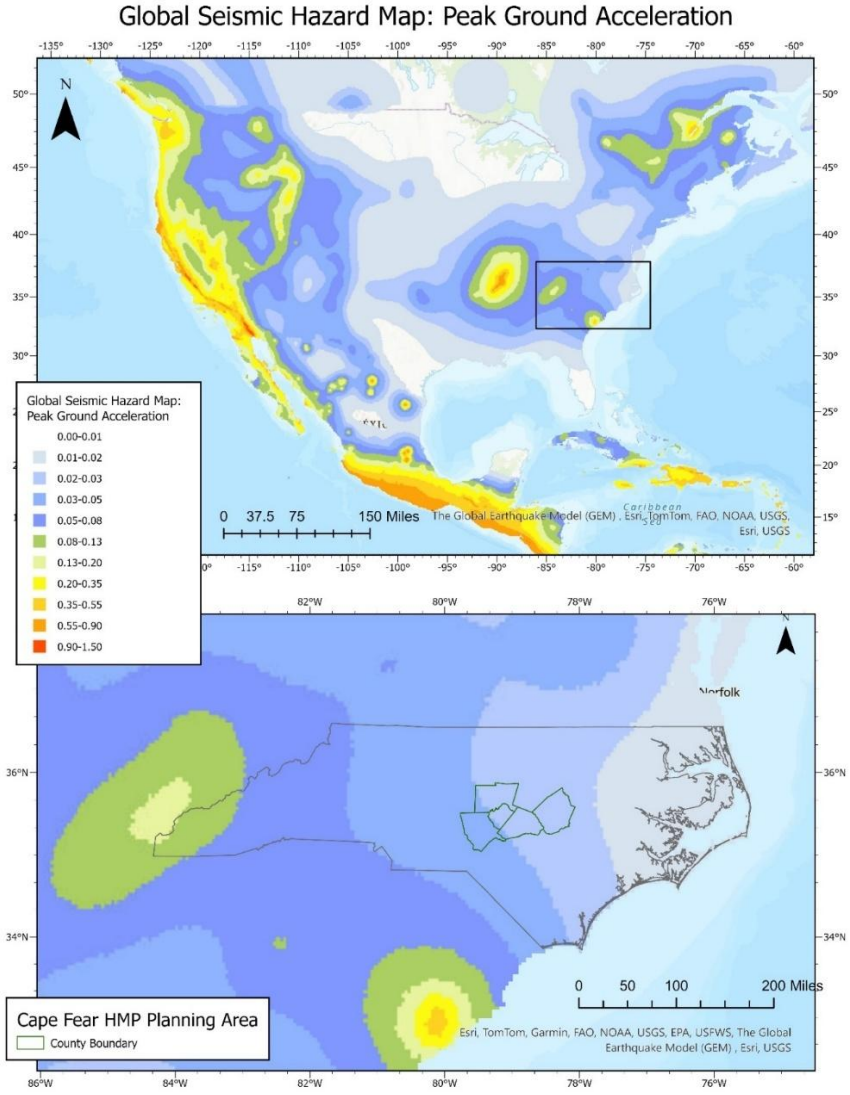


***Figure 5-270**: Peak Acceleration with 10 Percent Probability of Exceedance in 50 Years*[102]

[102] Johnson, K., Villani, M., Bayliss, K., Brooks, C., Chandrasekhar, S., Chartier, T., Chen, Y.-S., Garcia-Pelaez, J., Gee, R., Styron, R., Rood, A., Simionato, M., & Pagani, M. (2023). Global Seismic Hazard Map (v2023.1.0) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.8409647

5.9.4 Historical Occurrences

According to the USGS Earthquake Catalog, which utilizes a variety of data sources spanning from the mid-1800s to the present. According to the USGS Earthquake Catalog, there has been one earthquake in the planning area, which was 1.1 magnitude (md) on October 3, 1981. The summary of the earthquakes within 50 miles on the USGS Earthquake Catalog is listed in Table 5-40.

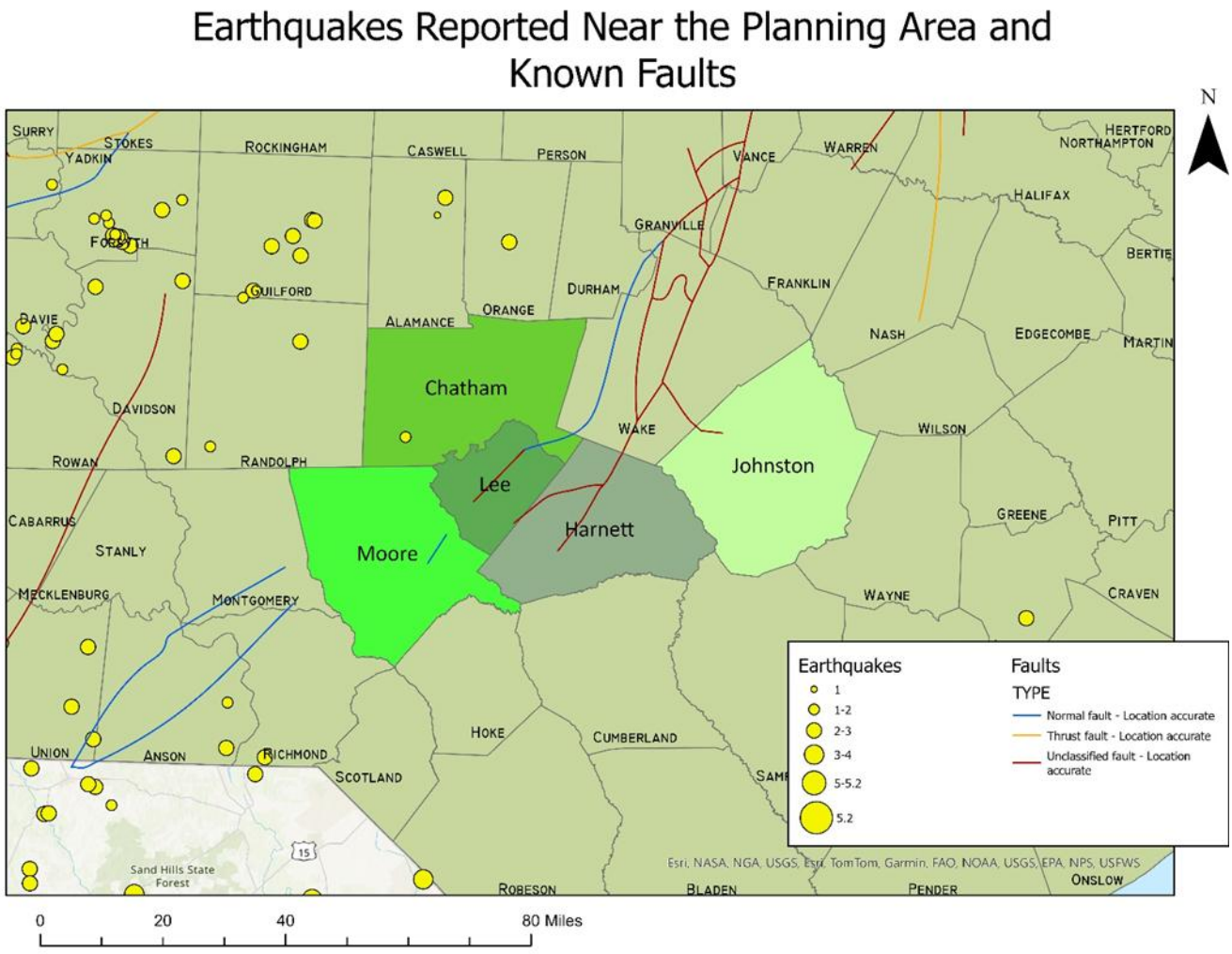


***Figure 5-271**: Geological and Seismic Information for North Carolina*[103]

Table 5-40 provides a summary of earthquake events reported by the USGS Earthquake Catalog.

[103] United States Geological Survey [USGS]. (n.d.). Earthquake Catalog [Dataset]. In USGS Earthquake Hazards Program. USGS Earthquake Hazards Program. https://earthquake.usgs.gov/earthquakes/search/
Garrity, C. P., & Soller, D. (2009). Database of the geologic map of North America— Adapted from the map by J.C. Reed, Jr. and others (2005). Data Series. https://doi.org/10.3133/ds424

Table 5-40: Earthquakes that occurred within 50 miles of the planning area from the USGS Earthquake Catalog[104]

Date	Magnitude	Magnitude Type	Miles to the Nearest Jurisdiction	Nearest Jurisdiction	County
10/3/1981	1.1	md	5.87	Goldston	Chatham
3/4/1981	2.8	mb_lg	16.83	Siler City	Chatham
10/19/2023	2.24	md	22.21	Pittsboro	Chatham
12/4/1983	1.6	md	24.89	Robbins	Moore
1/28/2020	2.33	md	25.42	Siler City	Chatham
2/2/2022	1.77	md	26.23	Foxfire Village	Moore
11/15/1983	1	md	27.37	Siler City	Chatham
3/26/2019	2.5	md	27.42	Siler City	Chatham
3/21/2011	2.9	md	28.16	Pinebluff	Moore
8/8/2022	1.97	md	28.31	Siler City	Chatham
9/13/2019	2.02	md	28.73	Siler City	Chatham
8/15/2023	2.21	md	28.94	Siler City	Chatham
8/15/2023	2.25	md	29.25	Siler City	Chatham
7/12/1993	2.7	mb_lg	29.67	Siler City	Chatham
11/15/2015	2.58	md	30.10	Robbins	Moore
2/25/1978	2.2	mb_lg	30.43	Siler City	Chatham
7/29/2012	2.5	md	31.20	Pinebluff	Moore
4/9/1980	2.8	md	31.26	Foxfire Village	Moore
6/24/2013	2.1	md	36.58	Princeton	Johnston
1/18/1992	2.1	md	38.38	Siler City	Chatham
9/25/2006	3.7	mlg	39.58	Pinebluff	Moore
9/22/2006	3.4	mlg	44.31	Pinebluff	Moore
3/31/2012	2.2	md	44.53	Foxfire Village	Moore
3/26/2020	1.82	md	45.51	Siler City	Chatham
4/29/2019	2.25	md	47.10	Siler City	Chatham
6/17/1986	2.2	md	48.17	Foxfire Village	Moore
10/17/2006	2.6	mlg	48.56	Siler City	Chatham
3/14/2025	2.02	md	49.43	Foxfire Village	Moore

Magnitude Types (USGS) [105]

- **Mw =** Derived from centroid moment tensor inversion of the W-phase. Mw is computed for all M5.0 and higher earthquakes worldwide.
    - Mw = 2/3 * ($\log_{10}$(MO) - 16.1) - where MO is the seismic moment
- **Md =** Based on the duration of shaking measured by the time decay of amplitude of the seismogram. Sometimes used for small events, but often used to compute magnitude from seismographs with clipped waveforms due to the limited dynamic recording range of analog instrumentation, which makes it

[104] United States Geological Survey [USGS]. (n.d.). Earthquake Catalog [Dataset]. In USGS Earthquake Hazards Program. USGS Earthquake Hazards Program. https://earthquake.usgs.gov/earthquakes/search/

[105] US Geological Survey [USGS]. (n.d.). Magnitude types. USGS Earthquake Hazard Program. Retrieved January 27, 2025, from https://www.usgs.gov/programs/earthquake-hazards/magnitude-types

Date	Magnitude	Magnitude Type	Miles to the Nearest Jurisdiction	Nearest Jurisdiction	County

impossible to measure the peak amplitude. Published only when no other magnitudes are available for ~4 or smaller magnitudes.

- **Mlg =** short-period surface wave. Magnitude for regional earthquakes based on the amplitude of Lg surface waves. Only used for smaller events in the central and eastern US, typically events less than 4.0 or when magnitude is not available.

***Table 5-41**: Earthquakes Which Have Caused Damage in North Carolina*

Date	Location	Richter Scale (Magnitude)	MMI (Intensity)	MMI in North Carolina
12/16/1811 - 1	NE Arkansas	8.5	XI	VI
12/16/1811 - 2	NE Arkansas	8.0	X	VI
12/18/1811 - 3	NE Arkansas	8.0	X	VI
01/23/1812	New Madrid, MO	8.4	XI	VI
02/071812	New Madrid, MO	8.7	XII	VI
04/29/1852	Wytheville, VA	5.0	VI	VI
08/31/1861	Wilkesboro, NC	5.1	VII	VII
12/23/1875	Central Virginia	5.0	VII	VI
08/31/1886	Charleston, SC	7.3	X	VII
05/31/1897	Giles County, VA	5.8	VIII	VI
01/01/1913*	Union County, SC	4.8	VII	VI
02/21/1916*	Asheville, NC	5.5	VII	VII
07/08/1926	Mitchell County, NC	5.2	VII	VII
11/03/1928*	Newport, TN	4.5	VI	VI
05/13/1957*	McDowell County, NC	4.1	VI	VI
07/02/1957	Buncombe County, NC	3.7	VI	VI
11/24/1957	Jackson County, NC	4.0	VI	VI
10/27/1959 **	Chesterfield, SC	4.0	VI	VI
07/13/1971	Newry, SC	3.8	VI	VI
11/30/1973*	Alcoa, TN	4.6	VI	VI
11/13/1976	Southwest Virginia	4.1	VI	VI
05/05/1981	Henderson County, NC	3.5	VI	VI

*This event is accounted for in the Cape Fear occurrences.

** Conflicting reports on this event, intensity in North Carolina could have been either V or VI

***Source**: This information is compiled by Dr. Kenneth B. Taylor and provided by Tiawana Ramsey of NCEM. Information was compiled from the National Earthquake Center, Earthquakes of the US by Carl von Hake (1983), and a compilation of newspaper reports in the Eastern Tennessee Seismic Zone compiled by Arch Johnston, CERI, Memphis State University (1983).*

5.9.5 Probability of Future Occurrences

The NRI calculates earthquake risk based on the USGS 100-year probability of minor earthquake shaking. According to the NRI, there is a 0.00 annual frequency of occurrence for

each county in the planning area due to rounding. Although the NRI data shows that earthquakes in the planning area are very unlikely, if an earthquake were to impact the area, each county would be at a "Relatively Moderate" Average EAL Rating and Average Hazard Risk Rating, except for Johnston County, which has a "Relatively Low" Average EAL Rating and Average Hazard Risk Rating. Moore County has the highest EAL of $480,502, followed by Johnston County, Harnett County, Lee County, and Chatham County, which have EALs of $372,306, $307,857, $203,352.32, and $183,959, respectively.

***Table 5-42**: NRI Earthquake annualized frequency, EAL Total, EAL Score, and Hazard Risk Index Score.*

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Chatham County	0.00	$183,959.74	41.11	Relatively Moderate	41.09	Relatively Moderate
Goldston	0.00	$19,665.11	60.57	Relatively High	62.38	Relatively High
Pittsboro	0.00	$22,438.42	36.77	Relatively Low	34.93	Relatively Low
Siler City	0.00	$59,077.96	57.77	Relatively Moderate	63.95	Relatively High
Area outside Jurisdictional Boundaries	0.00	$82,778.24	36.41	Relatively Low	35.14	Relatively Low
Harnett County	**0.00**	**$307,857.06**	**43.18**	**Relatively Moderate**	**47.06**	**Relatively Moderate**
Angier	0.00	$24,643.13	35.70	Relatively Low	40.75	Relatively Moderate
Coats	0.00	$18,382.32	44.69	Relatively Moderate	50.79	Relatively Moderate
Dunn	0.00	$100,481.28	62.85	Relatively High	68.85	Relatively High
Erwin	0.00	$80,549.22	54.79	Relatively Moderate	59.33	Relatively Moderate
Lillington	0.00	$85,373.06	41.35	Relatively Moderate	43.38	Relatively Moderate
Area outside Jurisdictional Boundaries	0.00	$65,427.24	40.98	Relatively Moderate	44.35	Relatively Moderate
Johnston County	0.00	$372,306.31	34.70	**Relatively Low**	**36.19**	**Relatively Low**
Archer Lodge	0.00	$27,580.52	30.53	Relatively Low	27.60	Relatively Low
Benson	0.00	$37,584.99	40.90	Relatively Moderate	45.31	Relatively Moderate
Clayton	0.00	$90,271.74	36.52	Relatively Low	35.91	Relatively Low
Four Oaks	0.00	$22,084.13	33.25	Relatively Low	38.26	Relatively Low
Kenly	0.00	$13,607.45	36.78	Relatively Low	40.88	Relatively Moderate
Micro	0.00	$17,467.73	32.11	Relatively Low	37.84	Relatively Low

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Pine Level	0.00	$28,680.60	52.57	Relatively Moderate	57.26	Relatively Moderate
Princeton	0.00	$12,329.83	33.45	Relatively Low	36.38	Relatively Low
Selma	0.00	$96,237.51	48.68	Relatively Moderate	53.84	Relatively Moderate
Smithfield	0.00	$89,940.56	46.59	Relatively Moderate	52.72	Relatively Moderate
Wilson's Mill	0.00	$32,230.37	39.94	Relatively Low	43.26	Relatively Moderate
Area outside Jurisdictional Boundaries	0.00	$78,836.24	28.59	Relatively Low	27.45	Relatively Low
Lee County	**0.00**	**$203,352.32**	**47.82**	**Relatively Moderate**	**51.88**	**Relatively Moderate**
Broadway	0.00	$10,425.04	30.50	Relatively Low	34.73	Relatively Low
Sanford	0.00	$186,038.57	48.51	Relatively Moderate	52.33	Relatively Moderate
Areas Outside Jurisdictional Boundaries	0.00	$17,313.76	43.00	Relatively Moderate	48.70	Relatively Moderate
Moore County	**0.00**	**$480,502.97**	**53.12**	**Relatively Moderate**	**52.15**	**Relatively Moderate**
Aberdeen	0.00	$140,469.76	53.39	Relatively Moderate	52.65	Relatively Moderate
Cameron	0.00	$15,875.67	56.54	Relatively Moderate	57.90	Relatively Moderate
Carthage	0.00	$120,740.73	57.02	Relatively Moderate	57.34	Relatively Moderate
Foxfire Village	0.00	$44,109.08	53.30	Relatively Moderate	51.21	Relatively Moderate
Pinebluff	0.00	$37,642.80	59.77	Relatively Moderate	61.14	Relatively High
Pinehurst	0.00	$182,610.46	55.26	Relatively Moderate	54.63	Relatively Moderate
Robbins	0.00	$65,369.19	59.87	Relatively Moderate	63.66	Relatively High
Southern Pines	0.00	$196,897.61	56.22	Relatively Moderate	55.44	Relatively Moderate
Taylortown	0.00	$45,175.98	62.74	Relatively High	62.88	Relatively High
Vass	0.00	$22,511.70	62.72	Relatively High	65.87	Relatively High
Whispering Pines	0.00	$12,982.62	52.43	Relatively Moderate	44.76	Relatively Moderate

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Areas Outside Jurisdictional Boundaries	0.00	$32,956.56	38.81	Relatively Low	33.95	Relatively Low

5.9.6 Impact

5.9.6.1 People

Earthquakes in the region generally are not high-impact events that cause injury or death. The public may typically experience some shaking in these events, and the greatest threat to health and well-being is often from objects falling from shelves. All jurisdictions in the Region are equally vulnerable to this impact.

5.9.6.2 Changes in Development

Buildings can be damaged by the shaking itself or by the ground beneath them settling to a lower level than 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. An earthquake can also break dams or levees along a river. The water from the river or the reservoir would then flood the area, damaging buildings and possibly drowning people. Finally, 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. Historically, the Region has not been affected by earthquakes of greater than moderate intensity, so damage to the built environment is unlikely.

5.9.6.3 Economy

Economic losses associated with an earthquake include property damage, business interruption costs, and repair costs for damaged utilities and infrastructure. Historically, there have been no economic losses associated with earthquakes in the Region.

5.9.6.4 Natural Environment

A moderate 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 of damage is unlikely based on historical occurrences.

5.9.6.5 First Responders

A moderate earthquake is unlikely to damage infrastructure such as roads, bridges, or gas/power/water lines. Therefore, there would be little impact on first responders in the event of a moderate earthquake in the Region.

5.9.6.6 Future Conditions

There are no measurable impacts of climate change on earthquake vulnerability in the planning area.

HYDROLOGIC HAZARDS

5.10 Dam and Levee Failure

5.10.1 Hazard Description and Background

Worldwide interest in dam and levee safety has risen significantly in recent years. Aging infrastructure, new hydrologic information, and population growth in floodplain areas downstream from dams and near levees have led to increased emphasis on safety, operations, and maintenance.

There are approximately 92,000 dams in the United States as of 2024, according to FEMA's National Inventory of Dams, most of which are privately owned. Other owners include state and local authorities, public utilities, and federal agencies. Dams provide numerous benefits, such as storage for drinking water, safe navigation channels, and agricultural irrigation. Dams also provide hydroelectric power, create lakes for fishing and recreation, and save lives by mitigating the impacts of flood hazard events.

Though dams offer many benefits, they can also pose risks to communities if not properly designed, operated, and maintained. In the event of a dam failure, the energy of the water stored behind even a small dam can cause loss of life and great property damage if development exists downstream. If a levee breaks, scores of properties may become submerged in floodwater, and residents may become trapped by rapidly rising water. The failure of dams and levees has the potential to place large numbers of people and great amounts of property in harm's way. The Cape Fear HMPC downloaded information from the State Dam Safety Program Office of NCDEQ website through NCDEQ, but dams that meet the following requirements are considered "exempt dams" according to the Senate Bill 107 / S.L. 2017-145 (06/29/2017) from the Dam Safety Program Office of NCDEQ regulations:

- Dams constructed by the US Army Corps of Engineers or other US Government Agency; Constructed with financial assistance from the United States Natural Resources
- Conservation Service, when that agency designed or approved plans for the dam, supervised its construction.
- Licensed by the Federal Energy Regulatory Commission, or for which a license application is pending with the Federal Energy Regulatory Commission; For use in connection with electric generating facilities regulated by the Nuclear Regulatory Commission.
- Under a single private ownership that provides protection only to land or other property under the same ownership and that does not pose a threat to human life or property below the dam.
- That is less than 25 feet in height or that has an impoundment capacity of less than 50 acre-feet, unless the Department determines that failure of the dam could result in loss of human life or significant damage to property below the dam.
- Constructed for and maintains the purpose of providing water for agricultural use, when a person who is licensed as a professional engineer or is employed by the Natural Resources Conservation Service, county, or local Soil and Water Conservation District,

and has federal engineering job approval authority under Chapter 89C of the General Statutes, designed or approved plans for the dam.

In accordance with FEMA Hazard Mitigation Planning HHPD1-a. and HHPD1-b requirements, each local government collected and shared relevant data, such as dam inspection findings, according to the NC State Dam Safety Program, and shared Emergency Action Plans (EAPs), inundation maps, and potential impacts on critical infrastructure with local dam owners through public meetings and draft plan reviews. The jurisdictions in the planning area are expected to continue assisting with and maintaining compliance with regulatory requirements in cooperation with private, utility, and local government dam owners. Maintaining compliance with regulatory requirements will reduce vulnerabilities, and the planning area will continue to explore mitigation actions that address deficiencies and reduce long-term vulnerabilities. This includes prioritizing high-hazard dams for rehabilitation to reduce the long-term vulnerability of the planning area. The counties within the Cape Fear HMP area have included mitigation actions to explore funding and dam rehabilitation projects to reduce long-term vulnerability of the planning area to dam failure or dam-related hazard events, prioritized by the hazard classification in Table 5-47.

5.10.2 Location and Spatial Extent

The North Carolina Division of Energy, Mineral, and Land Resources provides information on dams, including a hazard potential classification. There are three hazard classifications—high, intermediate, and low—that correspond to qualitative descriptions and quantitative guidelines (Table 5-47).

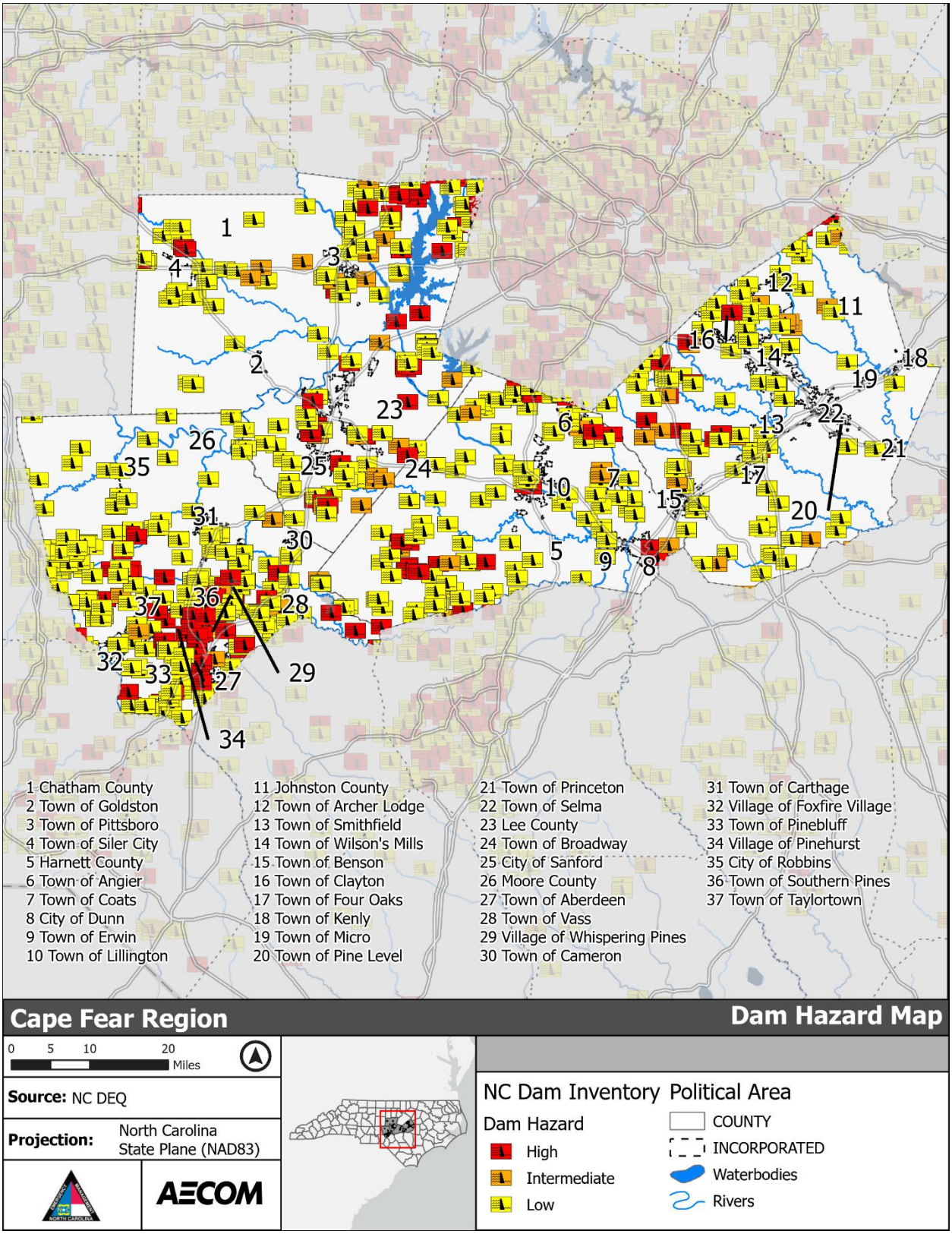


***Figure 5-272**: Dam Hazard Areas and Ranking – Cape Fear Region*

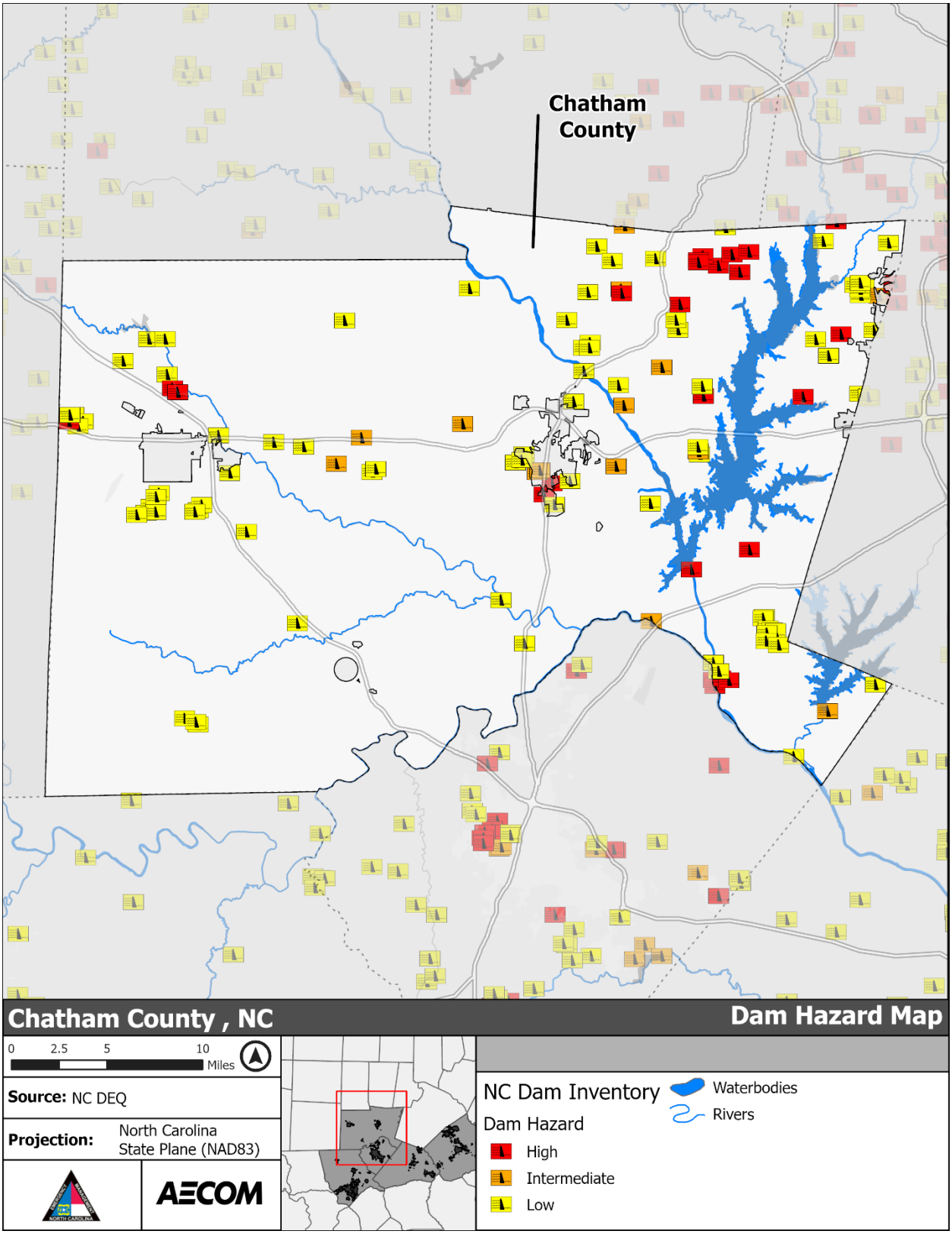


Figure 5-273: Dam Hazard Area – Chatham County

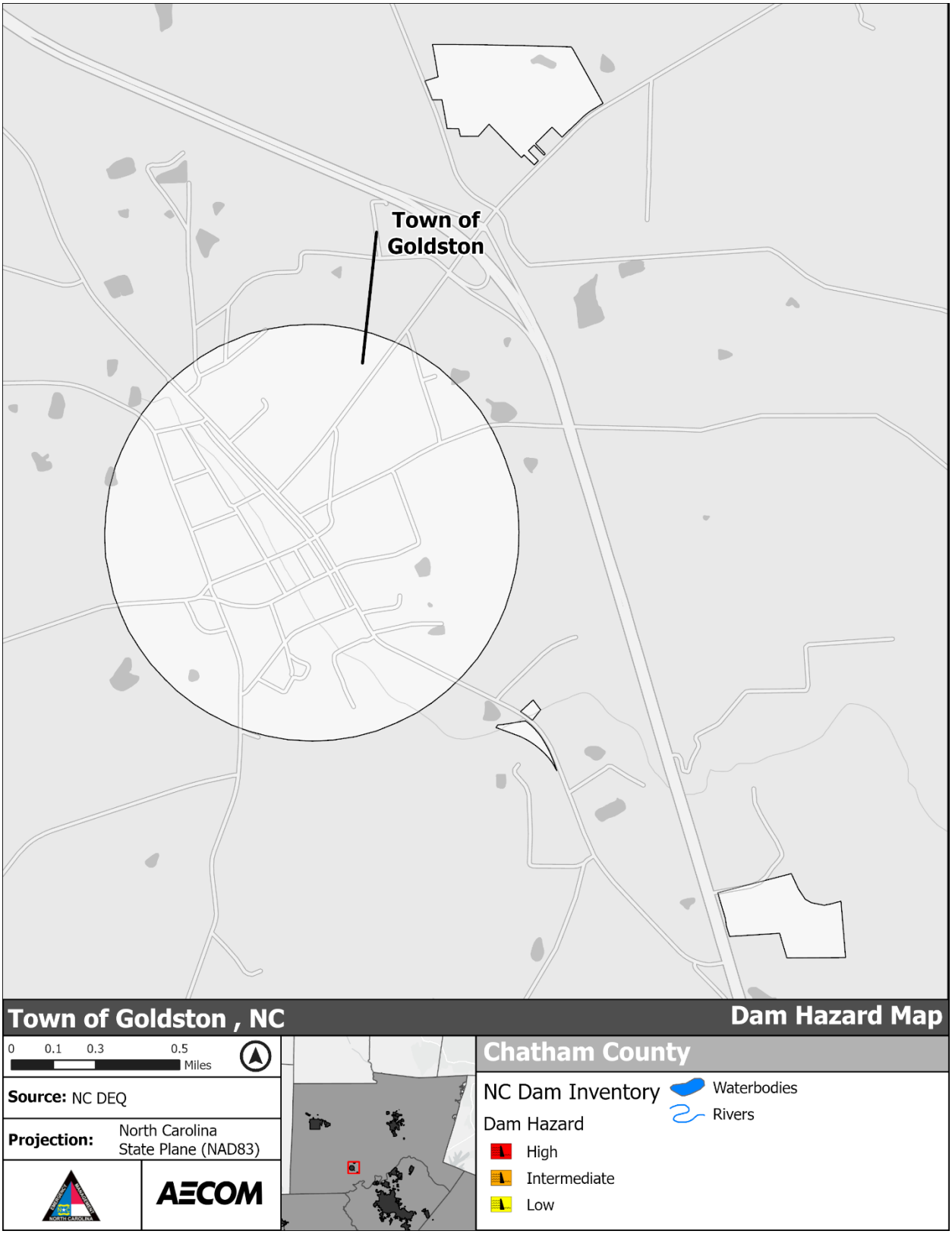


***Figure 5-274**: Dam Hazard Area – Town of Goldston*

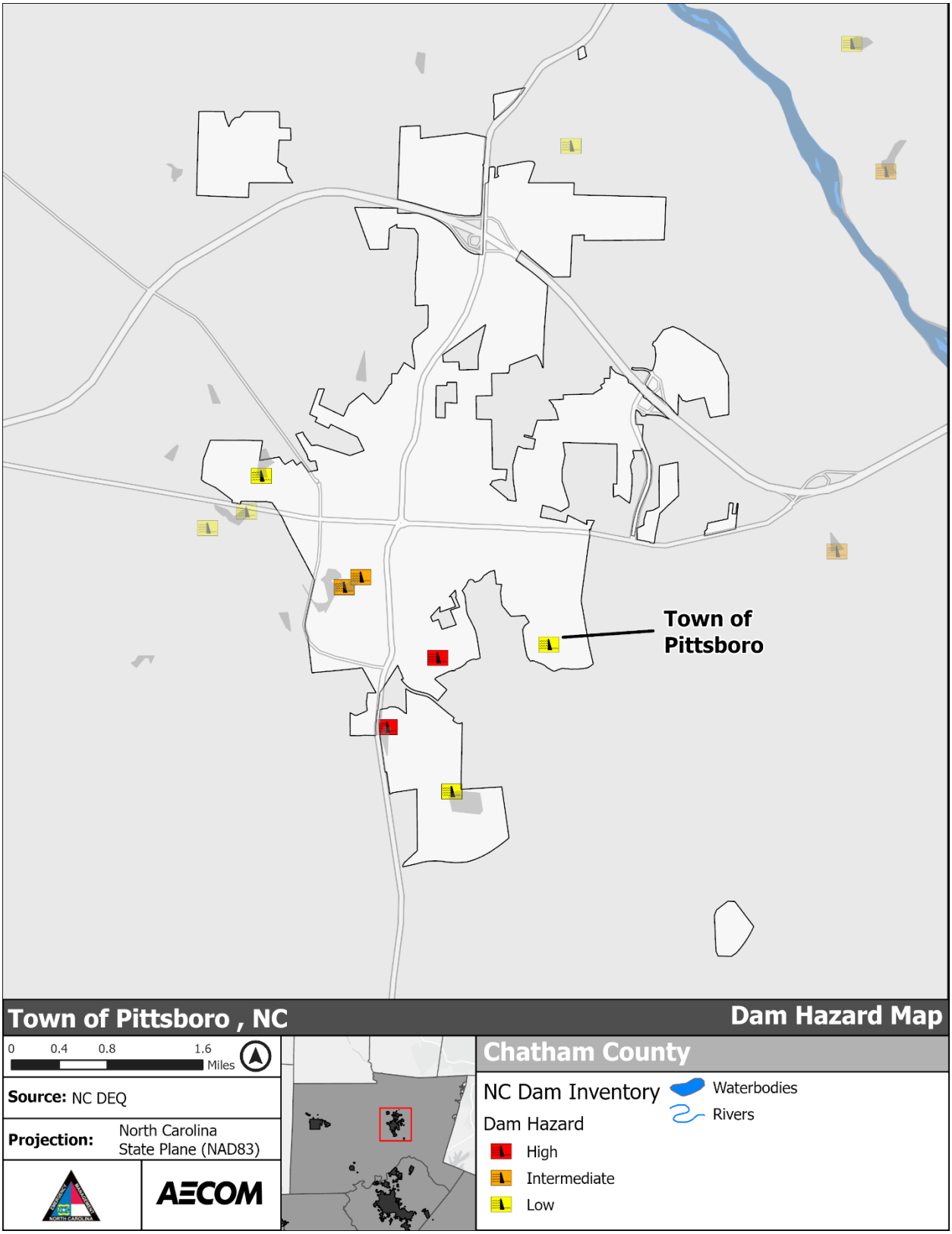


***Figure 5-275**: Dam Hazard Area – Town of Pittsboro*

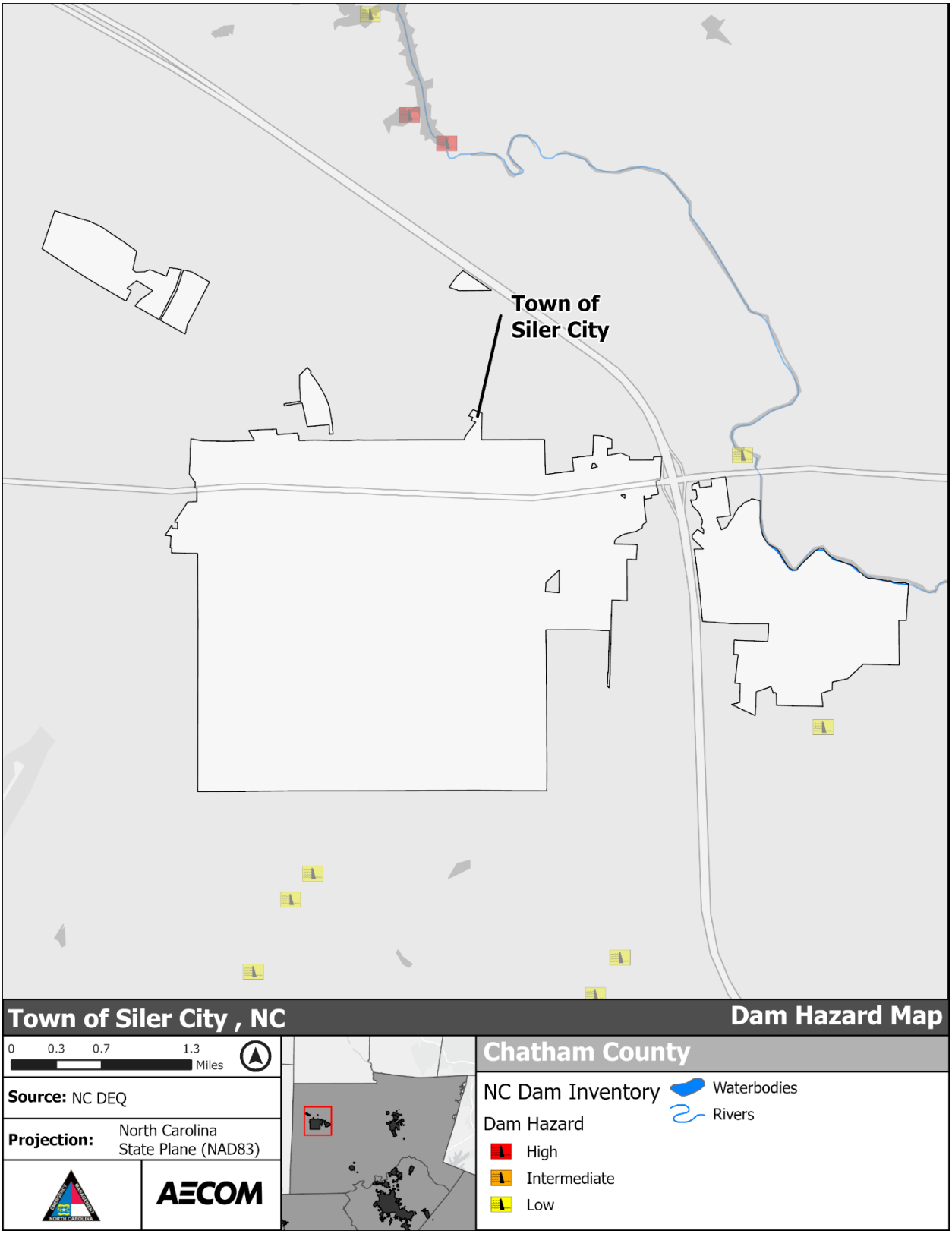


***Figure 5-276**: Dam Hazard Area – Town of Siler City*

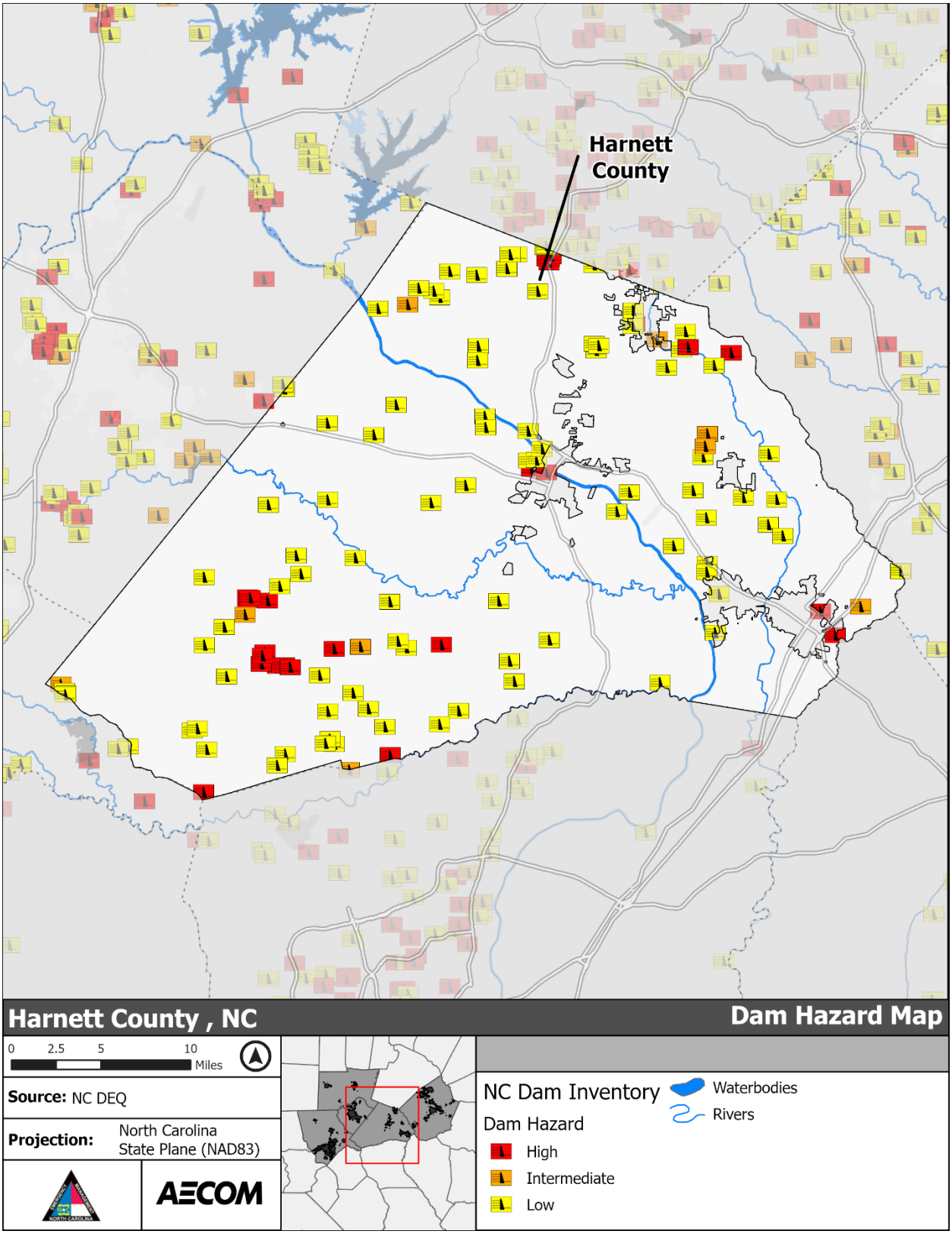


***Figure 5-277**: Dam Hazard Area – Harnett County*

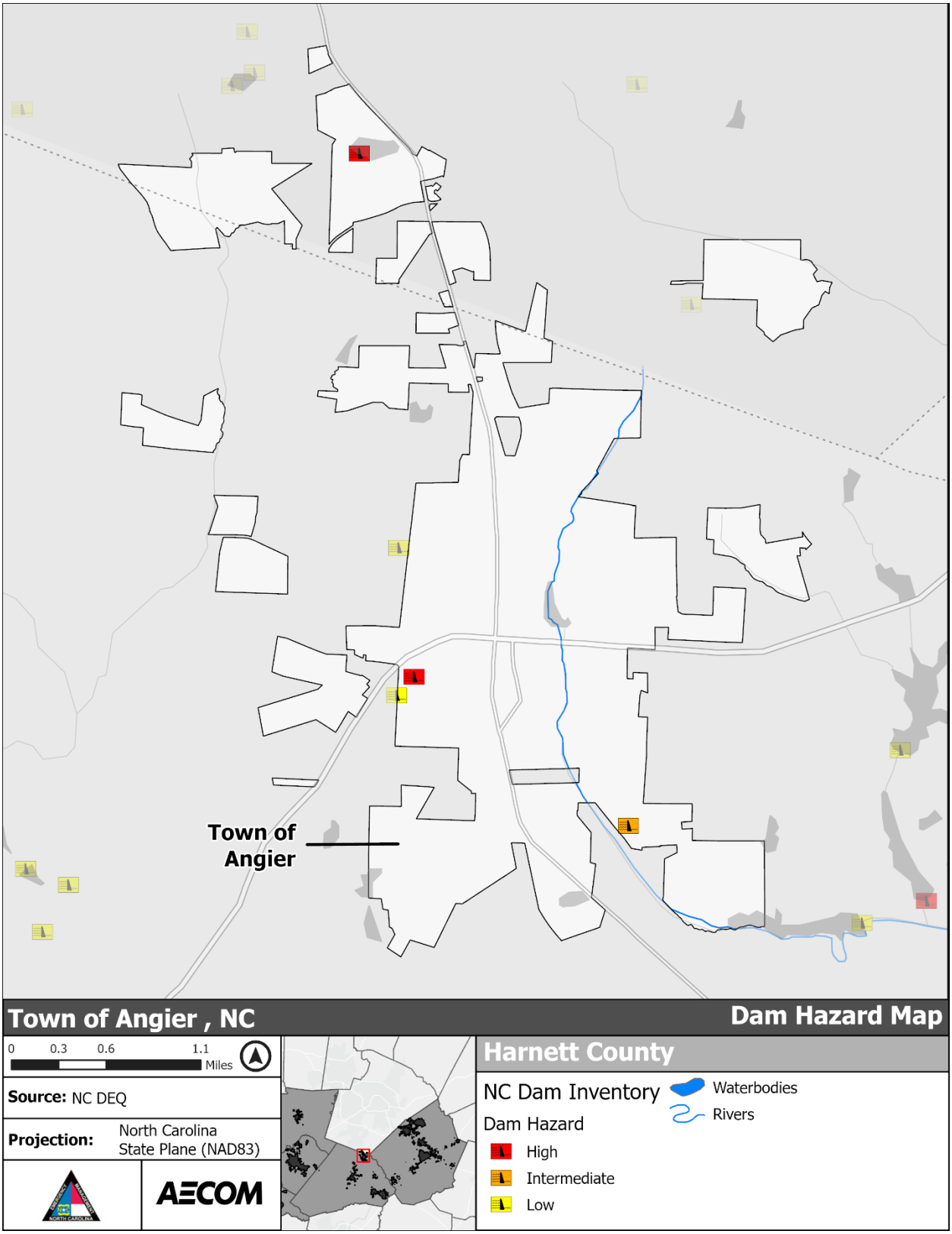


***Figure 5-278**: Dam Hazard Area – Town of Angier*

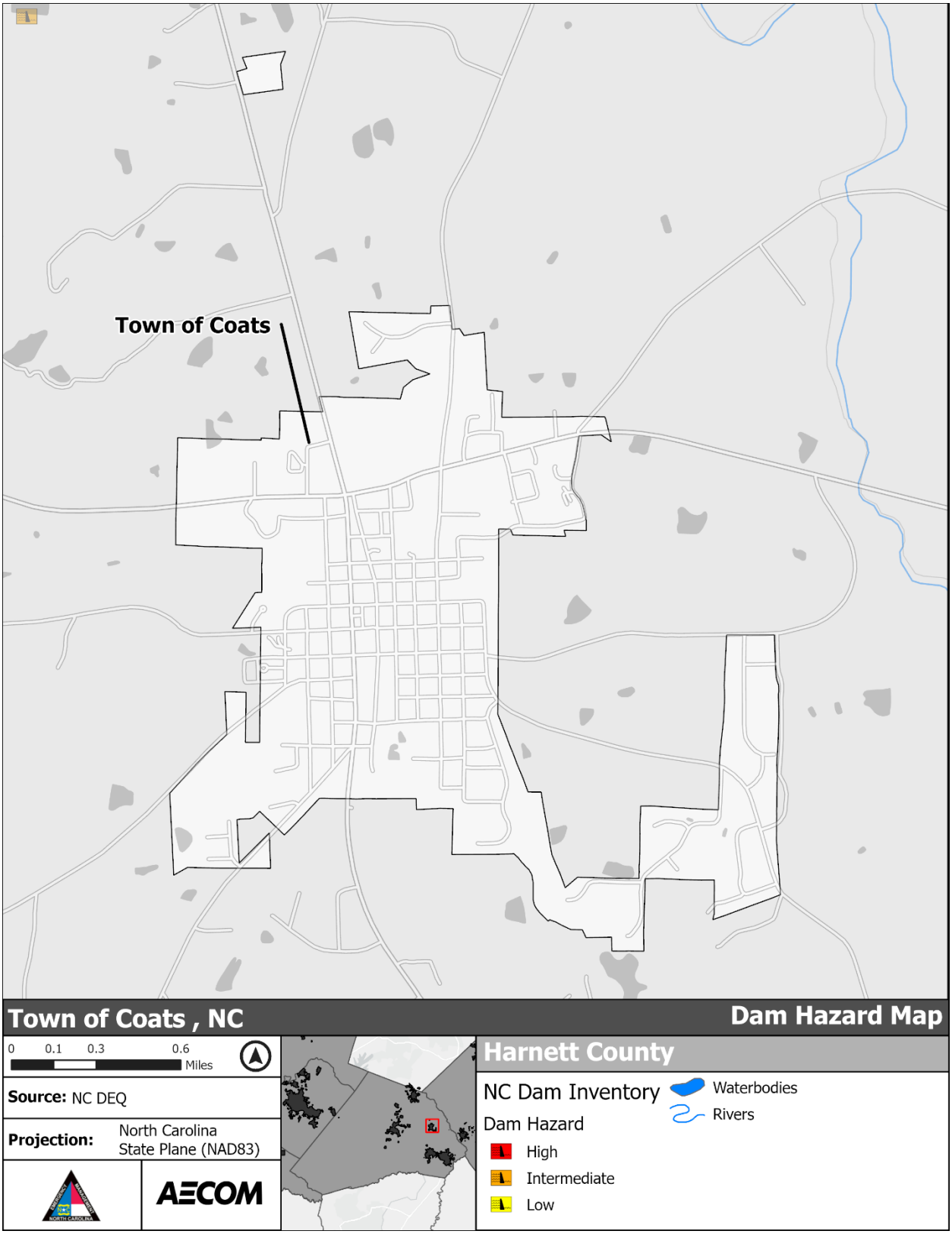


Figure 5-279: Dam Hazard Area – Town of Coats

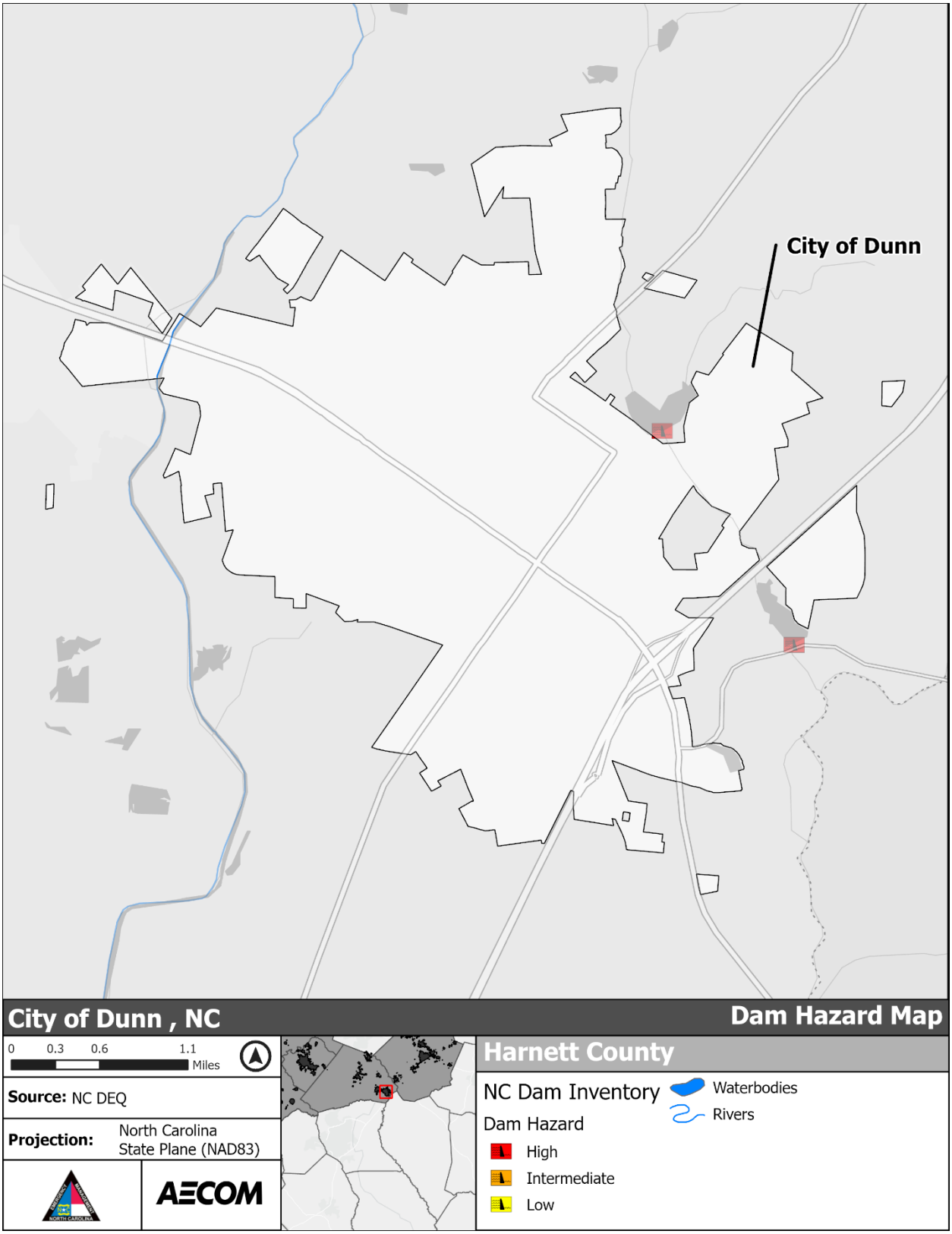


***Figure 5-280**: Dam Hazard Area – City of Dunn*

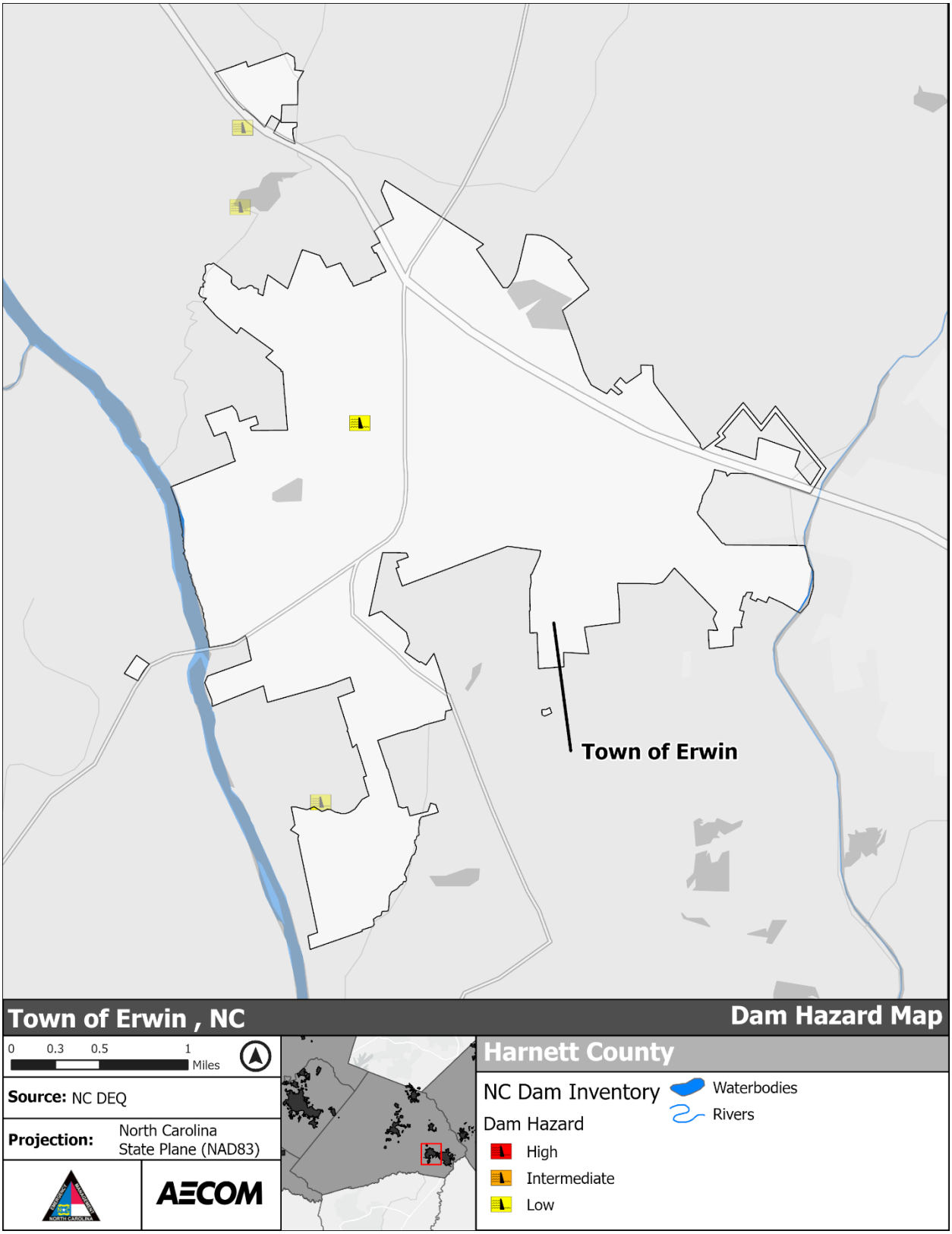


Figure 5-281: Dam Hazard Area – Town of Erwin

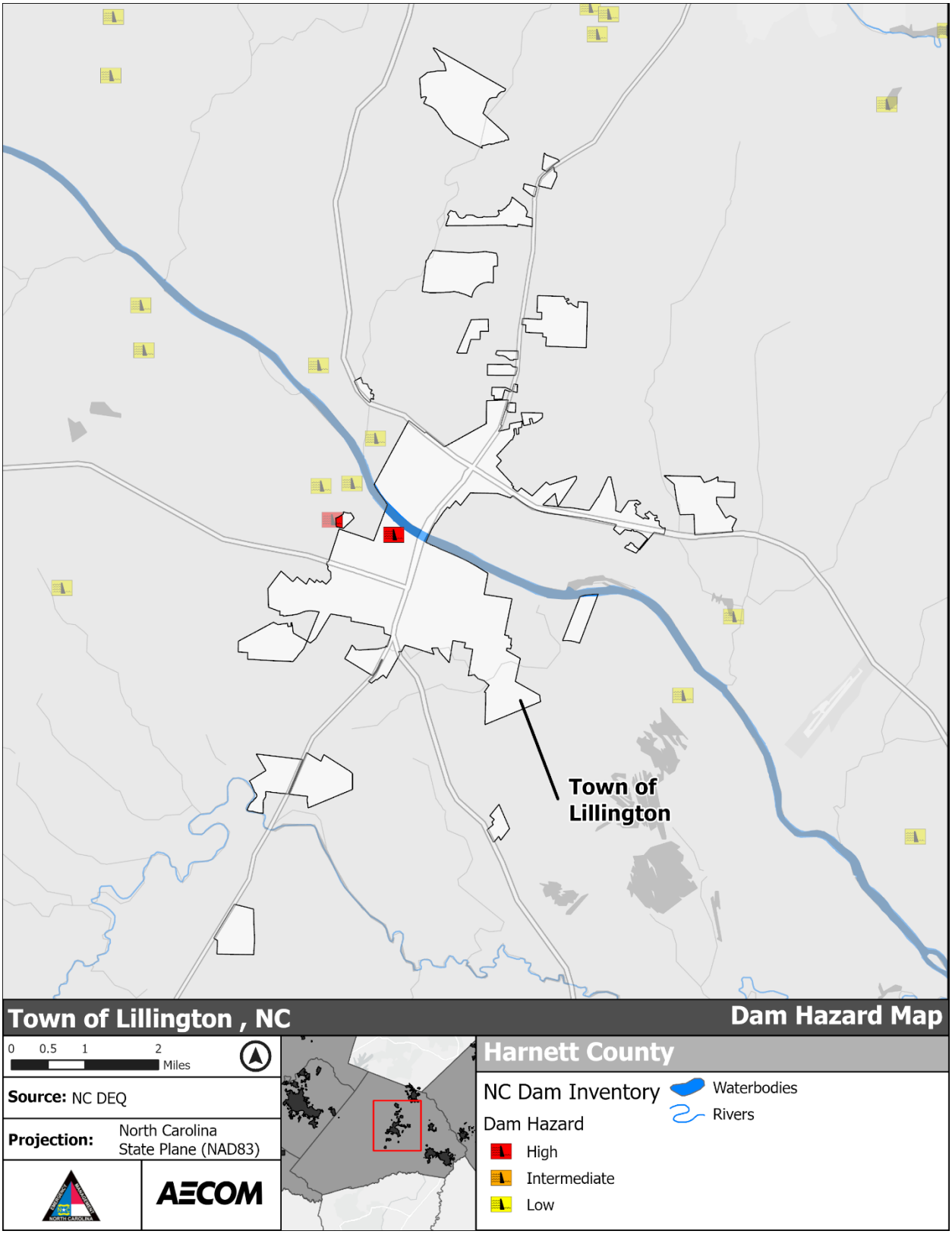


***Figure 5-282**: Dam Hazard Area – Town of Lillington*

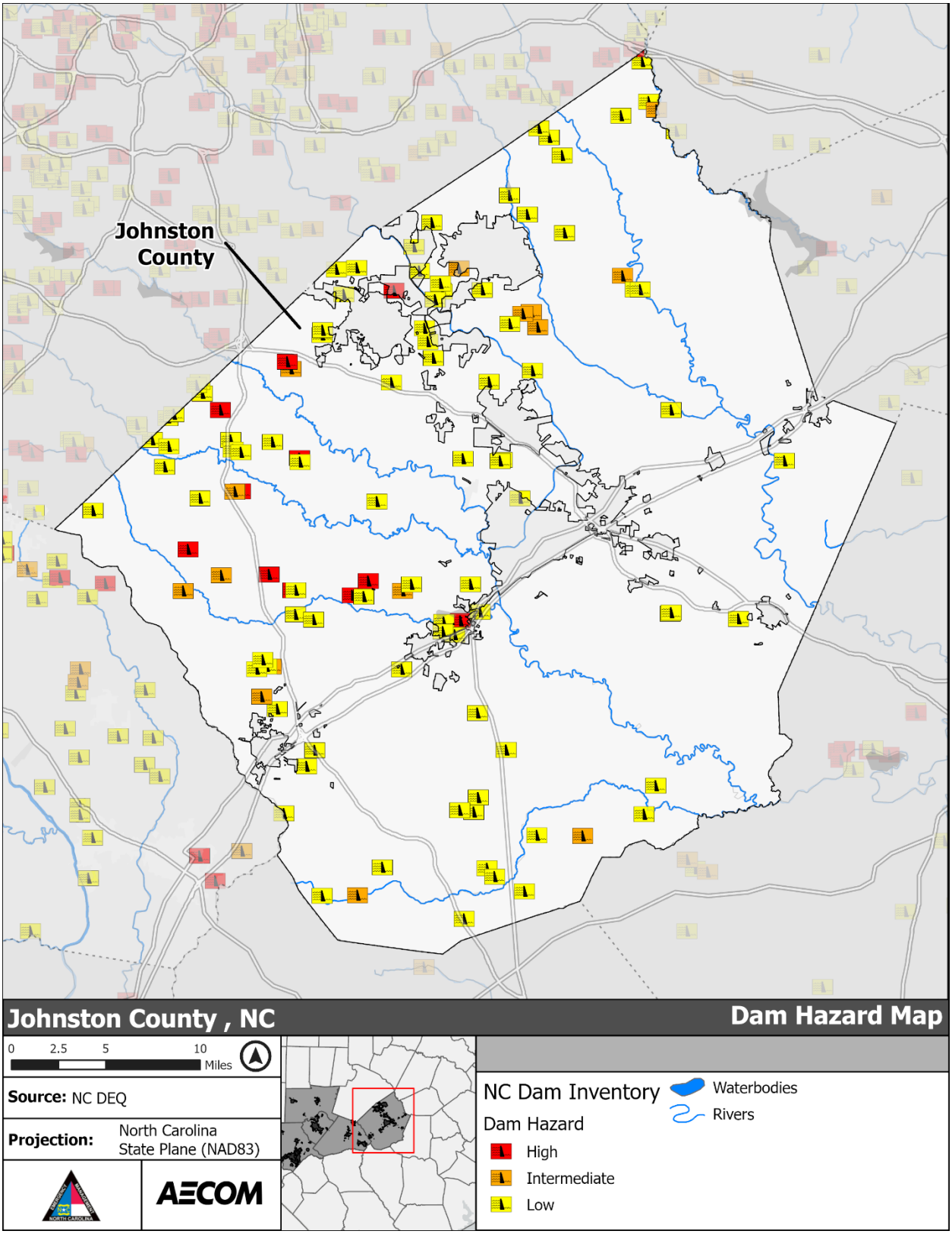


Figure 5-283: Dam Hazard Area – Johnston County

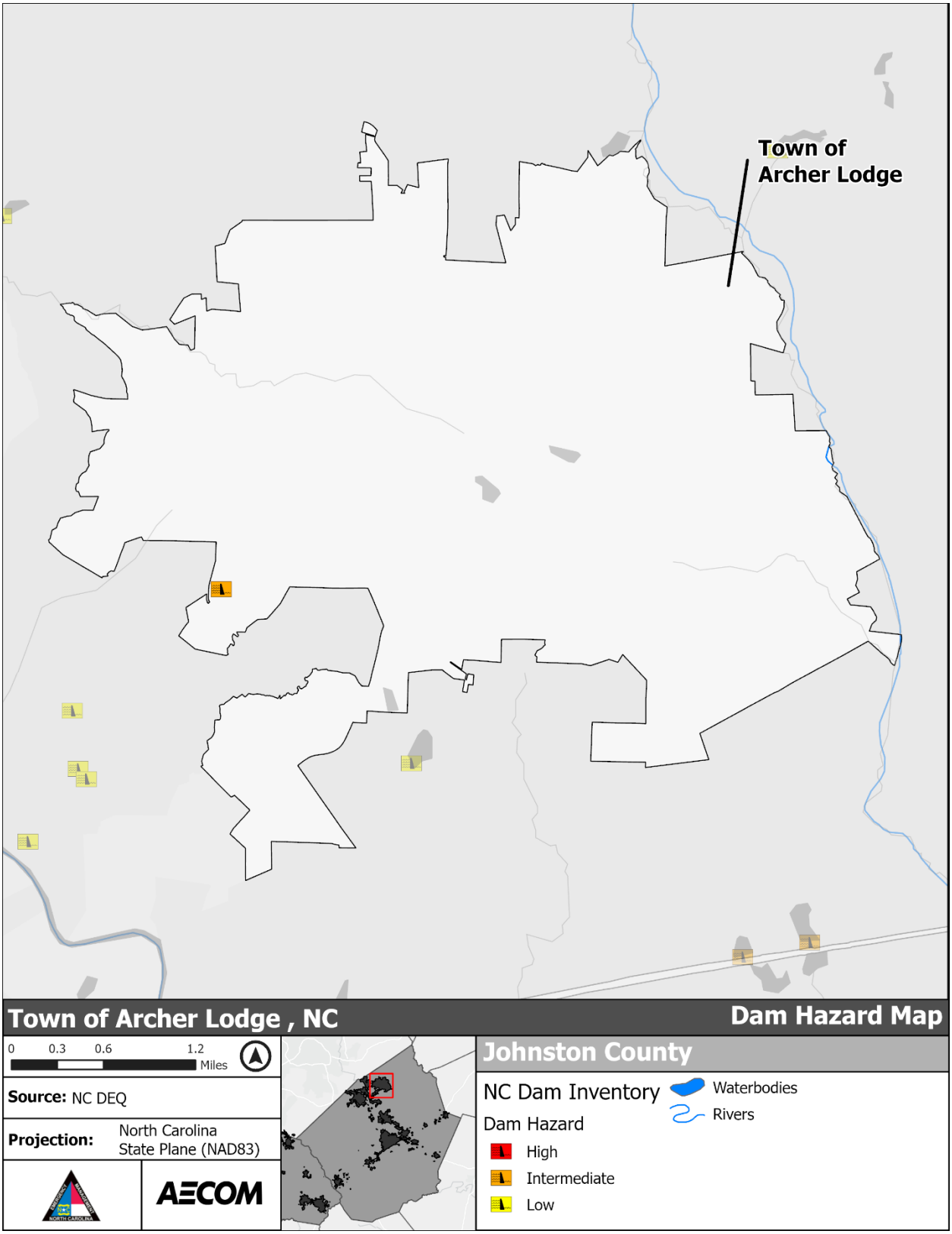


***Figure 5-284**: Dam Hazard Area – Town of Archer Lodge*

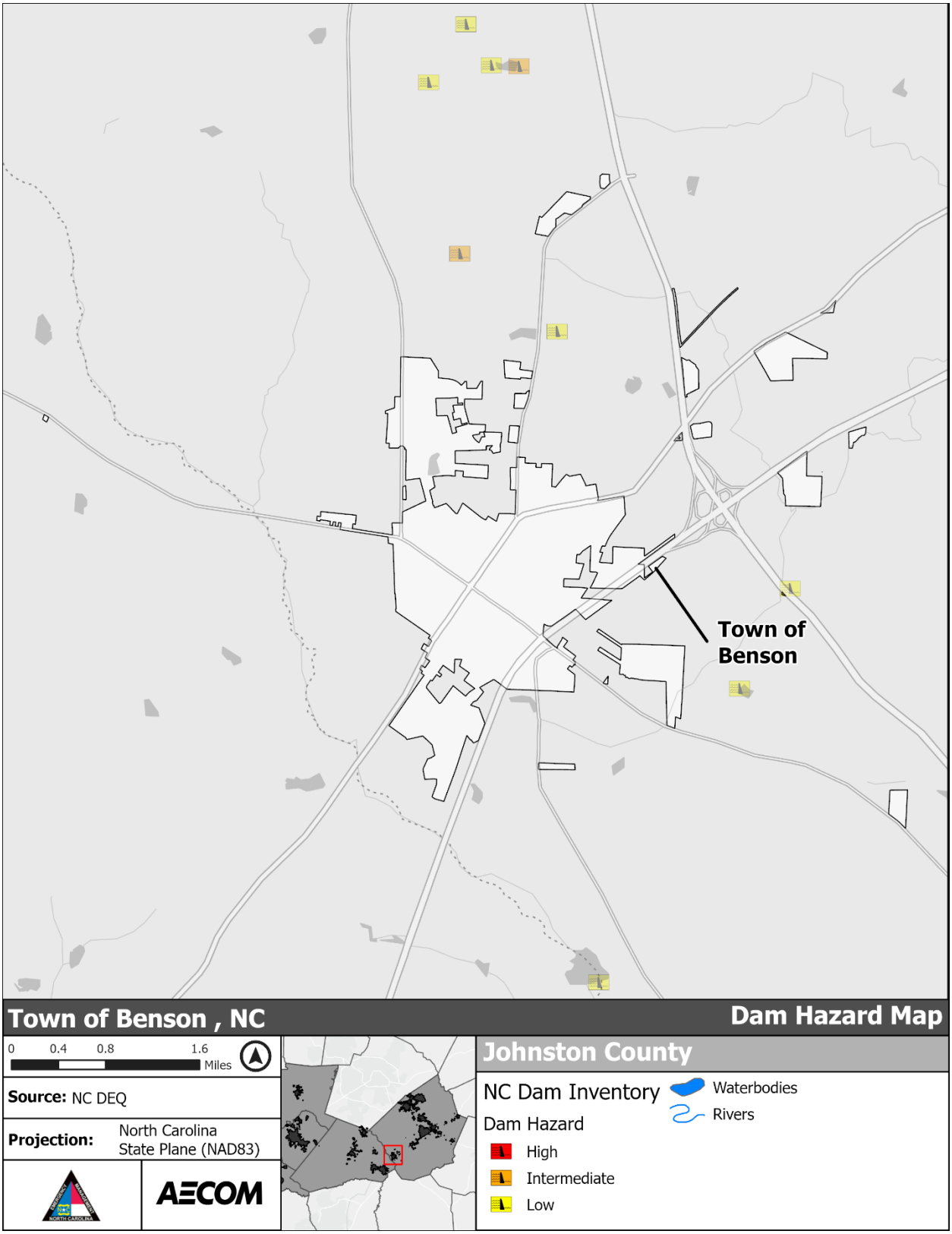


Figure 5-285: Dam Hazard Area – Town of Benson

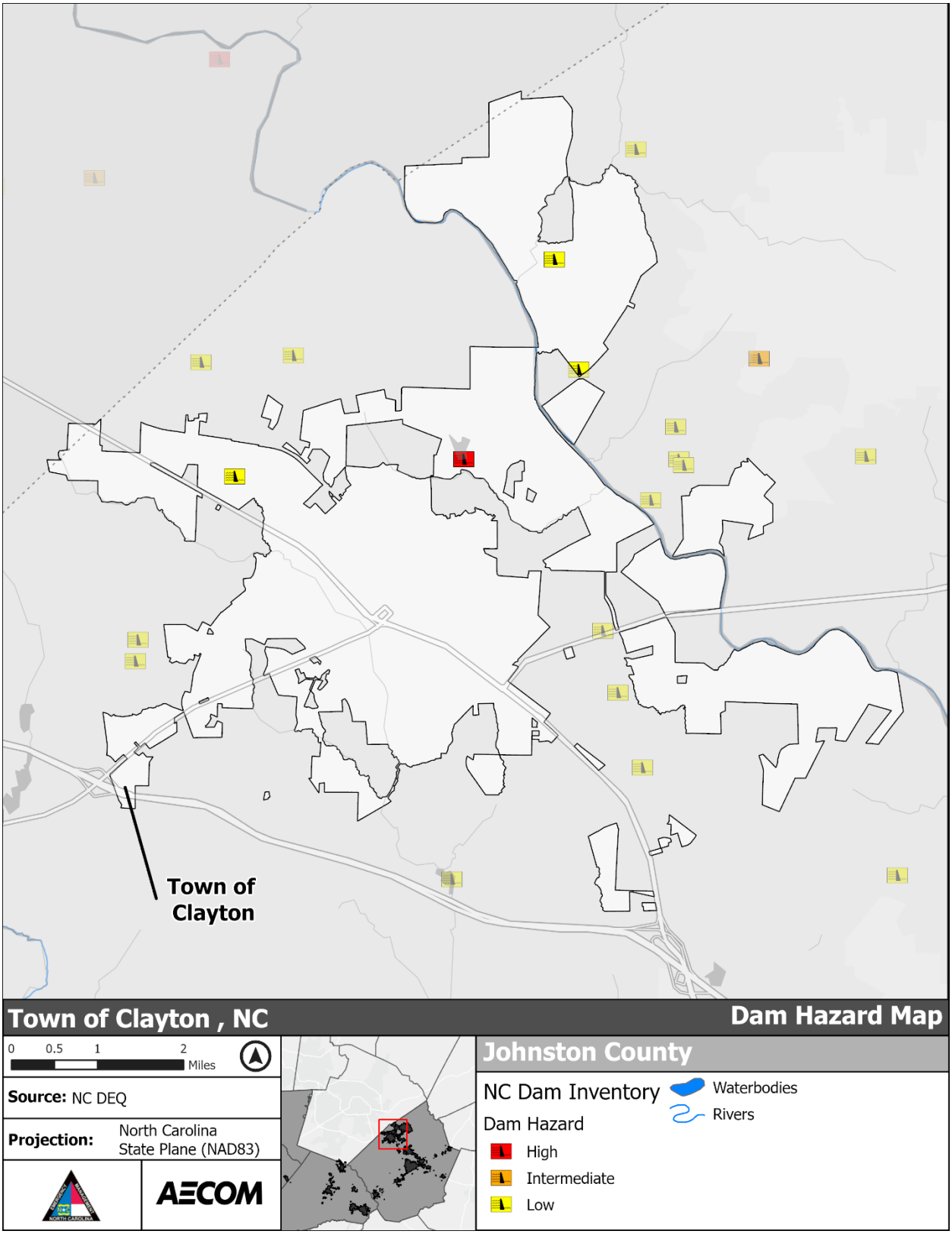


Figure 5-286: Dam Hazard Area – Town of Clayton

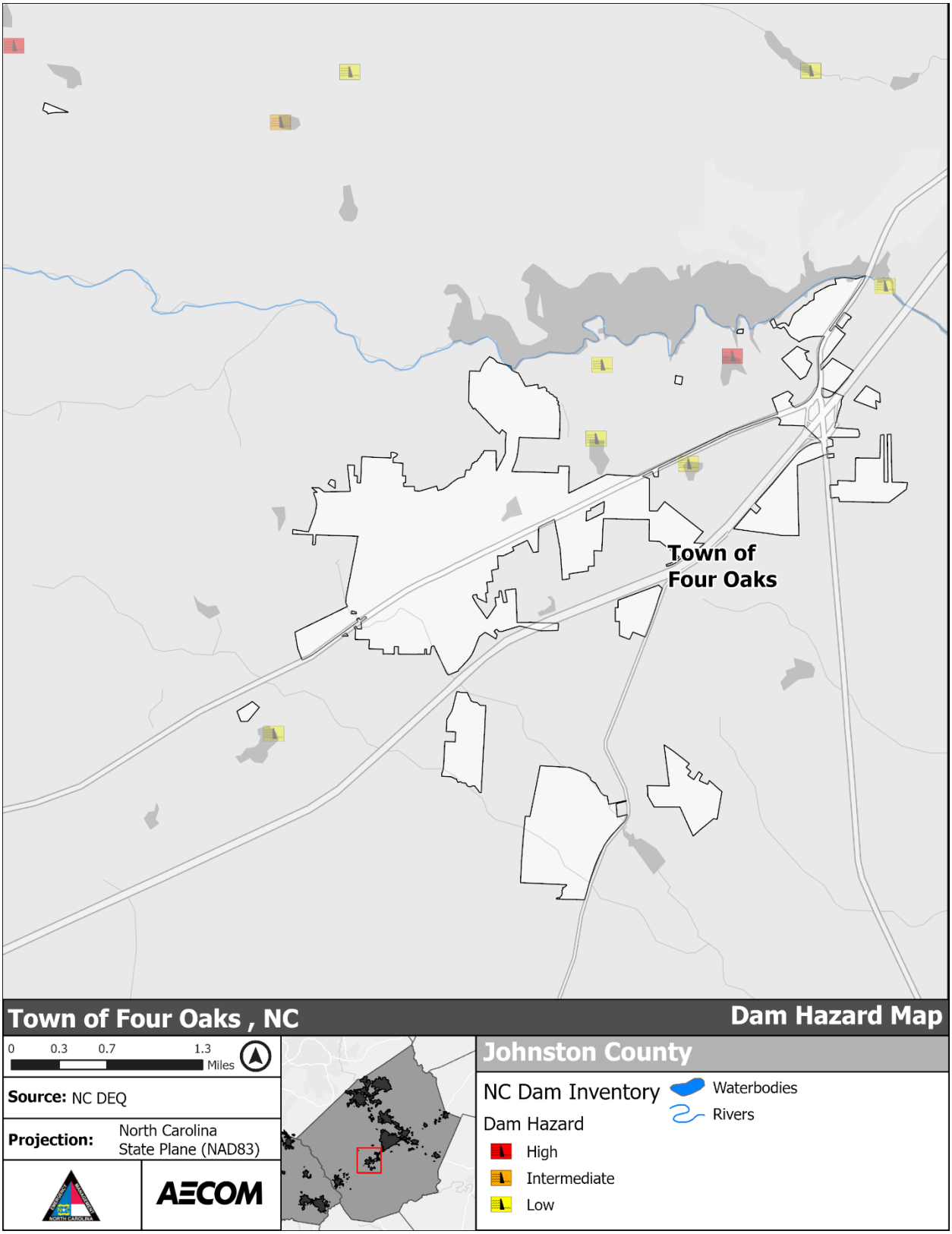


Figure 5-287: Dam Hazard Area – Town of Four Oaks

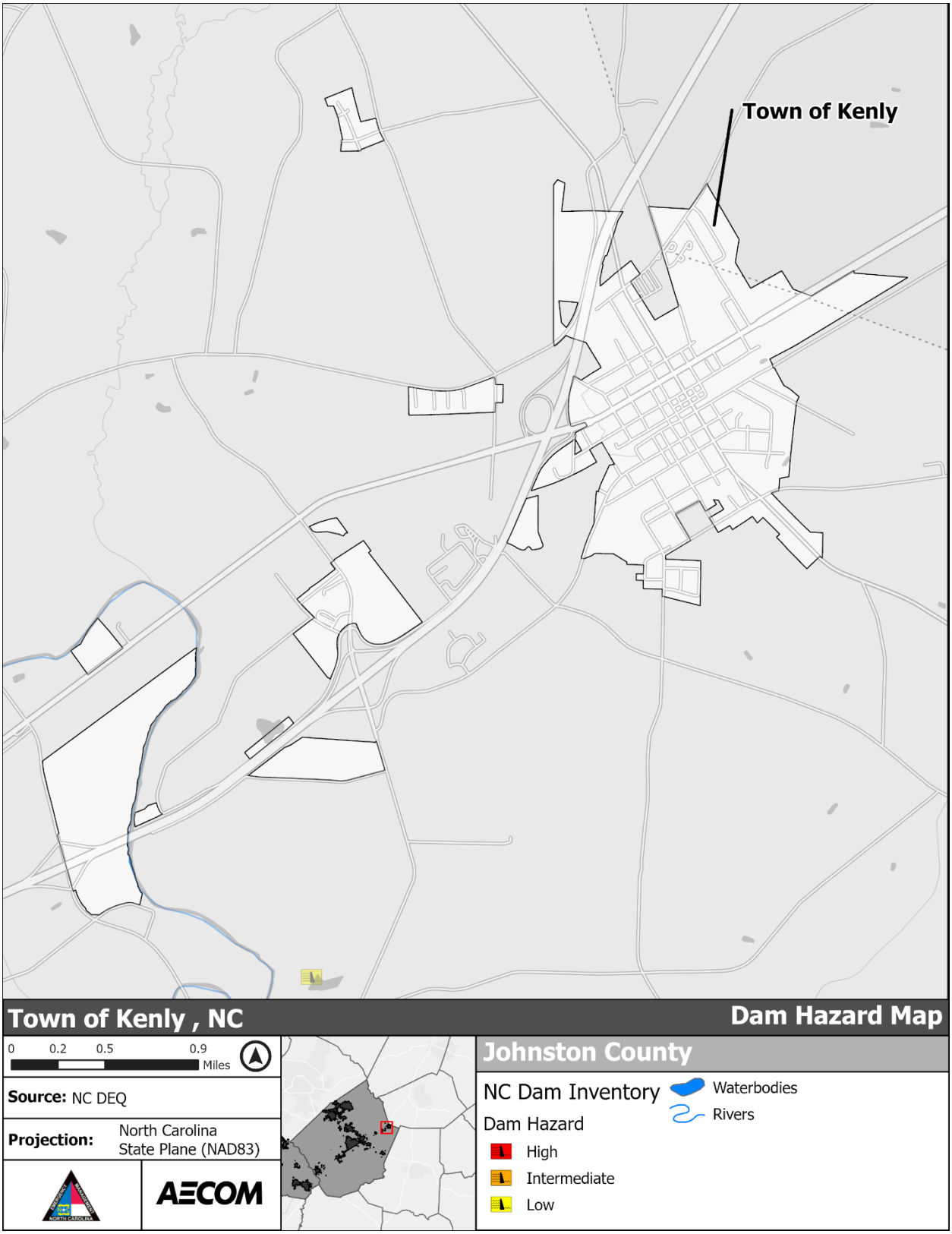


***Figure 5-288**: Dam Hazard Area – Town of Kenly*

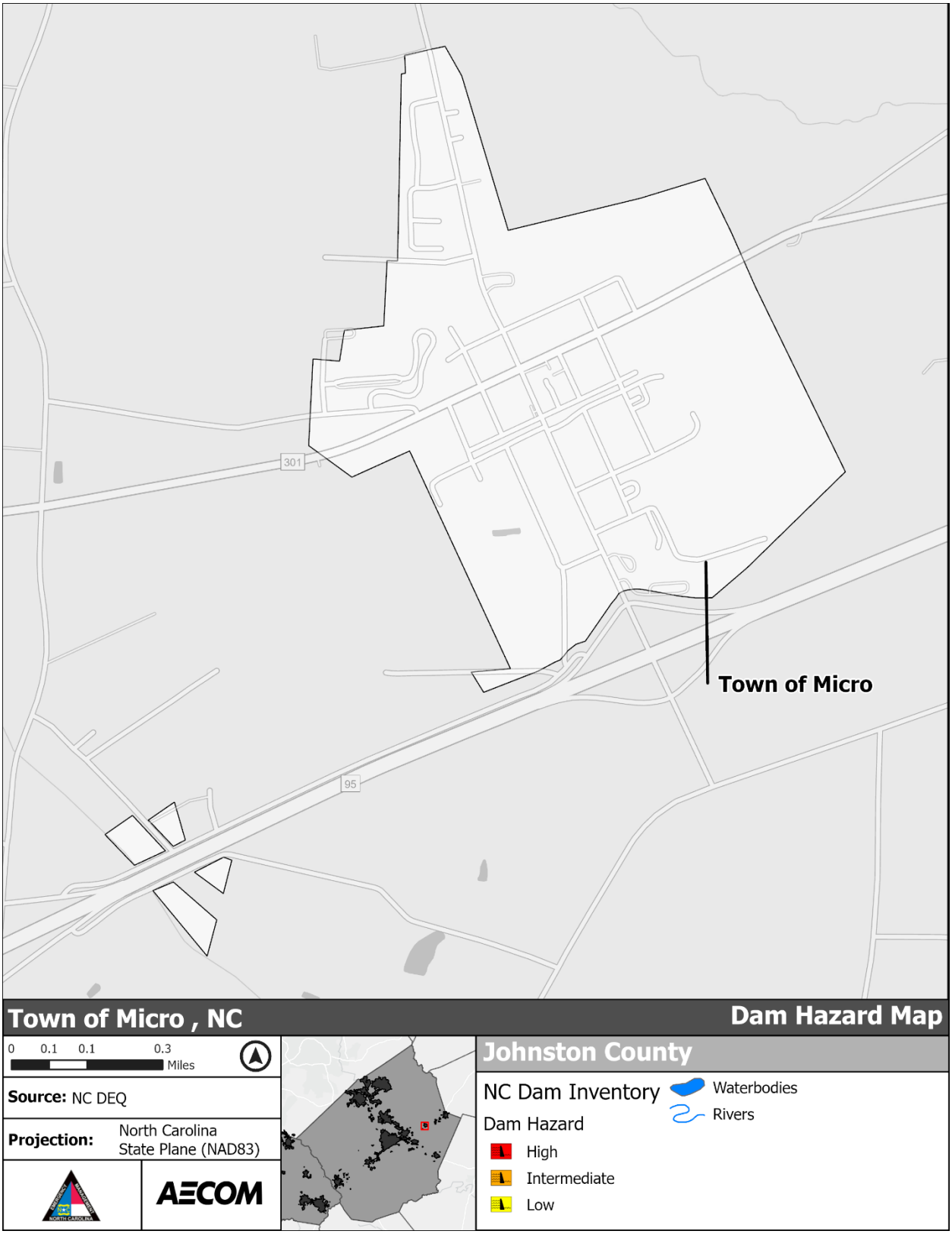


Figure 5-289: Dam Hazard Area – Town of Micro

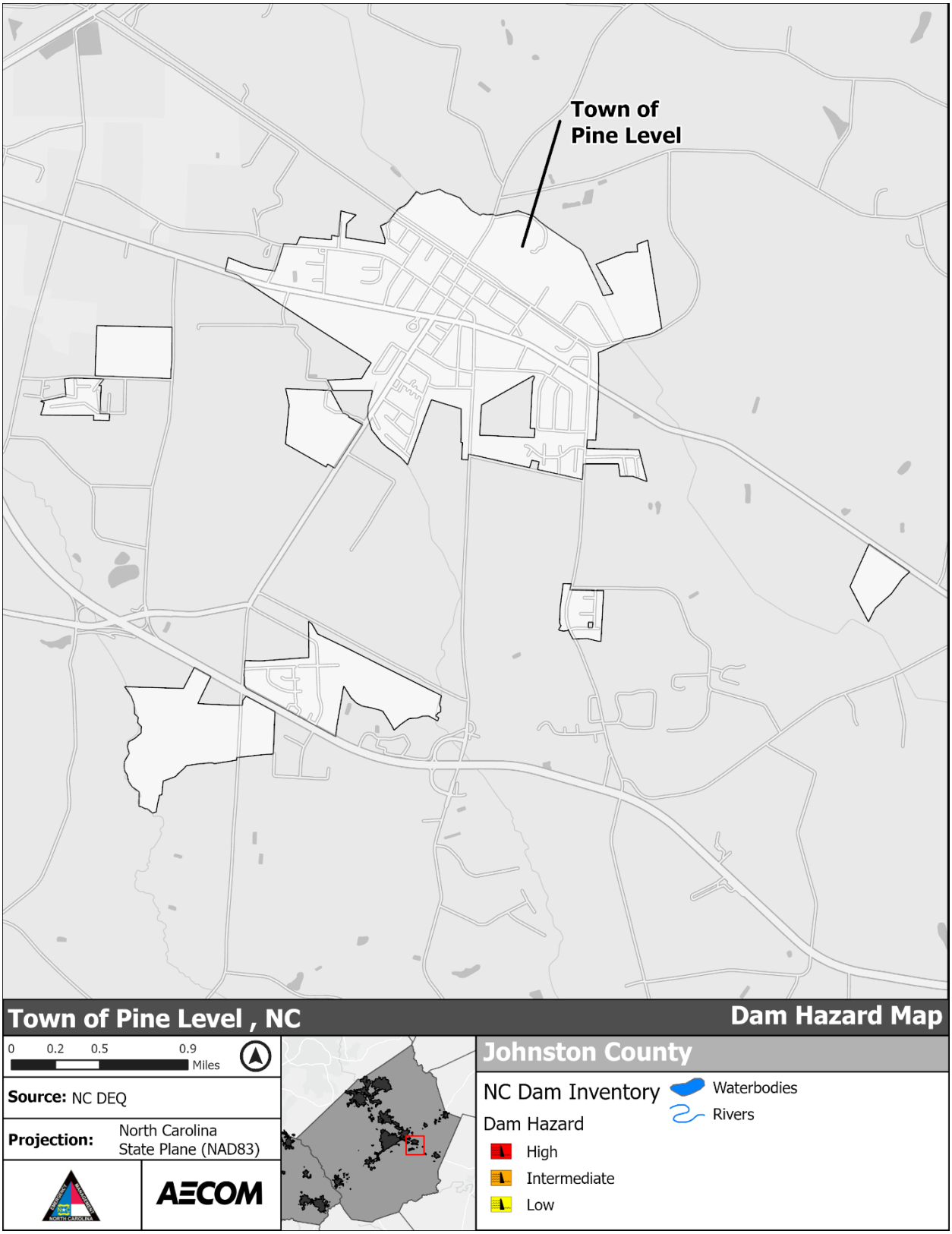


Figure 5-290: Dam Hazard Area – Town of Pine Level

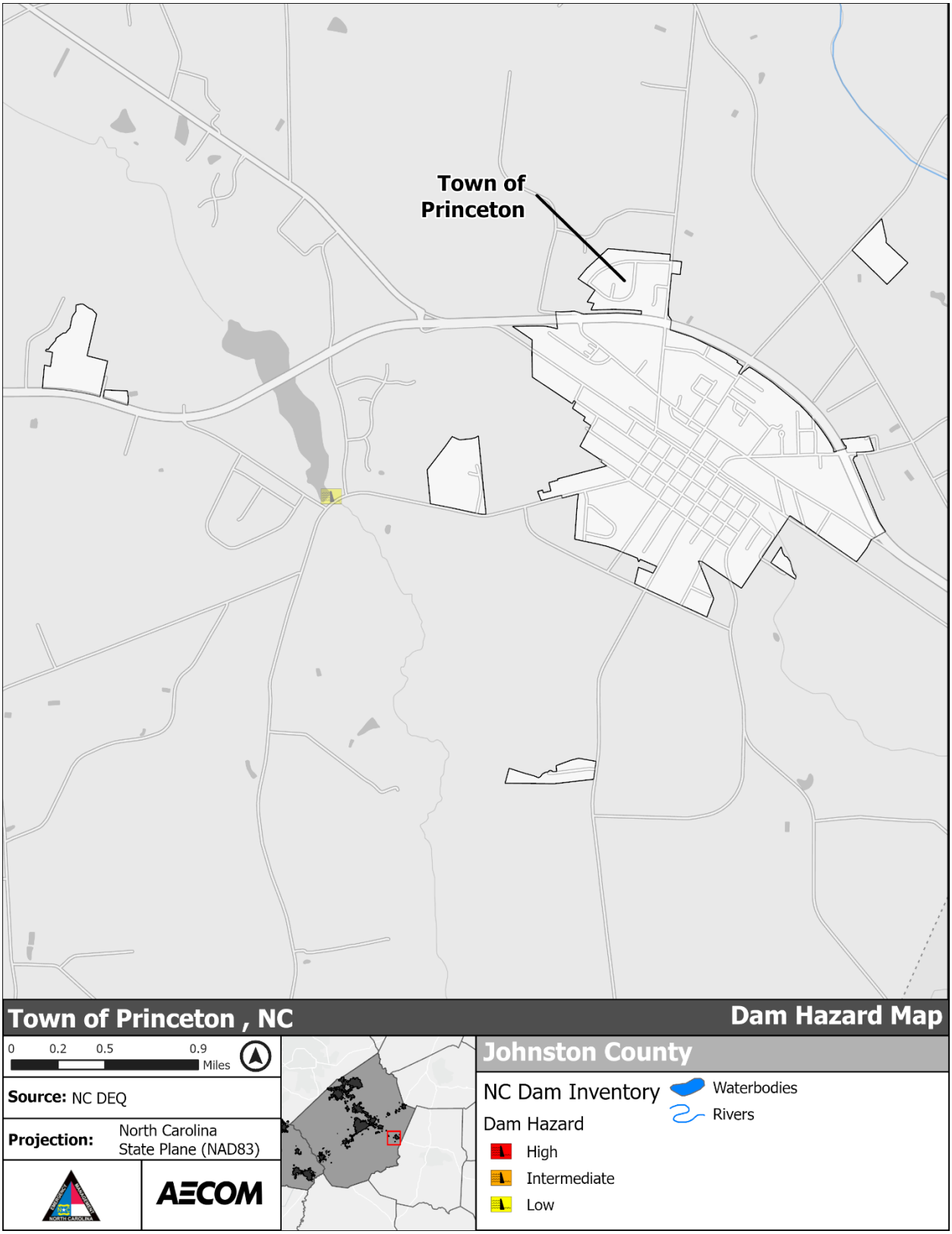


***Figure 5-291**: Dam Hazard Area – Town of Princeton*

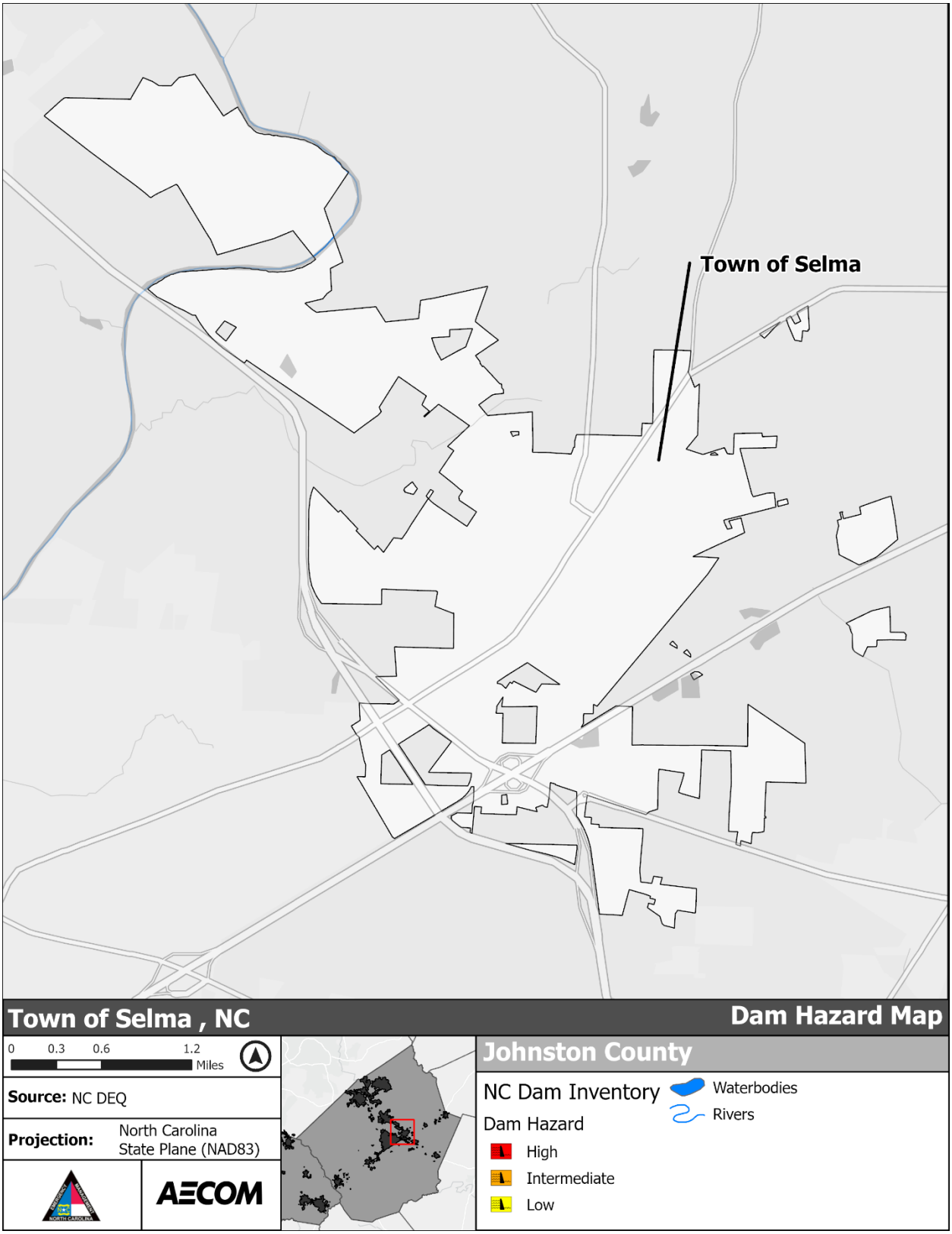


***Figure 5-292**: Dam Hazard Area – Town of Selma*

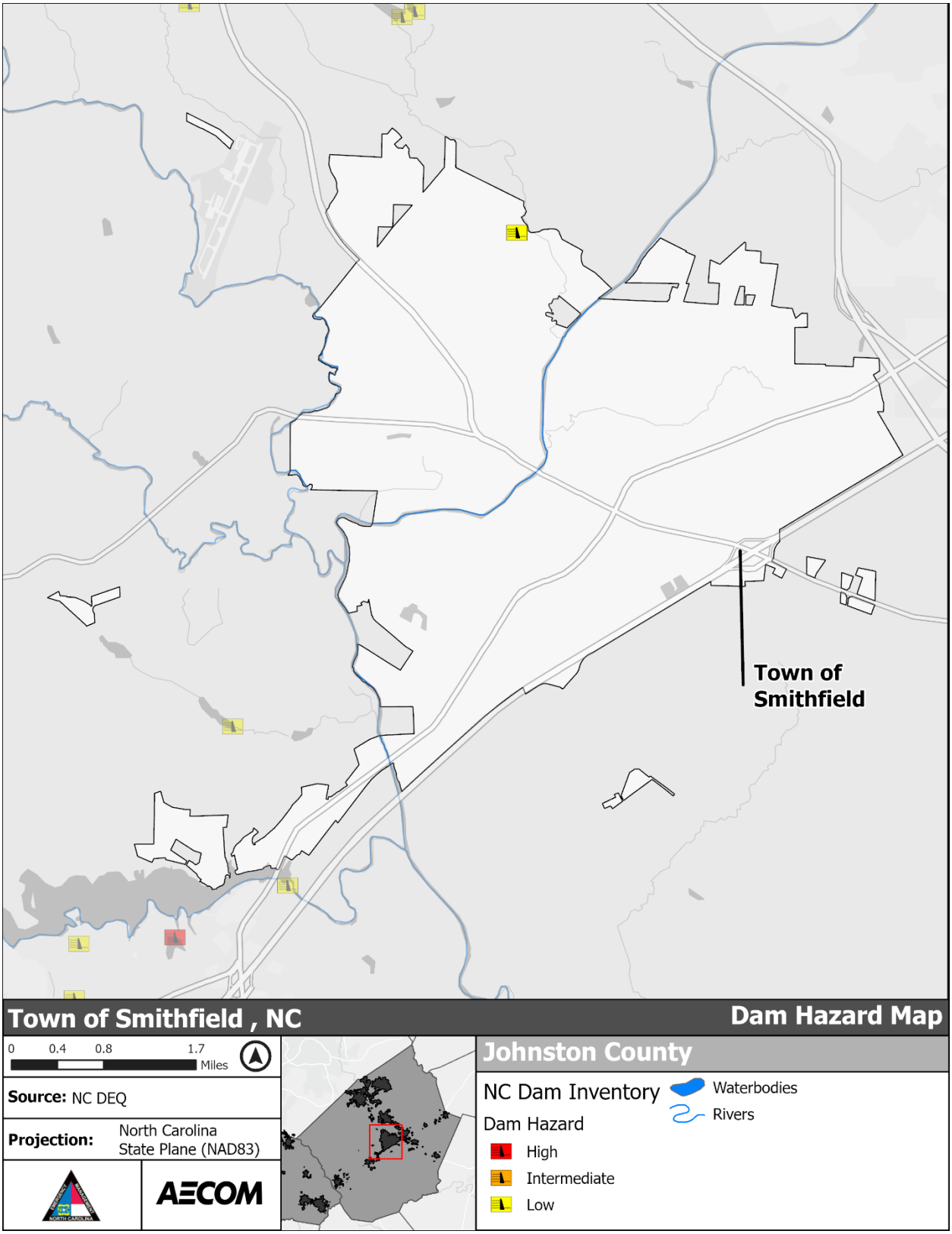


Figure 5-293: Dam Hazard Area – Town of Smithfield

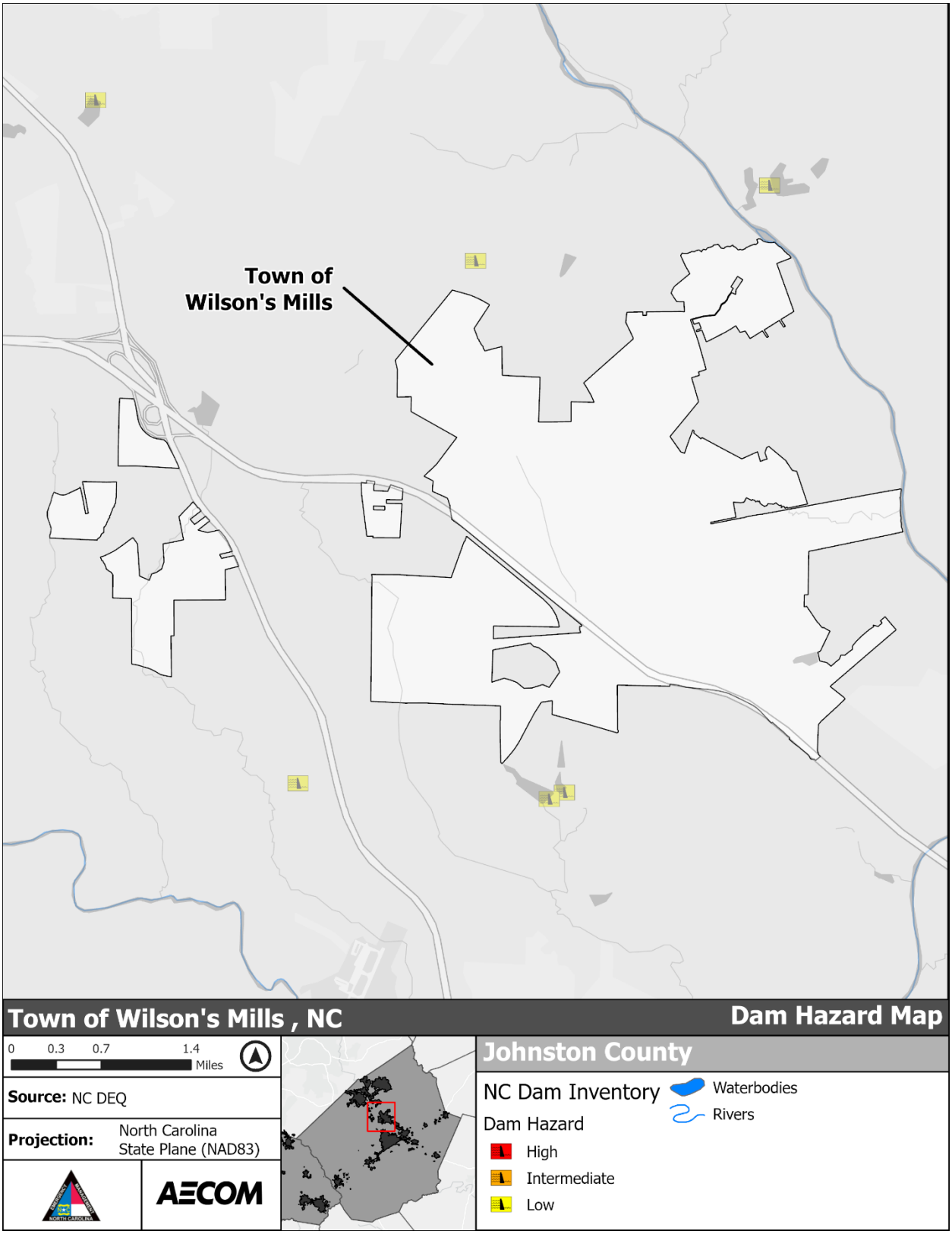


***Figure 5-294**: Dam Hazard Area – Town of Wilson's Mills*

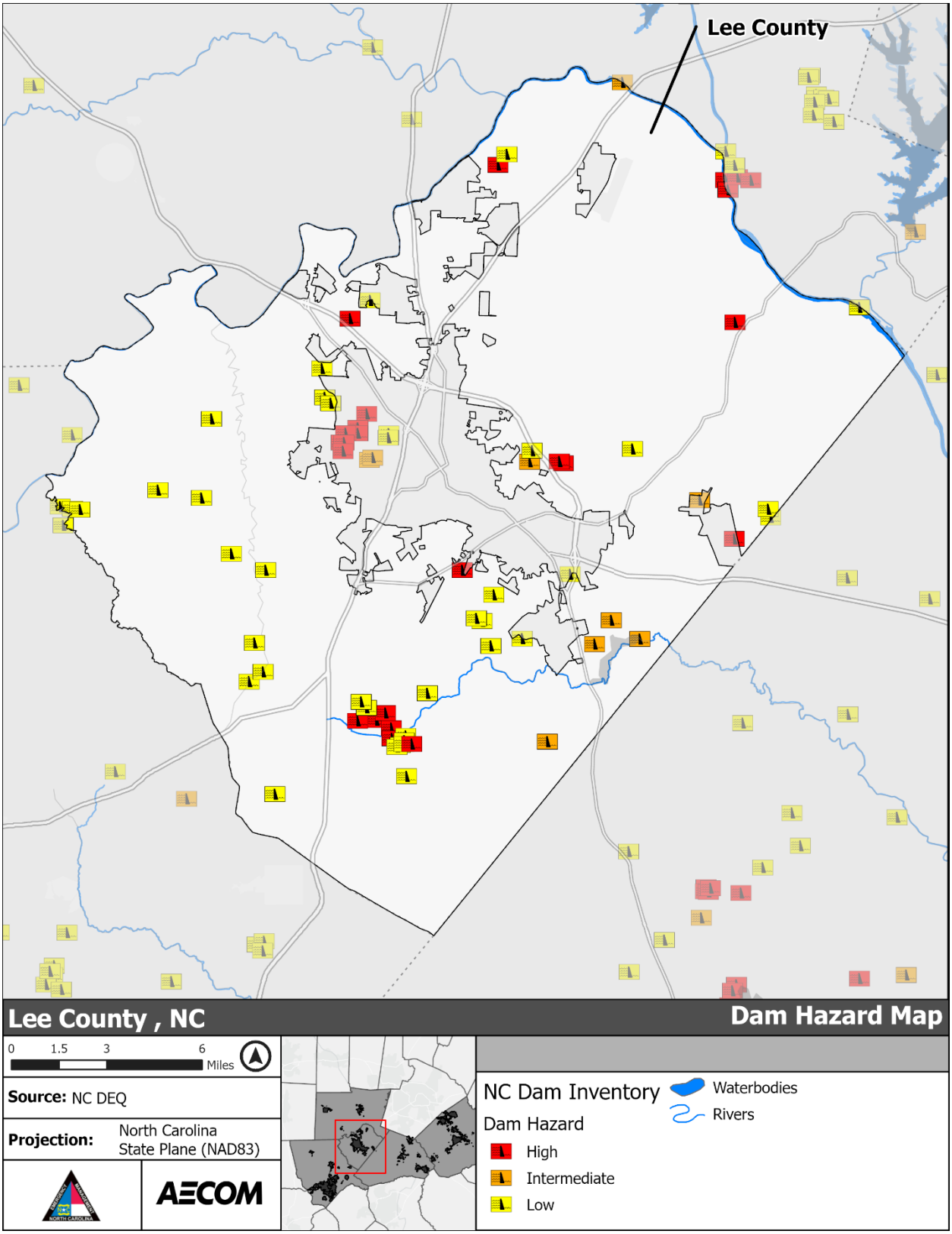


Figure 5-295: Dam Hazard Area – Lee County

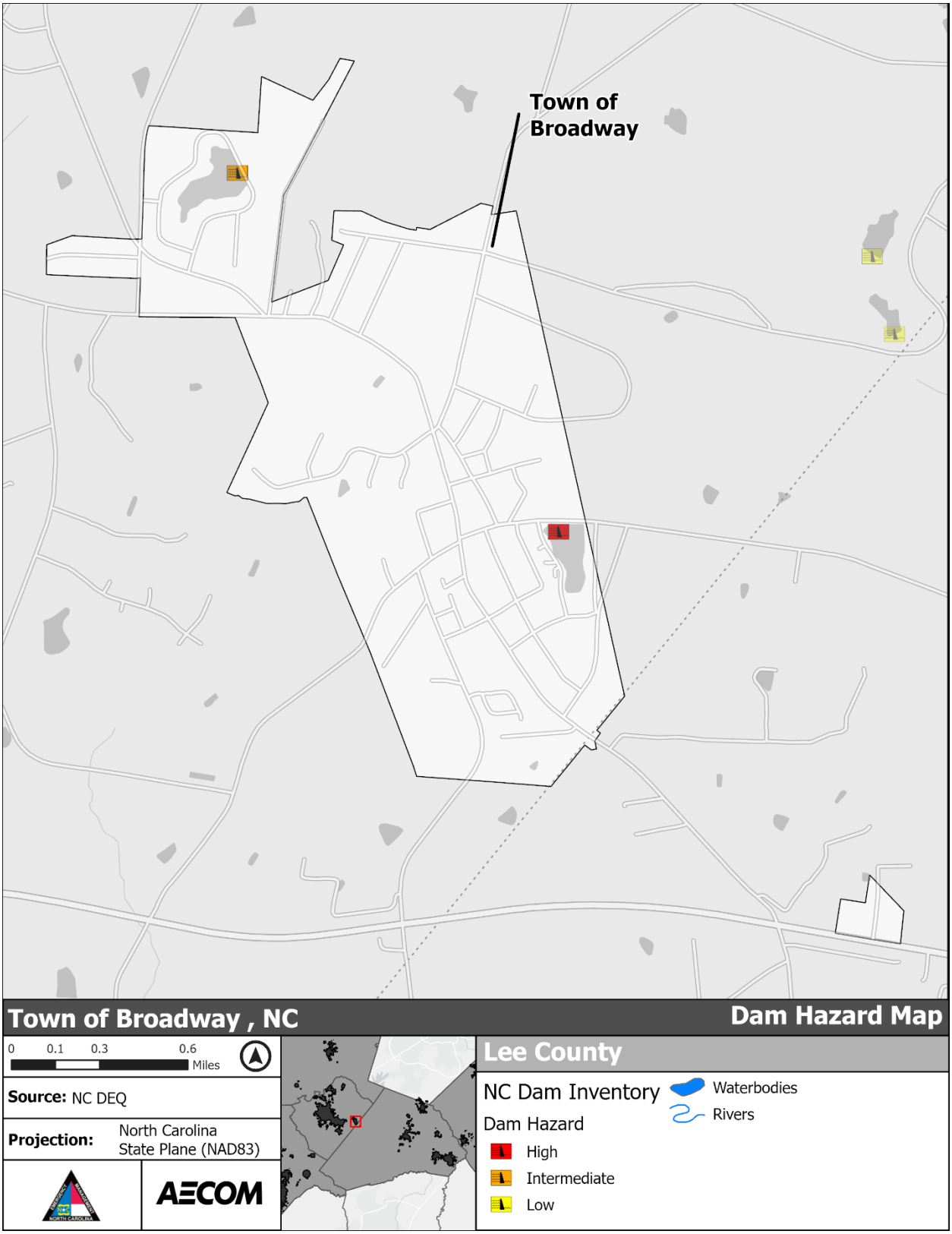


***Figure 5-296**: Dam Hazard Area – Town of Broadway*

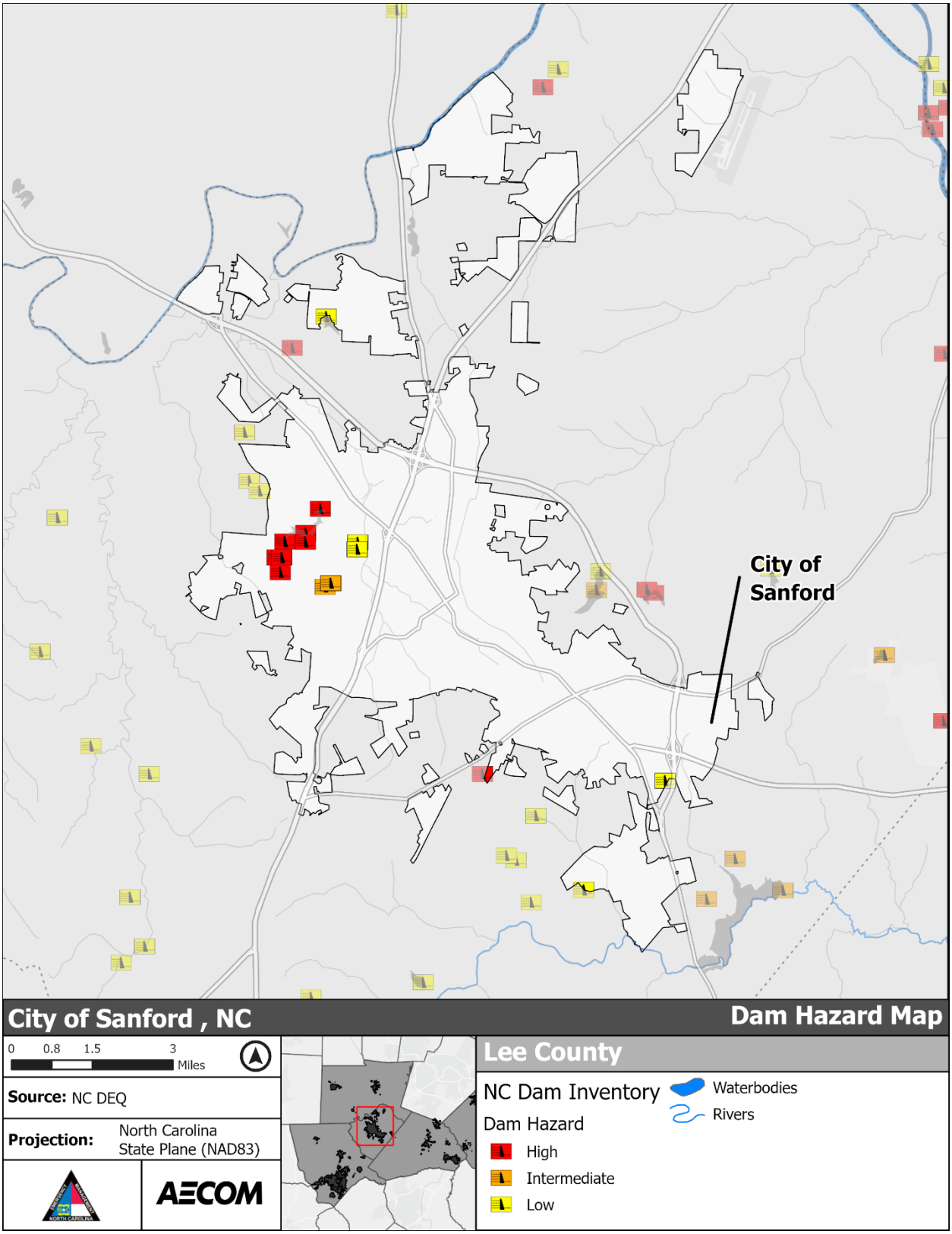


Figure 5-297: Dam Hazard Area – City of Sanford

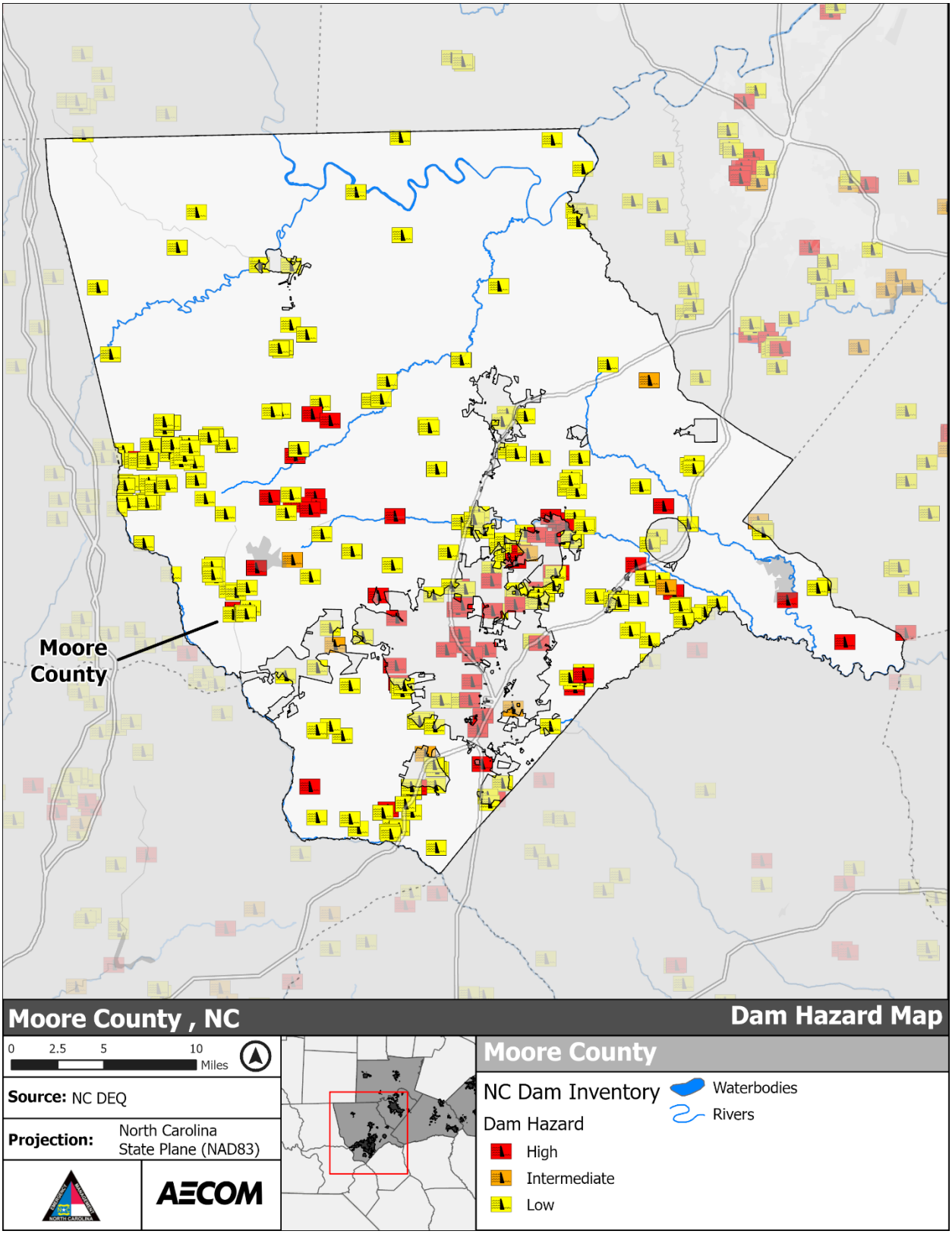


Figure 5-298: Dam Hazard Area – Moore County

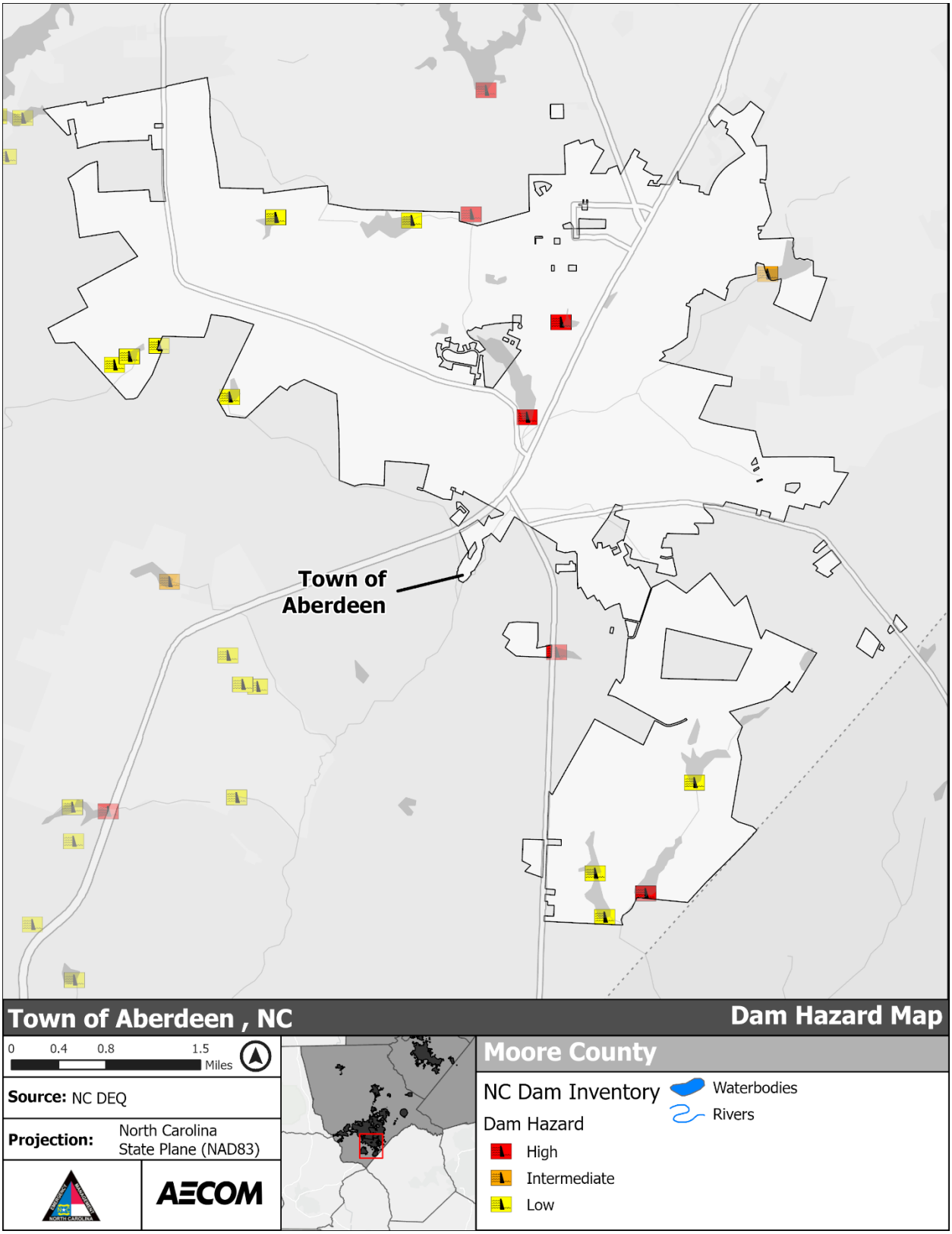


***Figure 5-299**: Dam Hazard Area – Town of Aberdeen*

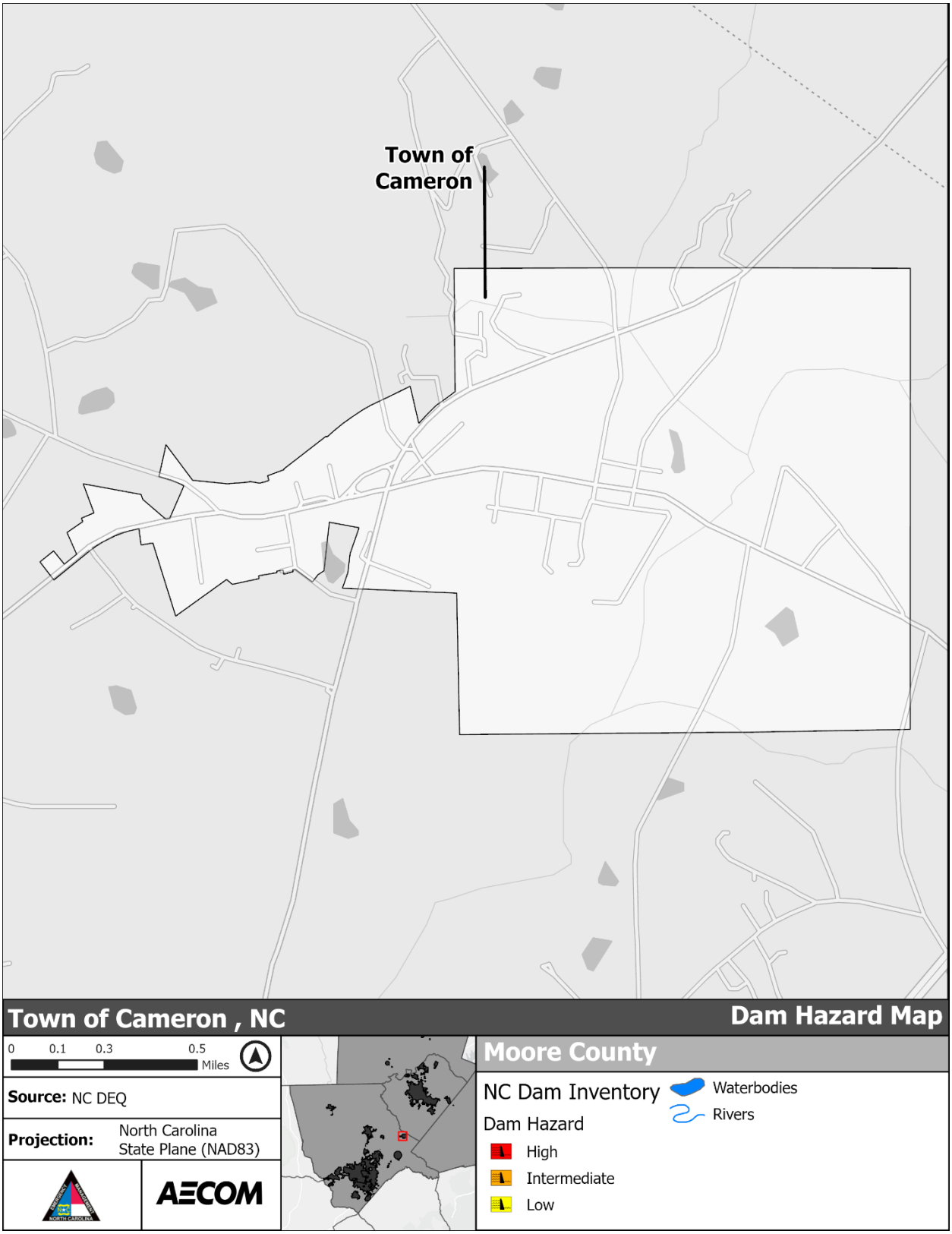


Figure 5-300: Dam Hazard Area - Town of Cameron

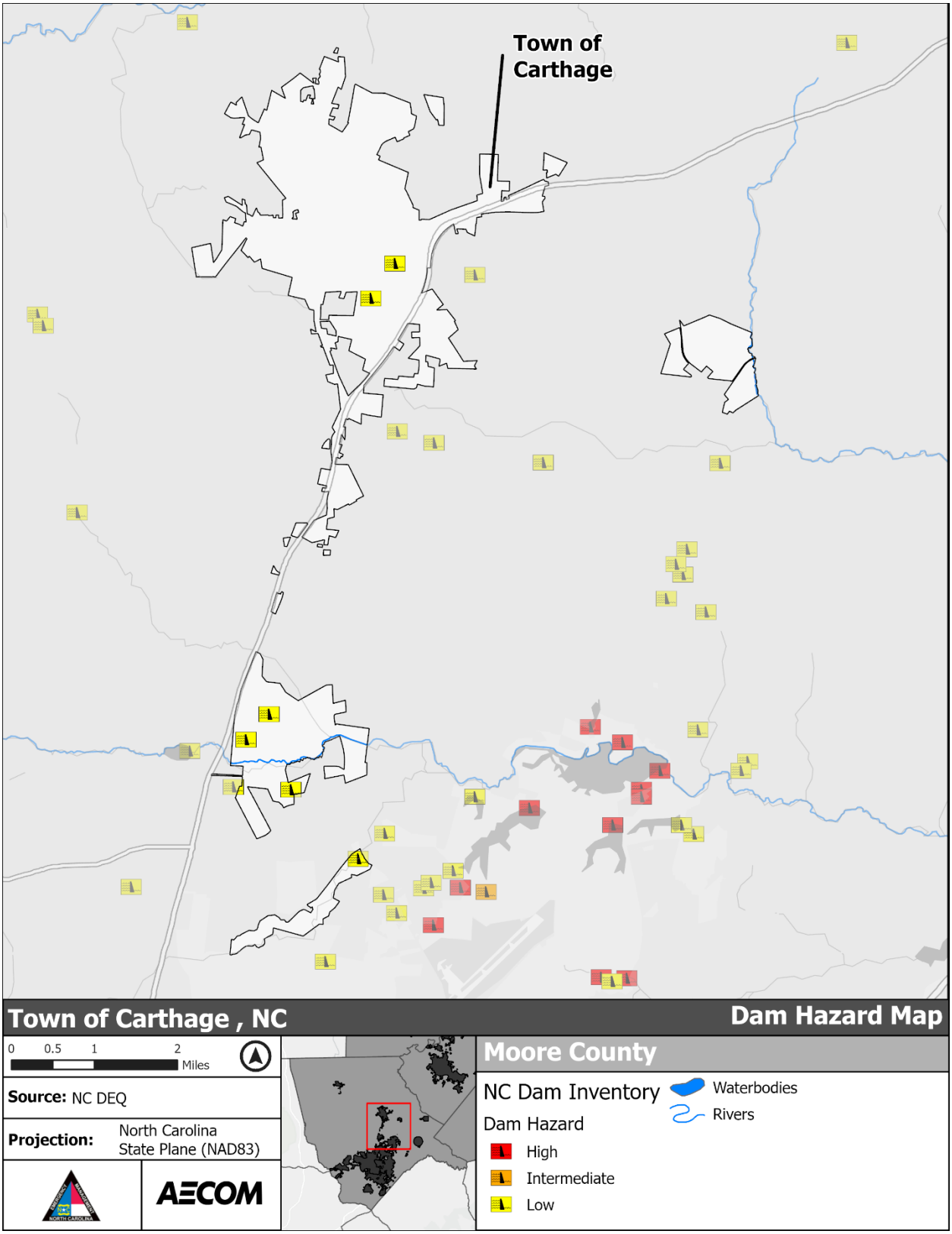


***Figure 5-301**: Dam Hazard Area – Town of Carthage*

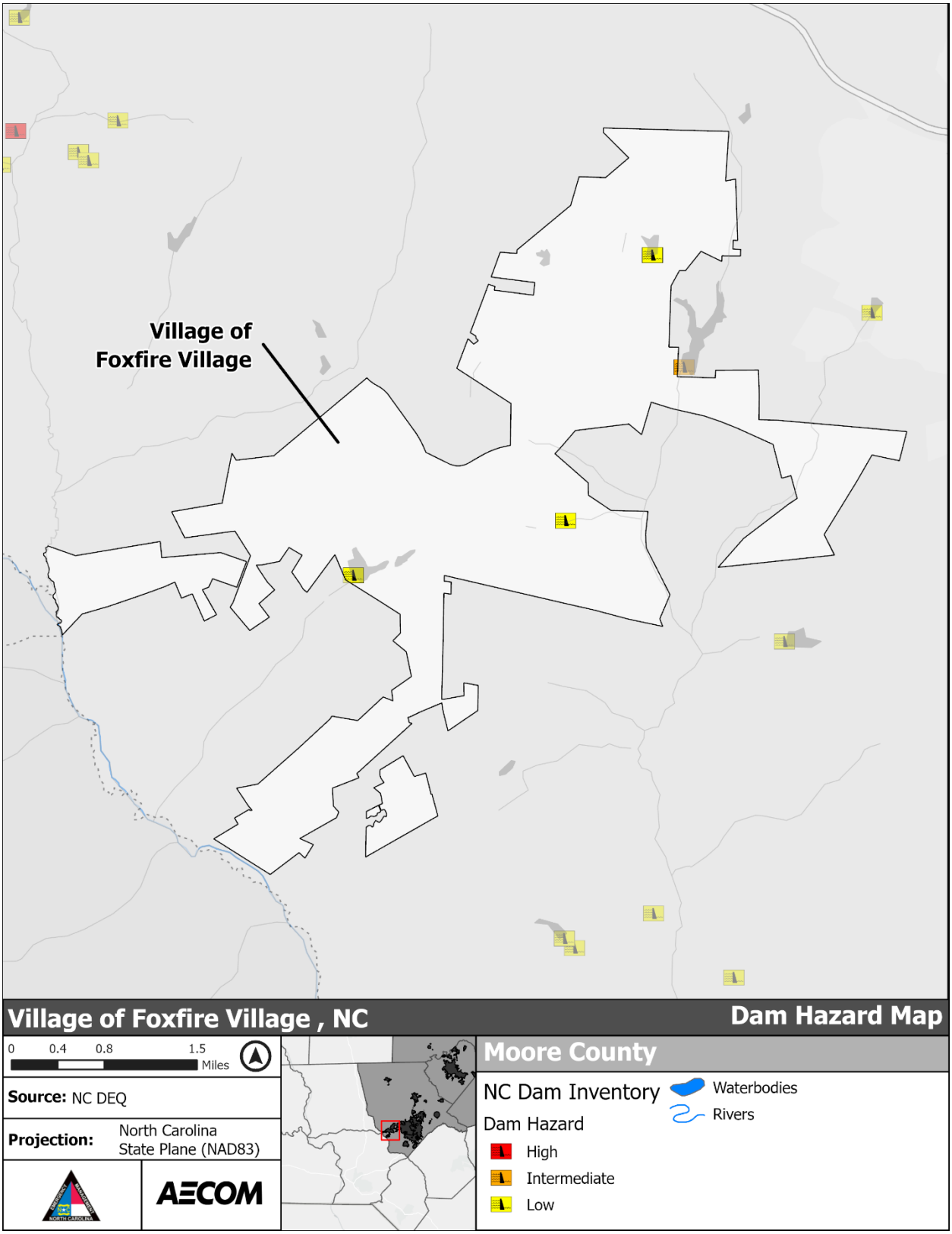


Figure 5-302: Dam Hazard Area – Foxfire Village

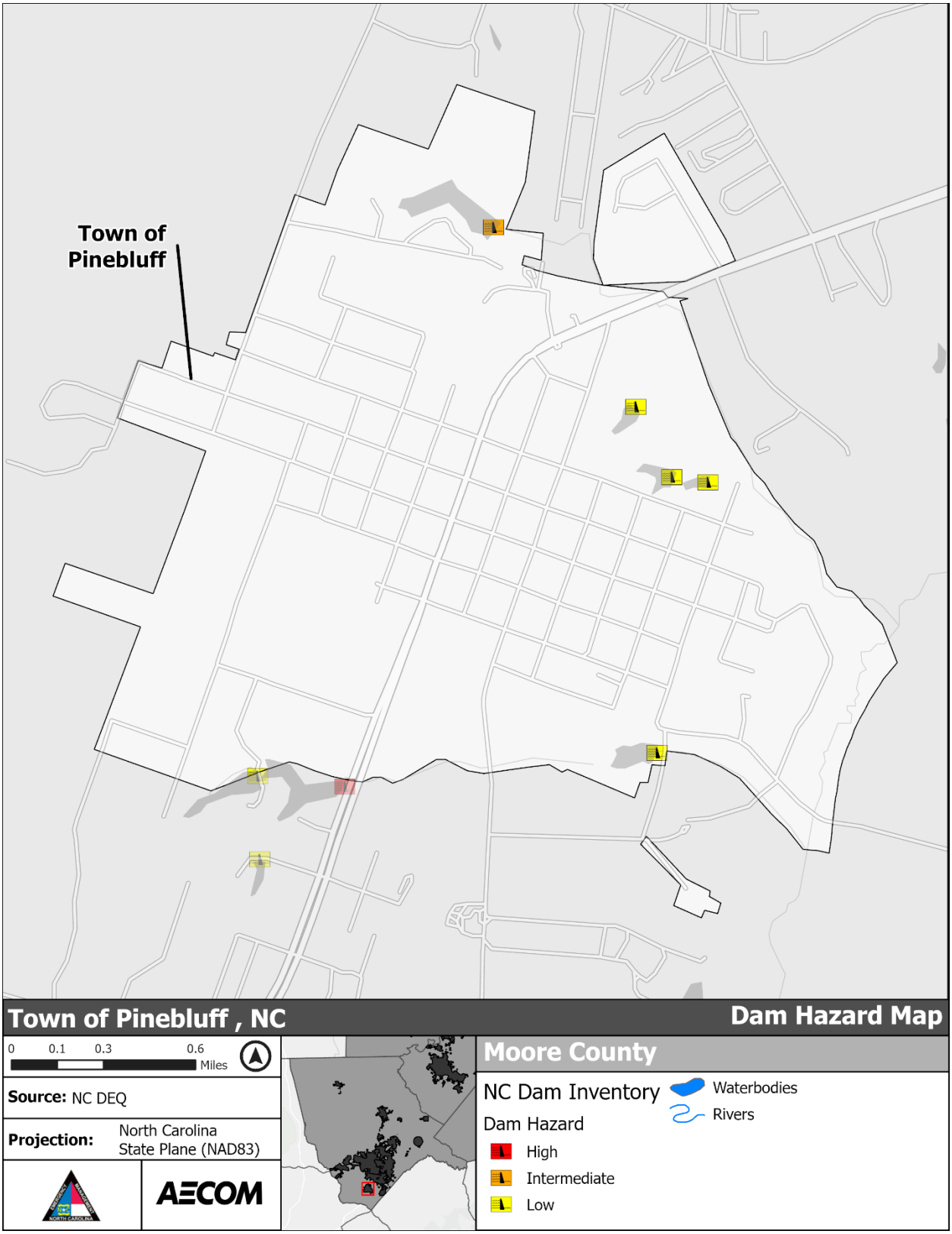


***Figure 5-303**: Dam Hazard Area – Town of Pinebluff*

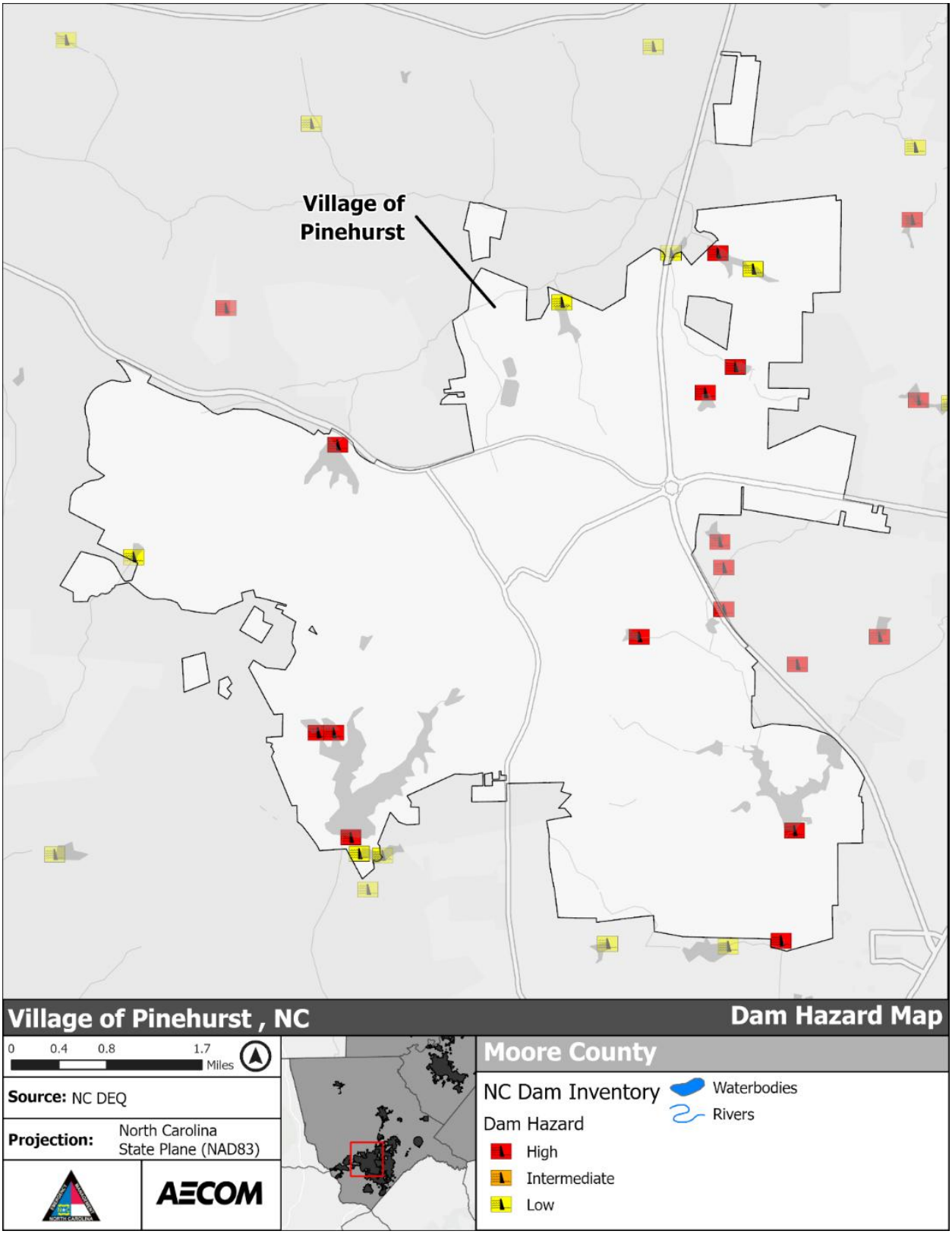


***Figure 5-304**: Dam Hazard Area – Village of Pinehurst*

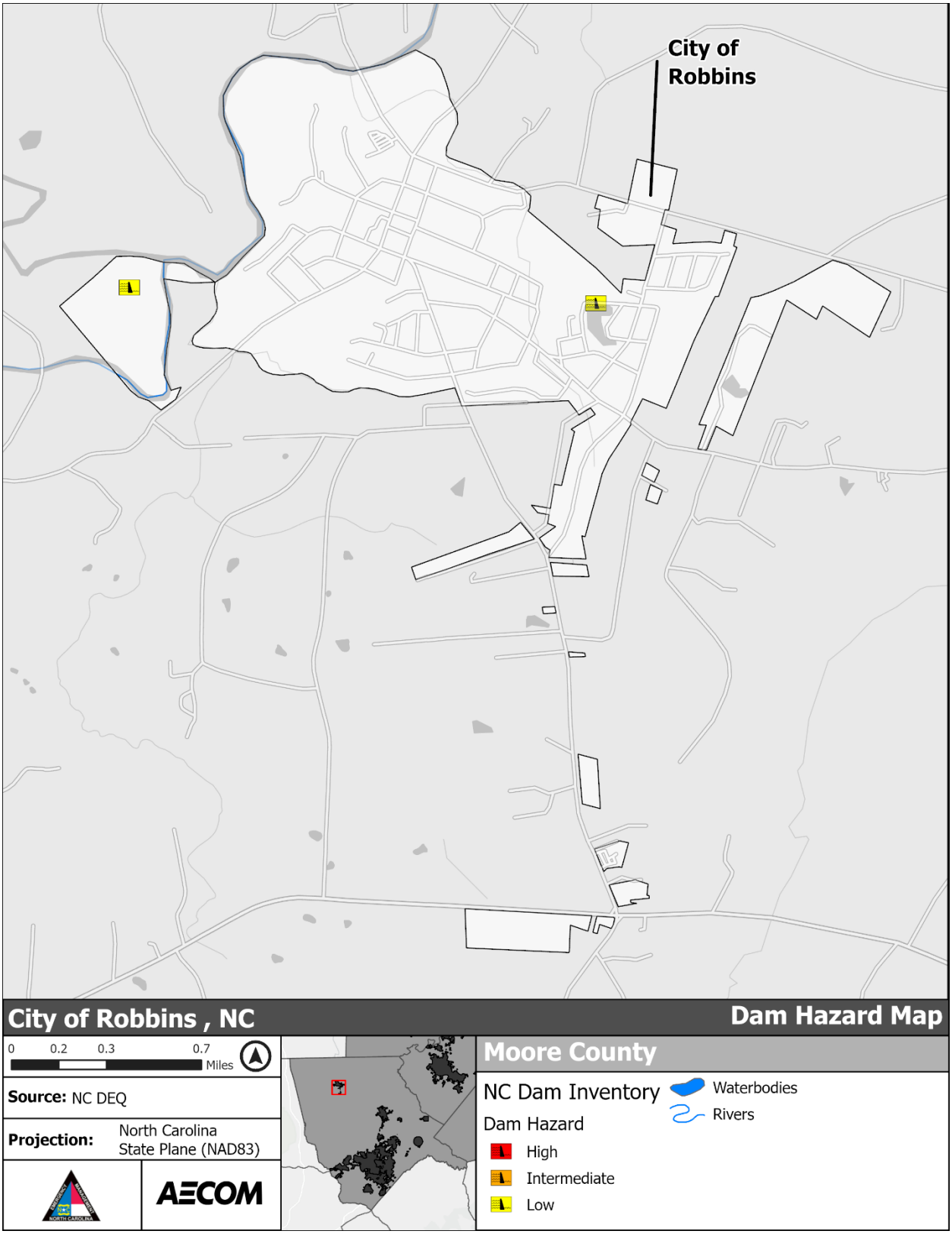


***Figure 5-305**: Dam Hazard Area – City of Robbins*

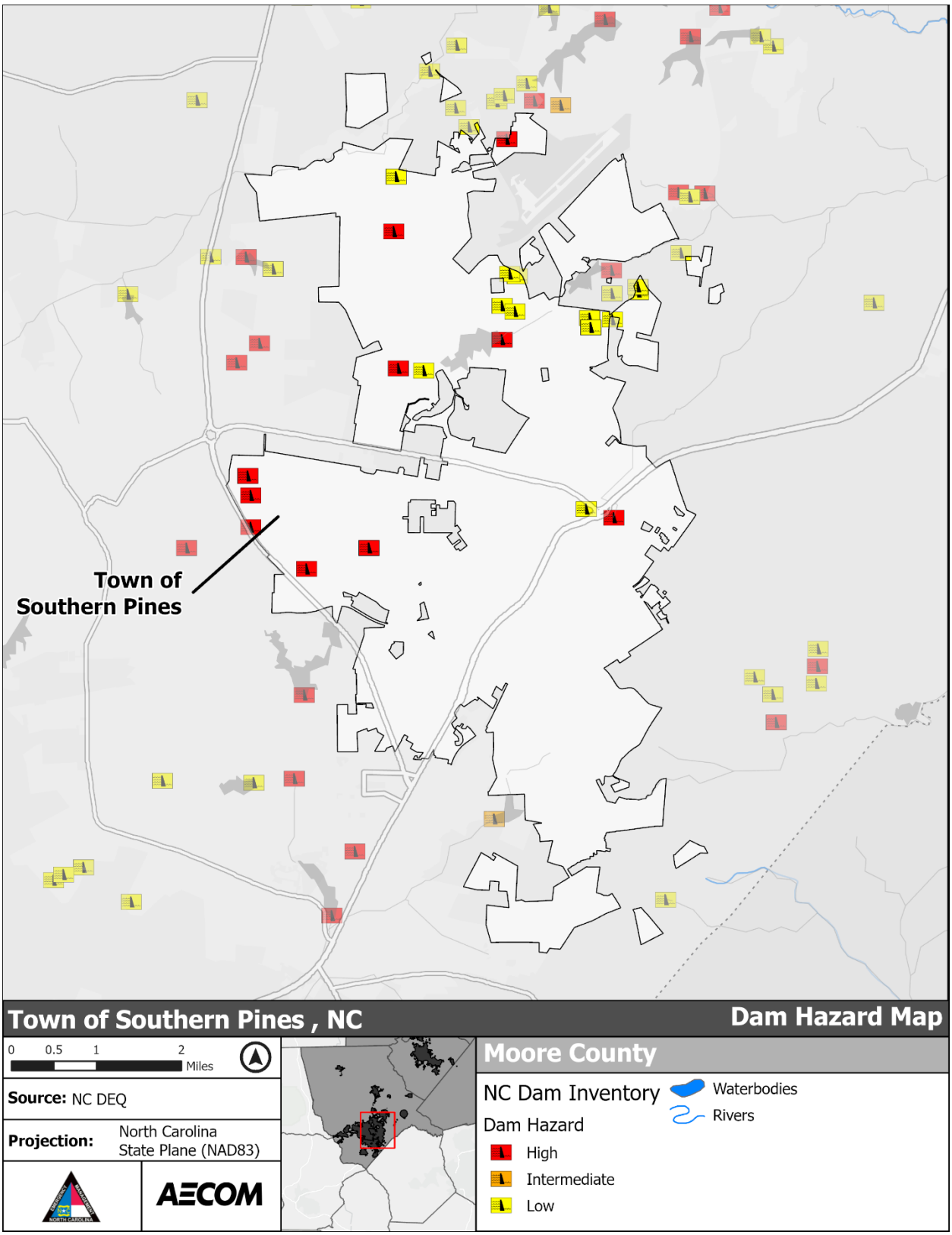


Figure 5-306: Dam Hazard Area – Town of Southern Pines

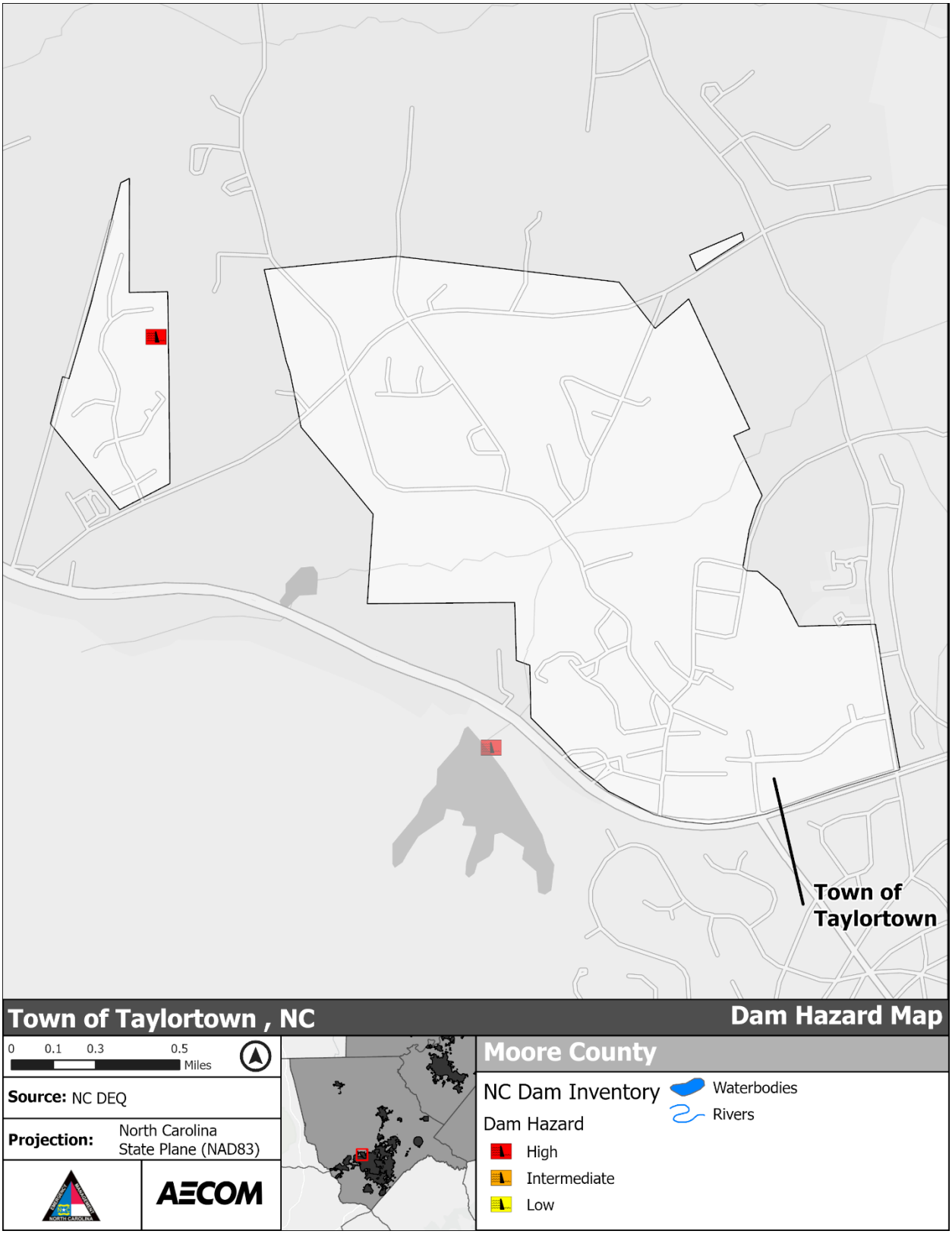


***Figure 5-307**: Dam Hazard Area – Town of Taylortown*

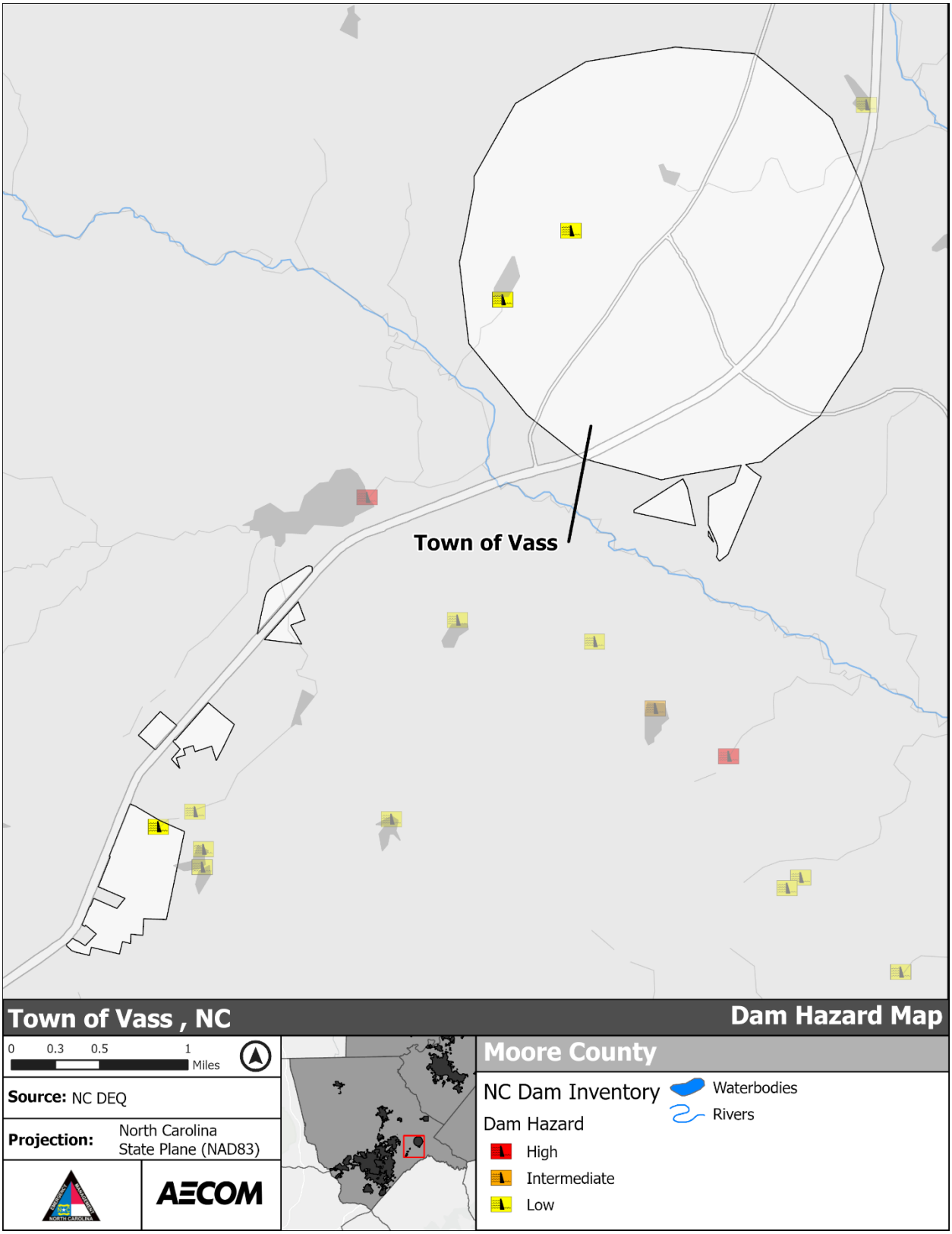


Figure 5-308: Dam Hazard Area – Town of Vass

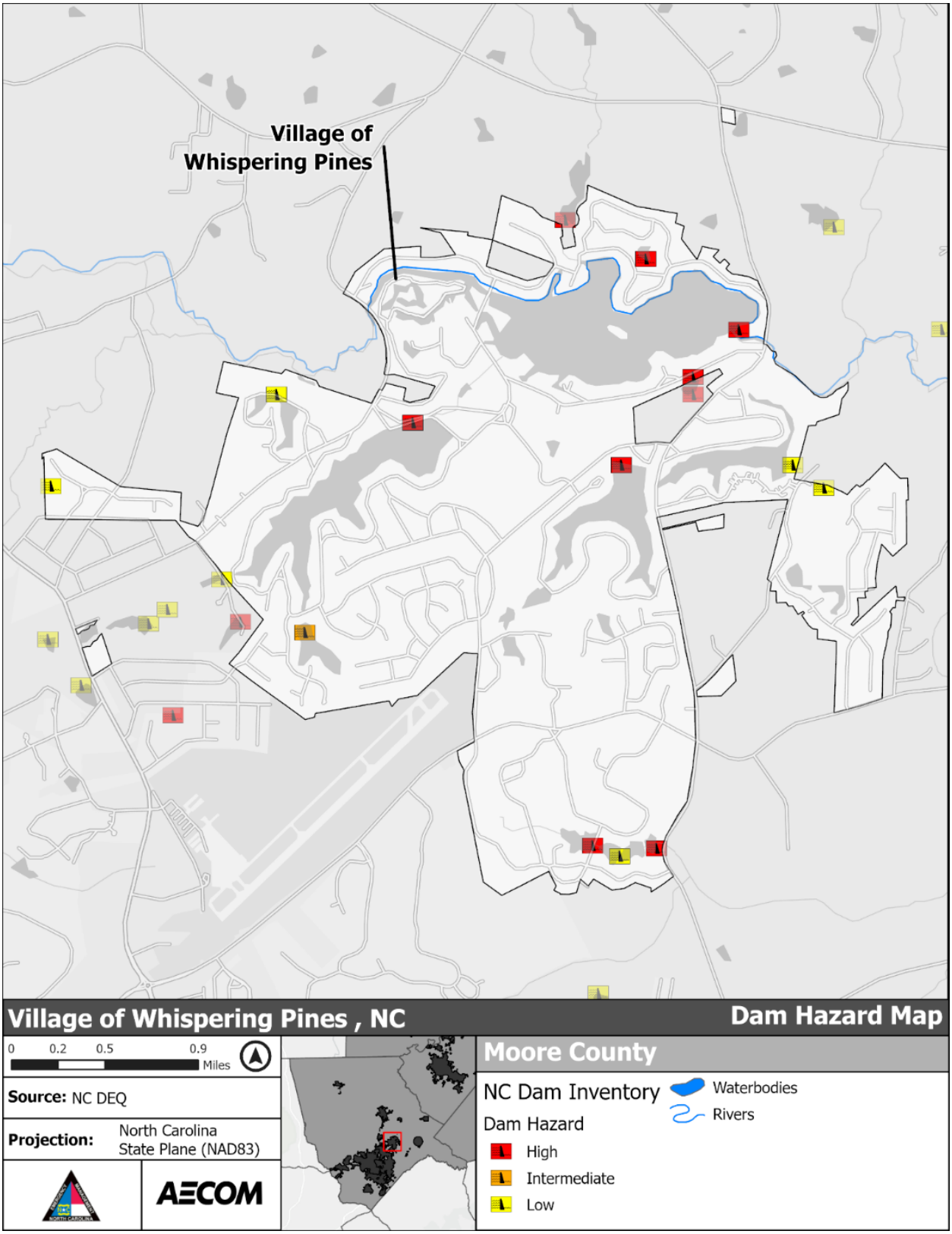


***Figure 5-309**: Dam Hazard Area – Village of Whispering Pines*

The figures below show counts and locations of high and intermediate hazard dams in each participating jurisdiction.

***Table 5-43**: Counts of High Hazard, Intermediate, and Low Hazard Dams by Jurisdiction*[106]

County	Jurisdiction	High	Intermediate	Low
Chatham	Goldston	-	-	-
	Pittsboro	1	2	2
	Siler City	-	-	-
	Chatham County (Unincorporated Area)	21	13	78
	Total	22	15	80
Harnett	Angier	1	1	1
	Erwin	-	-	1
	Coats	-	-	-
	Dunn	-	-	-
	Lillington	1	-	-
	Harnett County (Unincorporated Area)	28	7	80
	Total	30	8	82
Johnston	Archer Lodge	-	1	-
	Benson	-	-	-
	Clayton	1	-	3
	Four Oaks	-	-	-
	Kenly	-	-	-
	Micro	-	-	-
	Pine Level	-	-	-
	Princeton	-	-	-
	Selma	-	-	-
	Smithfield	-	-	1
	Wilson's Mill	-	-	-
	Johnston County (Unincorporated Area)	10	15	81
	Total	11	16	85
Lee	Broadway	1	1	-
	Sanford	7	2	3
	Lee County (Unincorporated Area)	12	5	36
	Total	20	8	39
Moore	Aberdeen	3	1	8
	Carthage	1	-	5
	Foxfire Village	-	-	3
	Pinebluff	-	1	4
	Pinehurst	10	-	4

[106] NC Department of Environmental Quality [NCDEQ]. (2024). North Carolina Dam Inventory [Dataset]. In NCDEQ Online GIS. NCDEQ. https://data-ncdenr.opendata.arcgis.com/

County	Jurisdiction	High	Intermediate	Low
	Robbins	-	-	3
	Southern Pines	11	-	11
	Taylortown	1	-	-
	Vass	-	-	3
	Whispering Pines	6	1	5
	Moore County (Unincorporated Area)	31	4	164
	Total	63	7	210
Planning Area Total		**146**	**54**	**496**

According to the NCDEQ Dam Inventory[107], there are 696 dams in the Cape Fear Region. Table 5-43 shows the dam location and the corresponding hazard ranking for each. Of these dams, 146 are classified as high hazard potential. These high hazard dams are summarized by county in Table 5-44.

***Table 5-44**: NC Dam Inventory Dam Hazards and Condition Rating[108]*

County	Dam Hazard	Fair	Not Rated	Poor	Satisfactory	Unsatisfactory	Total
Chatham	High	12	-	4	2	-	18
	Intermediate	3	1	2	5	-	11
	Low	15	1	1	8	-	25
	Total	30	2	7	15	-	54
Harnett	High	15	4	5		2	26
	Intermediate	2	-	1	1	-	4
	Low	33	4	10	4	-	51
	Total	50	8	16	5	2	81
Johnston	High	8	-	3		-	11
	Intermediate	4	-	1	4	-	9
	Low	14	-	3	8	-	25
	Total	26	-	7	12	-	45
Lee	High	12	-	2	-	-	14
	Intermediate	7	-		-	-	7
	Low	13	1	1	-	-	15
	Total	32	1	3	-	-	36
Moore	High	44	5	8	-	-	57
	Intermediate	2	-	-	1	1	4
	Low	106	7	3	1		117
	Total	152	12	11	2	1	178
Total		**290**	**23**	**44**	**34**	**3**	**394**

[107] NC Department of Environmental Quality [NCDEQ]. (2024). North Carolina Dam Inventory [Dataset]. In NCDEQ Online GIS. NCDEQ. https://data-ncdenr.opendata.arcgis.com/

[108] NC Department of Environmental Quality [NCDEQ]. (2024). North Carolina Dam Inventory [Dataset]. In NCDEQ Online GIS. NCDEQ. https://data-ncdenr.opendata.arcgis.com/

Table 5-45: Dam Status of Dams in the planning area from the NC Dam Inventory[109]

County	Breached	Drained	Dry Detention	Failed	Impounding	Proposed	Reclaimed
Chatham	2	2	1	-	109	1	2
Harnett	7	1	-	1	107	-	4
Johnston	6	-	-	-	105	-	1
Lee	1	-	-	-	66	-	-
Moore	10	3	-	1	264	-	2
Total	**26**	**6**	**1**	**2**	**651**	**1**	**9**

[109] NC Department of Environmental Quality [NCDEQ]. (2024). North Carolina Dam Inventory [Dataset]. In NCDEQ Online GIS. NCDEQ. https://data-ncdenr.opendata.arcgis.com/

__Table 5-46__: Dams in the planning area and their name, State ID, status, hazard type, condition, inspection dates, owner types and the jurisdictional boundaries that the dams may fall within[110]. Please note that any blanks listed in this table are where no information was available from the NC Dam Inventory.

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Rosemont Dam	CHATH-067	IMPOUNDING	High	Chatham	Fair	2024-11-21	11/21/2026	Private	-
Legacy Pond #2 Dam	CHATH-068	IMPOUNDING	High	Chatham	Fair	2023-11-16	11/16/2025	Private	-
Briar Chapel Reclamation Facility Central Pond Dam	CHATH-069	IMPOUNDING	Low	Chatham		2001-11-26	11/26/2006	Private	-
Briar Chapel Reclamation Facility 5-Day Upset Pond Dam	CHATH-070	IMPOUNDING	Low	Chatham	Satisfactory	2021-03-03	03/03/2026	Private	-
Old 421 Dam	CHATH-071	IMPOUNDING	High	Chatham	Fair	2024-11-21	11/21/2026	Private	-
Cape Fear 1956 Ash Basin Dam	CHATH-072	IMPOUNDING	Intermediate	Chatham	Fair	2025-02-14	02/14/2030	Private	-
Cape Fear 1963 Ash Basin Dam	CHATH-073	DRY DETENTION	High	Chatham	Fair	2025-02-14	02/14/2027	Private	-
Cape Fear 1970 Ash Basin Dam	CHATH-074	IMPOUNDING	Low	Chatham	Fair	2013-07-11	07/11/2014	Private	-
Cape Fear 1978 Ash Basin Dam	CHATH-075	RECLAIMED	Low	Chatham	Fair	2022-04-29	04/29/2023	-	-
Cape Fear 1985 Ash Basin Dam	CHATH-076	DRAINED	High	Chatham	Poor	2024-05-01	05/01/2025	Utility	-
Cape Fear Flood Control Dam	CHATH-077	DRAINED	High	Chatham	Poor	2024-05-01	05/01/2025	Utility	-
Legacy Irrigation Storage Pond Dam	CHATH-078	IMPOUNDING	High	Chatham	Fair	2024-05-01	05/01/2025	Utility	-

[110] NC Department of Environmental Quality [NCDEQ]. (2024). North Carolina Dam Inventory [Dataset]. In NCDEQ Online GIS. NCDEQ. https://data-ncdenr.opendata.arcgis.com/

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Governors Club Dam #8	CHATH-079	IMPOUNDING	High	Chatham	Fair	2024-05-01	05/01/2025	Utility	-
Shearon Harris Nuclear Power Plant Main Dam	CHATH-080	BREACHED	Low	Chatham	Satisfactory	2015-06-10	02/21/2020	-	-
Beechmast Pond Dam	CHATH-081	IMPOUNDING	Low	Chatham	Fair	2019-11-20	11/20/2024	Private	-
Horton's Pond Dam	CHATH-082	IMPOUNDING	High	Chatham	Fair	2024-11-21	11/21/2026	Private	-
Mann Irrigation Pond Dam	CHATH-083	IMPOUNDING	Intermediate	Chatham	-	-	-	Utility	-
Pittsboro Place Dam	CHATH-084	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Vinfast Dry Pond Dam #1	CHATH-085	IMPOUNDING	High	Chatham	Poor	2023-03-06	01/01/2025	Federal	-
Vinfast Dry Pond Dam #2	CHATH-086	IMPOUNDING	Intermediate	Chatham	-	-	-	Private	-
Vinfast Dry Pond Dam #3	CHATH-087	IMPOUNDING	Low	Chatham	Satisfactory	2020-10-09	01/01/9999	Private	Pittsboro
Vinfast Dry Pond Dam #4	CHATH-088	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Vinfast Dry Pond Dam #5	CHATH-089	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Vinfast Dry Pond Dam #6	CHATH-090	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Horil Dam	CHATH-091	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Riggsbee Dam	CHATH-092	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Knobeloch Dam	CHATH-093	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Culler Dam	CHATH-094	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Brooks Dam #1	CHATH-095	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Brooks Dam #2	CHATH-096	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Potterstone Village Dam	CHATH-097	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Annexation Tract Dam	CHATH-098	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Reeves Dam #2	CHATH-099	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Ashford Lake Dam	CHATH-100	IMPOUNDING	High	Chatham	-	-	-	Private	Pittsboro

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
B. Everett Jordan Lake Dam	CHATH-101	IMPOUNDING	High	Chatham	Fair	2023-10-17	0/17/2024	Private	-
Wood Lake Dam	CHATH-102	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Rocky River Reservoir Dam	CHATH-103	IMPOUNDING	Low	Chatham	-	-	-	Private	Pittsboro
Clapp Lake Dam	CHATH-001	IMPOUNDING	High	Chatham	-	2010-07-27	07/27/2011	Federal	-
Siler City Water Supply Dam	CHATH-002	IMPOUNDING	Low	Chatham	Fair	2023-03-07	01/01/2026	Private	-
Charles L. Turner Reservoir Dam	CHATH-003	IMPOUNDING	Low	Chatham	Satisfactory	2023-03-08	01/01/2026	Local Gov	-
Hackney Millpond Dam	CHATH-004	IMPOUNDING	Low	Chatham	Fair	2023-03-08	01/01/2025	Private	-
Roscoe Lake Dam	CHATH-005	IMPOUNDING	High	Chatham	Poor	2025-01-15	01/15/2027	Local Gov	-
Baldwin Millpond Dam	CHATH-006	IMPOUNDING	High	Chatham	Satisfactory	2025-01-15	01/15/2027	Local Gov	-
Reeve's Lake Dam	CHATH-007	IMPOUNDING	Low	Chatham	-	1976-06-23	09/09/9999	Private	-
Pensbroso Acres Lake	CHATH-008	IMPOUNDING	Low	Chatham	Satisfactory	2014-02-18	11/17/2002	Private	-
Thomas Dam	CHATH-009	IMPOUNDING	Low	Chatham	-	1976-06-02	09/09/9999	Private	-
Odell Lake Dam	CHATH-010	RECLAIMED	Low	Chatham	-	1980-06-24	06/24/1985	-	-
Bright Lake Dam	CHATH-011	BREACHED	Low	Chatham	Fair	2021-04-26	04/26/2025	-	-
Faircloth Lake Dam	CHATH-104	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Atwater-Henson Dam	CHATH-012	IMPOUNDING	Low	Chatham	-	1980-06-24	09/09/9999	Utility	-
Starr Dam	CHATH-013	IMPOUNDING	Low	Chatham	Fair	2023-03-06	01/01/2026	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Flack Dam	CHATH-014	IMPOUNDING	Low	Chatham	Fair	2022-01-25	01/25/2026	Private	-
Armadillo-Smith Pond Dam	CHATH-105	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Vinfast Phase 1B Dry Pond Dam 1A	CHATH-106	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Cedar Village Lake Dam	CHATH-107	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Vinfast Phase 1B Dry Pond Dam 2A	CHATH-108	IMPOUNDING	Low	Chatham	-	-	-	Private	-
King Lake Dam	CHATH-109	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Townsend Foods Dam	CHATH-015	IMPOUNDING	Low	Chatham	Fair	2021-04-26	04/26/2026	Private	-
Hadley Millpond Dam	CHATH-110	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Pittsboro Water Supply Dam Upper	CHATH-016	IMPOUNDING	Intermediate	Chatham	Fair	2023-12-18	12/18/2028	Private	-
Pittsboro Water Supply Dam Lower	CHATH-017	IMPOUNDING	Low	Chatham	Satisfactory	2024-04-09	04/09/2029	Private	-
Lockville Hydro Dam	CHATH-018	IMPOUNDING	Low	Chatham	Not Rated	2012-01-31	09/09/1999	Private	-
Vinfast Phase 1B Dry Pond Dam 3B	CHATH-019	IMPOUNDING	Intermediate	Chatham	Not Rated	2023-12-19	12/19/2028	Local Gov	Pittsboro
Buckhorn Lake Dam	CHATH-020	IMPOUNDING	Intermediate	Chatham	Fair	2023-12-19	12/19/2028	Local Gov	Pittsboro
Crissman Pond Dam	CHATH-021	IMPOUNDING	Intermediate	Chatham	Poor	2023-04-19	01/01/1999	Utility	-
Seymour Farm Dam	CHATH-111	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Capital Kiwannis Club Lake Dam	CHATH-022	IMPOUNDING	Low	Chatham	Fair	2021-04-15	04/15/2026	Utility	-
Moore Pond Dam	CHATH-112	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Castleberry Lake Dam	CHATH-113	IMPOUNDING	Low	Chatham	-	-	-	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Carter Lake Dam #1	CHATH-023	IMPOUNDING	Low	Chatham	Fair	2022-03-24	03/24/2027	Private	-
Camp Marantha Lake Dam	CHATH-114	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Red Bud Dam	CHATH-024	IMPOUNDING	Low	Chatham	-	2002-02-28	02/28/2007	Private	-
Markham Plantation Dam	CHATH-025	IMPOUNDING	Low	Chatham	Satisfactory	2012-01-31	03/22/2007	Private	-
Wendy Hill Dam	CHATH-026	IMPOUNDING	Low	Chatham	Fair	2022-01-13	01/13/2027	Local Gov	-
Apex Nursery Dam	CHATH-027	IMPOUNDING	Intermediate	Chatham	Satisfactory	2025-02-14	02/14/2030	Private	-
Rice Pond Dam	CHATH-028	IMPOUNDING	Low	Chatham	-	1999-09-09	09/09/2004	Private	-
White Pond Dam	CHATH-029	IMPOUNDING	High	Chatham	Satisfactory	2025-02-14	02/14/2027	Private	-
Reeves Dam	CHATH-030	IMPOUNDING	Low	Chatham	-	2002-02-28	02/28/2007	Private	-
Wolfspeed Storm Pond Dam #1	CHATH-031	IMPOUNDING	Low	Chatham	Satisfactory	2014-01-09	01/09/2019	Private	-
Culberson Dam	CHATH-032	IMPOUNDING	Intermediate	Chatham	Satisfactory	2013-05-15	05/15/2016	Private	-
Tilly Dam	CHATH-033	IMPOUNDING	Low	Chatham	Fair	2023-03-07	01/01/2025	Private	-
Johnson Pond Dam	CHATH-115	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Wolfspeed Storm Pond Dam #2	CHATH-034	IMPOUNDING	Low	Chatham	-	1997-03-24	03/24/2002	Private	-
Collins Dam #2	CHATH-039	IMPOUNDING	Low	Chatham	-	1997-01-29	01/29/2002	Private	-
Wolfspeed Storm Pond Dam #3	CHATH-044	IMPOUNDING	Intermediate	Chatham	Poor	2023-12-19	12/19/2028	Private	-
Phillips Dam	CHATH-116	IMPOUNDING	Low	Chatham	-	-	-	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Wolfspeed Storm Pond Dam #4	CHATH-045	IMPOUNDING	Low	Chatham	-	2002-03-22	03/22/2007	Private	-
Wolfspeed Storm Pond Dam #5	CHATH-117	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Whatley Land Pond Dam	CHATH-046	IMPOUNDING	Low	Chatham	-	2002-03-22	03/22/2007	Private	-
New Elam Church Dam	CHATH-118	PROPOSED	High	Chatham	-	-	-	Private	-
Jack Bennett Dam	CHATH-119	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Moncure Pittsboro Road Dam	CHATH-120	IMPOUNDING	Low	Chatham	-	-	-	Private	-
Guitar Dam	CHATH-121	IMPOUNDING	Intermediate	Chatham	-	-	-	Private	-
Seymour Farm Dam	CHATH-122	IMPOUNDING	Intermediate	Chatham	-	-	-	Private	-
Siler City Country Club Dam	CHATH-123	IMPOUNDING	Low	Chatham	Poor	2024-02-21	02/21/2029	State	-
Paschal Pond Dam	CHATH-124	IMPOUNDING	High	Chatham	-	-	-	Private	-
Ted Koenig Dam	CHATH-125	IMPOUNDING	Low	Chatham	-	-	-	Private	-
The Peninsula at Amberly Dam	CHATH-047	IMPOUNDING	Low	Chatham	Fair	2023-03-07	01/01/2026	Private	-
W.L. Fuller Pond Dam	CHATH-048	IMPOUNDING	Low	Chatham	-	2002-03-22	03/22/2007	Private	-
James Mckercher Pond Dam	CHATH-049	IMPOUNDING	Low	Chatham	-	1997-01-29	01/29/2002	Private	-
J.G. Williams Dam	CHATH-050	IMPOUNDING	Intermediate	Chatham	Satisfactory	2022-04-20	04/20/2032	Private	-
Siler City Country Club Dam	CHATH-051	IMPOUNDING	Low	Chatham	-	2002-02-28	02/28/2007	Private	-
Phillips Lake Dam	CHATH-052	IMPOUNDING	Low	Chatham	-	2002-02-28	02/28/2007	Private	-
Mclaughlin Dam	CHATH-053	IMPOUNDING	Low	Chatham	-	1997-11-17	11/17/2002	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Hackney Pond Dam	CHATH-054	IMPOUNDING	Low	Chatham	-	1995-07-03	07/03/2000	Private	-
Moore Pond Dam	CHATH-055	IMPOUNDING	Low	Chatham	-	1997-12-11	12/11/2002	Private	-
De St Aubin Pond Dam	CHATH-056	IMPOUNDING	Low	Chatham	-	2002-02-25	02/25/2007	Private	-
Governors Club Dam #3	CHATH-057	IMPOUNDING	Low	Chatham	Fair	2021-03-03	03/03/2026	Private	-
Governors Club Dam #4	CHATH-058	IMPOUNDING	Low	Chatham	-	2002-03-21	03/21/2007	Private	-
Governors Club Dam #1	CHATH-059	IMPOUNDING	Low	Chatham	-	2002-03-22	03/22/2007	Private	-
New Hope Trails Dam	CHATH-060	IMPOUNDING	High	Chatham	Fair	2024-11-21	11/21/2026	Private	-
Naylor Dam	CHATH-061	IMPOUNDING	High	Chatham	Fair	2024-11-21	11/21/2026	Private	-
Cronk Dam	CHATH-062	IMPOUNDING	High	Chatham	Fair	2024-11-21	11/21/2026	Private	-
Governors Club Dam #5	CHATH-063	IMPOUNDING	Intermediate	Chatham	Satisfactory	2018-09-18	01/15/2018	Private	-
Medows Pond Dam	CHATH-064	IMPOUNDING	Intermediate	Chatham	Satisfactory	2023-03-07	01/01/2026	Private	-
Wallace Pond Dam	CHATH-065	IMPOUNDING	Low	Chatham	-	1990-10-25	09/09/9999	Private	-
Senter Pond Dam	CHATH-066	IMPOUNDING	High	Chatham	Fair	2023-11-16	11/16/2025	Private	-
Elliot Sand & Gravel Plant Dam	HARNE-001	IMPOUNDING	Low	Harnett	Fair	2012-07-16	01/01/2022	Private	-
Royal Pond Dam	HARNE-002	IMPOUNDING	Low	Harnett	Fair	2012-05-04	05/04/2017	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Olde Farm Lake Dam	HARNE-003	IMPOUNDING	Low	Harnett	Fair	2012-05-04	05/04/2017	Private	-
Mckinney Pond Dam	HARNE-004	IMPOUNDING	Low	Harnett	Not Rated	2012-05-01	01/01/2099	Private	-
Watkins Pond Dam	HARNE-005	IMPOUNDING	Low	Harnett	Fair	2012-07-09	01/01/2022	Private	-
Rollins Pond Dam	HARNE-006	FAILED	High	Harnett	Not Rated	2016-09-15	04/15/2016	Private	-
Becker Sand & Gravel Dam	HARNE-007	IMPOUNDING	Low	Harnett	Fair	2012-05-04	05/04/2017	Private	-
Clayton Pond Dam	HARNE-008	IMPOUNDING	High	Harnett	Fair	2024-03-08	03/08/2026	Private	-
Harrington Pond Dam	HARNE-009	IMPOUNDING	Low	Harnett	Poor	2012-05-17	05/13/2033	Private	-
Dewar Pond Dam	HARNE-010	RECLAIMED	Low	Harnett	-	2010-12-02	12/02/2015		-
Jones Pond Dam	HARNE-011	IMPOUNDING	Low	Harnett	Fair	2012-07-09	01/01/2022	Private	-
Dewar Pond Dam	HARNE-012	IMPOUNDING	Low	Harnett	Poor	2012-05-07	05/07/2033	Private	-
Lutheran Synod Pond Dam	HARNE-013	IMPOUNDING	Low	Harnett	-	2000-04-19	01/02/2005	Private	-
Stevens Pond Dam	HARNE-014	IMPOUNDING	Low	Harnett	Fair	2012-05-04	05/04/2017	Private	-
Patterson Pond Dam	HARNE-015	IMPOUNDING	Low	Harnett	Fair	2012-05-04	05/04/2017	Private	-
Bond Pond Dam	HARNE-016	IMPOUNDING	Low	Harnett	Poor	2013-05-28	05/28/2033	Private	-
Dove Lake Dam	HARNE-017	IMPOUNDING	Low	Harnett	Fair	2012-05-04	05/04/2017	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Nichols Pond Dam	HARNE-018	IMPOUNDING	Low	Harnett	Fair	2012-05-04	05/04/2017	Private	-
Johnson Pond Dam	HARNE-019	IMPOUNDING	Low	Harnett	Fair	2012-10-25	10/25/2022	Private	-
Lake Hurley Dam	HARNE-020	IMPOUNDING	Low	Harnett	Poor	2012-05-10	05/10/2032	Private	-
Lasater Pond Dam	HARNE-021	IMPOUNDING	Low	Harnett	Fair	2022-02-15	02/15/2027	Private	-
Langdon Pond Dam	HARNE-022	BREACHED	Low	Harnett	Fair	2013-07-29	04/01/2099	-	-
Mann Pond Dam	HARNE-023	IMPOUNDING	Low	Harnett	-	2009-03-05	03/05/2014	Federal	-
Brown Pond Dam	HARNE-024	IMPOUNDING	Low	Harnett	Not Rated	2012-05-01	01/01/2099	Private	-
McLamb Pond Dam	HARNE-025	BREACHED	High	Harnett	Not Rated	2023-02-02	02/02/2028	-	-
Overhills #1 Dam	HARNE-026	IMPOUNDING	Low	Harnett	Not Rated	2012-05-01	01/10/2099	Private	-
Harnett Metals Dam	HARNE-027	IMPOUNDING	Low	Harnett	-	2010-12-03	12/03/2015	Private	-
Blue Brothers Lake Dam	HARNE-028	IMPOUNDING	Low	Harnett	Not Rated	2012-05-01	01/01/2099	Private	-
Olive Lake Dam	HARNE-029	IMPOUNDING	Low	Harnett	Satisfactory	2014-02-04	02/04/2024	Federal	-
West Lake Dam	HARNE-030	DRAINED	High	Harnett	Poor	2025-02-27	02/27/2026	Private	-
Keith Thomas Hog Lagoon Dam	HARNE-031	IMPOUNDING	Intermediate	Harnett	Poor	2023-08-04	08/04/2024	Private	-
Lake Lindsay Dam	HARNE-032	IMPOUNDING	Low	Harnett	Poor	2013-05-28	05/27/2033	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Blanchard Lake Dam #1	HARNE-033	IMPOUNDING	Low	Harnett	Fair	2022-02-22	02/22/2027	Private	-
Blanchard Lake Dam #2	HARNE-034	IMPOUNDING	Low	Harnett	Poor	2013-05-28	05/28/2033	Private	-
Blanchard Lake Dam #3	HARNE-035	IMPOUNDING	High	Harnett	-	2009-03-05	03/05/2014	Federal	-
Roberts Lake Dam	HARNE-036	IMPOUNDING	High	Harnett	Poor	2024-02-14	02/14/2025	Private	-
Buffalo Lake Dam	HARNE-037	IMPOUNDING	High	Harnett	Poor	2024-02-14	02/14/2025	Private	-
Lake Carolina Dam	HARNE-038	IMPOUNDING	High	Harnett	Poor	2024-02-14	02/14/2025	Private	-
Blanchard Dam #4	HARNE-039	IMPOUNDING	Intermediate	Harnett	Fair	2013-07-29	12/11/2099	Private	-
Smith Lake Dam	HARNE-040	IMPOUNDING	High	Harnett	Fair	2024-06-12	06/12/2026	Private	-
Hayner Lake Dam	HARNE-041	IMPOUNDING	High	Harnett	Fair	2024-12-17	12/17/2026	Private	-
Hannas Lake Dam	HARNE-042	IMPOUNDING	High	Harnett	Poor	2023-05-12	05/12/2025	Private	-
McLamb Lake Dam	HARNE-043	IMPOUNDING	Low	Harnett	Fair	2013-07-30	04/17/2099	Private	-
Guy Lake Dam	HARNE-044	BREACHED	Low	Harnett	-	2008-01-29	01/02/2013	-	-
Young Lake Dam	HARNE-045	IMPOUNDING	High	Harnett	Fair	2024-11-06	11/06/2026	Private	-
Chesterfield Lake Dam	HARNE-046	IMPOUNDING	High	Harnett	Fair	2024-11-06	11/06/2026	Private	-
Jernigan Lake Dam	HARNE-047	BREACHED	Low	Harnett	-	2008-02-01	01/02/2013	-	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Baker Lake Dam	HARNE-048	BREACHED	High	Harnett	Not Rated	2023-02-02	02/02/2025	-	-
Pope Lake Dam	HARNE-049	IMPOUNDING	Low	Harnett	Fair	2012-07-09	01/01/2022	Private	-
Dewar Lake Dam	HARNE-050	IMPOUNDING	Low	Harnett	-	2008-01-29	01/02/2013	Private	-
Mitchell Lake Dam	HARNE-051	IMPOUNDING	Low	Harnett	-	2008-02-04	01/02/2013	Private	-
Baker Lake Dam	HARNE-052	IMPOUNDING	Low	Harnett	-	2008-02-01	01/02/2013	Private	-
Gregory Lake Dam	HARNE-053	IMPOUNDING	Intermediate	Harnett	-	2001-03-02	01/02/2004	Private	-
Cambro Lake Dam	HARNE-054	BREACHED	Low	Harnett	Fair	2012-07-09	01/01/2022	-	-
Wood Lake Dam	HARNE-055	IMPOUNDING	Low	Harnett	-	2008-01-29	01/02/2013	Private	-
Williams Lake Dam	HARNE-056	IMPOUNDING	Low	Harnett	Fair	2021-02-09	02/01/2026	Private	-
White Lake Dam	HARNE-057	IMPOUNDING	High	Harnett	Fair	2024-06-12	06/12/2026	Private	-
Arnold Pond Dam	HARNE-058	IMPOUNDING	Low	Harnett	Fair	2012-07-09	01/01/2022	Private	-
Bennett Pond Dam	HARNE-059	IMPOUNDING	Low	Harnett	Fair	2012-10-25	10/25/2022	Private	-
Cameron Pond Dam	HARNE-060	IMPOUNDING	High	Harnett	Fair	2024-05-06	05/06/2026	Private	-
Silver Lake Dam	HARNE-061	IMPOUNDING	Low	Harnett	Poor	2013-05-28	05/28/2033	Private	-
Crystal Lake Dam	HARNE-062	IMPOUNDING	Low	Harnett	Fair	2012-06-21	01/16/2022	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
George Glover Dam	HARNE-063	IMPOUNDING	Low	Harnett	Fair	2012-06-21	03/25/2022	Private	-
Moore Dam	HARNE-064	IMPOUNDING	High	Harnett	Fair	2024-12-17	12/17/2026	Private	-
Lee Dam	HARNE-065	IMPOUNDING	High	Harnett	Fair	2024-12-17	12/17/2026	Private	-
Kellys Pond Dam	HARNE-066	IMPOUNDING	Low	Harnett	Fair	2022-02-22	02/22/2027	Private	-
Lake Holton Dam	HARNE-067	BREACHED	High	Harnett	Not Rated	2023-02-02	02/02/2028	-	-
Mclamb Dam	HARNE-068	IMPOUNDING	Low	Harnett	Fair	2012-07-09	01/01/2022	Private	-
Sr.1559 Dam	HARNE-069	IMPOUNDING	Low	Harnett	Fair	2012-10-25	10/25/2025	Private	-
Angier Wastewater Dam	HARNE-070	IMPOUNDING	Low	Harnett	Fair	2013-07-29	04/24/2099	Private	-
Carolina Lakes Dam #1	HARNE-071	IMPOUNDING	Intermediate	Harnett	Fair	2012-07-09	01/01/2022	Private	-
Carolina Lakes Dam #2	HARNE-072	IMPOUNDING	Low	Harnett	Satisfactory	2012-04-17	01/01/2099	Private	-
Rodgers Dam	HARNE-073	IMPOUNDING	Intermediate	Harnett	Satisfactory	2012-04-17	01/01/2099	Local Gov	Angier
L.W. Rollins Dam	HARNE-074	IMPOUNDING	High	Harnett	Fair	2024-12-17	12/17/2026	Private	-
Honeycutt Dam Lower	HARNE-075	IMPOUNDING	High	Harnett	Fair	2024-12-17	12/17/2026	Private	-
Hines Dam	HARNE-076	IMPOUNDING	Low	Harnett	Fair	2012-06-21	05/03/2022	Private	-
Honeycutt Dam Upper	HARNE-077	IMPOUNDING	Low	Harnett	Fair	2013-10-24	10/24/2099	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
L.D. Black Swine Lagoon Dam	HARNE-078	IMPOUNDING	High	Harnett	Fair	2024-11-06	11/06/2026	Private	Angier
Butler Farms Lagoon Dam	HARNE-079	IMPOUNDING	Low	Harnett	Poor	2013-05-28	05/28/2033	Private	-
Sherman Lakes Lower Dam	HARNE-080	RECLAIMED	Low	Harnett	Satisfactory	2006-03-02	03/02/2050	-	Angier
Sherman Lakes Upper Dam	HARNE-081	IMPOUNDING	Low	Harnett	Fair	2013-10-24	10/24/2099	Private	-
Atkins Dam	HARNE-082	IMPOUNDING	Low	Harnett	Poor	2013-05-28	05/28/2033	Private	-
Harnett County Raw Water Reservoir Dam	HARNE-083	IMPOUNDING	High	Harnett	Unsatisfactory	2023-04-28	04/28/2024	Private	-
Quail Lake Dam	HARNE-084	IMPOUNDING	High	Harnett	Unsatisfactory	2023-04-28	04/28/2024	Private	-
Mosquito Lagoon Dam	HARNE-085	IMPOUNDING	High	Harnett	Fair	2024-06-12	06/12/2026	Private	-
Overhills East Pond Dam	HARNE-086	IMPOUNDING	High	Harnett	Fair	2024-05-06	05/06/2026	Utility	Lillington
Kuekes Pond Dam	HARNE-087	IMPOUNDING	Low	Harnett	Fair	2014-02-04	02/26/2013	Federal	-
Deer Pen Lake Dam	HARNE-088	RECLAIMED	Low	Harnett	Satisfactory	2014-02-04	02/26/2024	-	-
Keith Hills Golf Course Dam	HARNE-089	IMPOUNDING	Low	Harnett	Fair	2014-02-04	02/26/2013	Private	-
Overhills #2 Dam	HARNE-090	IMPOUNDING	Low	Harnett	Poor	2013-05-28	05/28/2033	Private	-
Overhills #5 Dam	HARNE-091	IMPOUNDING	Low	Harnett	Fair	2014-02-04	02/01/2024	Federal	-
Giebmams Dam	HARNE-092	IMPOUNDING	Low	Harnett	-	2009-04-03	04/03/2014	Private	-
Honeycutt-Owens Dam	HARNE-093	IMPOUNDING	Low	Harnett	-	-	-	Federal	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Norris Lake Dam	HARNE-094	RECLAIMED	Low	Harnett	-	-	-	-	-
Thornton Creek Dam	HARNE-095	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Hamilton Lake Dam	HARNE-096	IMPOUNDING	Low	Harnett	Fair	2017-05-17	05/17/2017	Private	-
Etheridge Dam	HARNE-097	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Strafford Pond Dam	HARNE-098	IMPOUNDING	Intermediate	Harnett	-	-	-	Private	-
Pilson Dam #1	HARNE-099	IMPOUNDING	High	Harnett	Fair	2024-06-12	06/12/2026	Private	-
Pilson Dam #2	HARNE-100	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Pilson Dam #3	HARNE-101	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Blanchard Lake Dam #4	HARNE-102	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Williams-Lundberg Dam	HARNE-103	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Cruickshank Dam	HARNE-104	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Gardner Dam	HARNE-105	IMPOUNDING	High	Harnett	-	-	-	Private	-
Dolinger Dam	HARNE-106	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Bullock Dam	HARNE-107	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Cannady Dam	HARNE-108	IMPOUNDING	High	Harnett	-	-	-	Private	-
Morgan Farm Pond Dam	HARNE-109	IMPOUNDING	Low	Harnett	-	-	-	Private	-
13th Street Dam	HARNE-110	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Larry Alford Dam	HARNE-111	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Lewis Family Dam	HARNE-112	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Bohle Dam	HARNE-113	IMPOUNDING	Low	Harnett	-	-	-	Private	Erwin
Jonesboro Road Dam	HARNE-114	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Anderson Creek Dam	HARNE-115	IMPOUNDING	Low	Harnett	-	-	-	Private	-
River Glen Dam	HARNE-116	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Yaeger Dam	HARNE-117	IMPOUNDING	Intermediate	Harnett	-	-	-	Private	-
Charles Byrd Dam #2	HARNE-118	IMPOUNDING	Intermediate	Harnett	-	-	-	Private	-
Cuddington Dam	HARNE-119	IMPOUNDING	High	Harnett	-	-	-	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
McLamb Dam	HARNE-120	IMPOUNDING	Low	Harnett	-	-	-	Private	-
Langdon Lake Dam #3	JOHNS-109	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Langdon Pond Dam	JOHNS-110	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Wells Brothers Lower Dam	JOHNS-111	IMPOUNDING	Low	Johnston	-	-	-	Private	-
J P Edwards Dam	JOHNS-112	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Johnston County Wildlife Lake Dam	JOHNS-113	IMPOUNDING	Low	Johnston	-	-	-	Private	-
O'Neal Pond Dam	JOHNS-114	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Trejo-Lee Pond Dam	JOHNS-115	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Langdon Lake Dam #2	JOHNS-001	IMPOUNDING	Low	Johnston	Fair	2022-11-18	01/01/2026	Private	-
Oliver Farms Dam	JOHNS-116	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Langdon Lake Dam #1	JOHNS-117	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Crantock Mill Dam	JOHNS-002	IMPOUNDING	Low	Johnston	Poor	2017-12-18	01/01/9999	Private	-
Earp Lake Dam	JOHNS-118	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Lake Wendell Dam	JOHNS-003	IMPOUNDING	Low	Johnston	Fair	2017-12-18	01/01/7777	Private	-
Lee Dam Upper	JOHNS-119	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Lake Andrew Acres Dam	JOHNS-004	IMPOUNDING	High	Johnston	Fair	2025-02-18	02/18/2027	Private	Clayton
Cattail Lake Dam	JOHNS-005	IMPOUNDING	Low	Johnston	-	1976-05-05	09/09/9999	Private	-
Atkinson Lake Dam	JOHNS-120	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Fox Glenn Court Dam	JOHNS-006	IMPOUNDING	Low	Johnston	-	1999-02-08	02/08/2003	Private	-
Atkinson Millpond Dam	JOHNS-007	IMPOUNDING	Intermediate	Johnston	Satisfactory	2017-12-14	12/14/2018	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Keen Lake Dam #1	JOHNS-008	IMPOUNDING	Low	Johnston	Fair	2023-02-28	02/28/2023	Private	-
Sylvania Lake Dam	JOHNS-121	IMPOUNDING	Low	Johnston	-	-	-	-	-
Lake Austin Dam	JOHNS-009	IMPOUNDING	Low	Johnston	-	1980-03-22	09/09/9999	Private	-
Lassiter Lake Dam	JOHNS-010	IMPOUNDING	High	Johnston	Fair	2023-03-16	01/01/2025	Private	-
Tar Heel Farm Lake Dam	JOHNS-011	IMPOUNDING	Low	Johnston	-	2000-03-10	03/10/2003	Private	-
Holt Millpond Dam	JOHNS-012	IMPOUNDING	Low	Johnston	-	1999-02-06	02/06/2003	Private	-
Brown Lake Dam	JOHNS-013	IMPOUNDING	Intermediate	Johnston	Satisfactory	2017-04-27	04/27/2019	Private	-
Parker Dam	JOHNS-014	BREACHED	Low	Johnston	-	1999-02-04	02/04/2003	-	-
Mcgee Lake Dam	JOHNS-015	IMPOUNDING	Low	Johnston	-	2009-06-09	06/09/2014	Private	-
Massengill Millpond Dam	JOHNS-016	BREACHED	Low	Johnston	Satisfactory	2023-03-03	01/01/2026	-	-
Parker Millpond Dam	JOHNS-017	IMPOUNDING	Low	Johnston	Fair	2017-04-27	04/27/2018	Private	-
Bryan Lake Dam	JOHNS-018	IMPOUNDING	Intermediate	Johnston	-	1984-03-11	09/09/9999	Private	-
Godwin Lake Dam	JOHNS-019	IMPOUNDING	Intermediate	Johnston	Satisfactory	2013-05-14	05/14/2016	Private	-
Holt Lake Dam	JOHNS-020	BREACHED	Intermediate	Johnston	-	1992-08-27	09/09/9999	-	-
Griffith Nursury Farm Dam	JOHNS-021	IMPOUNDING	Intermediate	Johnston	Poor	2018-09-18	09/09/9999	Private	-
Langdon Pond #3 Dam	JOHNS-022	IMPOUNDING	Low	Johnston	Fair	2012-01-24	01/24/2012	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Lee Dam	JOHNS-023	IMPOUNDING	Low	Johnston	Satisfactory	2018-09-17	01/22/2019	Private	-
Austin Lake Dam	JOHNS-024	IMPOUNDING	Low	Johnston	-	1995-10-27	10/27/1999	State	-
Rose Lake Dam	JOHNS-025	IMPOUNDING	Low	Johnston	-	1996-01-25	12/25/1999	Private	-
Massengill Dam	JOHNS-026	IMPOUNDING	Low	Johnston	-	1999-03-16	03/16/2003	Private	-
Micozzi Dam	JOHNS-027	IMPOUNDING	Intermediate	Johnston	Fair	2017-11-29	11/29/2018	Private	-
Berry Downs Dam	JOHNS-028	IMPOUNDING	Low	Johnston	Satisfactory	2012-01-24	01/24/2013	Private	-
James Wright Pond Dam	JOHNS-029	IMPOUNDING	Low	Johnston	-	1979-12-04	12/04/1984	Private	-
Thunder Road Pond Dam	JOHNS-030	IMPOUNDING	Low	Johnston	-	1999-03-16	03/16/2003	Private	-
Gates Pond Dam	JOHNS-031	IMPOUNDING	High	Johnston	Fair	2025-01-29	01/29/2027	Private	-
Finch Dam	JOHNS-032	IMPOUNDING	High	Johnston	Fair	2023-12-29	12/29/2025	Private	-
Chamblee Dam	JOHNS-033	IMPOUNDING	Low	Johnston	-	1999-03-19	03/19/2003	Private	-
Delma Adams Dam	JOHNS-034	BREACHED	Low	Johnston	Satisfactory	2024-07-23	07/23/2028	-	-
Fowler Pond Dam	JOHNS-035	BREACHED	Low	Johnston	Fair	2019-04-16	09/09/9999	-	-
Charles Byrd Dam	JOHNS-036	IMPOUNDING	Low	Johnston	Fair	2023-03-15	01/01/2025	Private	-
Denning Lagoon Dam	JOHNS-037	IMPOUNDING	Low	Johnston	-	1999-03-19	03/19/2003	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Barham Lagoon Dam	JOHNS-038	IMPOUNDING	Intermediate	Johnston	Fair	2017-11-27	01/01/7777	Private	-
Lee & Ann Dam	JOHNS-039	IMPOUNDING	Intermediate	Johnston	-	2008-08-05	08/05/2011	Private	-
Lake Eva Marie Dam	JOHNS-040	IMPOUNDING	Low	Johnston	-	1979-02-22	02/22/1984	Private	-
Union Carbide Lake Dam	JOHNS-041	IMPOUNDING	Low	Johnston	-	1998-02-18	02/18/2003	Private	-
Clark Dam	JOHNS-042	IMPOUNDING	Low	Johnston	-	1994-10-25	10/25/1999	Private	-
Flowers Lake Dam #1	JOHNS-043	IMPOUNDING	Low	Johnston	Poor	2019-02-04	09/09/9999	Private	-
Flowers Dam	JOHNS-047	IMPOUNDING	Low	Johnston	-	2004-03-25	03/25/2009	Private	-
Flowers Pond Dam #2	JOHNS-048	IMPOUNDING	Low	Johnston	-	1999-03-23	03/23/2003	Private	-
Mooneyham Dam	JOHNS-049	IMPOUNDING	Intermediate	Johnston	Fair	2025-02-18	02/18/2027	Private	-
Smith Lake Dam #1	JOHNS-050	IMPOUNDING	Intermediate	Johnston	-	1981-10-14	09/09/9999	Private	-
Smith Lake Dam #2	JOHNS-051	IMPOUNDING	Intermediate	Johnston	-	2004-03-02	03/02/2007	Private	-
Barham Methane Dike	JOHNS-052	IMPOUNDING	Intermediate	Johnston	Satisfactory	2017-12-06	01/01/9999	Private	Archer Lodge
Richardson Dam	JOHNS-053	IMPOUNDING	Low	Johnston	-	2000-03-10	03/10/2005	Private	-
Boyette Dam	JOHNS-054	IMPOUNDING	Low	Johnston	Satisfactory	2017-12-18	01/01/9999	Private	-
Chamblee Dam	JOHNS-055	IMPOUNDING	Low	Johnston	-	1996-10-14	10/14/1998	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Massey Pond Dam	JOHNS-058	IMPOUNDING	Low	Johnston	-	1999-03-30	03/30/2003	Private	-
J&M Hog Lagoon Dam	JOHNS-059	IMPOUNDING	Low	Johnston	-	1998-01-05	01/05/2003	Private	Smithfield
Carolina Packers Pond Dam	JOHNS-060	IMPOUNDING	Low	Johnston	-	2004-05-13	05/13/2009	Private	-
Ncda Dam	JOHNS-062	IMPOUNDING	Low	Johnston	-	2001-01-24	10/25/1999	Private	Clayton
Tuscarora Lake Dam	JOHNS-063	IMPOUNDING	Intermediate	Johnston	-	2000-03-15	03/15/2002	Private	-
Lee Pond Dam	JOHNS-065	IMPOUNDING	Low	Johnston	-	1977-02-28	09/09/9999	Private	-
Lee Dam	JOHNS-066	IMPOUNDING	Low	Johnston	Satisfactory	2017-12-18	01/01/9999	State	Clayton
Blackmon Pond Dam	JOHNS-067	IMPOUNDING	Low	Johnston	-	2000-02-10	02/10/2003	Private	-
Smith #3 Dam	JOHNS-068	IMPOUNDING	Low	Johnston	-	1978-01-16	09/09/9999	Private	-
Stancil Pond #1 Dam	JOHNS-069	IMPOUNDING	Low	Johnston	-	1998-02-25	02/25/2003	Private	-
Gatis Pond Dam	JOHNS-070	IMPOUNDING	Low	Johnston	-	1999-03-16	03/16/2003	Private	-
Surles Dam	JOHNS-071	RECLAIMED	Low	Johnston	-	2000-03-10	03/10/2005	-	-
Creech Lagoon Dam	JOHNS-072	IMPOUNDING	Low	Johnston	-	1999-02-12	02/14/2004	Private	-
Vanns Pond Dam	JOHNS-073	IMPOUNDING	Low	Johnston	-	2000-03-23	03/23/2005	Private	-
Barbour Pond Dam	JOHNS-074	IMPOUNDING	Low	Johnston	Fair	2017-12-08	01/01/9999	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Batten Dam	JOHNS-075	IMPOUNDING	Low	Johnston	-	1997-04-10	04/10/2002	Private	-
Lee Lake Dam	JOHNS-076	IMPOUNDING	Low	Johnston	-	2001-02-28	02/28/2006	Private	-
Sanders Pond Dam	JOHNS-077	IMPOUNDING	Low	Johnston	-	2004-05-25	05/25/2009	Private	-
Smith Dam	JOHNS-078	IMPOUNDING	Low	Johnston	-	1995-02-01	02/01/2000	Private	-
Parker Lagoon Dam	JOHNS-079	IMPOUNDING	Low	Johnston	Fair	2023-03-16	01/01/2025	Private	-
Edwards Dam	JOHNS-080	IMPOUNDING	Low	Johnston	-	1999-02-11	02/11/2004	Private	-
L. Z. Creech Dam	JOHNS-081	IMPOUNDING	Intermediate	Johnston	Fair	2017-12-08	09/09/9999	Private	-
Raleigh Rescue Mission Dam	JOHNS-082	IMPOUNDING	Intermediate	Johnston	-	2000-03-15	03/15/2002	Private	-
Delmer Flowers Dam	JOHNS-083	IMPOUNDING	Low	Johnston	-	1999-03-16	03/16/2003	Private	-
Tom Daniel Dam	JOHNS-084	IMPOUNDING	Low	Johnston	-	2001-02-19	02/19/2006	Private	-
White Oak Farms Dam	JOHNS-085	IMPOUNDING	Low	Johnston	Fair	2025-02-18	02/18/2027	Private	Clayton
Harold Lee Lagoon Dam	JOHNS-086	IMPOUNDING	Low	Johnston	Fair	2025-02-18	02/18/2027	Private	-
David Herring Lagoon Dam	JOHNS-088	IMPOUNDING	Low	Johnston	-	1994-10-12	10/12/1999	Private	-
Temple Pond Dam	JOHNS-089	IMPOUNDING	Low	Johnston	Poor	2025-02-26	02/26/2027	Private	-
Danny Tucker Dam	JOHNS-091	IMPOUNDING	Low	Johnston	-	1995-01-24	01/24/2000	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Portofino Dam	JOHNS-092	IMPOUNDING	Low	Johnston	-	1998-03-10	03/10/2000	Private	-
Son Lan Lee Shipwash Dam	JOHNS-093	IMPOUNDING	Low	Johnston	Fair	2023-03-17	01/01/2026	Private	-
Miry Branch Dam	JOHNS-094	IMPOUNDING	Low	Johnston	-	2007-10-31	10/31/2012	Private	-
Talecris Biotherapeutics Dam	JOHNS-095	IMPOUNDING	Low	Johnston	Satisfactory	2017-12-14	01/01/9999	Private	-
Terry Parker Pond Dam	JOHNS-096	IMPOUNDING	High	Johnston	Fair	2025-01-15	01/15/2027	Private	-
Tuckers Lake Dam	JOHNS-097	IMPOUNDING	High	Johnston	Poor	2025-02-17	02/17/2027	Private	-
Regal Pond Dam	JOHNS-098	BREACHED	Low	Johnston	Satisfactory	2011-11-09	12/09/2012	-	-
Hamilton Pond Dam	JOHNS-099	IMPOUNDING	High	Johnston	Fair	2023-03-22	01/01/2025	Private	-
Cleveland Bluff Dam	JOHNS-100	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Pecan Grove Dam	JOHNS-101	IMPOUNDING	High	Johnston	Fair	2023-03-16	01/01/2025	Private	-
Ronald Barbour Dam	JOHNS-102	IMPOUNDING	High	Johnston	Poor	2025-03-26	03/26/2027	Private	-
John Lee Dam	JOHNS-103	IMPOUNDING	Low	Johnston	Fair	2021-01-26	12/20/2022	Private	-
Wells Brothers Upper Dam	JOHNS-104	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Winston Pointe Dam	JOHNS-105	IMPOUNDING	High	Johnston	Fair	2023-03-16	01/01/2025	Private	-
Johnson Lake Dam	JOHNS-106	IMPOUNDING	Low	Johnston	-	-	-	Private	-
Watson Lake Dam	JOHNS-107	IMPOUNDING	High	Johnston	Poor	2025-02-05	02/05/2027	Private	-
San-Lee Park Dam	JOHNS-108	IMPOUNDING	Low	Johnston	Fair	2025-02-26	02/26/2027	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Lake Trace Dam	LEE-001	IMPOUNDING	Intermediate	Lee	Fair	2023-11-30	11/30/2028	Private	Broadway
Lake Williams Dam	LEE-002	IMPOUNDING	High	Lee	Poor	2025-01-24	01/24/2027	Local Gov	Broadway
Oldham Upper Lake Dam #1	LEE-003	IMPOUNDING	High	Lee	Fair	2025-01-10	01/10/2027	Local Gov	-
Oldham Lower Lake Dam #2	LEE-004	IMPOUNDING	Intermediate	Lee	Fair	2023-02-09	02/09/2028	Private	-
Morris Dam	LEE-005	IMPOUNDING	Low	Lee	-	2004-04-15	04/15/2005	Private	-
Winstead Pond Dam #1	LEE-006	IMPOUNDING	Intermediate	Lee	Fair	2023-03-07	03/07/2025	Private	-
Willette Lake Dam	LEE-007	IMPOUNDING	Low	Lee	Poor	2023-11-30	11/30/2025	Private	-
Lower Holiday Lake Dam	LEE-008	IMPOUNDING	Intermediate	Lee	-	1976-06-15	09/09/9999	Private	-
Upper Holiday Lake Dam	LEE-009	IMPOUNDING	Low	Lee	-	2000-02-10	02/10/2005	Private	-
Sky View Lake Dam	LEE-010	IMPOUNDING	Low	Lee	Fair	2023-12-20	12/20/2028	Private	-
New Johnson Pond Dam	LEE-011	IMPOUNDING	High	Lee	Fair	2025-01-10	01/10/2027	Private	Sanford
Adams Dam	LEE-012	IMPOUNDING	High	Lee	Fair	2025-01-10	01/10/2027	Private	Sanford
Sanford Raw Water Reservoir Dam	LEE-013	IMPOUNDING	Low	Lee	-	2000-03-23	03/23/2005	Private	-
Ashmore Lake Dam	LEE-014	IMPOUNDING	High	Lee	Fair	2025-01-10	01/10/2027	Private	Sanford
Johnson Dam #3	LEE-015	BREACHED	Low	Lee	-	2000-02-10	02/10/2005	-	Sanford

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Johnson Dam #4	LEE-016	IMPOUNDING	High	Lee	Fair	2025-01-15	01/15/2027	Local Gov	-
Carolina Forest Lake Dam	LEE-017	IMPOUNDING	High	Lee	Fair	2025-01-10	01/10/2027	Private	Sanford
San-Lee Park Upper Dam	LEE-018	IMPOUNDING	Intermediate	Lee	Fair	2023-11-30	11/30/2028	Private	Sanford
Lake Villanow Dam	LEE-019	IMPOUNDING	Intermediate	Lee	Fair	2023-11-30	11/30/2028	Private	Sanford
Thomas Dam	LEE-021	IMPOUNDING	Low	Lee	Fair	2021-03-09	03/09/2024	Private	-
Faulk Pond Dam	LEE-022	IMPOUNDING	High	Lee	Fair	2025-01-10	01/10/2027	Local Gov	-
Wicker Shaw Pond Dam	LEE-023	IMPOUNDING	Low	Lee	Fair	2023-02-09	02/09/2025	Private	-
Arnolds Lake Dam	LEE-024	IMPOUNDING	Low	Lee	-	2000-02-17	02/17/2005	Private	-
Laurel Thicket Pond Dam	LEE-025	IMPOUNDING	Low	Lee	-	2000-03-23	03/23/2005	Private	-
Cedar Lake Dam	LEE-026	IMPOUNDING	Low	Lee	Fair	2012-03-01	03/23/2005	Private	-
Mcdonald Pond Dam	LEE-027	IMPOUNDING	Intermediate	Lee	Fair	2023-12-07	12/07/2028	Private	-
Harriss Dam	LEE-028	IMPOUNDING	Intermediate	Lee	Fair	2023-12-07	12/07/2028	Private	-
Blakely Pond Dam	LEE-029	IMPOUNDING	High	Lee	Fair	2023-12-07	12/07/2025	Private	-
Gilliam Farm Dam	LEE-030	IMPOUNDING	Low	Lee	-	2000-02-17	02/17/2005	Private	-
Hall Pond Dam	LEE-033	IMPOUNDING	Low	Lee	-	1997-02-20	02/20/2002	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Gasters Creek Dam	LEE-034	IMPOUNDING	Low	Lee	Fair	2021-01-15	01/15/2026	Private	-
Clyde Dalrymple Dam	LEE-035	IMPOUNDING	Low	Lee	-	2000-02-17	02/17/2005	Private	-
Winstead Lake Dam	LEE-036	IMPOUNDING	High	Lee	Fair	2022-12-13	12/03/2024	Private	-
Key Road Dam	LEE-037	IMPOUNDING	Low	Lee	-	1999-03-18	03/18/2004	Private	-
Ray-McGilvary Dam	LEE-038	IMPOUNDING	Low	Lee	-	2000-02-10	02/10/2005	Private	-
Greenwood Road Dam	LEE-039	IMPOUNDING	Low	Lee	-	2000-02-10	02/10/2005	Private	-
Gustafson Dam	LEE-040	IMPOUNDING	Low	Lee	Not Rated	2018-04-27	01/01/7777	Private	-
Tobacco Road Golf Dam #1	LEE-041	IMPOUNDING	High	Lee	Poor	2022-12-13	12/13/2024	Private	-
Tobacco Road Golf Dam #2	LEE-042	IMPOUNDING	High	Lee	-	-	-	Private	-
Reeves Subdivision Dam	LEE-043	IMPOUNDING	High	Lee	-	-	-	Private	-
Dalrymple Dam	LEE-044	IMPOUNDING	Low	Lee	-	-	-	Private	-
Dalrymple Tract 4 Dam	LEE-045	IMPOUNDING	Low	Lee	Fair	2023-03-28	03/28/2028	Private	-
Dalrymple Tract 4A Dam	LEE-046	IMPOUNDING	High	Lee	Fair	2024-01-31	01/31/2024	Private	-
Dalrymple Tract 1 Dam #1	LEE-047	IMPOUNDING	High	Lee	Fair	2024-01-23	01/23/2025	Private	-
Dalrymple Tract 1 Dam #2	LEE-048	IMPOUNDING	Low	Lee	Fair	2024-01-23	01/23/2025	Private	-
Douglas Farm Dam	LEE-049	IMPOUNDING	Low	Lee	Fair	2024-01-23	01/23/2025	Private	-
Dalrymple-Richardson Dam	LEE-050	IMPOUNDING	Low	Lee	Fair	2024-01-23	01/23/2025	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Mare Branch Dam	LEE-051	IMPOUNDING	Low	Lee	Fair	2024-01-23	01/23/2025	Private	-
Sloan Pond Dam	LEE-052	IMPOUNDING	Low	Lee	Fair	2024-01-23	01/23/2025	Private	-
Bristow Pond Dam	LEE-053	IMPOUNDING	High	Lee	Fair	2024-01-23	01/23/2025	Private	-
Winstead Pond Dam #2	LEE-054	IMPOUNDING	Low	Lee	Fair	2024-01-23	01/23/2025	Private	-
Rosser Dam	LEE-055	IMPOUNDING	Low	Lee	-	-	-	Private	-
Keller Pond Dam	LEE-056	IMPOUNDING	Low	Lee	-	-	-	Private	-
Smith-Jones Dam	LEE-057	IMPOUNDING	Low	Lee	-	-	-	Private	-
Purvis Dam #1	LEE-058	IMPOUNDING	Low	Lee	-	-	-	Private	-
Purvis Dam #2	LEE-059	IMPOUNDING	Low	Lee	-	-	-	Private	Sanford
Lind Dam	LEE-060	IMPOUNDING	Low	Lee	-	-	-	Private	Sanford
Hubbard Pond Dam	LEE-061	IMPOUNDING	High	Lee	-	-	-	Private	Sanford
Wildwood Lake Dam	LEE-062	IMPOUNDING	High	Lee	-	-	-	Private	Sanford
McKendry-Horner Dam	LEE-063	IMPOUNDING	High	Lee	-	-	-	Private	Sanford
Pocket Creek Dam	LEE-064	IMPOUNDING	Low	Lee	-	-	-	Private	-
Taylor Phillips Dam	LEE-065	IMPOUNDING	Low	Lee	-	-	-	Private	-
Tillotson Pond Dam	LEE-066	IMPOUNDING	High	Lee	-	-	-	Private	-
Southern Pond Dam	LEE-067	IMPOUNDING	Low	Lee	-	-	-	Private	-
Arch Johnson Pond Dam	LEE-068	IMPOUNDING	Low	Lee	-	-	-	Private	-
Hatchery Pond Dam	LEE-069	IMPOUNDING	Low	Lee	-	-	-	Private	-
Frith Pond Dam	LEE-070	IMPOUNDING	Low	Lee	Fair	2024-02-27	02/27/2034	Private	-
Seven Lakes Dam #7	MOORE-001	IMPOUNDING	Low	Moore	Fair	2012-08-29	01/01/2022	Private	-
Municipal Lake Dam	MOORE-002	IMPOUNDING	Low	Moore	Fair	2012-09-19	01/01/2022	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
J. Ross Pond Dam #3	MOORE-003	IMPOUNDING	Low	Moore	Fair	2021-10-01	10/01/2026	Private	-
Pinehurst National Dam #4	MOORE-004	IMPOUNDING	Low	Moore	Fair	2012-11-15	01/01/2013	Private	-
Longleaf Golf Course Dam	MOORE-005	IMPOUNDING	Low	Moore	Fair	2000-06-09	01/02/2022	Private	-
Lake Pinehurst Pond Dam #3	MOORE-006	IMPOUNDING	Low	Moore	Satisfactory	2012-09-26	01/01/2022	Private	-
Pinecrest High School Dam	MOORE-007	IMPOUNDING	High	Moore	Fair	2024-06-25	06/26/2026	Private	Southern Pines
Breslin Pond Dam	MOORE-008	IMPOUNDING	High	Moore	Poor	2024-11-13	11/13/2026	Private	Southern Pines
Garner Pond Dam	MOORE-009	IMPOUNDING	Low	Moore	Fair	2012-05-08	01/01/2099	Private	Pinehurst
Swan Lake Dam	MOORE-010	IMPOUNDING	High	Moore	Fair	2024-11-13	11/13/2026	Local Gov	Southern Pines
Taylor Pond Dam	MOORE-011	IMPOUNDING	Low	Moore	Poor	2012-05-08	01/01/2099	Private	-
Frye Pond Dam	MOORE-012	IMPOUNDING	Low	Moore	Not Rated	2001-05-21	01/02/2022	Private	-
Rowe Pond Dam	MOORE-013	IMPOUNDING	High	Moore	Fair	2024-05-03	05/03/2026	Private	Southern Pines
Robbins Millpond Dam	MOORE-014	IMPOUNDING	Low	Moore	-	2009-03-17	03/17/2014	Private	Aberdeen
Michael Pond Dam	MOORE-015	IMPOUNDING	Low	Moore	Fair	2012-08-14	01/01/2022	Private	Aberdeen
E. Griffin Pond Dam	MOORE-016	IMPOUNDING	Low	Moore	Fair	2012-08-14	01/01/2022	Private	Aberdeen
Firestone Pond Dam	MOORE-017	IMPOUNDING	Low	Moore	Not Rated	2001-04-30	01/02/2022	Local Gov	Robbins

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Lambert Pond Dam	MOORE-018	IMPOUNDING	Low	Moore	Fair	2013-07-29	01/02/2099	Private	-
Samarkand Pond Dam	MOORE-019	IMPOUNDING	Low	Moore	Fair	2012-08-14	01/01/2022	Private	-
Jordan Pond Dam	MOORE-020	IMPOUNDING	High	Moore	Fair	2024-11-13	11/13/2026	Private	-
Camp Easter Pond Dam	MOORE-021	IMPOUNDING	Low	Moore	Fair	2012-10-18	01/02/2022	Private	-
Legacy Golf Links Dam No. 2	MOORE-022	IMPOUNDING	Low	Moore	Fair	2012-05-11	01/01/2099	State	-
Hight Pond Dam	MOORE-023	IMPOUNDING	Low	Moore	Fair	2013-08-01	04/15/2013	Private	-
Cardinal Club Pond Dam	MOORE-024	RECLAIMED	Low	Moore	Fair	2012-09-26	01/01/2022		Southern Pines
Richardson Pond Dam	MOORE-025	IMPOUNDING	Low	Moore	Fair	2022-02-02	02/02/2027	Private	Aberdeen
Sandhill Furniture Company Pond Dam	MOORE-026	DRAINED	High	Moore	Fair	2024-02-28	02/28/2026	Private	-
Lake Diamond Dam	MOORE-027	IMPOUNDING	High	Moore	Poor	2024-11-13	11/13/2025	Private	-
Kelly Pond Dam	MOORE-028	IMPOUNDING	Low	Moore	Fair	2013-08-01	01/28/2016	Private	-
Blue - Freeman Pond Dam	MOORE-029	IMPOUNDING	Low	Moore	Fair	2013-08-01	04/08/2013	Private	Foxfire Village
Caddell Pond Dam	MOORE-030	IMPOUNDING	Intermediate	Moore	Satisfactory	2012-01-18	01/01/2017	Private	-
Causey Pond Dam	MOORE-031	IMPOUNDING	Low	Moore	Fair	2021-08-05	08/05/2026	Private	-
Carthage Pond Dam #1	MOORE-032	IMPOUNDING	Low	Moore	Fair	2012-07-31	01/01/2022	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Reardon Pond Dam	MOORE-033	IMPOUNDING	Low	Moore	-	2001-05-10	01/02/2011	Private	Carthage
Riddle Pond Dam	MOORE-034	IMPOUNDING	Low	Moore	-	2009-03-17	03/17/2014	Private	-
D. Matthews Pond Dam	MOORE-035	IMPOUNDING	Low	Moore	Fair	2013-08-01	01/01/2016	Local Gov	Carthage
Williams Lake Dam #8	MOORE-036	IMPOUNDING	Low	Moore	Fair	2013-08-02	01/24/2013	Private	-
Woodlake Dam	MOORE-037	IMPOUNDING	Low	Moore	-	2001-05-10	01/02/2011	Private	-
Simpson Lake Dam	MOORE-038	IMPOUNDING	Low	Moore	Fair	2013-08-08	02/05/2013	Private	-
Hedrick Lake Dam	MOORE-039	IMPOUNDING	Low	Moore	Fair	2012-05-11	01/01/2099	Private	-
Lake Bay Dam	MOORE-040	FAILED	High	Moore	Not Rated	2018-04-11	04/11/2019	Private	-
Lake Mcphaul Dam	MOORE-041	IMPOUNDING	High	Moore	Poor	2024-11-26	11/26/2025	Private	-
Legacy Golf Links Dam No. 3	MOORE-042	IMPOUNDING	Low	Moore	Fair	2013-07-29	02/05/2099	Private	-
Pine Lake Shooting Pres. Dam	MOORE-043	BREACHED	Low	Moore	Not Rated	2021-08-17	08/17/2026	-	-
Underwood Lake Dam	MOORE-044	IMPOUNDING	Low	Moore	Fair	2012-08-29	01/01/2022	Private	-
Shadow Lake Dam	MOORE-045	IMPOUNDING	High	Moore	Fair	2022-02-02	02/02/2023	Private	Aberdeen
Long Leaf Lake Dam	MOORE-046	IMPOUNDING	High	Moore	Fair	2024-10-30	10/30/2026	Private	-
Monroe Lake Dam Lower	MOORE-047	IMPOUNDING	Low	Moore	Poor	2017-02-02	02/07/2009	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Eighteenth Fairway Dam	MOORE-048	BREACHED	Low	Moore	-	2001-05-21	01/02/2011	-	-
Watson Lake Dam #1	MOORE-049	IMPOUNDING	Low	Moore	Fair	2022-01-28	01/28/2027	Private	-
Yadco Lake Dam	MOORE-050	IMPOUNDING	Low	Moore	-	2001-05-21	01/02/2011	Private	-
Aberdeen Town Lake Dam	MOORE-051	IMPOUNDING	High	Moore	Fair	2025-01-24	01/24/2027	Private	Southern Pines
Powell Lake Dam	MOORE-052	IMPOUNDING	High	Moore	Fair	2024-05-09	05/09/2026	Private	Pinehurst
Mid Pines Lake Dam	MOORE-053	IMPOUNDING	Low	Moore	Fair	2012-08-29	01/01/2022	Private	Aberdeen
Southern Pines Waterworks Dam	MOORE-054	IMPOUNDING	High	Moore	Fair	2024-05-01	05/01/2026	Local Gov	Aberdeen
Thagards Lake Dam	MOORE-055	IMPOUNDING	Intermediate	Moore	Fair	2011-12-02	12/02/2016	Local Gov	Aberdeen
Fly Rod Lake Dam	MOORE-056	BREACHED	High	Moore	Not Rated	2024-10-23	10/23/2026	-	Southern Pines
Stanley Pond Dam	MOORE-057	IMPOUNDING	High	Moore	Fair	2024-05-03	05/03/2026	Local Gov	Southern Pines
Spring Valley Lake Dam	MOORE-058	IMPOUNDING	High	Moore	Poor	2024-03-26	03/26/2025	Local Gov	Whispering Pines
Pine Lake Dam	MOORE-059	IMPOUNDING	Low	Moore	Fair	2021-05-27	05/27/2026	Local Gov	Whispering Pines
Shadow Lake Dam	MOORE-060	DRAINED	Low	Moore	Not Rated	2022-01-28	01/28/2027	Private	-
Warrior Lake Dam	MOORE-061	IMPOUNDING	High	Moore	Fair	2024-06-20	06/20/2026	Local Gov	Whispering Pines
Fox Lake Dam	MOORE-062	IMPOUNDING	High	Moore	Fair	2024-05-31	05/31/2026	Local Gov	Whispering Pines

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Greene Lake Dam	MOORE-063	IMPOUNDING	Low	Moore	Fair	2021-05-27	05/27/2026	Local Gov	Whispering Pines
Devane Lake Dam	MOORE-064	IMPOUNDING	High	Moore	Fair	2024-04-25	04/25/2026	Private	-
Morse Lake Dam	MOORE-065	IMPOUNDING	Low	Moore	Fair	2017-05-12	05/12/2099	Private	-
Thurlow Lake Dam	MOORE-066	IMPOUNDING	Low	Moore	Fair	2017-05-12	05/12/2099	Private	-
Troy Lumber Company Lake Dam	MOORE-067	IMPOUNDING	Low	Moore	Fair	2022-02-23	02/23/2027	Private	-
Crystal Lake Dam	MOORE-068	IMPOUNDING	Low	Moore	Fair	2022-01-20	01/20/2027	Private	-
Forrest Lake Dam	MOORE-069	IMPOUNDING	High	Moore	Fair	2024-04-25	04/24/2025	Private	-
Ellis Farm Pond Dam #1	MOORE-070	IMPOUNDING	Low	Moore	Fair	2021-09-01	09/01/2026	Private	Vass
Bear Creek Dam	MOORE-071	IMPOUNDING	High	Moore	Fair	2024-04-25	04/25/2026	Private	-
Griffin Lake Dam	MOORE-072	IMPOUNDING	Low	Moore	-	2009-03-17	03/17/2014	Private	-
Boy Scouts Of America Dam Upper	MOORE-173	IMPOUNDING	Low	Moore	Fair	2013-07-30	03/12/2013	Private	-
Browers Mill Dam	MOORE-274	IMPOUNDING	Low	Moore	-	-	-	Local Gov	Robbins
Ellis Farm Pond Dam #2	MOORE-073	IMPOUNDING	Intermediate	Moore	Fair	2012-06-05	11/01/2012	Private	-
Lake Mckenzie Dam	MOORE-074	IMPOUNDING	High	Moore	Poor	2024-04-25	04/25/2025	Private	-
Williams-Lemonds Dam	MOORE-275	IMPOUNDING	Low	Moore	-	-	-	Private	-
Ellis Farm Pond Dam #4	MOORE-174	IMPOUNDING	Low	Moore	Fair	2013-07-30	03/12/2099	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Ellis Farm Pond Dam #5	MOORE-075	IMPOUNDING	Low	Moore	Fair	2012-08-21	01/01/2022	Private	Foxfire Village
Early Dam	MOORE-276	IMPOUNDING	Low	Moore	-	-	-	Private	-
Arthur Williams Dam	MOORE-175	IMPOUNDING	Low	Moore	Fair	2013-07-30	03/12/2099	Private	-
Bengston Lake Dam #1	MOORE-176	IMPOUNDING	Low	Moore	Fair	2013-07-30	03/12/2099	Private	-
Bengston Lake Dam #2	MOORE-277	IMPOUNDING	Low	Moore	-	-	-	Private	-
Bengston Lake Dam #3	MOORE-076	BREACHED	Low	Moore	-	2000-06-09	01/02/2005	-	-
Hall Pond Dam	MOORE-077	IMPOUNDING	Low	Moore	Fair	2022-03-03	03/03/2027	Private	-
Bengston Lake Dam #4	MOORE-078	IMPOUNDING	Low	Moore	Fair	2022-03-03	03/03/2027	Private	-
Boy Scouts Of America Dam Lower	MOORE-079	IMPOUNDING	Low	Moore	Fair	2022-03-03	03/03/2027	Private	-
Ellis Farm Pond Dam #9	MOORE-278	IMPOUNDING	Low	Moore	-	-	-	Private	-
Monroe Pond Dam	MOORE-080	IMPOUNDING	Low	Moore	Fair	2017-04-07	04/08/2020	Private	-
Brigman Pond Dam	MOORE-081	IMPOUNDING	High	Moore	Fair	2024-04-25	04/25/2025	Private	-
Richardson Lake Dam	MOORE-177	IMPOUNDING	Low	Moore	Fair	2013-07-30	03/12/2099	Private	-
Rankin Lake Dam	MOORE-279	IMPOUNDING	Low	Moore	-	-	-	Private	-
Pinesage Lake Dam	MOORE-280	IMPOUNDING	Low	Moore	-	-	-	Private	-
Holly Course Dam	MOORE-281	IMPOUNDING	Low	Moore	-	-	-	Private	-
Johnson Pond Dam	MOORE-082	IMPOUNDING	Low	Moore	-	2009-03-17	03/17/2014	Private	-
Mcneil Lake Dam	MOORE-178	IMPOUNDING	High	Moore	Fair	2024-10-30	10/30/2026	Private	Taylortown

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Lake Auman Dam	MOORE-179	IMPOUNDING	Low	Moore	Fair	2021-08-17	08/17/2026	Private	Pinehurst
Edwards Lake Dam	MOORE-180	BREACHED	High	Moore	Not Rated	2024-10-23	10/23/2026	-	-
Mclendon Creek Dam	MOORE-181	IMPOUNDING	High	Moore	Poor	2024-06-20	06/20/2026	Private	-
Deerfield Swine Waste Lagoon Dam No. 3	MOORE-182	IMPOUNDING	High	Moore	Fair	2025-03-06	03/06/2027	Private	-
Belle Meade Retirement Center Dam	MOORE-183	IMPOUNDING	Low	Moore	Fair	2013-07-30	04/09/2099	Private	-
Whispering Woods Golf Course Dam	MOORE-184	IMPOUNDING	High	Moore	Fair	2025-01-24	01/24/2027	Private	-
Thomas Brothers Dam	MOORE-185	IMPOUNDING	Low	Moore	Fair	2013-07-30	02/05/2099	Private	-
Nick's Creek Water Intake Dam	MOORE-186	IMPOUNDING	Low	Moore	Fair	2012-05-15	01/01/2099	Private	Southern Pines
Allred Farms Hog Lagoon #12 Dam	MOORE-187	IMPOUNDING	High	Moore	Not Rated	2024-06-20	06/20/2026	Private	Whispering Pines
Fairwoods Dam #4	MOORE-188	IMPOUNDING	Low	Moore	Fair	2013-07-30	05/07/2099	Private	-
Camp Durant Wastewater Pond Dam	MOORE-189	BREACHED	High	Moore	Not Rated	2024-10-23	10/23/2026	-	Carthage
Keatley Pond Dam	MOORE-190	IMPOUNDING	Low	Moore	Fair	2013-07-30	01/28/2099	Private	-
Sandy Woods Lake Dam	MOORE-191	IMPOUNDING	High	Moore	Fair	2024-10-23	10/23/2026	Private	Pinehurst
Edgewater Dam	MOORE-192	IMPOUNDING	Low	Moore	-	2005-09-22	09/22/2010	Private	-
Duncan Dam	MOORE-193	IMPOUNDING	Low	Moore	-	2007-02-15	02/15/2012	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Lake Meredith Dam	MOORE-083	IMPOUNDING	Low	Moore	Fair	2022-03-17	03/17/2027	Private	-
Thomas Blue Dam #1	MOORE-194	IMPOUNDING	Low	Moore	-	-	-	Private	Southern Pines
Thomas Blue Dam #2	MOORE-195	IMPOUNDING	Low	Moore	Fair	2012-05-04	01/01/2099	Private	Aberdeen
Southern Pines Raw Water Reservoir Dam	MOORE-196	IMPOUNDING	Low	Moore	Fair	2011-04-12	01/28/2012	Private	-
Dowdy Road Dam	MOORE-197	IMPOUNDING	Low	Moore	Fair	2022-03-03	03/03/2022	Private	-
High Falls Small Hydro Dam	MOORE-198	IMPOUNDING	Low	Moore	Fair	2012-02-09	01/01/2017	Private	-
Magnolia Pond Dam	MOORE-199	IMPOUNDING	High	Moore	Fair	2024-05-14	5/14/2026	Local Gov	-
Needham Farm Pond Dam	MOORE-200	IMPOUNDING	Low	Moore	-	-	-	Private	-
Matthews Dam	MOORE-201	IMPOUNDING	Low	Moore	-	-	-	Private	-
Kirby Holding Group Dam	MOORE-202	IMPOUNDING	Intermediate	Moore	-	-	-	Private	-
Rockery Pond Dam	MOORE-203	IMPOUNDING	Low	Moore	-	-	-	Private	-
Curries Pond Dam	MOORE-204	IMPOUNDING	Low	Moore	-	-	-	Private	-
Gray Dog Farm Pond Dam	MOORE-206	BREACHED	Low	Moore	-	-	-	-	Whispering Pines
Chriscoe Pond Dam	MOORE-207	IMPOUNDING	High	Moore	-	-	-	Private	Whispering Pines
Hollybrook Farm Dam	MOORE-208	IMPOUNDING	Low	Moore	-	-	-	Private	-
Huffman Dam	MOORE-209	IMPOUNDING	Low	Moore	-	-	-	Private	-
Lakebay Pond Dam	MOORE-210	IMPOUNDING	Low	Moore	-	-	-	Private	-
Lakebay Pond Dam #2	MOORE-211	IMPOUNDING	Low	Moore	-	-	-	Private	-
Williams Dam	MOORE-212	IMPOUNDING	Low	Moore	-	-	-	Private	-
Moonseed Lane Dam #1	MOORE-213	IMPOUNDING	Low	Moore	-	-	-	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Moonseed Lane Dam #2	MOORE-214	IMPOUNDING	Low	Moore	-	-	-	Private	-
Mabe Dam	MOORE-215	IMPOUNDING	Low	Moore	-	-	-	Private	-
Bible Tabernacle Dam	MOORE-216	BREACHED	Low	Moore	-	-	-	-	Southern Pines
Sandhills Christian School Upper Dam	MOORE-217	BREACHED	Low	Moore	-	-	-	-	Southern Pines
Sandhills Christian School Lower Dam	MOORE-218	IMPOUNDING	Low	Moore	-	-	-	Private	-
Pine Ridge Drive Dam	MOORE-219	IMPOUNDING	Low	Moore	-	-	-	Private	-
Wilkins Dam	MOORE-220	IMPOUNDING	Low	Moore	-	-	-	Private	-
Forest Creek Golf Course Dam #1	MOORE-221	IMPOUNDING	Low	Moore	-	-	-	Private	-
Forest Creek Golf Course Dam #2	MOORE-222	IMPOUNDING	Low	Moore	-	-	-	Private	-
Evander McLeod Mill Dam	MOORE-223	IMPOUNDING	High	Moore	-	-	-	Private	-
Matthews Tract Dam #1	MOORE-224	IMPOUNDING	Low	Moore	-	-	-	Private	Southern Pines
Matthews Tract Dam #2	MOORE-225	IMPOUNDING	High	Moore	-	-	-	Private	Southern Pines
Matthews Tract Upper Dam	MOORE-226	IMPOUNDING	Low	Moore	-	-	-	Private	-
Matthews Tract Lower Dam	MOORE-227	IMPOUNDING	Low	Moore	-	-	-	Private	-
Rankin Lake Dam #2	MOORE-228	IMPOUNDING	Low	Moore	-	-	-	Private	-
Page Land Dam	MOORE-229	IMPOUNDING	Low	Moore	-	-	-	Private	-
Thornburg Land Dam	MOORE-230	IMPOUNDING	Low	Moore	-	-	-	Private	-
Drowning Creek Dam	MOORE-231	IMPOUNDING	Low	Moore	-	-	-	Private	-
Blue Moon Dam	MOORE-232	IMPOUNDING	Low	Moore	-	-	-	Private	-
Fox Lake Dam	MOORE-233	IMPOUNDING	Low	Moore	-	-	-	Private	-
Baker Dam	MOORE-234	IMPOUNDING	Low	Moore	-	-	-	Private	-
Providence Avenue Dam	MOORE-235	IMPOUNDING	Low	Moore	-	-	-	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Gozzi Dam #1	MOORE-236	IMPOUNDING	Low	Moore	-	-	-	Private	-
Gozzi Dam #2	MOORE-237	IMPOUNDING	High	Moore	-	-	-	Private	-
Gozzi Dam #3	MOORE-238	IMPOUNDING	Low	Moore	-	-	-	Private	-
Williams Pond Dam	MOORE-239	IMPOUNDING	Low	Moore	-	-	-	Private	Pinebluff
Kim Shoemaker Pond Dam	MOORE-240	IMPOUNDING	Low	Moore	-	-	-	Private	Pinebluff
Giles Pond Dam #1	MOORE-241	IMPOUNDING	Low	Moore	-	-	-	Private	Pinebluff
Giles Pond Dam #2	MOORE-242	IMPOUNDING	Low	Moore	-	-	-	Private	-
Kalawi Farm Pond Dam #1	MOORE-243	IMPOUNDING	Low	Moore	-	-	-	Private	-
Williams Pond Dam	MOORE-244	IMPOUNDING	Low	Moore	-	-	-	Private	-
Cardinal Lake Dam #2	MOORE-245	IMPOUNDING	Low	Moore	-	-	-	Private	-
Fryman Pond Dam	MOORE-246	IMPOUNDING	Low	Moore	-	-	-	Private	-
Fryman Pond Dam #2	MOORE-247	IMPOUNDING	Low	Moore	-	-	-	Private	-
Priest Dam	MOORE-248	IMPOUNDING	Low	Moore	-	-	-	Local Gov	Whispering Pines
Helen Ross Pond Dam	MOORE-249	IMPOUNDING	Low	Moore	-	-	-	Private	-
Frye Pond Dam #2	MOORE-250	IMPOUNDING	Low	Moore	-	-	-	Private	-
Benites Pond Dam	MOORE-251	IMPOUNDING	Low	Moore	-	-	-	Private	-
Causey Pond Dam #2	MOORE-252	IMPOUNDING	Low	Moore	-	-	-	Private	-
Demeulemester Pond Dam	MOORE-253	IMPOUNDING	Low	Moore	-	-	-	Private	Aberdeen
Nastasi Pond Dam	MOORE-254	IMPOUNDING	Low	Moore	-	-	-	Private	-
Bailey Pond Dam	MOORE-255	IMPOUNDING	Low	Moore	-	-	-	Private	-
Wohlford Pond Dam	MOORE-256	IMPOUNDING	Low	Moore	-	-	-	Private	-
Williams Pond Dam	MOORE-257	IMPOUNDING	Low	Moore	-	-	-	Private	Vass
Carter Pond Dam	MOORE-258	IMPOUNDING	Low	Moore	-	-	-	Private	-
Clement Williams Pond Dam #1	MOORE-259	IMPOUNDING	Low	Moore	-	-	-	Private	-
Clement Williams Pond Dam #2	MOORE-260	IMPOUNDING	Low	Moore	-	-	-	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Brenner Pond Dam	MOORE-261	IMPOUNDING	Low	Moore	-	-	-	Private	-
Schartman Pond Dam	MOORE-262	IMPOUNDING	Low	Moore	-	-	-	Private	-
Alan Williams Pond Dam	MOORE-263	IMPOUNDING	Low	Moore	-	-	-	Private	-
Reeb Pond Dam	MOORE-264	IMPOUNDING	Low	Moore	-	-	-	Private	-
Tate Pond Dam	MOORE-265	IMPOUNDING	Low	Moore	-	-	-	Private	-
Cretors Pond Dam	MOORE-266	IMPOUNDING	Low	Moore	-	-	-	Private	-
Longleaf Road Dam	MOORE-267	IMPOUNDING	Low	Moore	-	-	-	Private	-
Herons Brook Drive Dam	MOORE-268	IMPOUNDING	Low	Moore	-	-	-	Private	-
Edwards Lake Dam #2	MOORE-269	IMPOUNDING	Low	Moore	-	-	-	Private	-
Dowd Dam	MOORE-270	IMPOUNDING	High	Moore	-	-	-	Private	Aberdeen
Hussey Lake Dam	MOORE-271	IMPOUNDING	High	Moore	-	-	-	Private	-
Harris Lake Dam	MOORE-272	IMPOUNDING	Low	Moore	-	-	-	Private	-
Jordan Lake Dam	MOORE-273	IMPOUNDING	Low	Moore	-	-	-	Private	-
Williams Lake Dam #1	MOORE-084	IMPOUNDING	Low	Moore	Not Rated	2009-12-15	01/01/2014	Private	-
Williams Lake Dam #3	MOORE-085	IMPOUNDING	Low	Moore	Fair	2022-03-03	03/03/2027	Private	-
Williams Lake Dam #4	MOORE-086	IMPOUNDING	Low	Moore	Fair	2013-08-08	01/24/2013	Private	-
Williams Lake Dam #5	MOORE-087	IMPOUNDING	Low	Moore	Fair	2012-05-11	01/01/2099	Private	-
Mcduffie Lake Dam	MOORE-088	IMPOUNDING	Low	Moore	Fair	2019-12-06	12/06/2020	Private	-
Harris Lake Dam #1	MOORE-089	IMPOUNDING	Low	Moore	Not Rated	2019-12-12	12/12/2020	Private	-
Harris Lake Dam #2	MOORE-090	IMPOUNDING	Low	Moore	Fair	2017-06-02	06/07/2202	Private	-
Lewis Lake Dam	MOORE-091	IMPOUNDING	Low	Moore	-	2006-06-05	06/05/2011	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
R. Green Lake Dam	MOORE-092	IMPOUNDING	High	Moore	Fair	2024-10-30	10/30/2026	Private	-
Williams Lake Dam #7	MOORE-093	IMPOUNDING	Low	Moore	-	2009-01-23	01/23/2014	Private	-
Holly Hills Lake Dam	MOORE-094	IMPOUNDING	Low	Moore	Fair	2022-03-17	03/17/2027	Private	-
Blue Lake Dam	MOORE-095	IMPOUNDING	Low	Moore	Fair	2022-03-17	03/17/2027	Private	-
Barnes Lake Dam	MOORE-096	IMPOUNDING	Low	Moore	Fair	2012-05-11	01/01/2099	Private	-
Van Arsdale Lake Dam	MOORE-097	IMPOUNDING	Low	Moore	Fair	2013-10-24	10/24/2099	Private	-
Blue Farm Dam	MOORE-098	IMPOUNDING	Intermediate	Moore	-	2001-05-21	01/02/2011	Local Gov	Whispering Pines
Marsh Lake Dam	MOORE-099	IMPOUNDING	Low	Moore	Fair	2016-11-22	11/22/2050	Private	-
Von Cannon Lake Dam	MOORE-100	IMPOUNDING	Low	Moore	Fair	2013-08-15	01/21/2016	Private	-
Matthews Lake Dam	MOORE-101	IMPOUNDING	High	Moore	Fair	2024-10-23	10/23/2026	Private	Southern Pines
Municipal Lake Dam	MOORE-102	IMPOUNDING	Low	Moore	Fair	2012-10-18	01/01/2022	Private	-
Cox Lake Dam	MOORE-103	IMPOUNDING	Low	Moore	Fair	2013-07-29	01/01/2099	Private	-
Carolina Lake Dam	MOORE-104	IMPOUNDING	Low	Moore	Fair	2022-01-28	01/28/2027	Private	-
Little River Farm Dam	MOORE-105	IMPOUNDING	Low	Moore	-	2009-03-17	03/17/2014	Private	Pinebluff
Mckeithan Lake Dam	MOORE-106	IMPOUNDING	Low	Moore	Fair	2012-10-30	01/01/2022	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Southern Pines #1 Lagoon Dam	MOORE-107	DRAINED	Intermediate	Moore	Unsatisfactory	2011-05-11	03/04/2012	Private	-
Seven Lakes Dam #1	MOORE-108	IMPOUNDING	Low	Moore	Fair	2013-08-15	02/11/2015	Private	Carthage
Seven Lakes Dam #2	MOORE-109	IMPOUNDING	High	Moore	Fair	2024-05-14	05/14/2026	Private	-
Seven Lakes Dam #3	MOORE-110	IMPOUNDING	High	Moore	Fair	2024-05-14	05/14/2026	Local Gov	-
Seven Lakes Dam #4	MOORE-111	IMPOUNDING	High	Moore	Fair	2024-05-21	05/21/2026	Private	-
Seven Lakes Dam #5	MOORE-112	IMPOUNDING	High	Moore	Fair	2024-05-21	05/21/2026	Private	-
Seven Lakes Dam #6	MOORE-113	IMPOUNDING	High	Moore	Fair	2024-05-21	05/21/2026	Private	-
Mac Chappel Waste Lagoon Dam	MOORE-114	IMPOUNDING	High	Moore	Fair	2024-05-21	05/21/2026	Private	-
Oldham Lake Dam	MOORE-115	IMPOUNDING	High	Moore	Fair	2024-05-21	05/21/2026	Private	-
Legacy Golf Links Dam No. 1	MOORE-116	IMPOUNDING	Low	Moore	Fair	2012-10-30	01/01/2022	Private	-
Larsen Lake Dam	MOORE-117	RECLAIMED	Low	Moore	Fair	2013-07-29	01/24/2099	-	-
Watson Lake Dam #2	MOORE-118	IMPOUNDING	Low	Moore	Fair	2012-09-19	01/01/2022	Private	-
Robbins Raw Water Reservoir Dam	MOORE-119	IMPOUNDING	Low	Moore	Fair	2022-02-02	02/02/2027	Private	Aberdeen
Bunny Wallace Lake Dam	MOORE-120	IMPOUNDING	Low	Moore	Fair	2013-10-24	10/24/2099	Private	-
George Williams Dam #1	MOORE-121	IMPOUNDING	High	Moore	Fair	2024-05-09	05/09/2026	Private	Pinehurst

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
F. Marsh Pond Dam	MOORE-122	IMPOUNDING	Low	Moore	Fair	2022-05-17	05/17/2027	Local Gov	Robbins
A & C Enterprise Dam	MOORE-123	IMPOUNDING	Low	Moore	Fair	2012-08-21	01/01/2022	Private	-
Camp Hawthornburg Dam	MOORE-124	IMPOUNDING	Low	Moore	Not Rated	2022-05-17	05/17/2023	Private	-
Craven Lake Dam	MOORE-125	IMPOUNDING	Low	Moore	Fair	2013-10-24	10/24/2099	Private	-
Pinehurst Unit 15 Dam	MOORE-126	BREACHED	Low	Moore	Poor	2021-12-21	12/21/2023	-	-
Pinehurst GC #6 Dam #1	MOORE-127	IMPOUNDING	Low	Moore	Fair	2013-10-24	10/24/2099	Private	-
Pinehurst GC #6 Dam #2	MOORE-128	IMPOUNDING	Intermediate	Moore	-	2009-02-03	02/03/2012	Private	Pinebluff
Queens Court Dam	MOORE-129	IMPOUNDING	Low	Moore	Fair	2022-01-05	01/05/2027	Private	Pinehurst
Lake Pinehurst Pond Dam #2	MOORE-130	IMPOUNDING	Low	Moore	Fair	2012-06-13	01/01/2022	Private	Pinehurst
Lower Matthews Pond Dam	MOORE-131	IMPOUNDING	High	Moore	Fair	2024-10-23	10/23/2026	Private	Pinehurst
Lake Pinehurst Dam	MOORE-132	IMPOUNDING	High	Moore	Fair	2024-05-09	05/09/2026	Local Gov	Pinehurst
J. Williams Lake Dam	MOORE-133	IMPOUNDING	High	Moore	Fair	2024-05-09	05/09/2026	Local Gov	Pinehurst
Pinehurst GC #6 Dam #3	MOORE-134	IMPOUNDING	Low	Moore	Fair	2013-10-24	10/24/2099	Private	-
Anita Lake Dam	MOORE-135	IMPOUNDING	High	Moore	Fair	2024-05-09	05/09/2026	Private	Pinehurst
Lower Pompelli Lake Dam	MOORE-136	IMPOUNDING	Low	Moore	-	2008-05-12	05/12/2013	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Pinehurst Unit 14 Dam	MOORE-137	IMPOUNDING	High	Moore	Fair	2024-05-31	05/31/2026	Private	Pinehurst
Thomas Pond Dam	MOORE-138	IMPOUNDING	Low	Moore	-	2001-05-10	01/02/2011	Private	Carthage
Foxfire Dam #1	MOORE-139	IMPOUNDING	Low	Moore	-	2008-01-24	01/24/2013	Private	-
Pinewild Lake Dam	MOORE-140	IMPOUNDING	High	Moore	Fair	2024-10-30	10/30/2026	Private	Pinehurst
Dr. R. Tate Pond Dam	MOORE-141	IMPOUNDING	Low	Moore	Fair	2013-10-24	10/24/2099	Private	-
Cardinal Lake Dam	MOORE-142	IMPOUNDING	Low	Moore	Fair	2022-01-05	01/05/2027	Private	Foxfire Village
Whisper Lake Dam	MOORE-143	IMPOUNDING	High	Moore	Fair	2024-06-25	06/25/2026	Private	Pinehurst
Fairway Farms Dam	MOORE-144	IMPOUNDING	Low	Moore	-	2009-03-17	03/17/2014	Private	Vass
Edwin Williams Pond Dam	MOORE-145	IMPOUNDING	High	Moore	Fair	2024-05-01	05/01/2026	Local Gov	Whispering Pines
Neville Pond Dam	MOORE-146	IMPOUNDING	Low	Moore	Fair	2021-05-27	05/27/2026	Local Gov	Whispering Pines
Pinehurst National Golf Course Dam #1	MOORE-147	IMPOUNDING	Low	Moore	Fair	2012-05-25	01/01/2099	Private	-
George Williams Dam #2	MOORE-148	IMPOUNDING	Low	Moore	Fair	2013-10-28	10/28/2099	Private	-
Pinehurst National Dam #3A	MOORE-149	IMPOUNDING	Low	Moore	Fair	2013-10-28	10/28/2099	Private	
John Garner Pond Dam	MOORE-150	IMPOUNDING	High	Moore	Poor	2024-02-16	02/16/2025	Private	Southern Pines
Sandhills Comm. Coll. Dam	MOORE-151	IMPOUNDING	Low	Moore	Fair	2013-10-28	10/28/2099	Private	-

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Randall Monroe Dam	MOORE-152	IMPOUNDING	High	Moore	Fair	2024-06-25	06/25/2026	Private	Southern Pines
Sandhills Comm. Coll. Dam #2	MOORE-153	IMPOUNDING	High	Moore	Fair	2024-05-14	05/14/2026	Private	-
J.L. Frith Pond Dam #2	MOORE-154	IMPOUNDING	Low	Moore	Fair	2012-05-15	01/01/2099	State	Southern Pines
St. Joseph Hospital Dam	MOORE-155	IMPOUNDING	Low	Moore	Fair	2013-10-29	10/29/2099	Private	-
Breeden Lake Dam	MOORE-156	IMPOUNDING	Low	Moore	Fair	2012-05-15	01/01/2099	Private	Southern Pines
Lake Heron Dam	MOORE-157	IMPOUNDING	High	Moore	Fair	2024-07-23	07/23/2026	Private	-
Lawrence Lyerly Dam	MOORE-158	IMPOUNDING	Low	Moore	Fair	2012-08-29	01/01/2022	Private	Southern Pines
Little River Farm Dam #2	MOORE-159	IMPOUNDING	Low	Moore	Fair	2013-10-29	10/29/2099	Private	-
Bibey Pond Dam #1	MOORE-160	IMPOUNDING	Low	Moore	Fair	2021-08-17	08/17/2026	Private	-
Bibey Pond Dam #2	MOORE-161	IMPOUNDING	Low	Moore	Fair	2021-12-14	12/14/2026	Private	-
Lake Whippoorwill Dam	MOORE-162	IMPOUNDING	Low	Moore	Fair	2013-10-29	10/29/2099	Private	Carthage
Lanson Farm Dam #1 Lower	MOORE-163	IMPOUNDING	High	Moore	Poor	2025-03-14	03/14/2026	Private	-
Lanson Farm Dam #2 Upper	MOORE-164	IMPOUNDING	High	Moore	Fair	2025-03-14	03/14/2027	Private	-
Wet Creek Farm Lagoon #1 Dam	MOORE-165	IMPOUNDING	Low	Moore	Fair	2013-10-29	10/29/2099	Private	-
Wet Creek Farm Lagoon #2 Dam	MOORE-166	IMPOUNDING	Low	Moore	Fair	2012-09-26	01/01/2012	Private	Southern Pines

Dam Name	State ID	Dam Status	Dam Hazard	County	Condition	Date of Last Inspection	Next Inspection Date	Owner Type	City
Wet Creek Farm Pond Dam	MOORE-167	IMPOUNDING	Low	Moore	Fair	2012-09-26	01/01/2022	Private	Southern Pines
Holly Ridge Farm Lagoon #1 Dam	MOORE-168	IMPOUNDING	Low	Moore	Fair	2013-07-30	01/24/2099	Private	-
Holly Ridge Farm Lagoon #2 Dam	MOORE-169	IMPOUNDING	Low	Moore	Fair	2013-07-30	04/15/2099	Private	-
Rosemont Dam	MOORE-170	IMPOUNDING	Low	Moore	Fair	2022-06-15	06/15/2027	Private	-
Legacy Pond #2 Dam	MOORE-171	IMPOUNDING	Low	Moore	Fair	2013-07-30	04/15/2099	Private	-
Briar Chapel Reclamation Facility Central Pond Dam	MOORE-172	IMPOUNDING	Low	Moore	Fair	2013-07-30	04/15/2099	Private	-

5.10.3 Extent

Two factors influence the potential severity of a dam failure: the amount of water impounded and the density, type, and value of development and infrastructure located downstream. The potential extent of dam failure may be classified according to its "hazard potential," meaning the probable damage that would occur if the structure failed, in terms of loss of human life, economic losses, or environmental damage. The State of North Carolina classifies dam structures under its regulations according to hazard potential, as described in Table 5-47. It is important to note that these classifications are not based on the adequacy or structural integrity of existing dam structures. There were no reported dam failures in the Region and all its jurisdictions. A mitigation strategy for dam identification and mapping will be considered in future mitigation actions for the Region.

***Table 5-47**: North Carolina 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
High	Loss of human life*	Probable loss of 1 or more human lives
	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: North Carolina Division of Land Resources

5.10.4 Historical Occurrences

Two dam breaches have been reported in the Cape Fear Region, both in Johnston County. Although no damage was reported with these events, several breach scenarios in the region could be catastrophic.

Additionally, according to the North Carolina State Hazard Mitigation Plan, 15 dam breaks were reported across Eastern North Carolina following Hurricane Fran in 1996, and another 36 failures occurred as a result of Hurricane Floyd in 1999. County-specific information is not available to determine if any of these breaks occurred in the Cape Fear Region.

The information below identifies additional historical anecdotal information reported by the jurisdictions.

Chatham County

No dam failures are reported in Chatham County, but two dams have the status of breached (The Pensbroso Acres Lake and Cape Fear Flood Control Dam) in the planning area.[111] However, there are no details about the incidents on the Association of State Dam Officials (ASDSO) Dam Safety Incident Database Search.

Harnett County

There is one dam in Harnett County that has been reported as failed, and seven dams that are listed as breached in the NC Dam Inventory.[112] However, according to the ASDSO Dam Safety Incident Database, two dams, Long Valley Farm Lake Dam and Guy Lake Dam, reported failure incidents in the planning area in 2016, attributed to overtopping associated with Hurricane Matthew.[113] Long Valley Farm Lake Dam on Jumping Run Creek and Guy Lake Dam on Black River both experienced dam failures driven by flooding associated with Hurricane Matthew. The Long Valley Farm Lake Dam had deep scour holes at the crest, and the failure resulted in an estimated $1,000,000 to $5,000,000 in damage. Guy Lake Dam was overtopped and breached, but didn't overtop the road or bridge, and the incident caused an

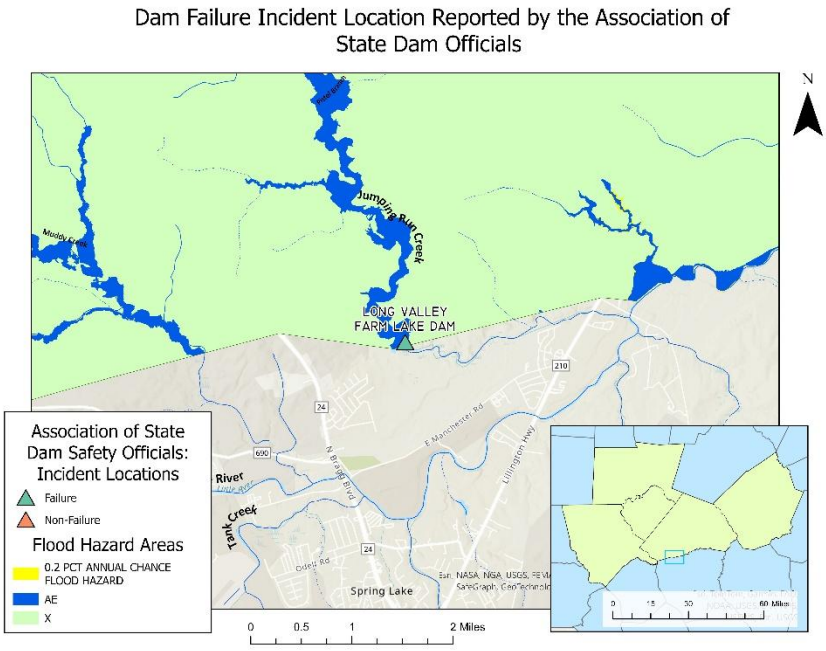


Figure 5-310: Long Valley Farm Lake Dam ASDSO Dam Safety Incident Database

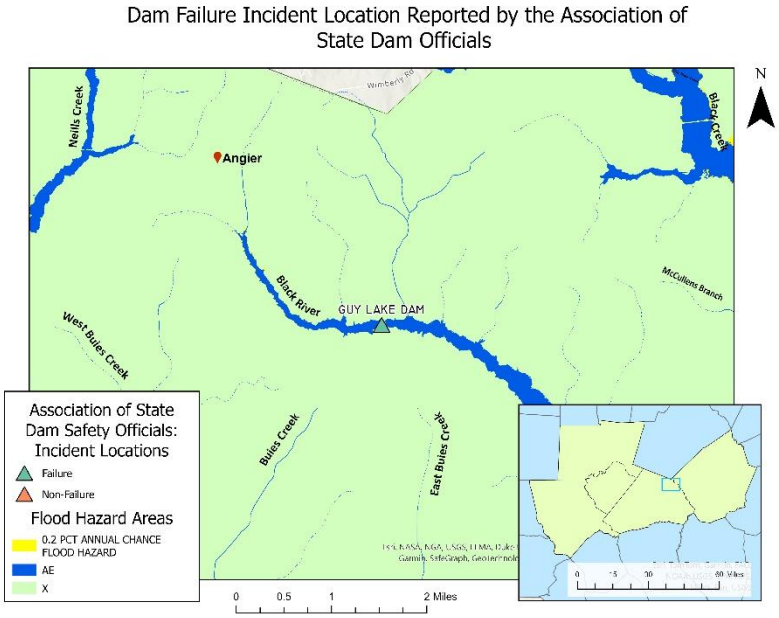


Figure 5-311: Guy Lake Dam location based on ASDSO Dam Safety Incident Database

[111] NC Department of Environmental Quality [NCDEQ]. (2024). North Carolina Dam Inventory [Dataset]. In NCDEQ Online GIS. NCDEQ. https://data-ncdenr.opendata.arcgis.com/

[112] NC Department of Environmental Quality [NCDEQ]. (2024). North Carolina Dam Inventory [Dataset]. In NCDEQ Online GIS. NCDEQ. https://data-ncdenr.opendata.arcgis.com/

[113] Association of State Dam Safety Officials [ASDSO]. (n.d.). Dam Incident Database [Dataset]. In Association of State Dam Safety Officials. ASDSO. https://damsafety.org/incidents

estimated $100,000 to $500,000 in damage.

Johnston County

Six dams in Johnston County are listed as breached, including The Tar Heel Farm Lake Dam, Brown Lake Dam, Parker Millpond Dam, Gates Pond Dam, Finch Dam, and Talecris Biotherapeutics Dam. There are no records of the breaches on the ASDSO Dam Safety Incident Database Search.

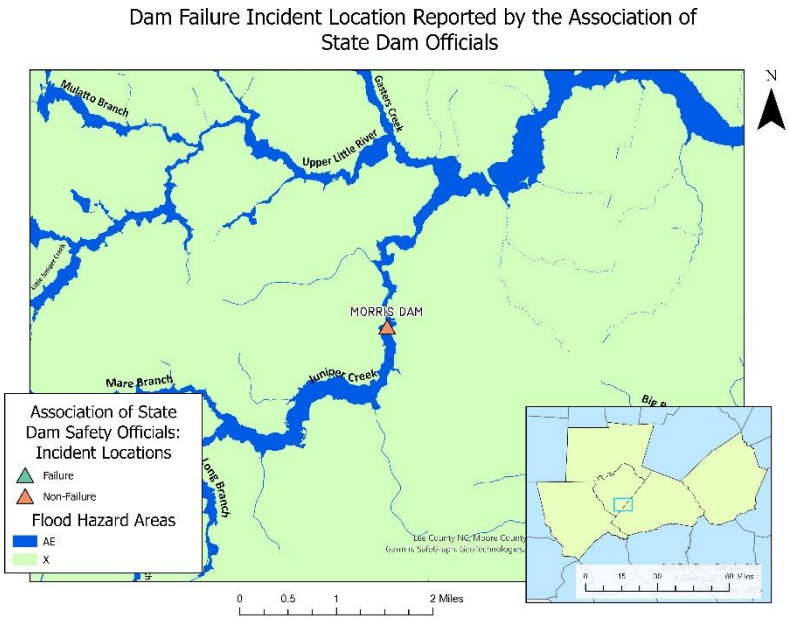


***Figure 5-312**: Dam Failure Incidents from the ASDSO Incident Database*

Lee County

Adams Dam has a reported status of breached according to the NC Dam Safety Office, and the ASDSO Dam Safety Incident Database reports an overtopping event for Morris Dam. The Morris Dam overtopping event occurred on June 7, 2013, when Tropical Depression Andrea passed over the area. The overtopping event threatened Swanns Station Road downstream from the dam, but no economic damage was reported in the ASDSO Dam Safety Incident Database.

Moore County

According to the NC Dam Safety Office, 10 dams have been reported breached, and the Woodlake Dam is listed as failed. Lake Bay Dam, Shadow Lake Dam, Mid Pines Lake Dam, A & C Enterprise Dam, Arthur Williams Dam, Johnson Pond Dam, Nick's Creek Water Intake Dam (also known as Carthage Water Intake Dam), Kirby Holding Group Dam, Moonseed Lane Dam

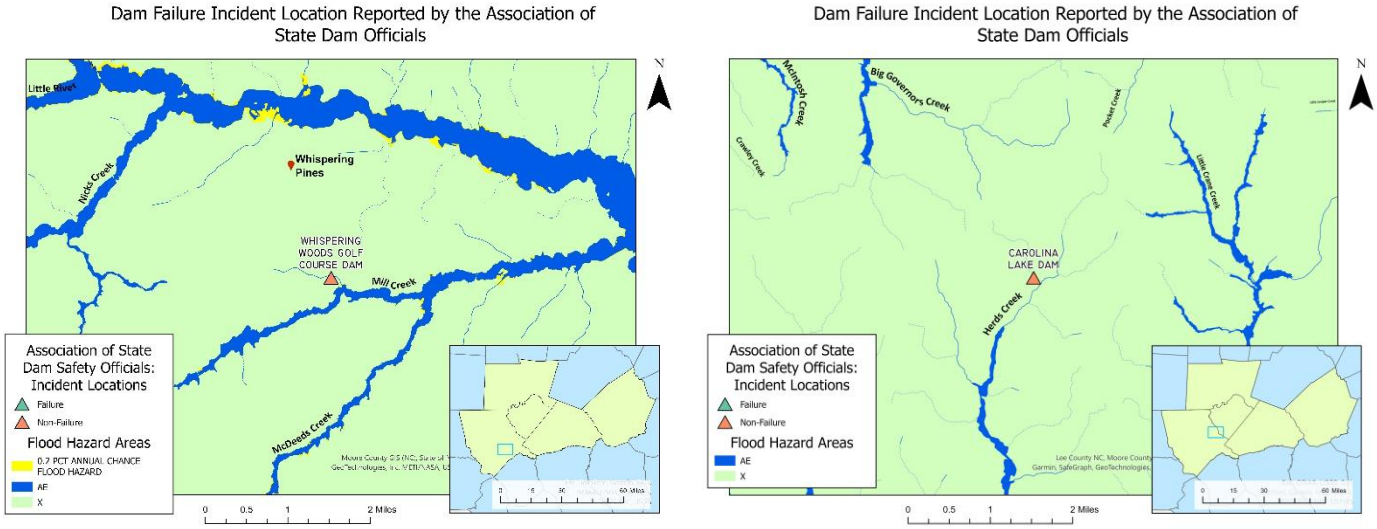


***Figure 5-313**: Whispering Woods Golf Course Dam and Carolina Lake Dam ASDSO Dam Failure Incident Locations*

#1, and Moonseed Lane Dam #2 have a reported status of breached. However, Carolina Lake Dam (also known as ATCO Dam) and Whispering Woods Golf Course Dam have reported ASDSO Dam Failure incidents attributed to deterioration or poor condition.

5.10.5 Probability of Future Occurrence

Given the current dam inventory and historical data, a dam breach is unlikely in the future (annual probability less than 1 percent). However, as has been demonstrated in the past, regular monitoring is necessary to prevent these events. No further analysis will be conducted in Section 6: Vulnerability Assessment, as more sophisticated dam breach plans (typically prepared by the U.S. Army Corps of Engineers) have been completed for the dams of concern in the region.

5.10.6 Impact

5.10.6.1 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 with an Emergency Action Plan (EAP), the vulnerability to loss of life for persons in their homes or on their property may be mitigated by following the EAP evacuation procedures; however, displaced persons may still incur sheltering costs. For people located on the river (e.g., for recreation), the vulnerability of loss of life is significant.

The dams in the Region do not provide a drinking water supply. As a result, the Region is not at risk of major public health threats from dam failure disrupting the drinking water supply. However, the population is vulnerable to minor impacts, including the loss of the aesthetic or recreational use of the lakes upstream of dams following failure. Johnston County and the jurisdictions of Four Oaks and Benson are most vulnerable to dam breaches, given past incidents.

- To prepare for and respond to impending dam or levee failure events, it is important that residents can access resources for dam failure preparedness and response distributed by text message alerts and through the internet. In the planning area, some housing units are estimated to not have access to a computing device (5% of housing units in Chatham County, 6.1% in Harnett County, 3.2% in Johnston County, 5.1% in Lee County, and 5.3% in Moore County estimated in 2023)[114] and some housing units do not have an internet subscription (13.2% of housing units in Chatham County, 16.3% in Harnett County, 13.7% in Johnston County, 23.8% in Lee County, and 10.2% in Moore County in 2023).[115] Given the large portion of the planning area without internet subscriptions or computing devices, the planning area should equip residents with a

[114] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[115] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

wide range of public awareness materials and initiatives across multiple media, such as radio ads, newspaper ads, flyers, and commercials.

- To prevent dam failure impacts, there should be a way for all residents in dam failure areas can receive emergency alerts in a timely manner to reduce the potential loss of life related to dam failure. Communication via reverse-911, text message, or internet alerts has become a critical tool for alerting residents to impending hazard impacts. However, this may be limited for those without access to a computer or the internet. Additionally, a significant number of housing units report that they do not have telephone service (Chatham County 0.5%, Harnett County 0.4%, Johnston County 1.1%, Lee County 0.9%, and Moore County 0.9% of housing units), which means that these residents may have limited access to time-sensitive emergency alerts sent with reverse-911 systems or SMS to evacuate high hazard areas in a timely manner.
- Additionally, residents who do not have a vehicle available in their housing unit (2.9% in Chatham County, 3.8% in Harnett County, 3.8% in Johnston County, 4.3% in Lee County, and 4.1% in Moore County)[116] may have difficulty evacuating in a timely manner in the event of a potential dam failure. It is important that residents who do not have a vehicle available in their housing unit, individuals with disabilities (11.8% in Chatham County, 15.5% in Harnett County, 13% in Johnston County, 17.7% in Lee County, and 14% in Moore County[117]), and individuals with an independent living difficulty (4.8% in Chatham County, 6.4% in Harnett County, 5.1% in Johnston County, 6.4% in Lee County, and 5.9% in Moore County[118]) are accounted for in the event of dam failure.
  - The planning area should develop a plan that ensures all residents can evacuate in a timely manner in the event of a dam failure. This includes developing an emergency services plan to assist with evacuations for those with limited ability to travel to a safe location.
  - Ensure that all residents can receive emergency alerts via a single communication channel, such as text messages, radio alerts, internet alerts, or other alert systems, in the event of an imminent dam failure.

5.10.6.2 Changes in Development

Vulnerability to the built environment includes damage to the dam itself and to any man-made features located within the inundation area caused by 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 crosses 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,

[116] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[117] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810

[118] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810

floating structures, or water intake structures, may be damaged by the rapid reduction in water level during the failure.

5.10.6.3 Economy

The economic impact of small dams is generally small, and it is often limited to the dam owner and the cost of first responder activities. Large failures can disrupt the economy by displacing workers, damaging commercial employment centers, or destroying infrastructure that impacts commercial activities or access to other economic drivers.

5.10.6.4 Natural 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 likely cause erosion within and adjacent to the stream. Deposition of eroded deposits may choke instream habitat or disrupt riparian areas. Sediments on the lake bottom and any low-oxygen water from within the lake will be dispersed, potentially causing fish kills or releasing heavy metals from the lake sediment layers. Dam failure events can also increase soil erosion, sedimentation that clogs waterways, decreased water quality, contamination of rivers and lakes, and destruction of downstream ecosystems.

5.10.6.5 First Responders

For dams that fail slowly, first responders will be affected similarly to other events with advance warning. For dams that fail without prior warning, the impact is rapid and severe, requiring a rapid response to the impacts. Although the response is generally restricted to the stream below the dam, the impact location moves rapidly downstream, requiring multiple response locations.

5.10.6.6 Future Conditions

Changes in the climate are expected to lead to more frequent, severe storm events, which will likely increase the future risk of dam overtopping, damage, or failure during periods of excessive precipitation.

5.11 Flood

5.11.1 Hazard Description and Background

According to the Natural Resources Defense Council (NRDC), floods are the most common (and often most deadly) natural disasters in the United States. Between 2019 and 2018, North Carolina alone experienced 47 flood fatalities.[119] Floods account for nearly 90 percent of the damage from natural disasters. In addition, floods represent the majority of Presidential disaster declarations.[120]

Floods generally result from excessive precipitation and can be classified into two categories: general floods, characterized by precipitation over a given river basin over a long period, along

[119] 2010-2018 Flood Fatalities in the United States, NOAA/National Weather Service. Retrieved from: https://www.weather.gov/arx/usflood

[120] U.S. Geological Survey Water-supply Paper, 1991, Issue 2375.

with storm-induced wave action, and flash floods, the product of heavy, localized precipitation over a short period at a given location. The severity of a flooding event is typically determined by a combination of several major factors, including stream and river basin topography and physiography, precipitation and weather patterns, recent soil moisture conditions, and the degree of vegetative clearing and impervious surface.

General floods are usually long-term events that may last for several days. The primary types of general flooding include riverine, coastal, and urban flooding. Riverine flooding is a function of excessive precipitation levels and water runoff volumes within the watershed of a stream or river. Storm surge, wind-driven waves, and heavy rainfall from hurricanes, tropical storms, and other large coastal storms typically cause coastal flooding. Urban flooding occurs when man-made development obstructs the natural flow of water and reduces the ability of natural ground cover to absorb and retain surface water runoff.

Slow-moving thunderstorms cause most flash flooding in a local area, as do heavy rains associated with hurricanes and tropical storms. However, flash flooding events may also occur from a dam or levee failure within minutes or hours of heavy rainfall, or from a sudden release of water held by a retention basin or other stormwater control facility. Although flash flooding occurs most often along mountain streams, it is also common in urbanized areas where much of the ground is covered by impervious surfaces.

The periodic flooding of lands adjacent to rivers, streams, and shorelines (land known as a floodplain) is a natural and inevitable occurrence that can be expected to occur based on established recurrence intervals. The recurrence interval of a flood is defined as the average time interval, in years, expected between a flood event of a particular magnitude and an equal or larger flood. Flood magnitude increases with increasing recurrence interval.

Floodplains are designated by the frequency of the flood that is large enough to cover them. For example, the 10-year floodplain will be covered by the 10-year flood, and the 100-year floodplain by the 100-year flood. Flood frequencies, such as the 100-year flood, are determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur. Another way of expressing the flood frequency is the chance of occurrence in a given year, which is the percentage of the probability of flooding each year. For example, the 100-year flood has a 1 percent chance of occurring in any given year, and the 500-year flood has a 0.2 percent chance of occurring in any given year.

5.11.2 Location and Spatial Extent

There are areas in the Cape Fear Region that are susceptible to flood events. Special flood hazard areas in the Cape Fear Region were mapped using Geographic Information System (GIS) and FEMA Digital Flood Insurance Rate Maps (DFIRM). This includes Zone A (1-percent annual chance floodplain), Zone AE (1-percent annual chance floodplain with elevation), and Zone X500 (0.2-percent annual chance floodplain). According to GIS analysis, of the 3,070 square miles that make up the Cape Fear Region (including the area of Chatham County, Harnett County, Johnston County, Lee County, and Moore County), there are 330.7 square miles of land in zones A and AE (1-percent annual chance floodplain/100-year floodplain) and 21.4 square miles of land in zone X500 (0.2-percent annual chance floodplain/500-year floodplain). The county totals are presented below in Table 5-48.

Table 5-48: Summary of Floodplain Areas in the Cape Fear Region

Location	100-year area (square miles)	500-year area (square miles)
Chatham County	73.1	0.4
Harnett County	52.9	11.8
Johnston County	126.0	7.8
Lee County	24.5	0.3
Moore County	54.2	1.1
Cape Fear Region Total	**330.7**	**21.4**

It is important to note that while FEMA digital flood data is recognized as the best data available for planning purposes, it does not always reflect the most accurate and up-to-date flood risk. Flooding and flood-related losses often do occur outside of delineated special flood hazard areas. Table 5-49 illustrates the location and extent of currently mapped special flood hazard areas in the Cape Fear Region, based on the best available FEMA DFIRM data. The following maps represent the FEMA digital flood data for the planning area and the associated flood risk:

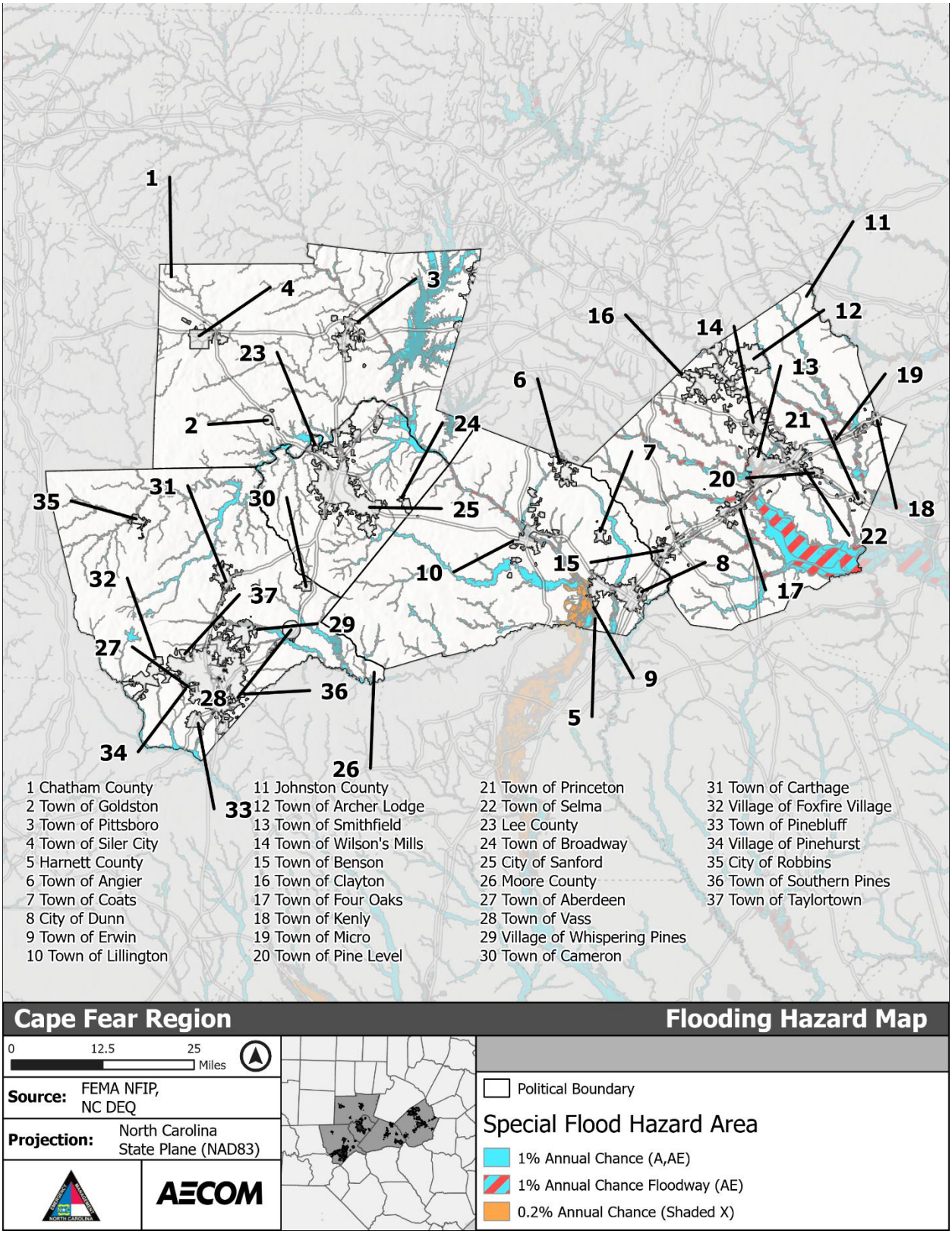


***Figure 5-314**: Flood Hazard Areas - Cape Fear Region*

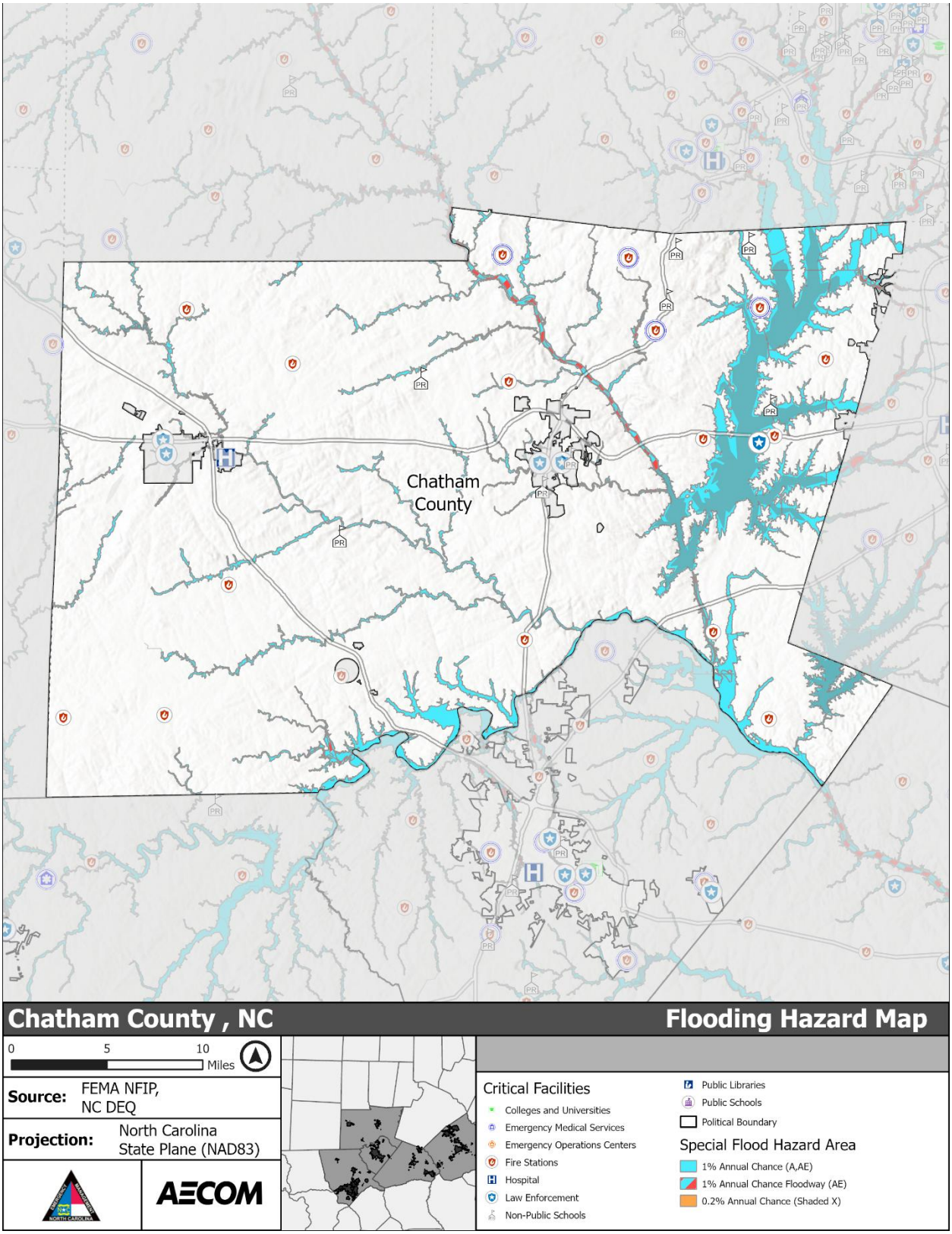


***Figure 5-315**: Flood Hazard Areas - Chatham County*

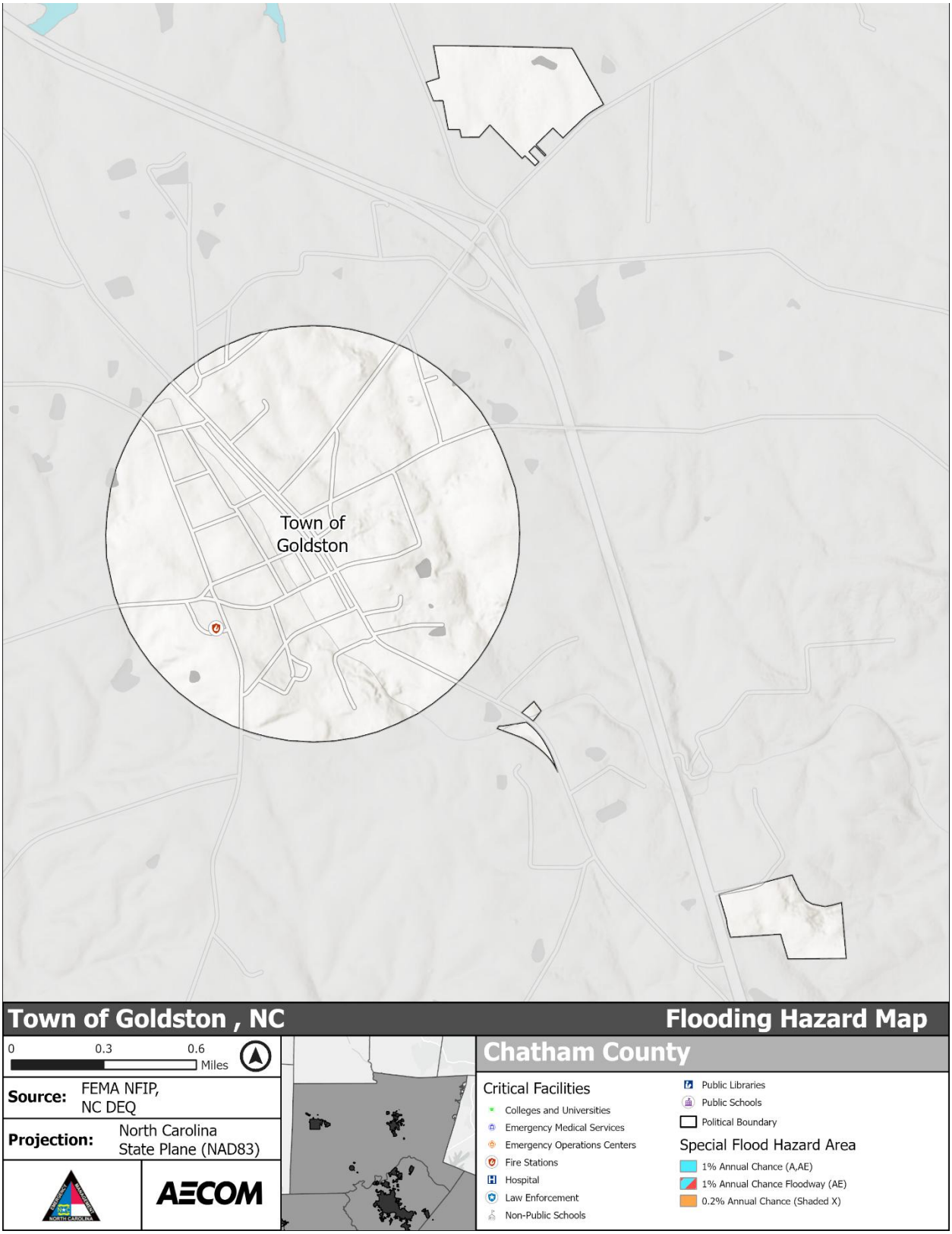


***Figure 5-316**: Flood Hazard Areas - Town of Goldston*

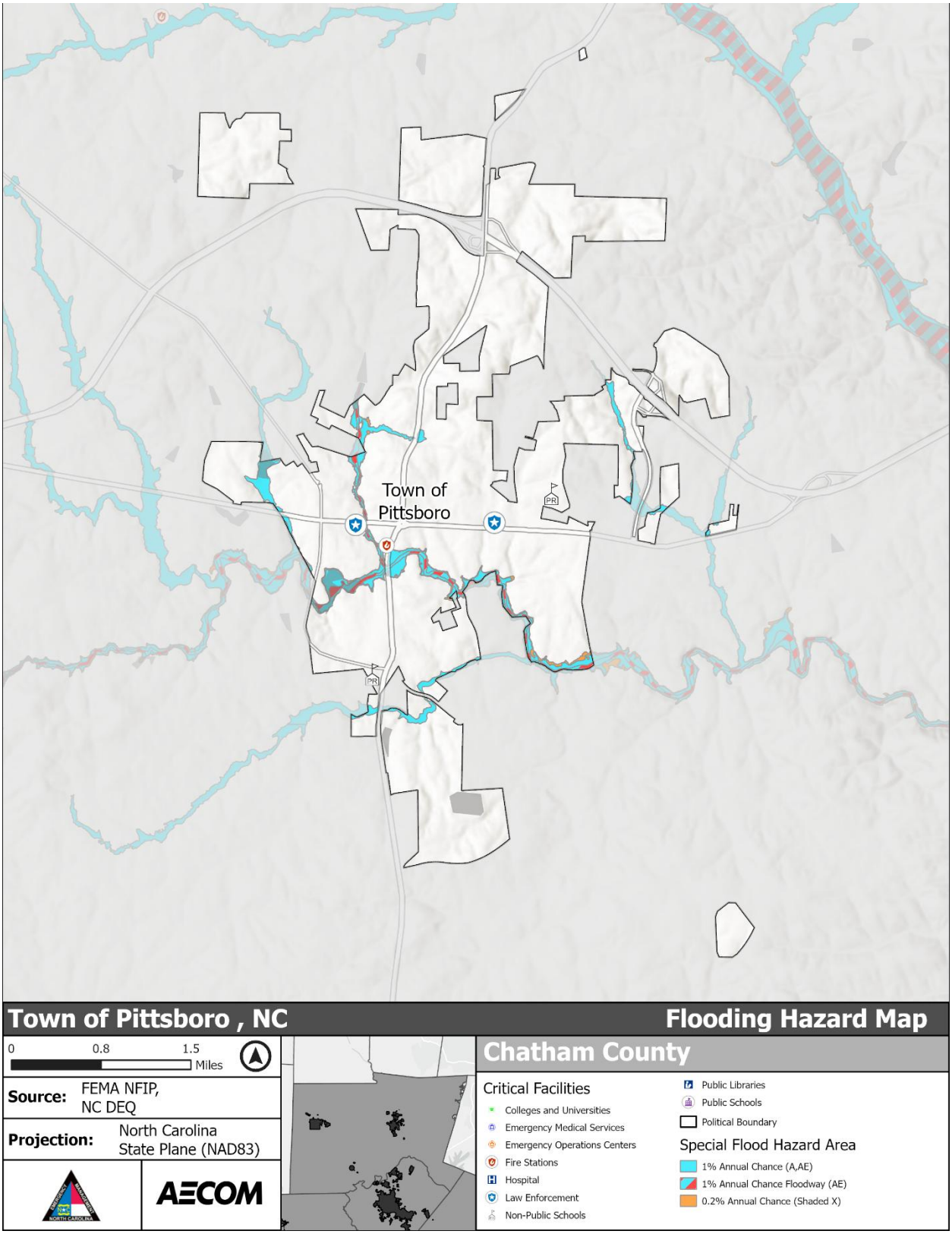


***Figure 5-317**: Flood Hazard Areas - Town of Pittsboro*

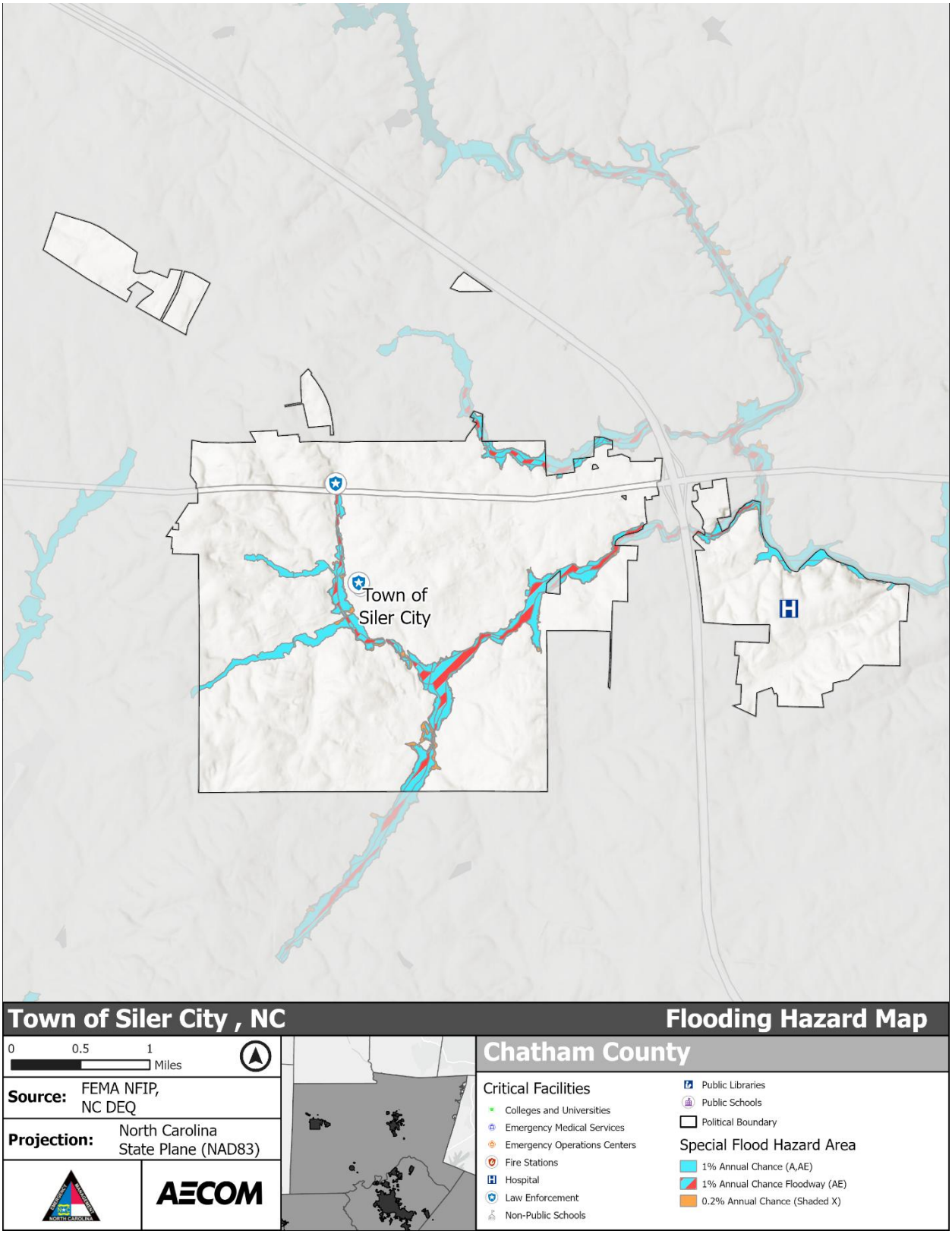


***Figure 5-318**: Flood Hazard Areas - Town of Siler City*

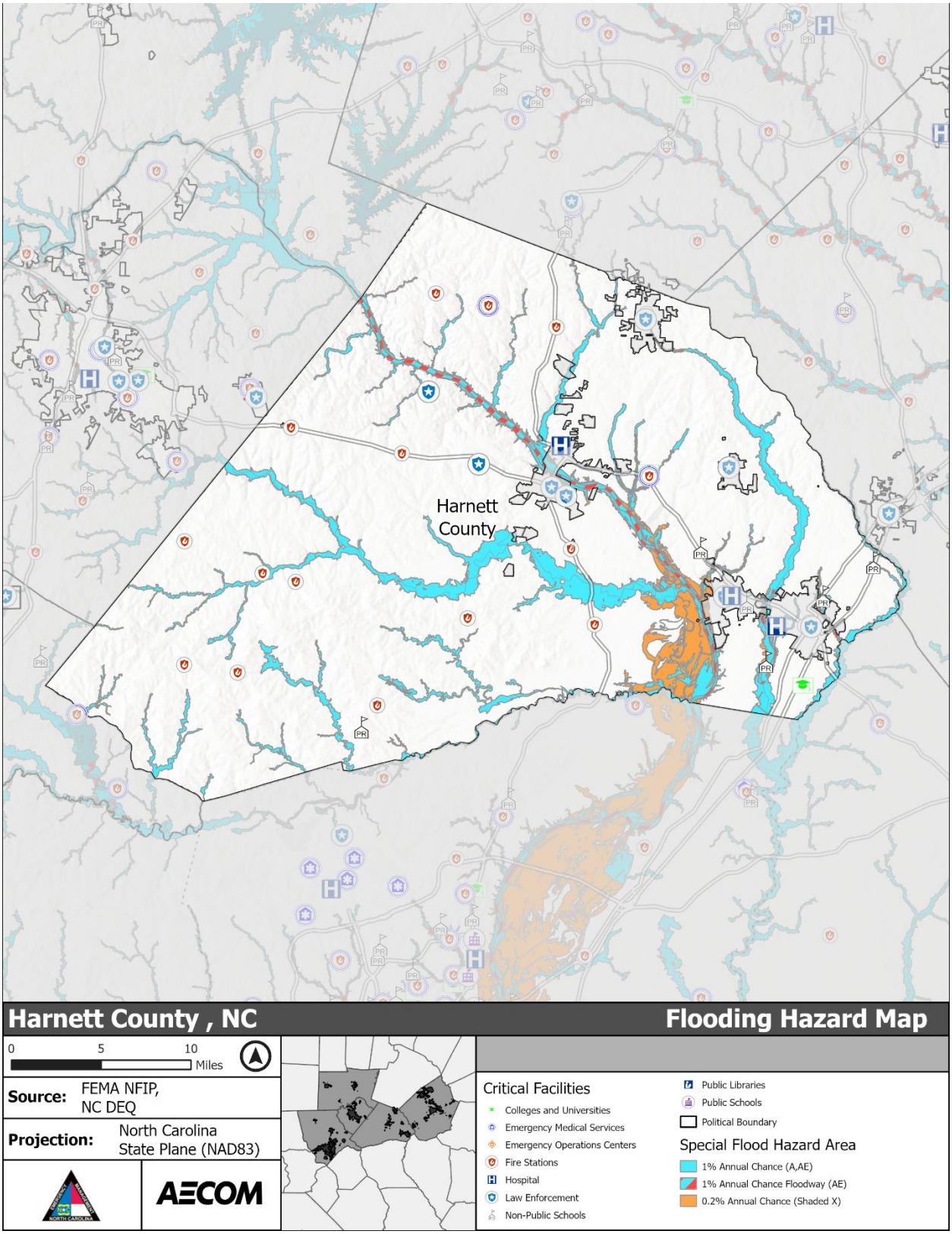


***Figure 5-319**: Flood Hazard Areas - Harnett County*

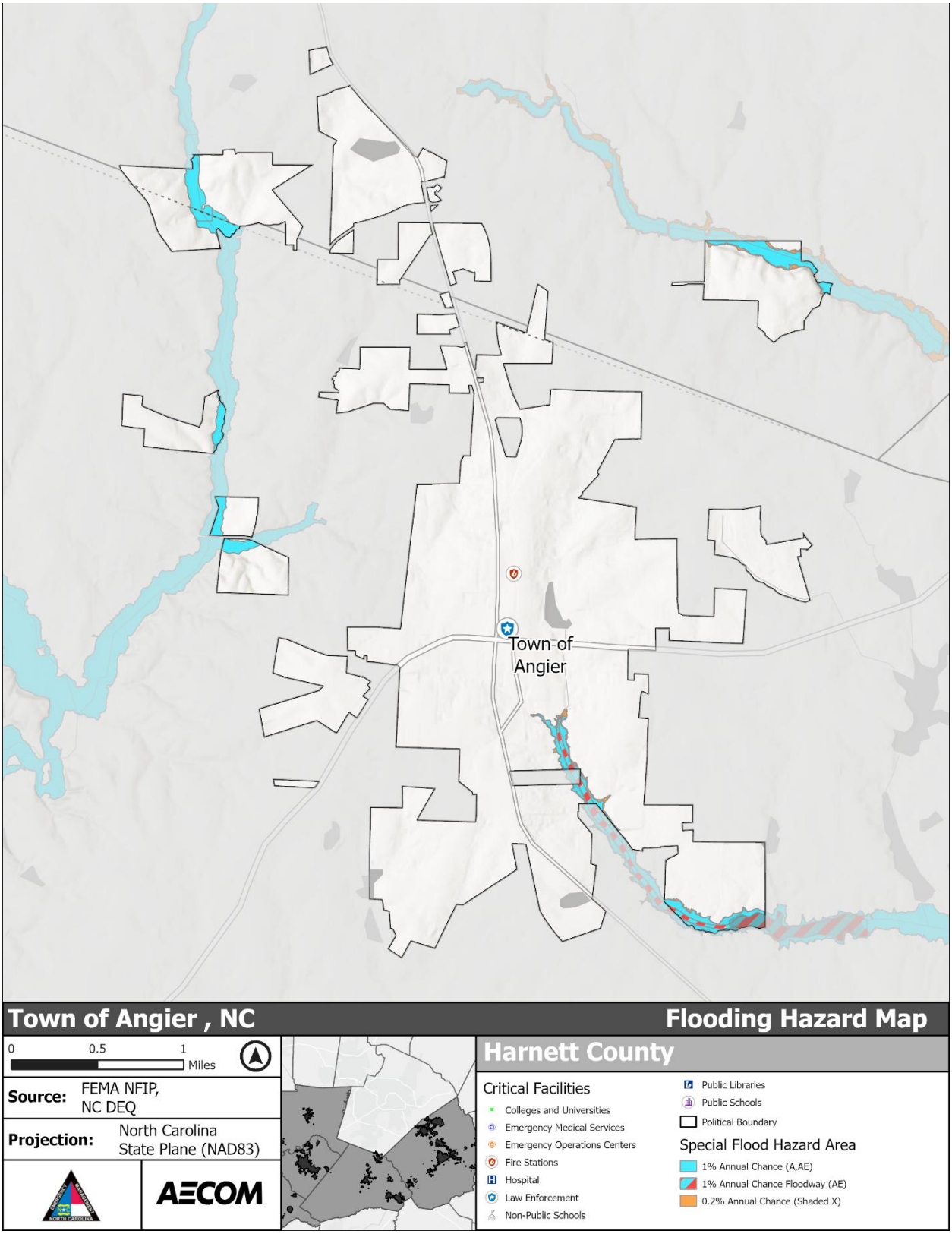


***Figure 5-320**: Flood Hazard Areas - Town of Angier*

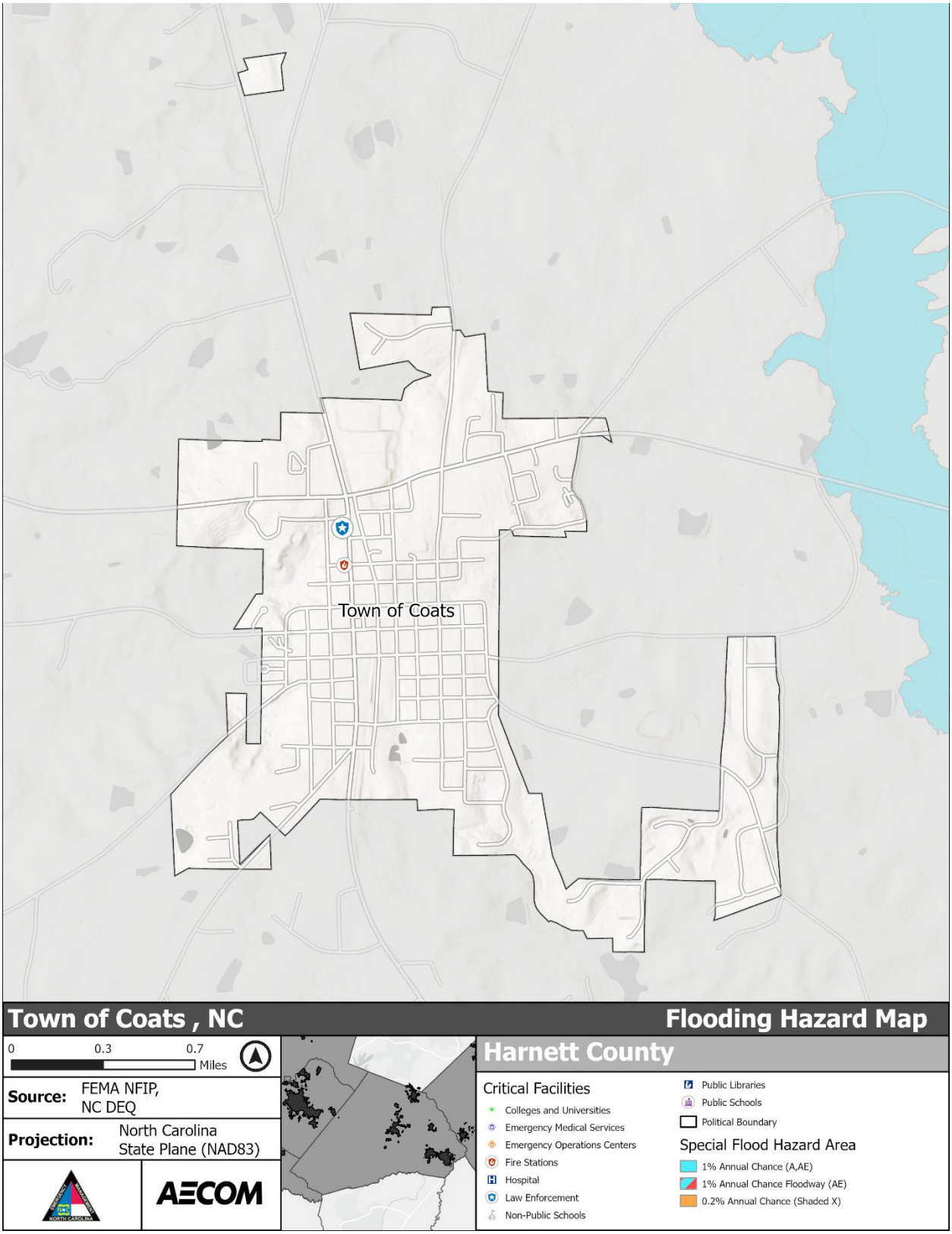


***Figure 5-321**: Flood Hazard Areas - Town of Coats*

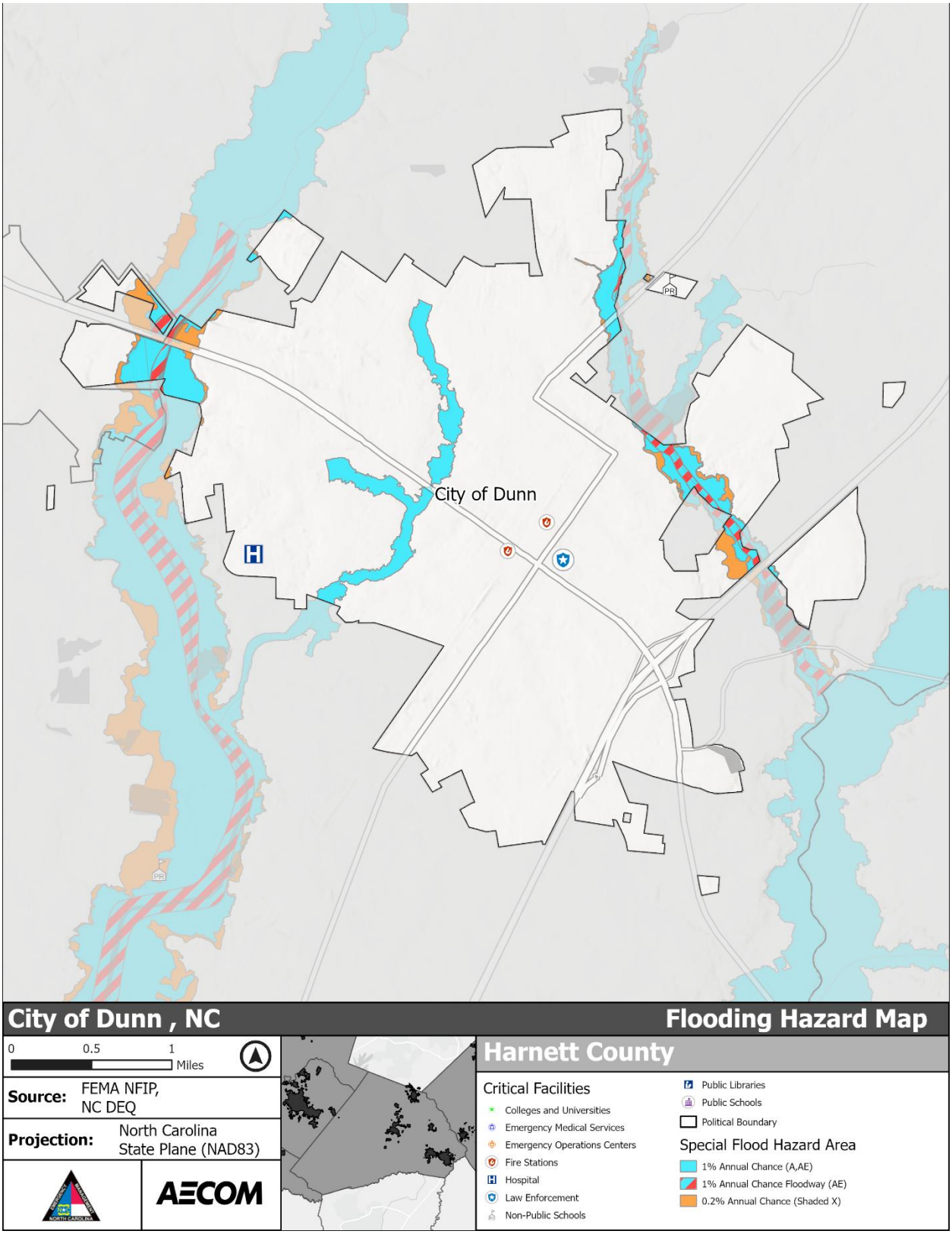


***Figure 5-322**: Flood Hazard Areas - City of Dunn*

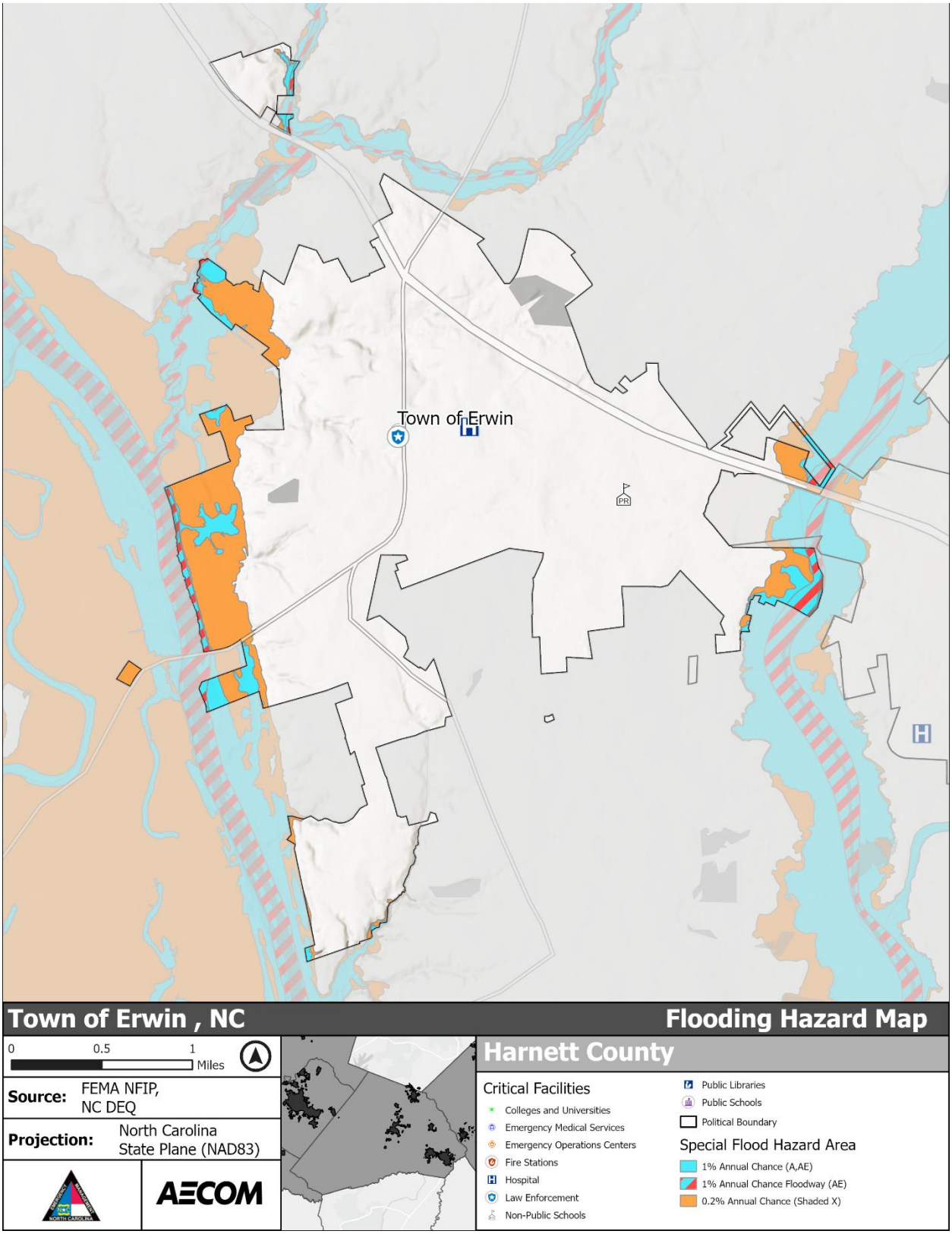


***Figure 5-323**: Flood Hazard Areas - Town of Erwin*

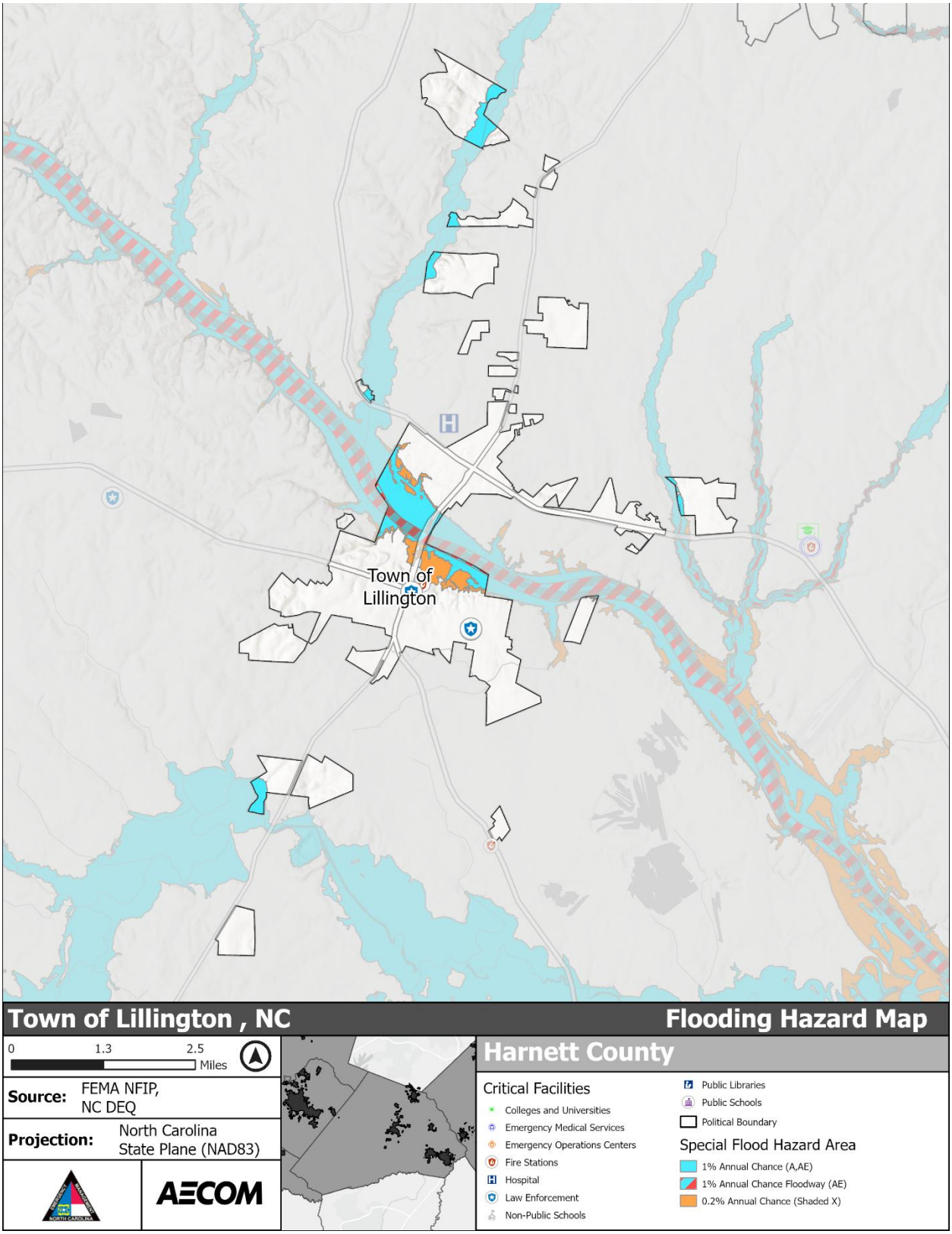


***Figure 5-324**: Flood Hazard Areas - Town of Lillington*

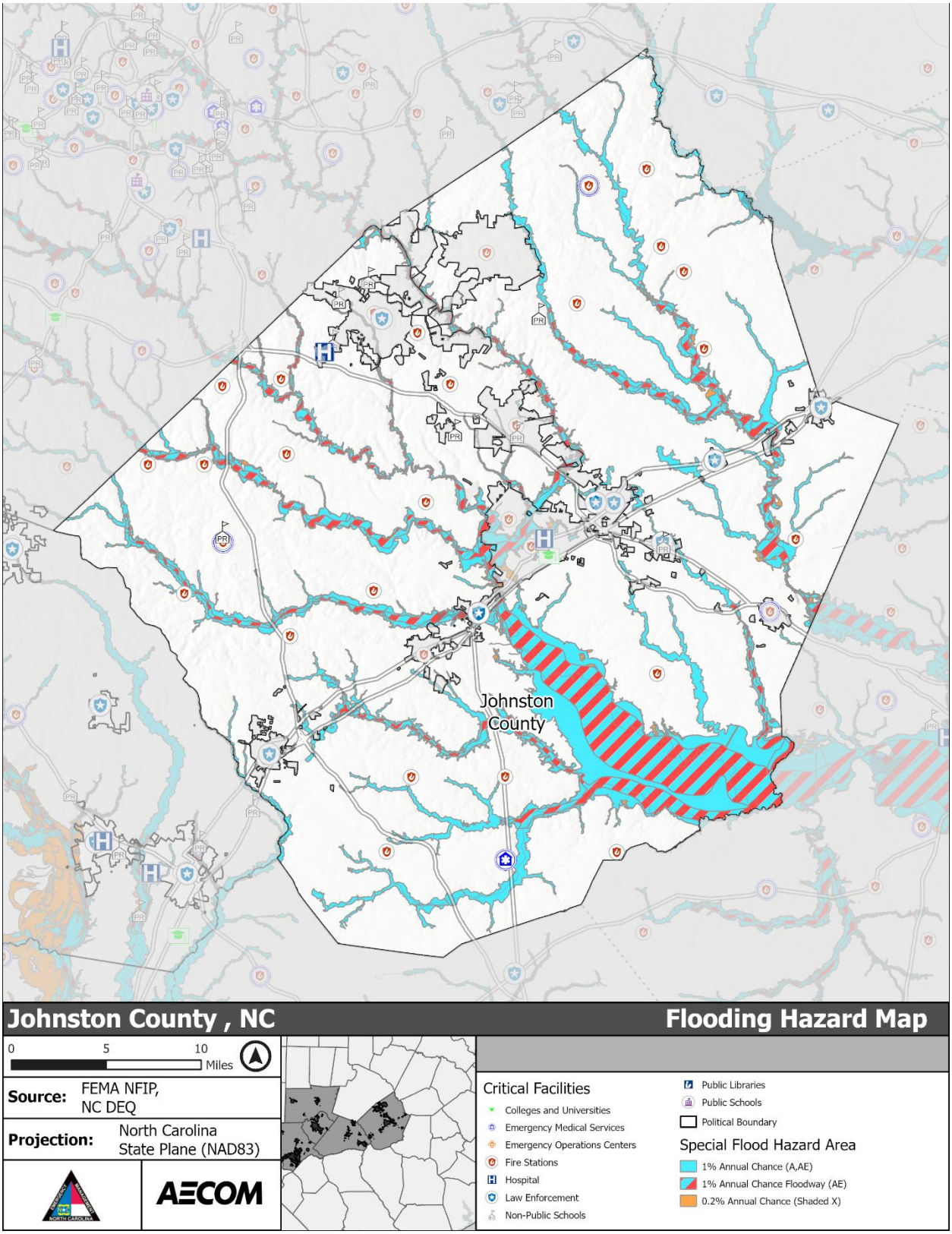


***Figure 5-325**: Flood Hazard Areas - Johnston County*

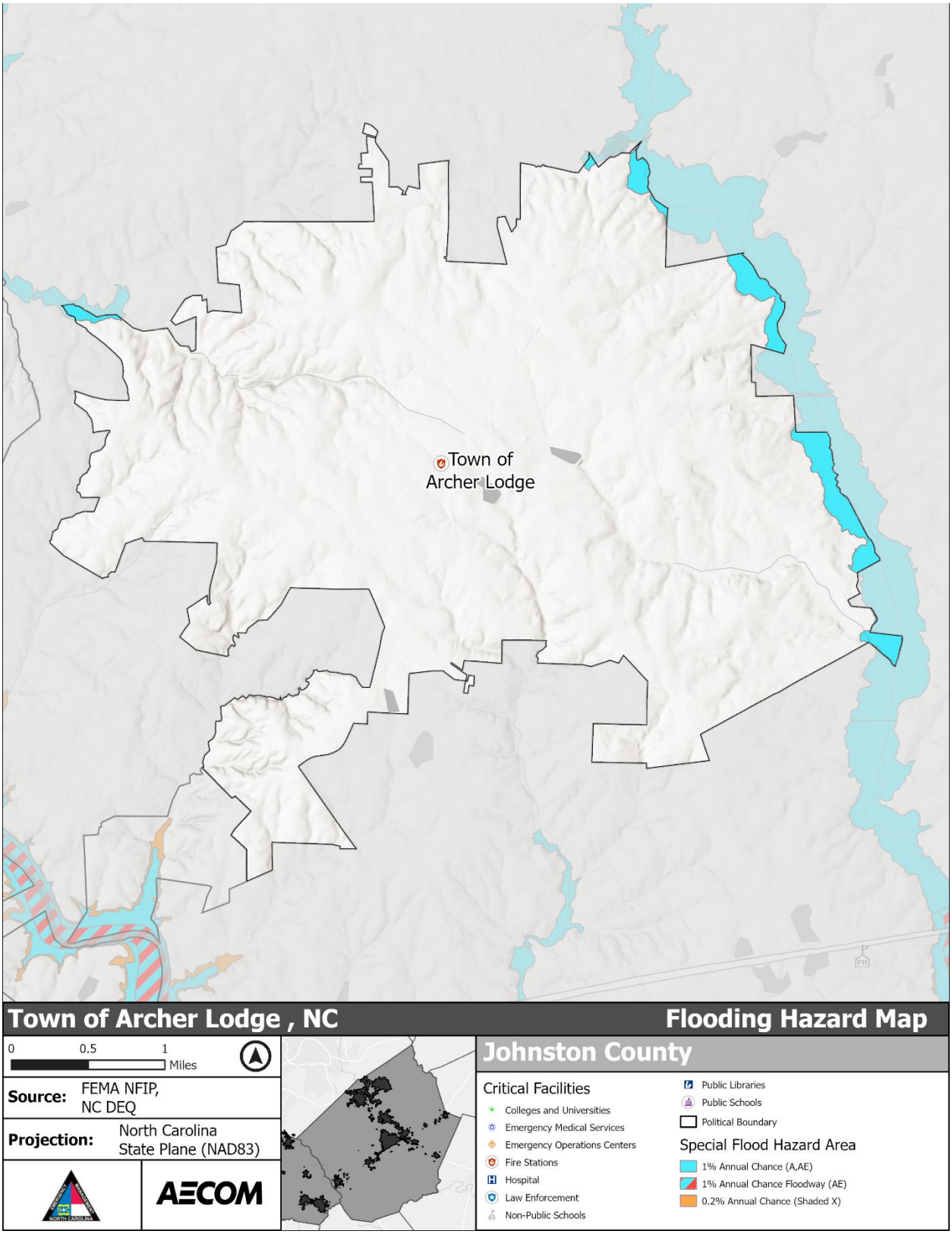


***Figure 5-326**: Flood Hazard Areas – Town of Archer Lodge*

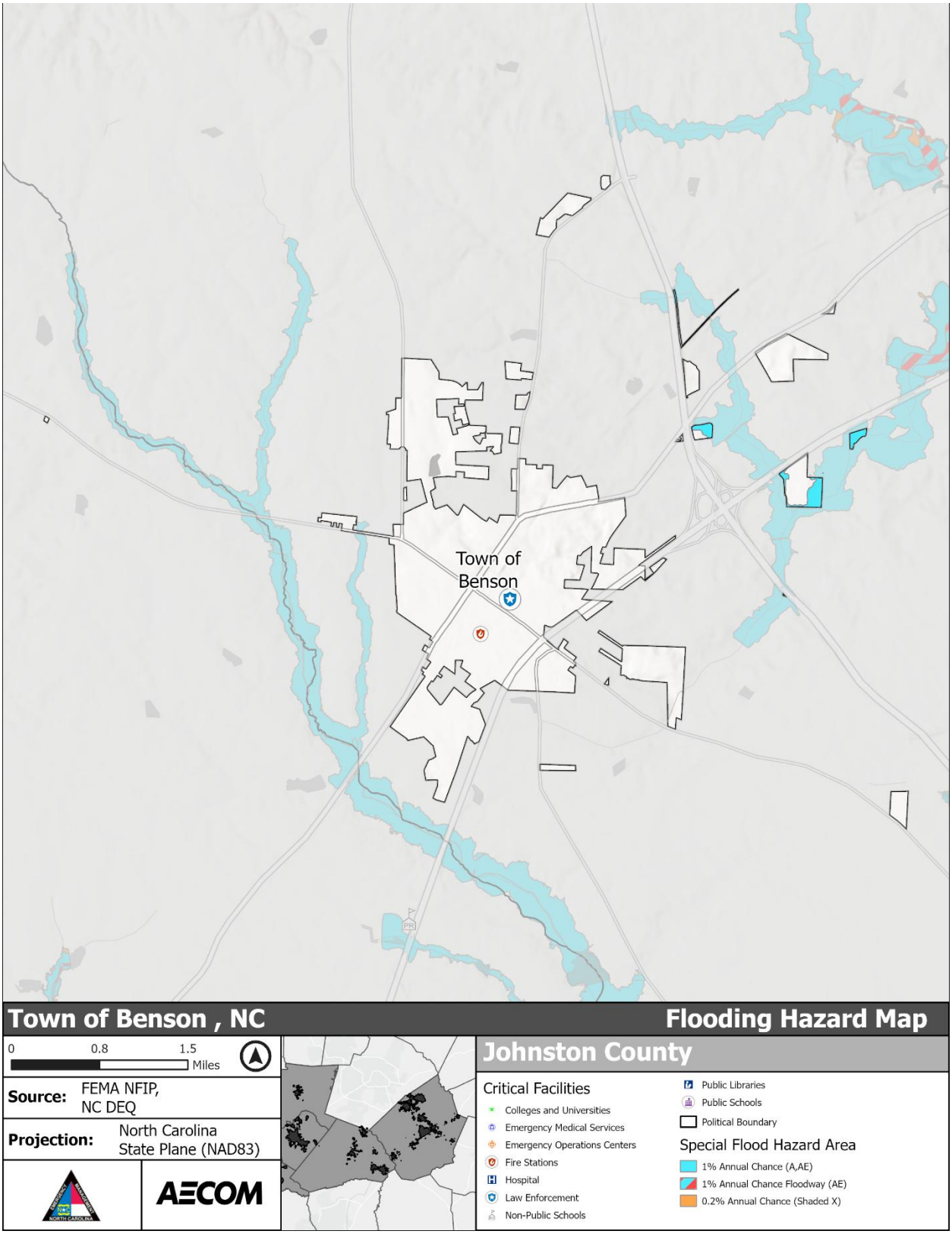


***Figure 5-327**: Flood Hazard Areas - Town of Benson*

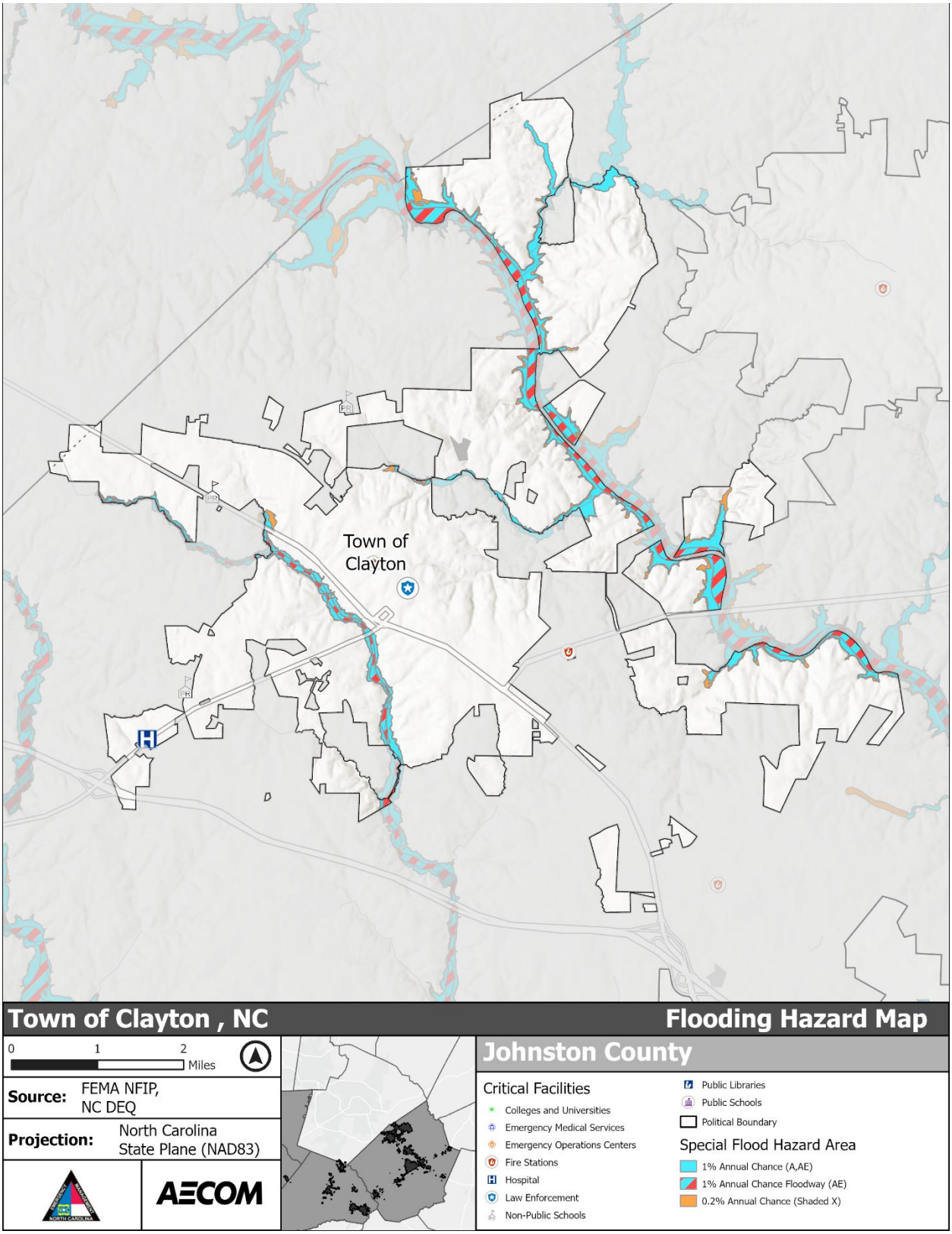


***Figure 5-328**: Flood Hazard Areas - Town of Clayton*

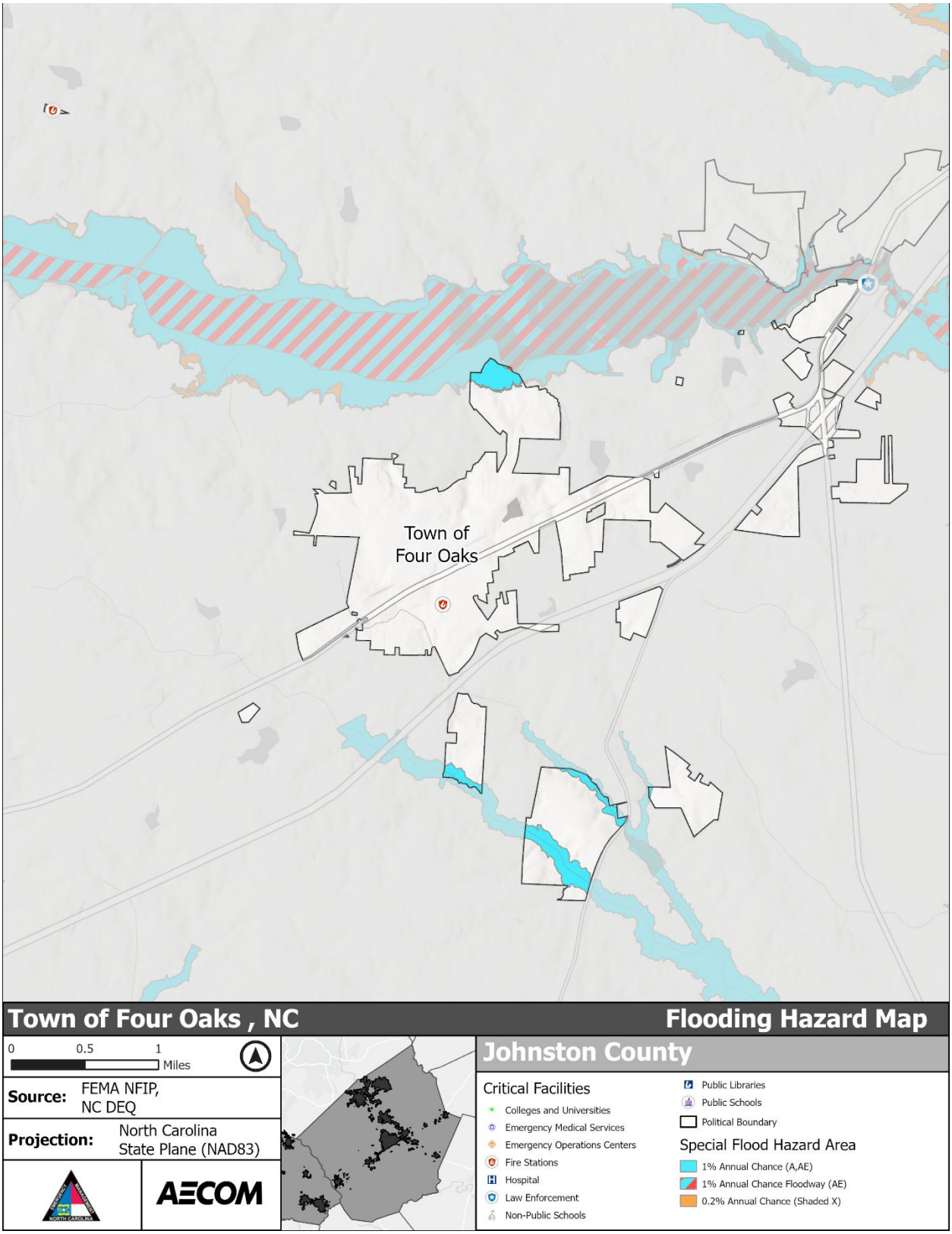


***Figure 5-329**: Flood Hazard Areas - Town of Four Oaks*

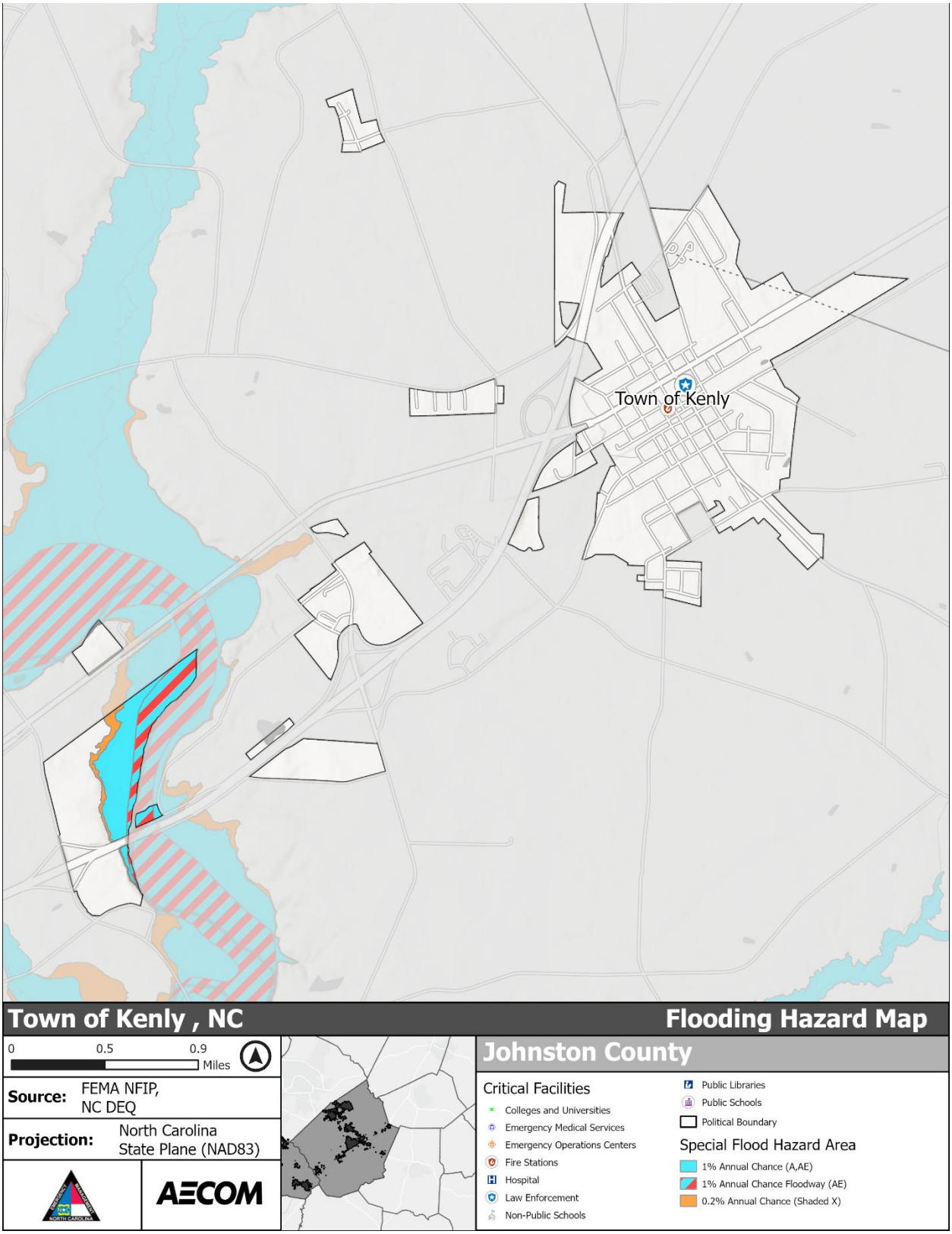


***Figure 5-330**: Flood Hazard Areas - Town of Kenly*

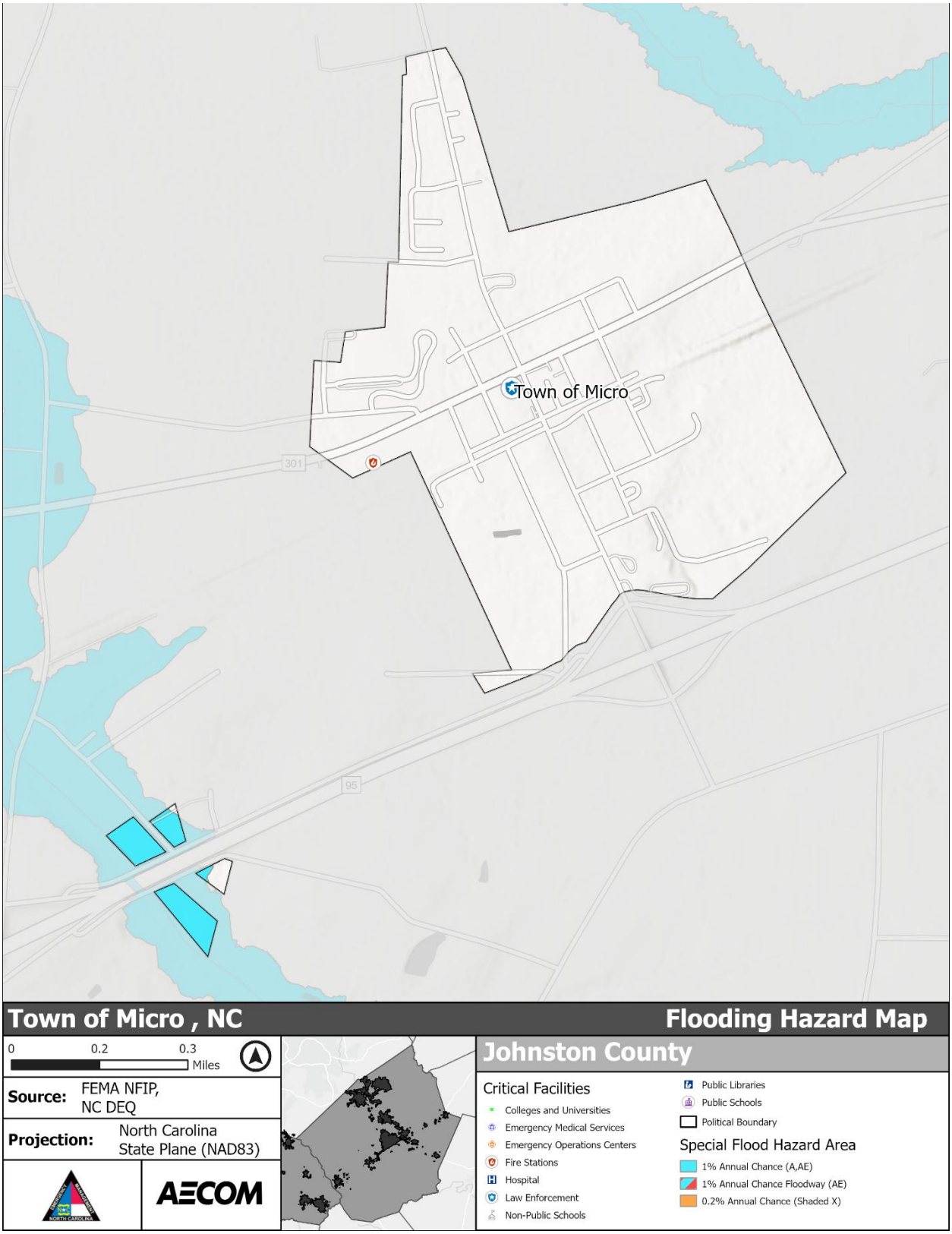


***Figure 5-331**: Flood Hazard Areas - Town of Micro*

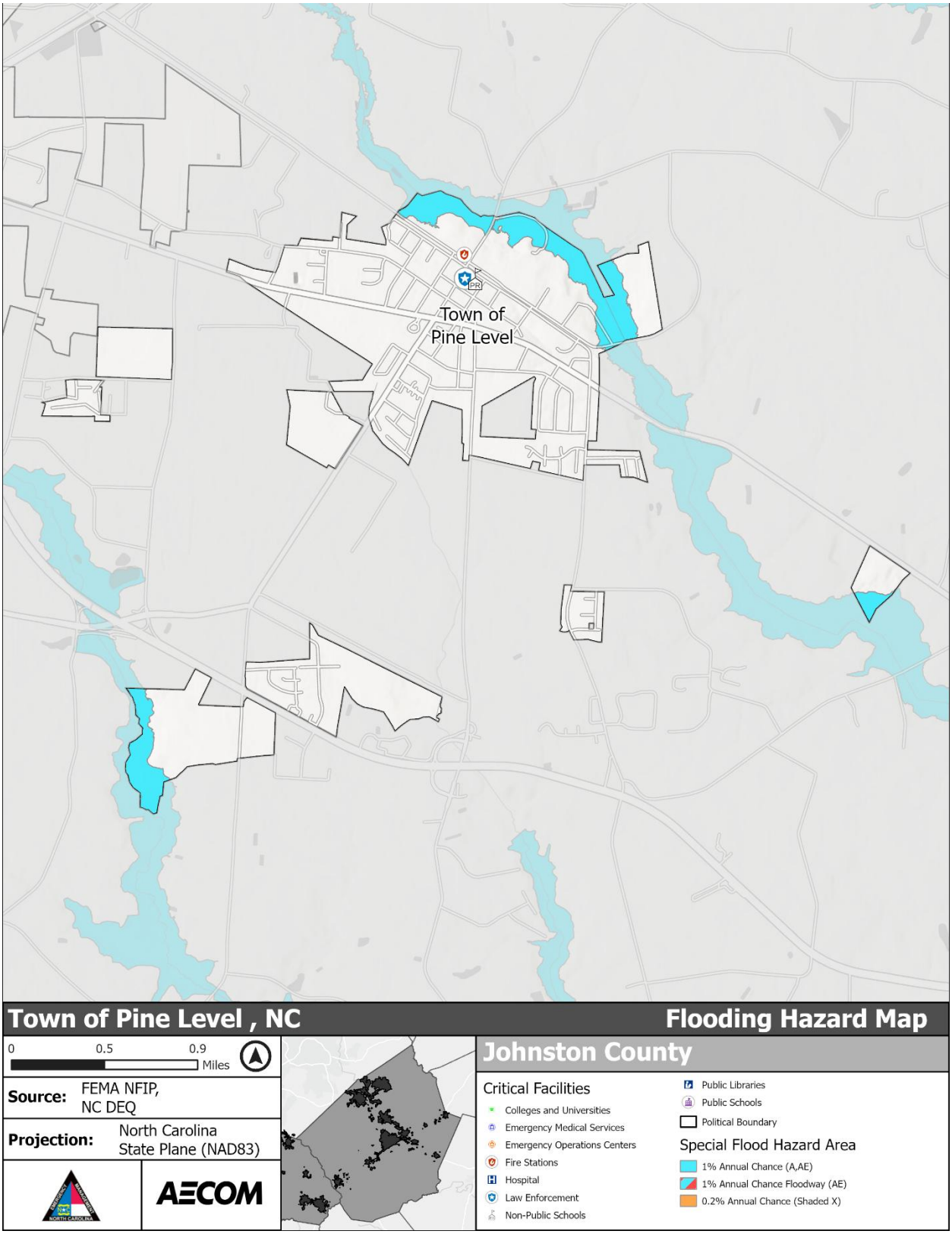


***Figure 5-332**: Flood Hazard Areas - Town of Pine Level*

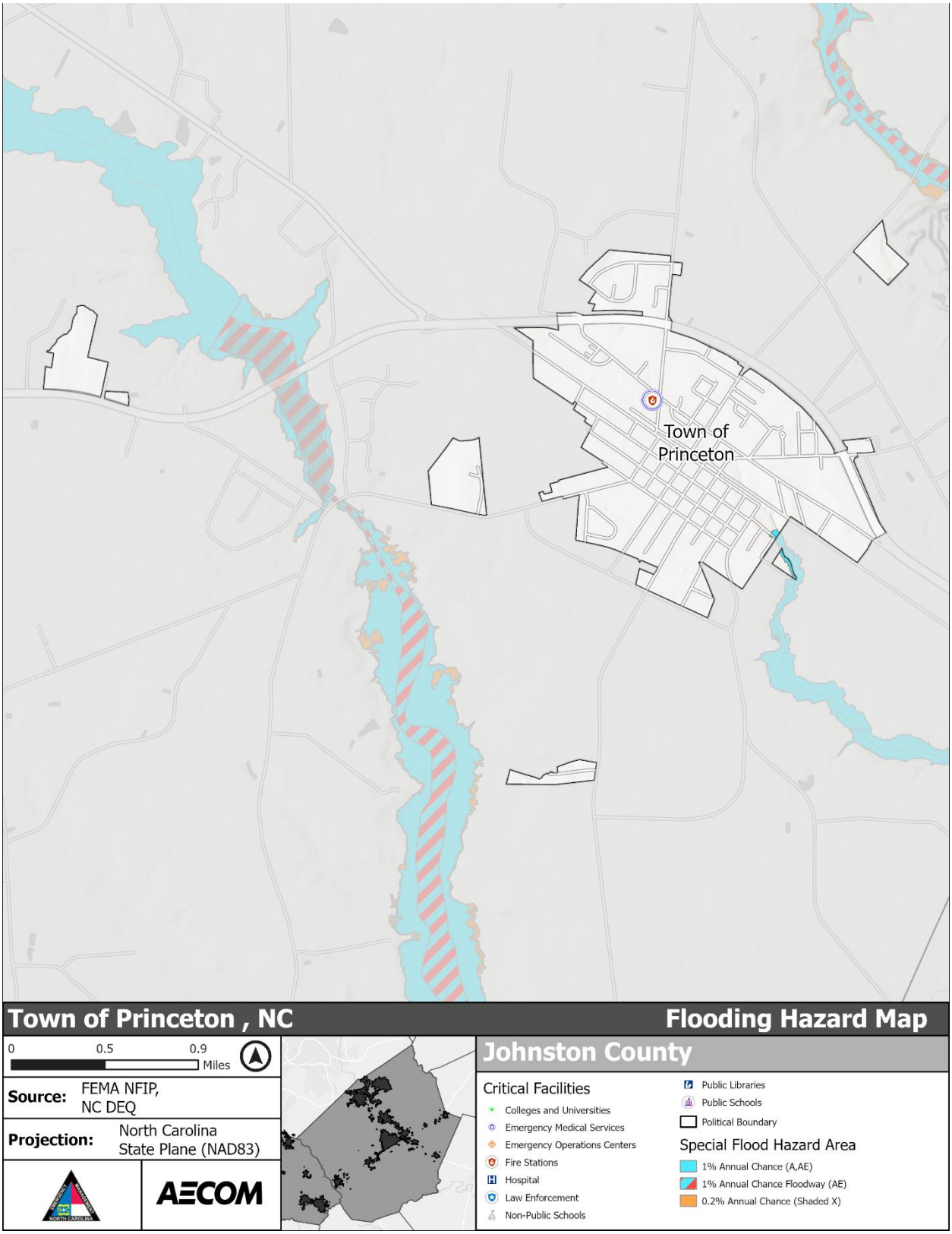


***Figure 5-333**: Flood Hazard Areas - Town of Princeton*

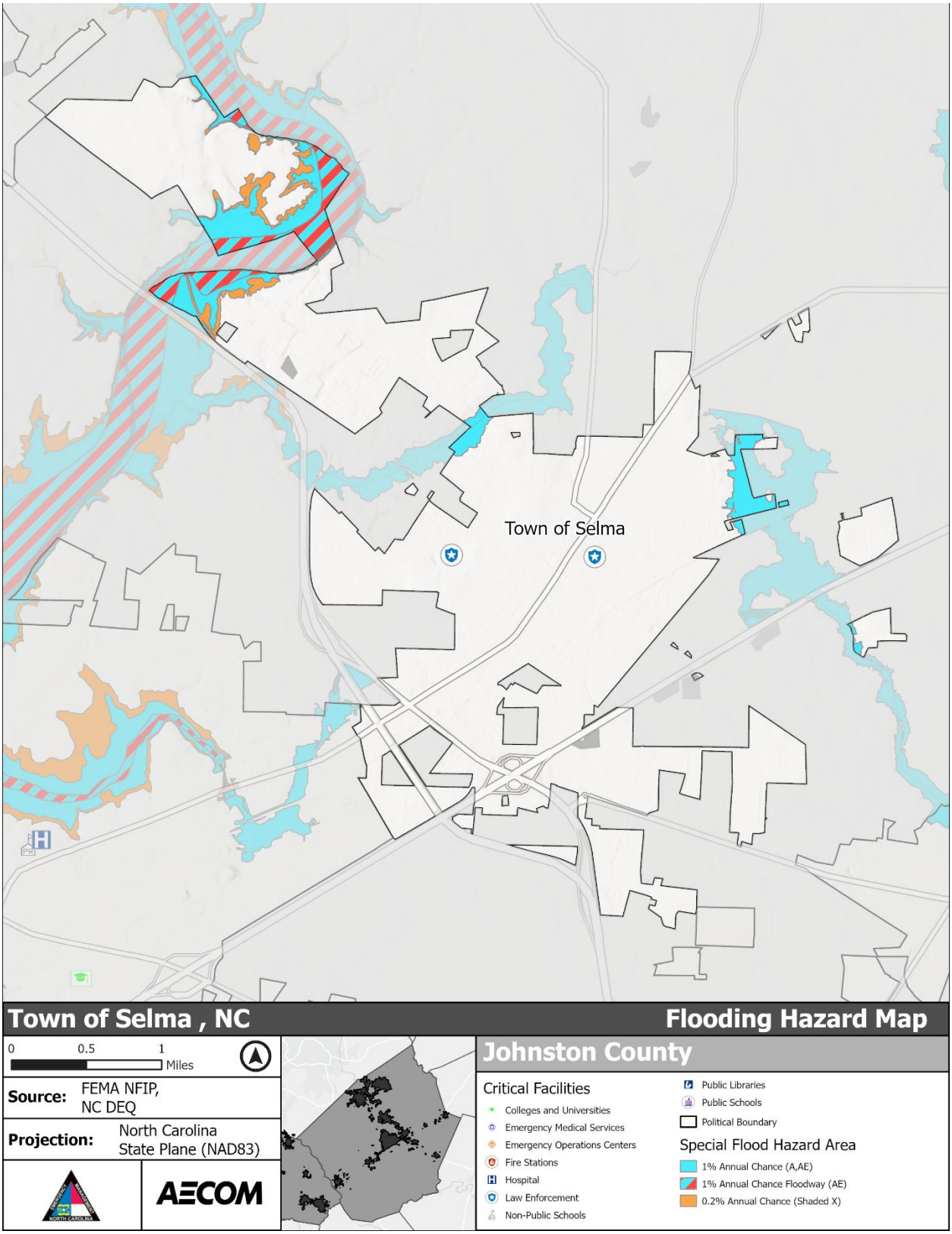


***Figure 5-334**: Flood Hazard Areas - Town of Selma*

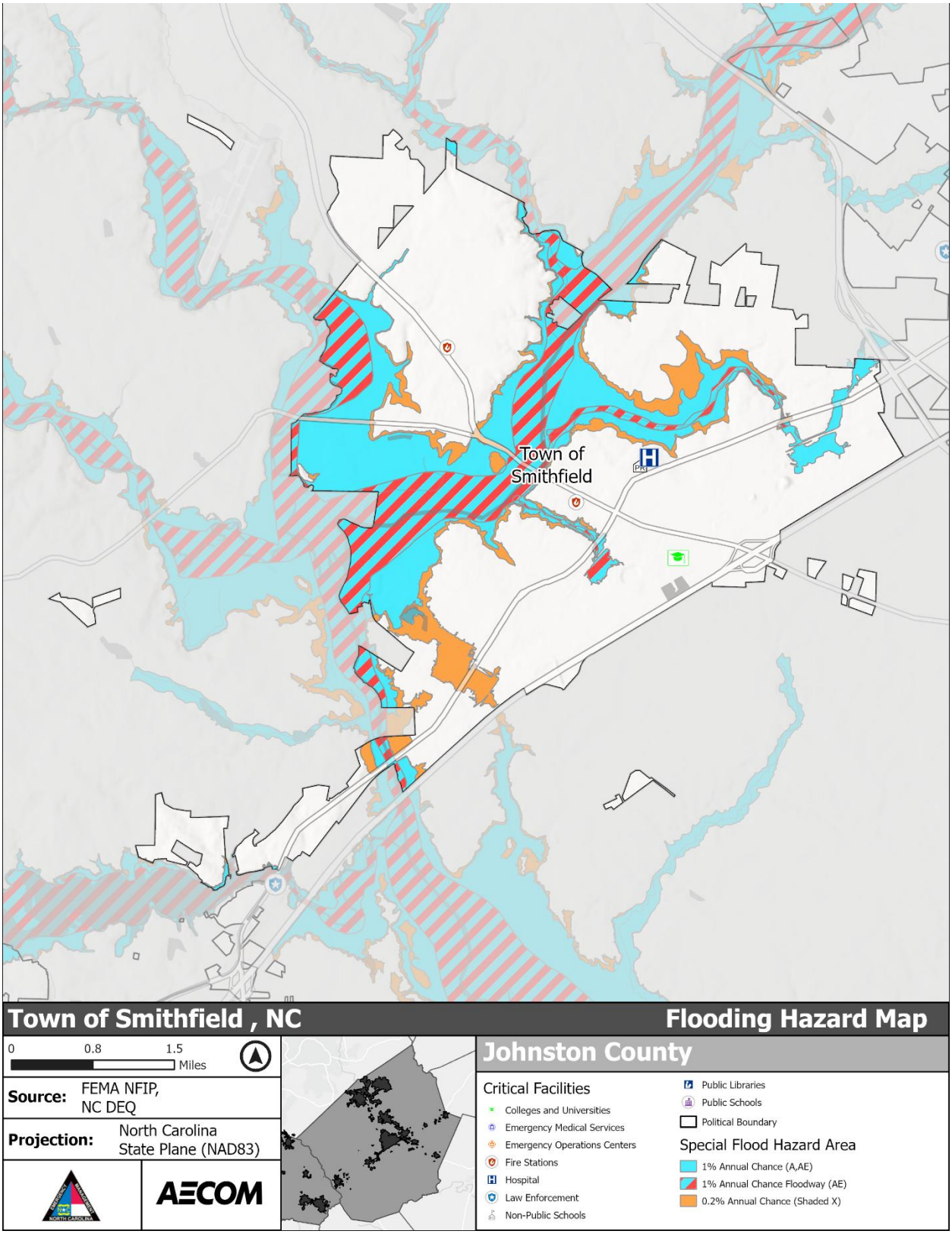


***Figure 5-335**: Flood Hazard Areas - Town of Smithfield*

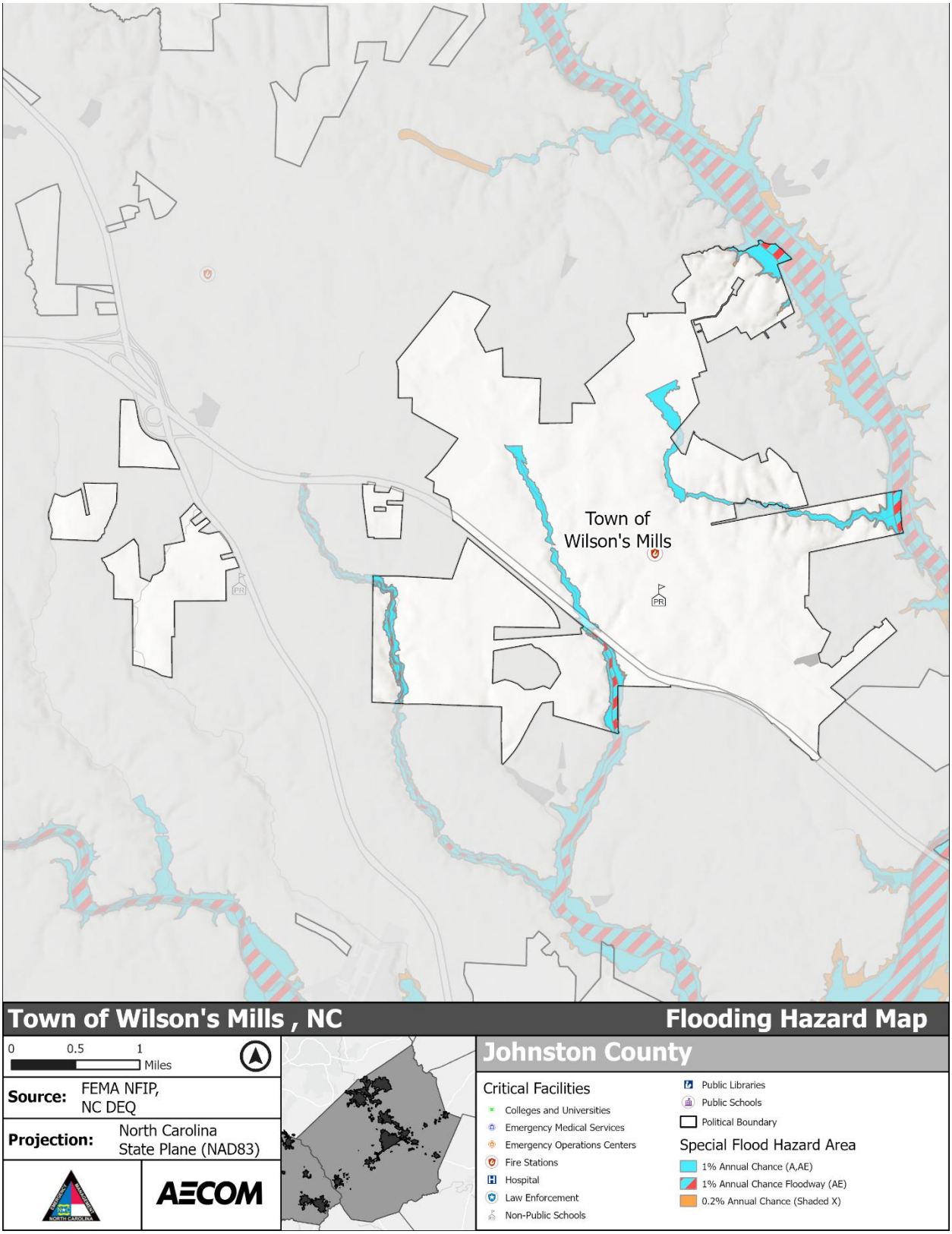


***Figure 5-336**: Flood Hazard Areas - Town of Wilson's Mills*

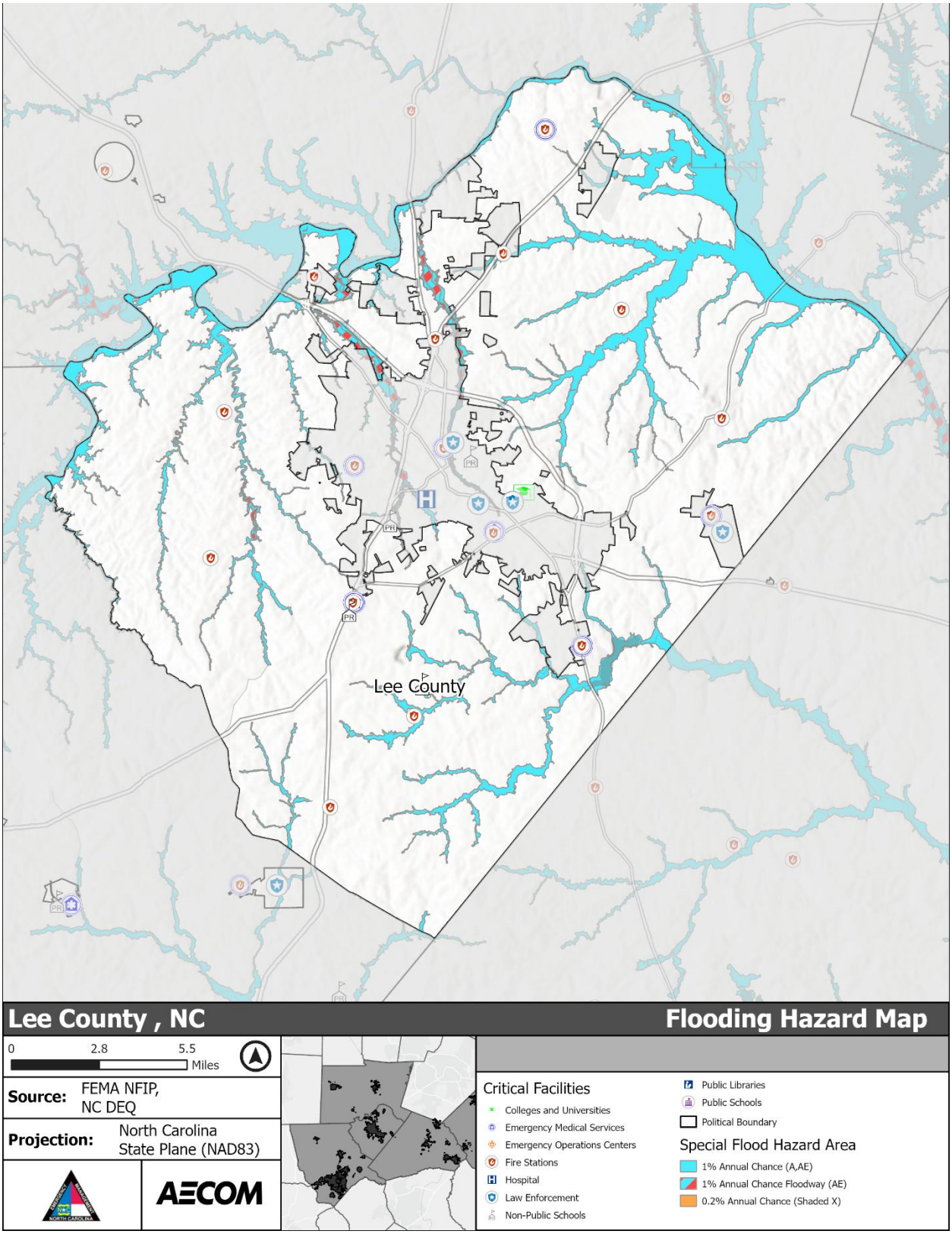


***Figure 5-337**: Flood Hazard Areas - Lee County*

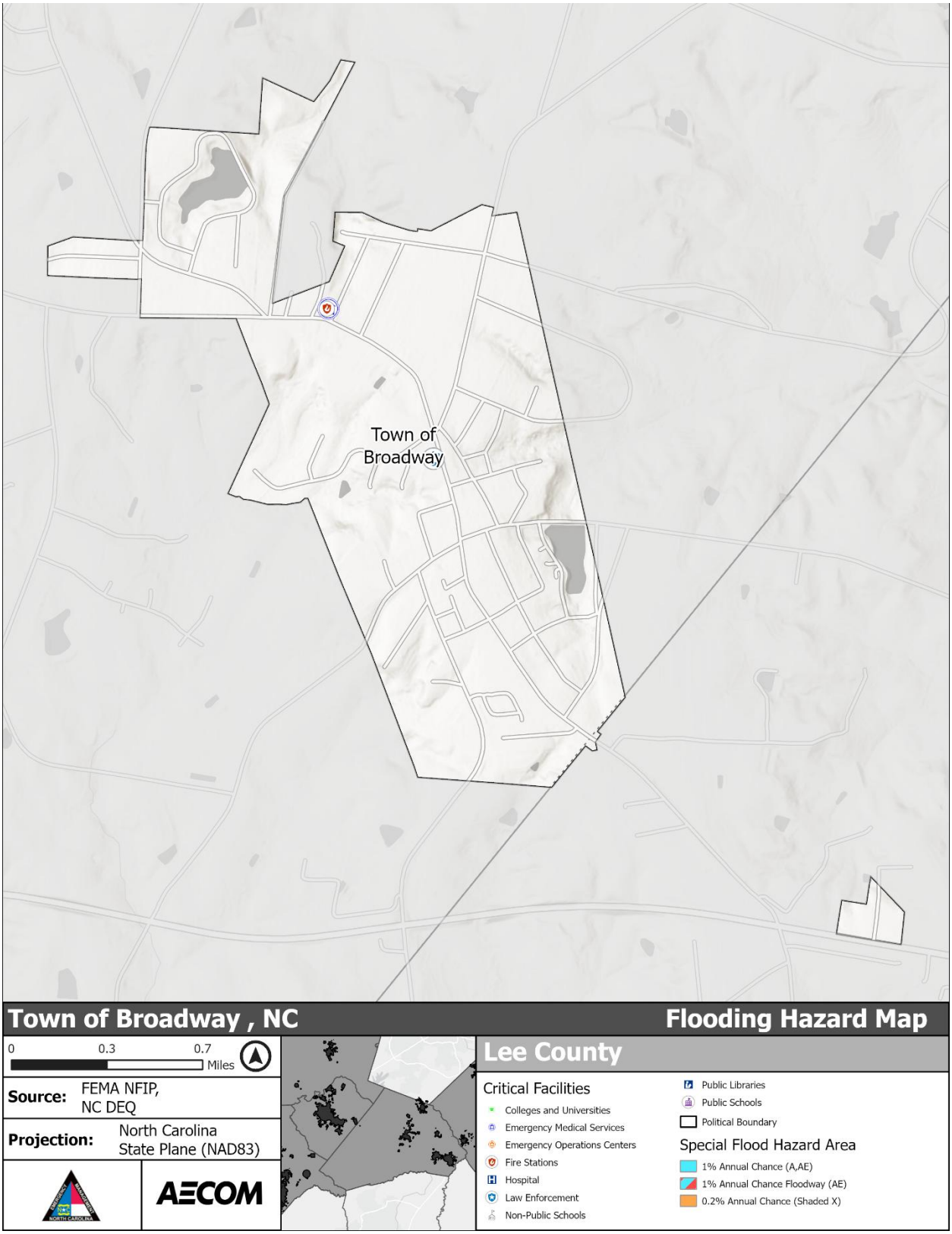


***Figure 5-338**: Flood Hazard Areas - Town of Broadway*

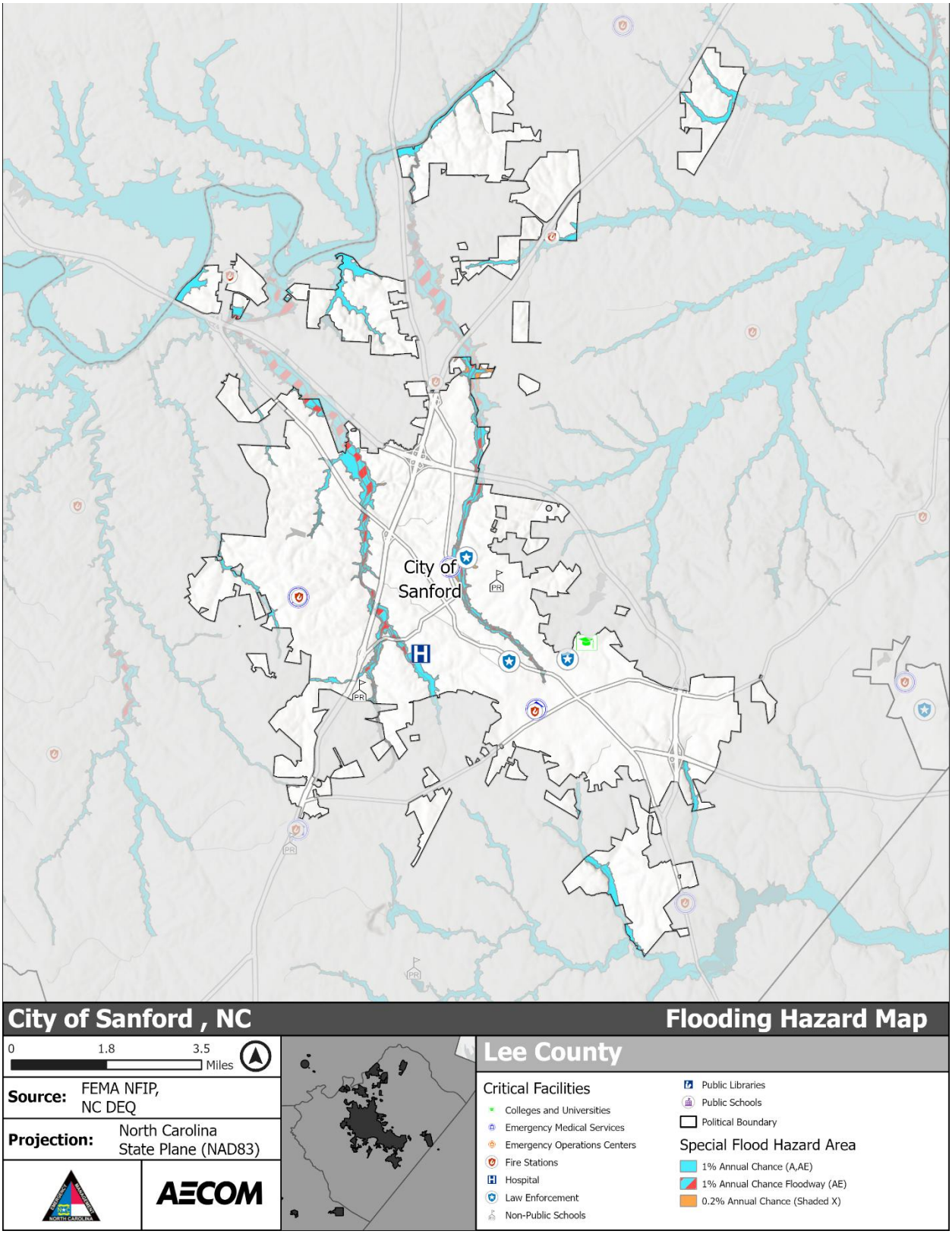


***Figure 5-339**: Flood Hazard Areas - City of Sanford*

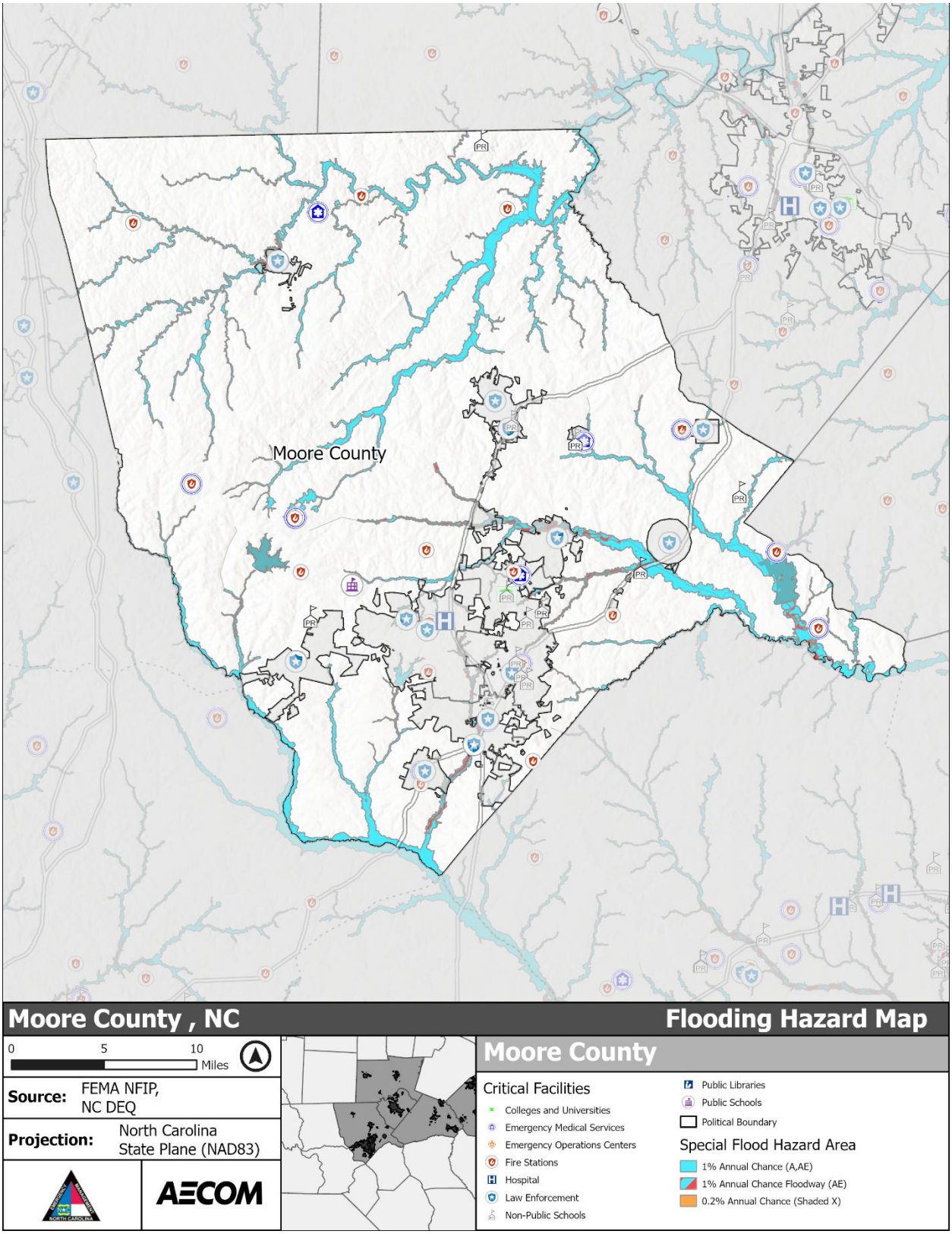


***Figure 5-340**: Flood Hazard Areas - Moore County*

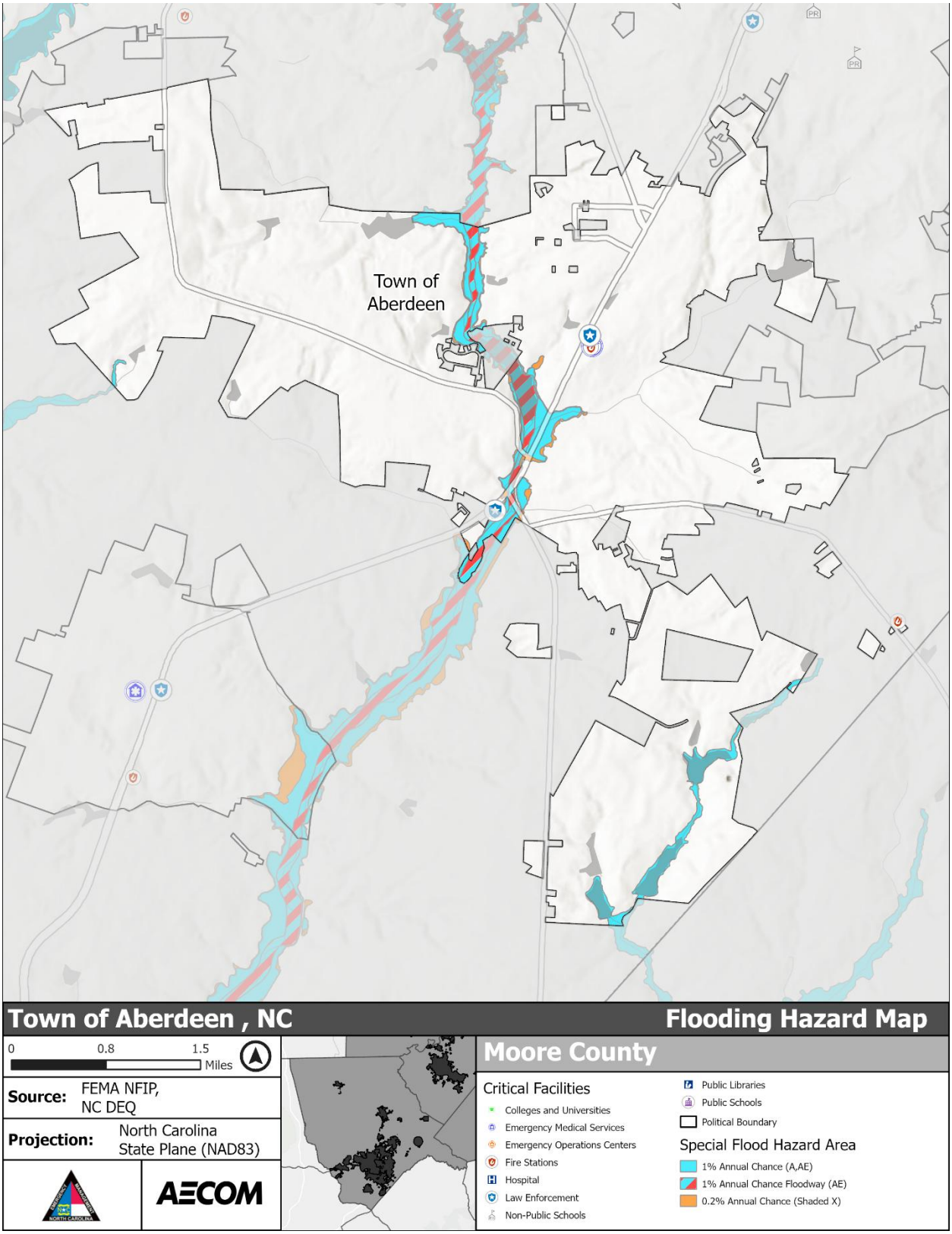


***Figure 5-341**: Flood Hazard Areas - Town of Aberdeen*

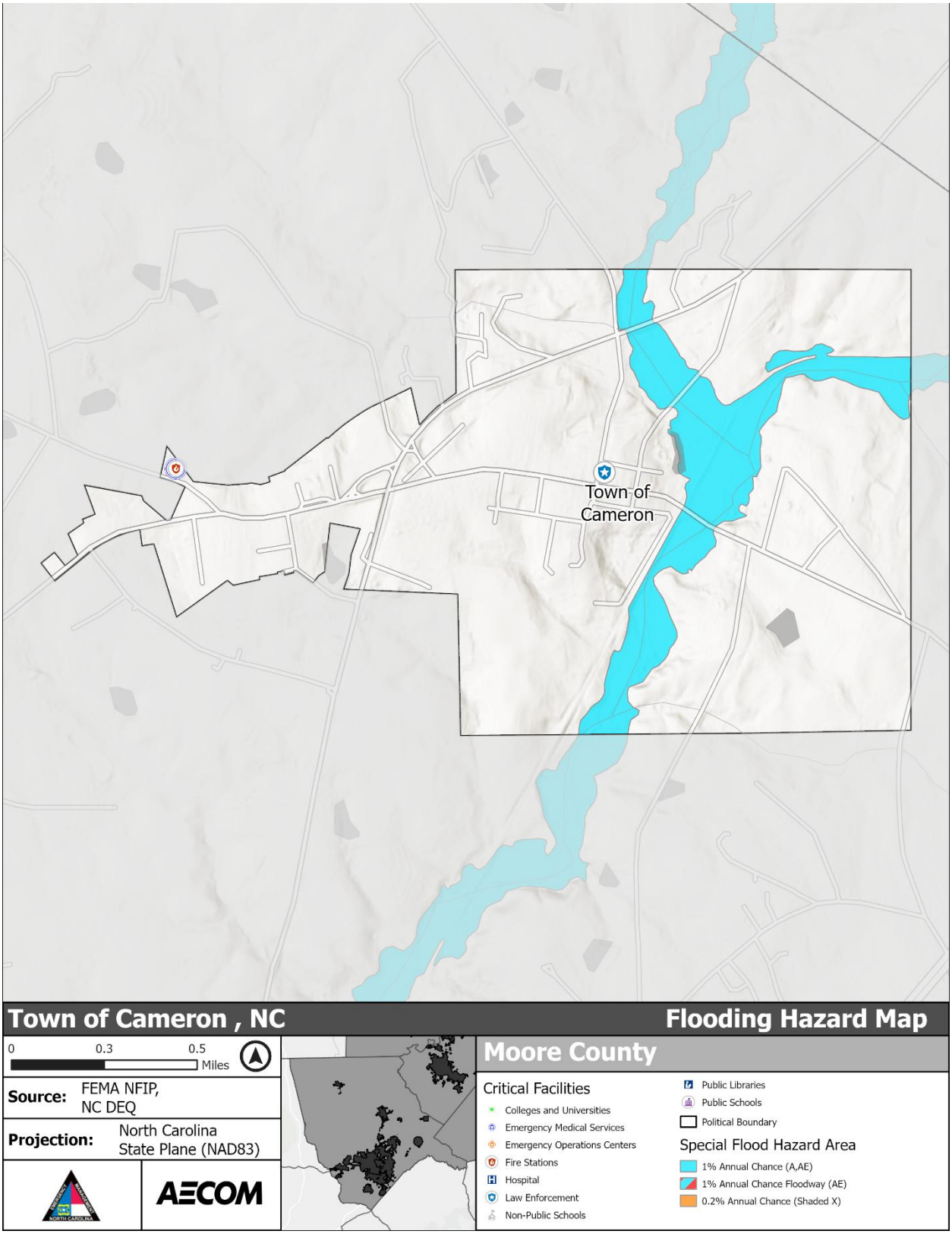


***Figure 5-342**: Flood Hazard Areas - Town of Cameron*

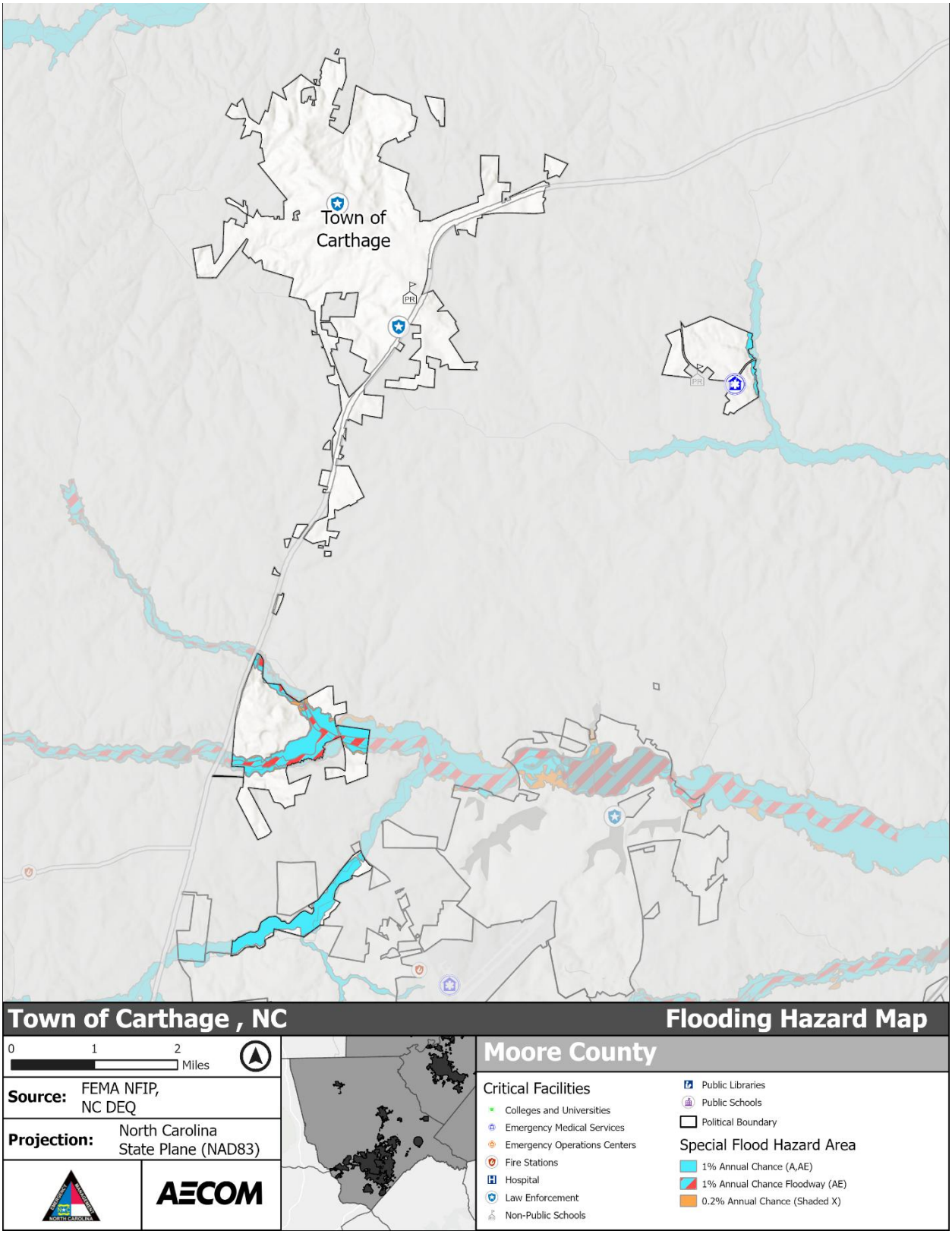


***Figure 5-343**: Flood Hazard Areas - Town of Carthage*

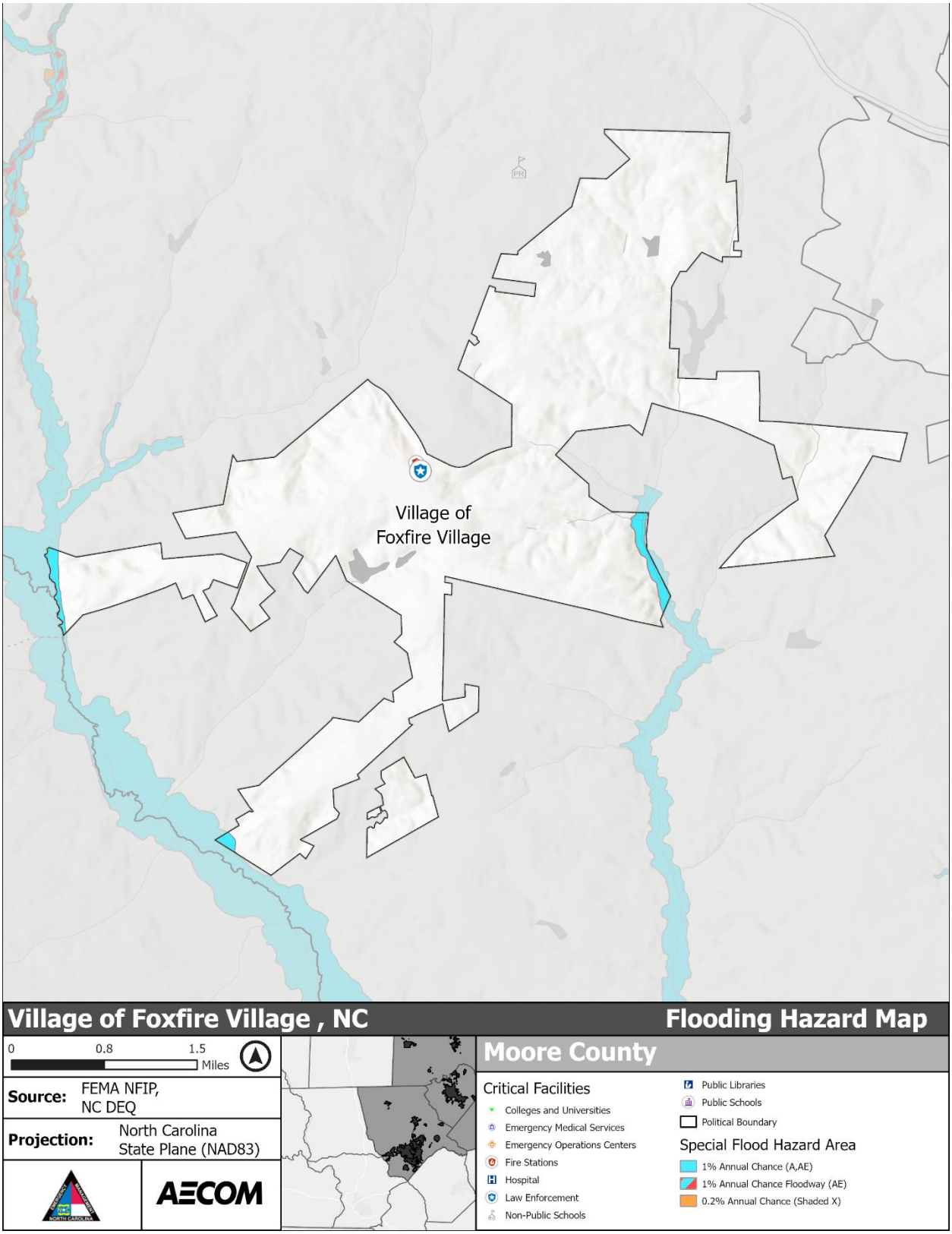


***Figure 5-344**: Flood Hazard Areas - Foxfire Village*

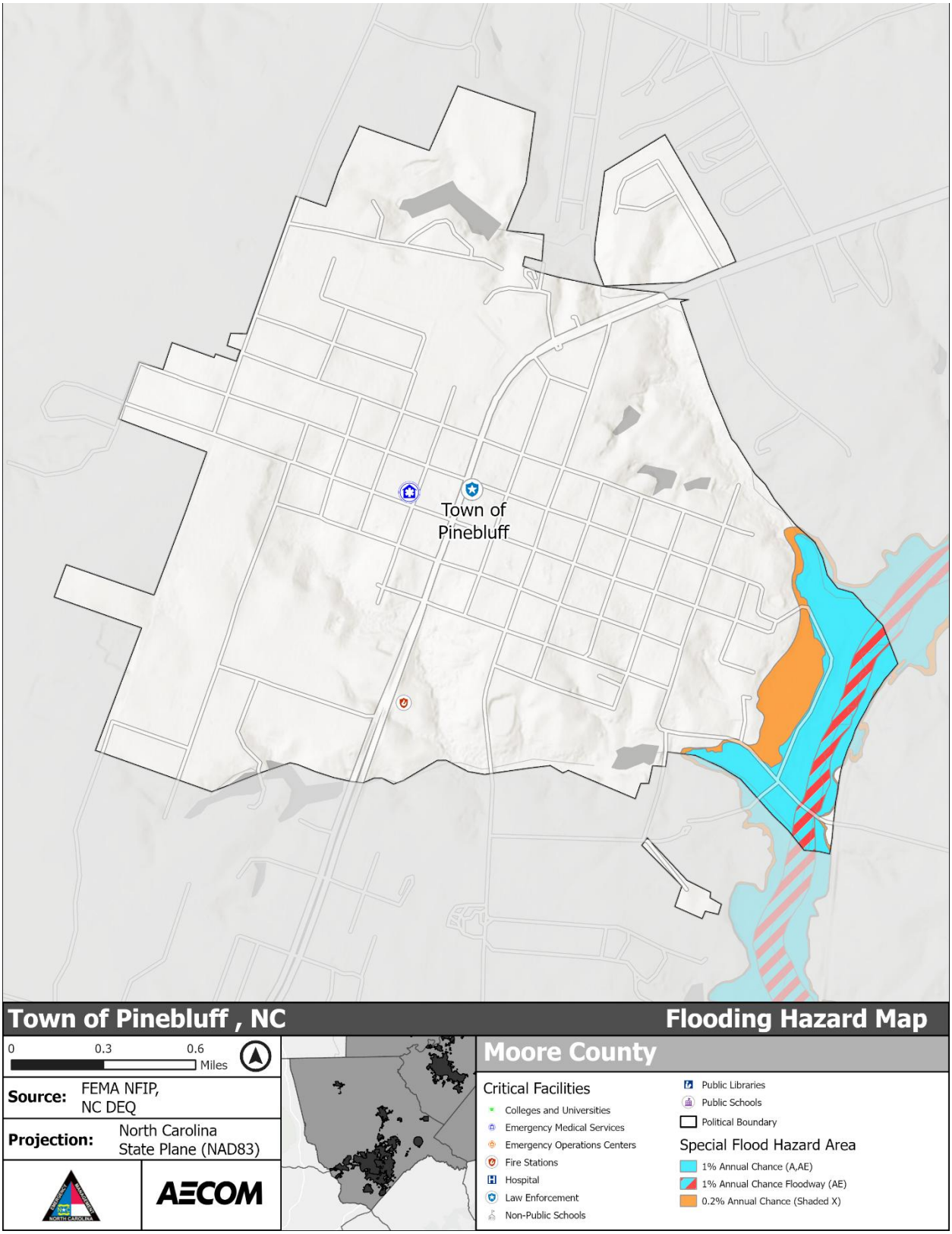


***Figure 5-345**: Flood Hazard Areas - Town of Pinebluff*

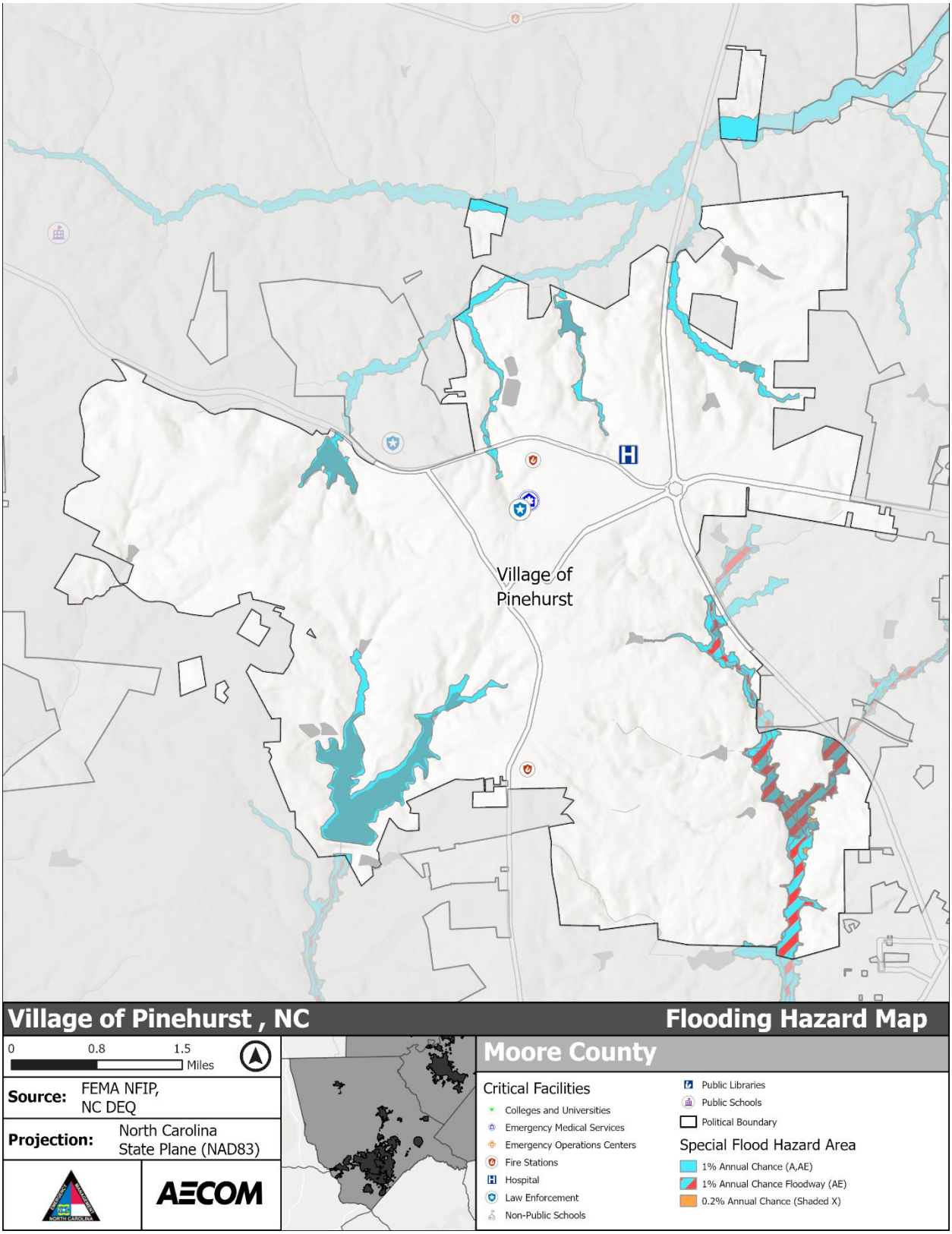


***Figure 5-346**: Flood Hazard Areas - Village of Pinehurst*

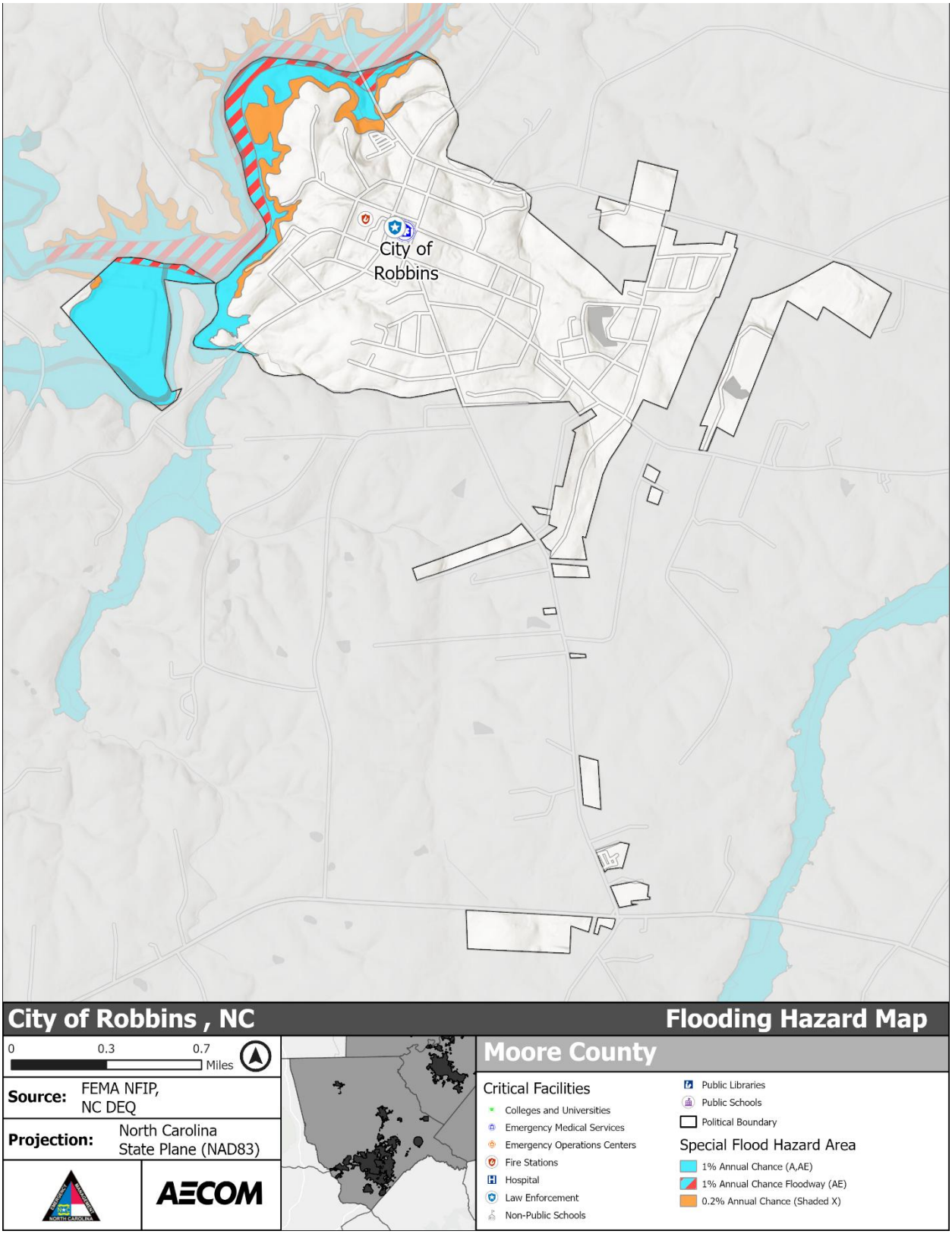


***Figure 5-347**: Flood Hazard Areas - City of Robbins*

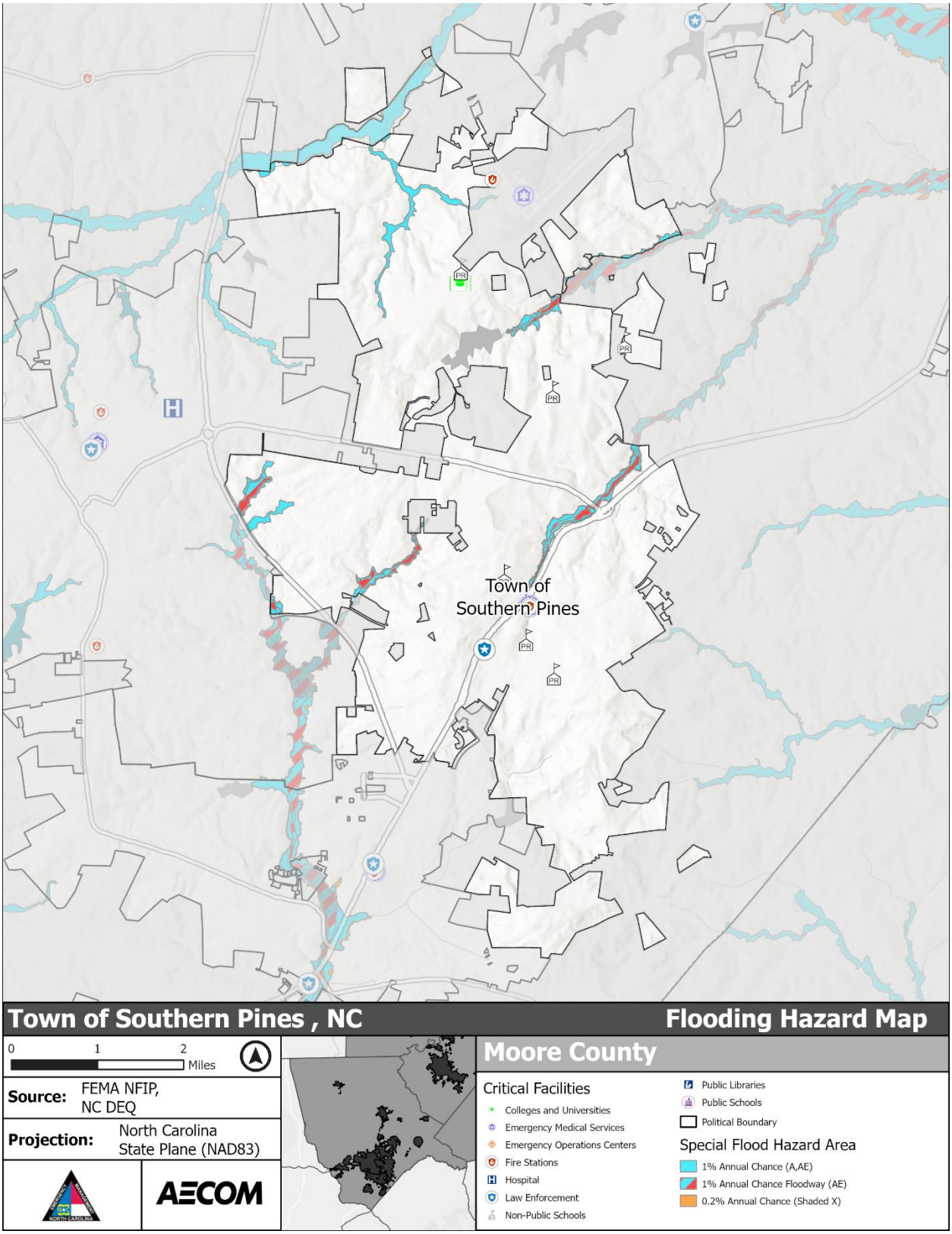


***Figure 5-348**: Flood Hazard Areas - Town of Southern Pines*

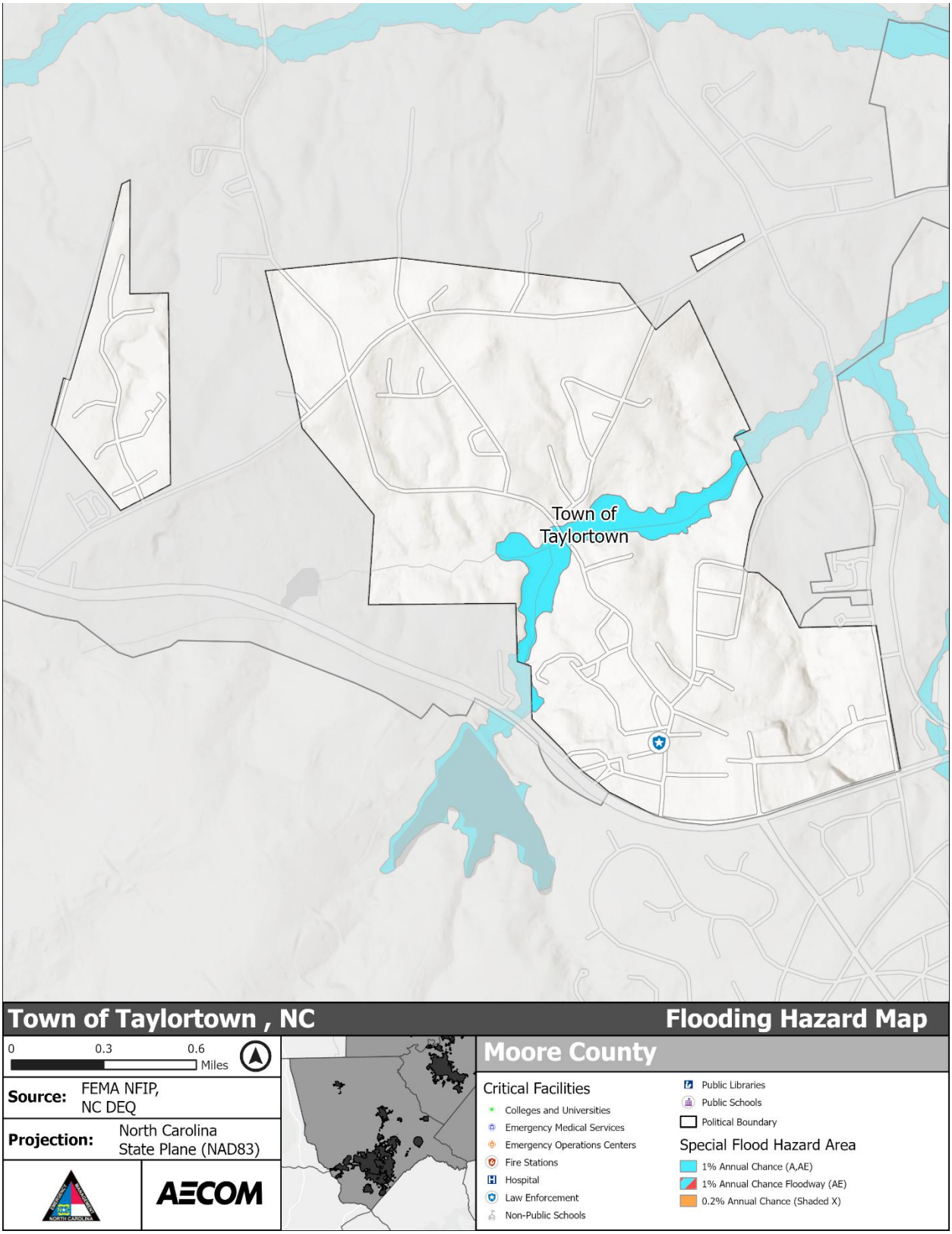


***Figure 5-349**: Flood Hazard Areas - Town of Taylortown*

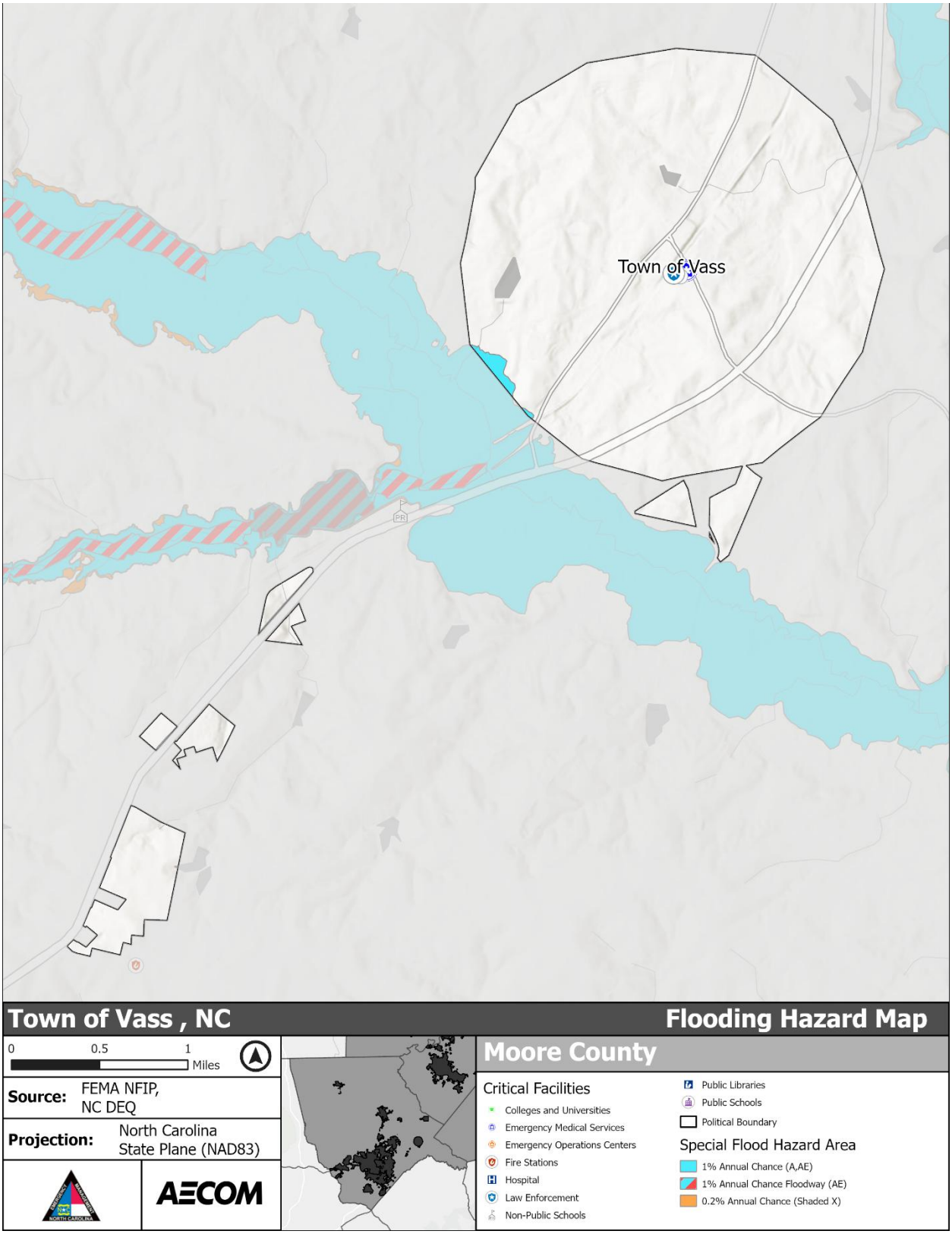


***Figure 5-350**: Flood Hazard Areas - Town of Vass*

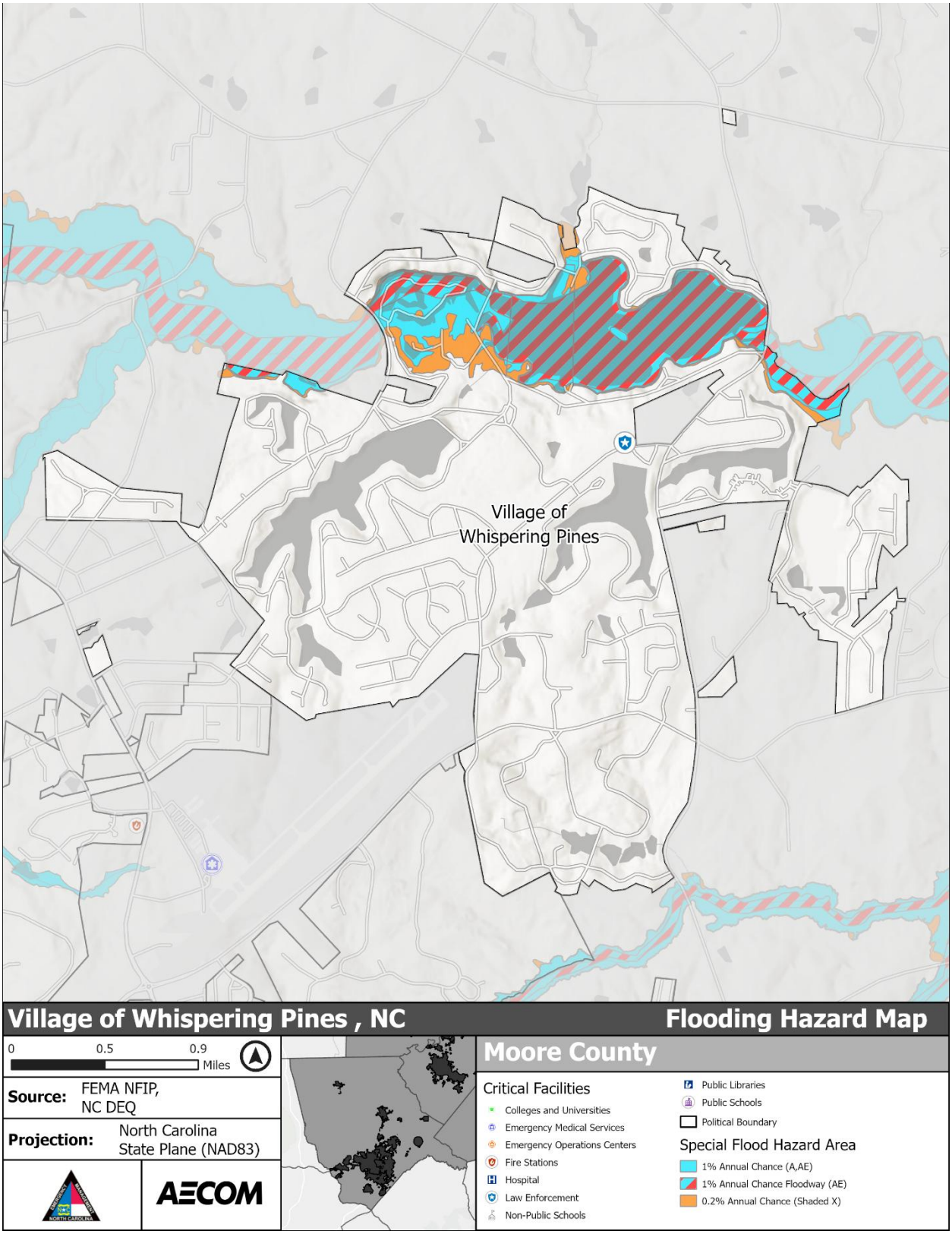


***Figure 5-351**: Flood Hazard Areas - Village of Whispering Pines*

5.11.3 Extent

The following table provides peak river stage data from USGS, showing the highest recorded stage for each jurisdiction.

***Table 5-49**: Peak Streamflow in the planning area from the USGS[121](* Indicates Closest Stream Gauge to a Jurisdiction located outside of the planning area)*

County	River	Jurisdiction	USGS Gage Number	HUC	Drainage Area (mi^2)	Date of Peak	Gage Height (ft)	Stream Flow (cfs)
Johnston	Neuse River	Clayton	2087500	3020201	1150	9/19/1945	22.12	22,900
Johnston	Neuse River	Smithfield	2087570	3020201	1206	8/1/1908	27.1	19,900
Johnston	Swift Creek	Clayton	208773375	3020201	113.7	10/9/2016	21.09	8870
Johnston	Middle Creek	Clayton	2088000	3020201	83.5	10/9/2016	16.18	20,300
Johnston	Stone Creek	Newton Grove	2088140	3020201	27.9	7/4/1962	24.58	3,110
Johnston	Hannah Creek	Benson	2088210	3020201	2.68	10/5/1964	23.19	820
Johnston	Long Branch	Selma	2088420	3020201	7.64	10/24/1959	24.96	20,500
Johnston	Little River	Kenly	2088470	3020201	191	10/6/1964	16.3	5,030
Johnston	Little River	Princeton	2088500	3020201	232	9/17/1999	16.58	20,700
Chatham	Haw River	Bynum	2096960	3030002	1275	9/7/1974	14.66	25,000
Chatham	Haw River	Pittsboro	2097000	3030002	1310	8/1/1908	32.1	98,000
Chatham	Robeson Creek	Pittsboro	2097010	3030002	1.71	7/16/1975	25.88	780
Chatham	White Oak Creek	Wilsonville	2097910	3030002	23.6	5/29/1963	24.45	2,150
Chatham	New Hope River	Pittsboro	2098000	3030002	285	9/1/1945	27.65	
Chatham	Haw River	Moncure	2098198	3030002	1689	3/10/1989	14.91	16,800
Chatham	Haw River	Haywood	2098200	3030002	1689	10/25/1971	22.41	25,800
Chatham	Haw River	Moncure	2098206	3030002	1691	5/31/2020	11.4	12,800
Chatham	Falls Creek	Bennett	2101030	3030003	3.43	10/15/1954	25.79	1,410
Chatham	Rocky River	Crutchfield Crossroads	210166029	3030003	7.42	9/6/1996	11.91	1,670
Chatham	Rocky River	Siler City	02101726	3030003	68.7	9/17/2018	24.9	14,000
Chatham	Tick Creek	Mount Vernon Springs	2101800	3030003	15.5	9/6/1996	13.41	4,010
Chatham	Bear Creek	Goldston	2101890	3030003	43.2	8/31/1952	30.6	7,400
Lee	Sugar Creek	Tramway	2101480	3030003	0.85	9/3/1955	30.7	400
Lee	Deep River	Moncure	2102000	3030003	1434	9/18/1945	17.2	80,300
Moore	Bear Creek	Robbins	2101000	3030003	137	7/20/1956	34.57	43,600
Moore	Deep River	Glendon	210106600	3030003	859	7/26/1993	4.11	877
Chatham	Cape Fear Power Plant Discharge	Brickhaven	02102094	3030004		7/15/2012	3.51	613
Chatham	Cape Fear River	Corinth	2102192	3030004	76.3	2/2/1973	20.02	6,920
Harnett	Cape Fear River	Lillington	2102500	3030004	3464	9/19/1945	33.19	150,000

[121] US Geological Survey. (n.d.). USGS surface water for North Carolina: Peak streamflow [Dataset]. Retrieved August 5, 2025, from https://nwis.waterdata.usgs.gov/usa/nwis/peak

County	River	Jurisdiction	USGS Gage Number	HUC	Drainage Area (mi^2)	Date of Peak	Gage Height (ft)	Stream Flow (cfs)
Harnett	South Prong Anderson Creek	Lillington	2103390	3030004	7.56	10/5/1964	22.55	482
Harnett	Little River	Linden	2103500	3030004	459	9/18/1945	41.47	13,500
Moore	Little River	Mount Pleasant	2102907	3030004		8/9/2024	17.97	4,300
Moore	Dunhams Creek	Carthage	2102910	3030004	2.19	4/21/1959	24.52	410
Moore	Cane Creek	Vass	2102930	3030004	32.4	4/22/1959	25.95	2,650
Hoke	Flat Creek		2102908*	3030004	7.63	10/8/2016	8.63	733
Montgomery	Little River		2128000*	3040104	106	9/17/2018	28.8	35000
Richmond	Drowning Creek		2133500*	3040203	183	9/17/2018	11.48	9990

Table 5-50: *Distance of Closest USGS Stream Gauge from each Jurisdictional Boundary in the planning area with peak gauge data from* ***Table 5-49***

Jurisdiction	Closest USGS Gauge Number	Distance (Miles)	Date of Peak	Peak Gauge Height (ft)	Stream Flow (CFS)
Chatham County					
Goldston	2101800	5.58	9/6/1996	13.41	4,010
Pittsboro	209696	0	8/1/1908	14.66	25,000
Siler City	2101800	1.31	9/6/1996	13.41	4,010
Harnett County					
Angier	2102500	5.96	9/19/1945	33.19	150,000
Coats	2102500	6.66	9/19/1945	33.19	150,000
Dunn	2102500	10.76	9/19/1945	33.19	150,000
Erwin	2102500	7.17	9/19/1945	33.19	150,000
Lillington	2102500	0.00	9/19/1945	33.19	150,000
Johnston County					
Archer Lodge	2087500	0.95	9/19/1945	22.12	22,900
Benson	2088000	9.83	10/9/2016	16.18	20,300
Clayton	2087500	0.03	9/19/1945	22.12	22,900
Four Oaks	2087570	2.96	8/1/1908	27.10	19,900
Kenly	2088500	3.73	9/17/1999	16.58	20,700
Micro	2088500	3.00	9/19/1945	16.58	20,700
Pine Level	2088500	2.98	9/19/1945	16.58	20,700
Princeton	2088500	1.63	9/19/1945	16.58	20,700
Selma	2087570	2.46	10/9/2016	27.10	19,900
Smithfield	2087570	0.00	2/2/1973	27.10	19,900
Wilson's Mill	2087570	3.07	10/8/2016	27.10	19,900
Lee County					
Broadway	2102192	7.20	2/2/1973	20.02	6,920
Sanford	2102000	1.86	9/17/1999	17.20	80,300
Moore County					
Aberdeen	2133500	4.17	9/6/1996	11.48	9,990
Cameron	2102908	9.23	10/8/2016	8.63	733
Carthage	2133500	12.67	9/17/2018	11.48	9,990
Foxfire Village	2133500	6.26	9/17/2018	11.48	9,990
Pinebluff	2133500	1.58	9/17/2018	11.48	9,990
Pinehurst	2133500	5.26	10/8/2016	11.48	9,990
Robbins	2128000	12.97	8/1/1908	28.80	35,000
Southern Pines	2133500	7.07	10/8/2016	11.48	9,990
Taylortown	2133500	9.84	8/1/1908	11.48	9,990
Vass	2102908	5.81	9/17/2018	8.63	733
Whispering Pines	2102908	10.07	9/18/1945	8.63	733

5.11.4 Historical Occurrences

The following historical occurrences, ranging from 2014 to 2025, have been identified based on the National Climatic Data Center (NCDC) Storm Events database (Table 5-50). It should be noted that only those historical occurrences listed in the NCDC database are shown here and that other, unrecorded or unreported events may have occurred within the planning area during this timeframe.

***Table 5-50**: Historical Occurrences of River Flooding from 2014 to 2025 in the NCDC Storm Events Database*[122]

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Chatham	Pittsboro	8/8/2024	Flash Flood	0	0	$2,000	$0	Heavy Rain	Several roads in Pittsboro were flooded, most notably Oakwood Dr and Park Dr.	Tropical Depression Debby slowly made its way through Florida, off the South Carolina coast, then back inland through the western Piedmont of North Carolina during the evening hours of 8 August 2024. Ahead of the storm, numerous feeder bands brought periods of heavy rain to central North Carolina, resulting in widespread rainfall of 4-6 inches across the western Piedmont, with higher amounts to the east. In addition, numerous tornadoes occurred during this event, including one on 7 August and six on 8
	Siler City		Flash Flood	0	0	$2,000	$0	Heavy Rain	US Highway 421 near Siler City was flooded.	
Harnett	Angier		Flash Flood	0	0	$10,000	$0	Heavy Rain	Several roads in Harnett County were flooded, including Chalybeate Springs Rd, West Williams St, and Dry Creek Rd, between Angier and Lillington.	
	Cokesbury		Flash Flood	0	0	$10,000	$0	Heavy Rain	Several roads in Harnett County were flooded, many near Lillington. These roads included Rosser Pittman Rd, Clayhole Rd, Buie Rd, Manor Hills Rd, and Harnett Central Rd.	
	Kipling		Flash Flood	0	0	$5,000	$0	Heavy Rain	Several roads in Lillington and Dunn were flooded.	

[122] National Oceanic and Atmospheric Organization [NOAA] & National Center for Environmental Information [NCEI]. (n.d.). Storm Events Database [Dataset]. NOAA.

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Moore	Aberdeen		Flash Flood	0	0	$5,000	$0	Heavy Rain	Several roads in Moore County were flooded, particularly in the towns of Aberdeen and Southern Pines.	August, including a rare EF-3 tropical cyclone tornado.
	Carthage		Flash Flood	0	0	$10,000	$0	Heavy Rain	Several roads in Moore County were flooded. Roads impacted included Farm Life School Rd, Furr Rd, McCaskill Rd, North Carolina Highway 27, and Lobelia Rd.	
Johnston	Smithfield	5/5/2024	Flash Flood	0	0	$10,000	$0	Heavy Rain	A water rescue was reported at 2nd Street and Holding St. Additionally, a flooded car was reported at Brogden Rd and S Brightleaf Blvd.	Within a moist airmass, a lingering surface frontal boundary led to scattered showers and thunderstorms. Over the Coastal Plain, a storm cell produced localized flash flooding near Smithfield.

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Johnston	Smithfield	8/15/2023	Flash Flood	0	0	$0	$0	Heavy Rain	Market Street was closed due to flooding.	A trough and associated cold front interacted with a very hot and humid air mass, resulting in widespread showers and storms across much of central North Carolina in the afternoon and early evening. With adequate wind shear, some storms became severe and consolidated into a line as they pushed east. There were numerous reports of wind damage across the Piedmont and northern and central Coastal Plain, along with several reports of large hail. One fatality occurred in Durham, where a tree fell on a woman's vehicle.
Chatham	Goldston	7/14/2023	Flash Flood	0	0	$0	$0	Heavy Rain	Several feet of water were over the road near the intersection of Rosser Rd and Henry Oldham Rd. The road was impassable.	A few surface boundaries, from upstream thunderstorms over Virginia and the North Carolina Foothills during the afternoon and evening on the 13th of

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
	Pittsboro		Flash Flood	0	0	$0	$0	Heavy Rain	Several feet of water were reported over the roadway near the intersection of Chatham Church Rd and Johnny Shaw Rd. The road was impassable.	July, converged upon and focused thunderstorm development over central North Carolina, as they settled generally southward throughout the morning through evening hours on the 14th. A combination of slow-moving showers and thunderstorms caused damaging wind gusts and flash flooding.
Johnston	Drug Store	9/10/2022	Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported near the intersection of North Carolina Highway 42 and I-40.	A tropical airmass interacted with a stalled frontal zone across portions of the southern Coastal Plain and eastern Sandhills of central North Carolina, producing heavy rain from numerous showers and storms. Flash flooding was reported in these areas, where the heaviest rain fell.
	Smithfield		Flash Flood	0	0	$0	$0	Heavy Rain	Flash Flooding was reported along North Carolina Highway 210.	
Chatham	Gulf	10/9/2021	Flash Flood	0	0	$0	$0	Heavy Rain	Heavy rain caused flash flooding along Georges Creek and Rocky Branch, which flooded Rosser Road.	The combination of high-moisture-content air and a slowly moving, negatively tilted upper trough, along with a boundary stalled across the area, resulted in areas of very heavy rain during the morning
Johnston	Kenly		Flash Flood	0	0	$0	$0	Heavy Rain	Old Route 22 was reported flooded between J Howell Road and Bay Valley Road.	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
	Princeton		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along Holts Pond Road near Princeton Elementary School.	into the afternoon. Heavy rain in some areas produced flash flooding across portions of the central Piedmont and central Coastal Plain of central North Carolina.
	Princeton		Flash Flood	0	0	$0	$0	Heavy Rain	Multiple roads were reported flooded in the town of Princeton, including along Massey-Holt Road and Progressive Church Road.	
Moore	Robbins	9/22/2021	Flash Flood	0	0	$0	$0	Heavy Rain	Multiple roads were reported impassable due to flash flooding in and around the Robbins area.	Several clusters of showers and thunderstorms moved across the western Piedmont and western Sandhills as a plume of tropical moisture from the south advanced into the area ahead of a strong cold front. This resulted in multiple reported of flash flooding from heavy rain across portions of the southern Piedmont and western Sandhills, along with a severe wind gust in Chatham County.
	Robbins		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along Highway 705 near Robbins.	
Harnett	Dunn	7/27/2021	Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along Highway 421 near Washington Avenue and Wilmington Avenue.	A weak mid-level disturbance moved across the area during the early morning hours, interacting with a very moist airmass. This allowed a large cluster of slow-moving showers and storms to develop, producing heavy rain and
Johnston	Brogden		Flash Flood	0	0	$0	$0	Heavy Rain	Numerous roads were flooded in and around Princeton.	
	Princeton		Flash Flood	0	0	$100,000	$0	Heavy Rain	Flash flooding was reported along Progressive Church Road.	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									A portion of the road was also washed out.	several reports of flash flooding across portions of the Coastal Plain and eastern Sandhills.
	Princeton		Flash Flood	0	0	$25,000	$0	Heavy Rain	Cars were reported flooded in downtown Princeton.	
	Smithfield		Flash Flood	0	0	$0	$0	Heavy Rain	East Market Street was reported closed between 9th Street and North Malta Street due to flash flooding.	
Johnston	Bagley	11/12/2020	Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along Old Route 22, between Beulahtown Road to J Howell Road.	Moisture from Tropical Storm Eta was drawn northward into the Mid-Atlantic during Wednesday, November 11th. Meanwhile, a slow-moving cold front approached the area and moved through central North Carolina on Thursday, resulting in widespread showers and isolated thunderstorms. Rainfall totals were generally in the 4 to 6 inches range, although some spots near Rocky Mount saw close to 10 inches of rain by the time the event drew to a close. This resulted in numerous flooded roads, including one death resulting from the flash flooding. One thunderstorm also caused some localized
	Brogden		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along Brogden Road near Neuse Bend Road.	
	Kenly		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along Railroad Street, between North Carolina Highway 222 and the Wilson County Line.	
	Kenly		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along Glendale Road, between Bay Valley Road and Harvey Road.	
	Lowell Mill		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along Bizzle Grove Church Road, between Hinnant Edgerton Road and Lowell Mill Road.	
Lee	Northview		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along McNeill Road near United States Highway 421 Business.	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
	Tramway		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along Willet Road near Hickory House Road.	storm damage in Sampson County.
Moore	Carthage		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along North Carolina Highway 22.	
	Spies		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along Upper Road.	
	Spies		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along Pine Grove Church Road.	
	Vass		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along James Street.	
Harnett	Angier	8/31/2020	Flash Flood	0	0	$0	$0	Heavy Rain	Flash Flooding closed North Carolina Highway 55 near Ennis Road.	Warm, moist air lifted along a wavy stationary front. This, combined with slow-moving and merging thunderstorms, resulted in heavy rain and flash flooding, including a dam break in Johnston County and two fatalities.
	Angier		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported on Kay Lane.	
	Angier		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported on North Carolina Highway 210.	
	Angier		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported on Honeycutt Drive.	
	Barclaysville		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported on Old Buies Creek Road.	
Johnston	Coats Crossroads		Flash Flood	0	0	$10,000	$0	Heavy Rain	Flash flooding was reported near Sanders Road, prompting a water rescue.	
	Four Oaks		Flash Flood	0	0	$70,000	$0	Heavy Rain	Flash flooding was reported in Four Oaks, where at least seven water rescues were conducted.	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
	Four Oaks		Flash Flood	0	0	$0	$0	Heavy Rain	The Highway 301 bridge over Holts Lake was reported underwater and closed due to flash flooding.	
	Four Oaks		Flash Flood	0	0	$25,000	$0	Heavy Rain	I-95 was reported closed due to flash flooding near the Highway 301 interchange. Several vehicles were stranded in the floodwaters at this location.	
	Smithfield		Flash Flood	2	0	$15,000	$0	Heavy Rain	Heavy rain resulted in flash flooding along Galilee Road. Part of the road washed away in the floodwaters, resulting in a car being swept off the road. Two individuals were not able to be rescued and drowned in the floodwaters.	
Harnett	Coats	8/15/2020	Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported in yards and roadways near the intersection of Lincoln Street and Hamer Street.	Training thunderstorms along a stalled front bisecting central North Carolina produced pockets of 3 to 6 inches of rain across Wake, Franklin, and Harnett counties. The storms flooded numerous roads in Harnett and Franklin counties.
	Dunn		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported on United States Highway 301.	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
	Norrington Xrds		Flash Flood	0	0	$0	$0	Heavy Rain	Numerous roads were reported to be flooded to the south and west of Lillington.	
Harnett	Dunn	6/19/2020	Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported on Highway 301.	Cyclonic, perturbed flow related to a weakening mid- and upper-level low centered over Ohio and Pennsylvania supported the development of numerous, mainly multicellular storms that produced sub-severe hail and flash flooding. Storms became anchored or back-built on outflow mergers, resulting in flash flooding.
Moore	Aberdeen		Flash Flood	0	0	$0	$0	Heavy Rain	Magnolia Drive near United States Highway 1 was closed due to flash flooding.	
	Carthage		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported on Dowd Road and Sunset Drive.	
	Carthage		Flash Flood	0	0	$0	$0	Heavy Rain	Bethlehem Church Road near North Carolina Highway 24-27 was closed due to flash flooding.	
Johnston	Pine Level	9/5/2019	Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	The intersection of W. Pine Street at N. Herring Street was closed due to flooding.	Hurricane Dorian moved north and northeastward near and along the coast of North Carolina on September 5th and 6th, with Dorian making landfall

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
	Pine Level		Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Flash flooding was reported near the intersection of Country Store Road and Bizzel Grove Church Road.	along the Outer Banks of North Carolina during the morning of September 6th. Meanwhile, heavy rain and strong damaging winds spread inland and across eastern central North Carolina. Heavy rainfall of 3 to 7 inches produced flash flooding across portions of the Coastal Plain of central North Carolina, generally along and east of the Interstate 95 corridor. Strong damaging winds of 35 to 55 mph spread inland across the Coastal Plain and eastern Sandhills of central North Carolina. This resulted in numerous power outages and trees down in these locations. Several weak tornadoes occurred during the afternoon of September 5th as multiple rain bands shifted eastward and into central North Carolina during peak heating.
	Princeton		Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Nearby Moccasin Creek flooded Holt Pond Road.	
	Smithfield		Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	The intersection of E. Market Street at 9th Street is closed due to flooding.	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Johnston	Smithfield	7/12/2019	Flash Flood	0	0	$50,000	$0	Heavy Rain	Numerous roads were closed or impassable due to flash flooding in the Smithfield and Princeton areas. Due to flash flooding and resulting erosion, a partial road collapse occurred on the 700 block of South Vermont Street near the intersection of Meadowbrook Drive and West Parker Street.	A line of showers and thunderstorms developed ahead of a cold front as it moved through central North Carolina. A few of the storms became severe, producing damaging winds. Persistent overnight training storms produced heavy rain and caused localized flash flooding in the cities of Goldsboro and Smithfield.
Chatham	Bennett	9/17/2018	Flood	0	0	$6,330,000	$20,000,000	Heavy Rain / Tropical System	Torrential rainfall of 10 to 15 inches caused widespread flooding across the county. Additional rainfall upstream caused major flooding along the Deep River near Moncure and along the Haw River near Bynum. Flooding damaged approximately 107 structures throughout the county, destroying 3, resulting in approximately $6.33 million in property damage and and at least $20 million in crop damage. Numerous roads were closed due to flooding. Numerous homes and businesses were flooded as well.	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

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Harnett	Johnsonville		Flood	0	0	$7,580,000	$20,000,000	Heavy Rain / Tropical System	Torrential rainfall of 10 to 15 inches caused widespread flooding across the county. Additional heavy rainfall upstream caused moderate flooding along the Cape River Basin. The river reached the patio of the Mermaid Point restaurant at its initial crest. Flooding damaged approximately 285 structures throughout the county, destroying 10 and resulting in over $7.58 million in property damage. Crop damages were at least $20 million. Numerous streets and roads were flooded, some sustaining structural damage.	throughout the Carolinas. As the storm moved inland, from September 15 to 17, heavy rain of 10 to 25 inches caused widespread inland flooding, inundating cities such as Fayetteville, Smithfield, Goldsboro, Durham, and Chapel Hill, and causing 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. There were 3 direct and 6 indirect deaths attributed to the storm with in the WFO RAH CWA.
Johnston	Hardy Xrds		Flood	0	0	$1,310	$30,000	Heavy Rain / Tropical System	Torrential rainfall of 10 to 15 inches caused widespread flooding across the county. Additional rainfall upstream caused minor flooding along the Neuse River at Clayton and the Little River near Princeton and moderate flooding along the Neuse River at Smithfield. Flooding damaged approximately 221 structures throughout the county, resulting in over $1.3	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									million in property damage, and $30 million in crop damage. Numerous streets and roads were reported flooded.	
Lee	Lemon Spgs	9/17/2018	Flood	0	0	$5,420,000	$20,000,000	Heavy Rain / Tropical System	Torrential rainfall of 10 to 15 inches caused widespread flash flooding across the county. Additional heavy rainfall upstream caused moderate flooding along the Deep River near Moncure. Flooding damaged approximately 210 structures throughout the county, destroying 13 and resulting in over $5.4 million in property damage and over $20 million in crop damage. Numerous streets and roads were reported to be flooded.	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

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Moore	Addor		Flood	0	0	$8,340,000	$20,000,000	Heavy Rain / Tropical System	Torrential rainfall of 10 to 15 inches caused widespread flooding across the county. Additional rainfall upstream led to major flooding along Flat Creek near Vass. Flooding damaged approximately 418 structures throughout the county, destroying 29 and resulting in approximately $8.34 million in property damage. Crop damage was at least $20 million. Numerous streets and roads were reported to be flooded.	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, inundating cities such as Fayetteville, Smithfield, Goldsboro, Durham, and Chapel Hill, and causing 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 flooding, with large stretches of I-40 and I-95 remaining impassable for days after the storm. The storm also spawned tornadoes in several places along its path. There were three direct and six indirect deaths attributed to the storm within the WFO RAH CWA.
Chatham	Crutchfield Crossroads	9/15/2018	Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Heavy rainfall of 8 to 12 inches caused flooding on numerous roads across the county. Several roads are impassable due to flash flooding. This list includes,	A ridge of high pressure over eastern North America stalled Florence's forward motion a few miles off the southeast North Carolina coast on

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									but is not limited to, U.S. 15-501 south at the Deep River, Morris Road between Parker Herndon Road and U.S. 15-501, Corinth Road between old U.S. 1 and Moncure Flatwood Road, Chatham Church Road at the bridge over the Rocky River, and R. Jordan Road near Rosser Road.	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, inundating cities such as Fayetteville, Smithfield, Goldsboro, Durham, and Chapel Hill, and causing 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 flooding, with large stretches of I-40 and I-95 remaining impassable for days after the storm. The storm also spawned tornadoes in
Lee	Lemon Springs		Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Heavy rainfall of 8 to 12 inches flooded several roads across the county, including the area between Black's Road and NC Highway 24/27. NC Highway 87 was also closed near Winstead Road.	
Moore	Robbins		Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Torrential rainfall of 10 to 15 inches caused widespread flash flooding across the county. The heavy rains caused several creeks to overflow their banks. Numerous roads throughout the county were closed due to flooding, including significant flooding in the Crains Creek community. Numerous homes and businesses were also flooded. At least 24 persons and 31 animals were rescued	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									from flood waters in the southeastern part of the county.	several places along its path. There were three direct and six indirect deaths attributed to the storm within the WFO RAH CWA.
Harnett	Cokesbury		Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Torrential rainfall of 8 to 15 inches caused widespread flash flooding across the county. The heavy rains caused several creeks to overflow their banks. Numerous roads throughout the county were closed due to flooding, including portions of Interstate 95 between Fayetteville and Dunn and Highways 301 and 401 near Dunn. Numerous homes and businesses were also flooded.	
Johnston	Clayton		Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Torrential rainfall of 8 to 15 inches caused widespread flash flooding across the county. Heavy rains caused flash flooding on several creeks, especially in the southern portions of the county. Numerous roads throughout the county were closed due to flooding, including portions of Interstate 95, NC-Highway 242, NC-Highway 96, and US-Highway 701. Several roads were washed out across the county, including Stevens	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									Chapel Road, near Princeton. Numerous homes and businesses were also flooded.	
Lee	Lemon Springs	8/19/2018	Flash Flood	0	0	$0	$0	Heavy Rain	Greenwood Road was closed due to flooding.	Prefrontal convection developed over central North Carolina during the late evening in a warm and unstable atmosphere. Several of the storms produced wind damage, with one report of flash flooding.

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Chatham	Pittsboro	8/2/2018	Flash Flood	0	0	$50,000	$0	Heavy Rain	Heavy rainfall resulted in flash flooding throughout the Pittsboro business district.	Heavy rain showers and thunderstorms developed over central NC in association with a series of disturbances moving through the long-wave trough aloft. Deep moist advection and unidirectional flow through the atmosphere resulted in training of heavy rain and thunderstorms. Saturated antecedent conditions contributed to the flash flooding that occurred as a result of the training storms. A cluster of storms became severe during the afternoon, resulting in sporadic downed trees and power lines while other marginally severe storms resulted in numerous downed trees and power lines due to saturated ground.

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Harnett	Coats	7/23/2018	Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along NC Highway 55, near the intersection of Carson Gregory Road.	A stationary surface low over western North Carolina, and a pair of outflow-modulated fronts over North Carolina and Virginia, were overspread by perturbed southwesterly flow around an anomalous mid to upper low over the Ohio Valley. Loosely organized multi-clusters resulted, with accompanying marginally severe hail, wind damage, and isolated flooding.
Harnett	Dunn	7/22/2018	Flash Flood	0	0	$0	$0	Heavy Rain	US 301 N at Bryan McLamb Lane is closed due to flooding.	Multiple disturbances rotating around an upper-level low across the Ohio Valley produced multiple clusters of showers and storms across central NC during the late evening and overnight hours. Convection congealed into an MCS-like complex and pushed east during the overnight hours, which produced some isolated wind damage and pockets of heavy rainfall, which produced flash flooding.
Johnston	Emit		Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported at the intersection of NC Highway 42 and NC Highway 39.	
Harnett	Kipling	7/17/	Flash Flood	0	0	$0	$0	Heavy Rain	Flooding was reported at 401 North at Christian Light Road.	A slow-moving cold front lagged over West Virginia and

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
	Lillington		Flash Flood	0	0	$0	$0	Heavy Rain	Flooding was reported on South Main Street and East Duncan Street.	Virginia through late afternoon, with a prefrontal trough over central NC. Scattered clusters of storms developed during the mid-afternoon, with a couple becoming severe and producing wind damage, along with one producing flash flooding.
	Lillington		Flash Flood	0	0	$0	$0	Heavy Rain	Flooding was reported on United States Highway 421 between the 1000 and 2000 blocks.	
Moore	Taylortown	5/29/2018	Flash Flood	0	0	$0	$0	Heavy Rain	Several roads were closed in Aberdeen, Pinehurst, and Southern Pines due to flash flooding.	Remnants of Alberto were moving north through TN, with a nearly stationary front extending ESE through the southern Appalachians, southern NC, and offshore. Southerly flow into the boundary resulted in increasing temperatures, moisture, and instability. As a result of weak steering flow, back-building and training storms developed along the stationary boundary.

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Lee Co.	Jonesboro	4/15/2018	Flash Flood	0	0	$0	$0	Heavy Rain	Flash Flooding was reported along United States Highway 421.	A strong upper low moved from Iowa across the Lower Great Lakes region, with a deep trough taking on a negative tilt while swinging into North Carolina. An associated strong cold front approached western North Carolina that afternoon and pushed east and east-northeast across central North Carolina on the night of the 15th. A strengthening and backing flow at all levels led to a surge of moisture into NC. Moderate instability, strong deep-layer shear, and high low-level storm-relative helicity were also present. The result was a quasi-linear convective system with embedded mesovortices, which produced widespread severe weather, including a tornado in Greensboro, as it moved through North Carolina.

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Johnston	Clayton	9/1/2017	Flash Flood	0	0	$0	$0	Heavy Rain	Heavy rain resulted in flash flooding in Clayton. The right lane of Route 70 near Champion Drive was impassable. A trained spotter 3 miles west of Clayton also measured 4.14 inches of rain in an hour and a half.	The remnants of Harvey increased the southwesterly flow over Central North Carolina as it moved northeastward through Tennessee and Kentucky. In the wake of the northward-moving warm front, a cold front moved into and stalled over Central North Carolina, providing lift in the strongly sheared, moist environment. The resulting thunderstorms became severe, producing damaging wind gusts, large hail, and flash flooding.
Moore	Midtown	7/23/2017	Flash Flood	0	0	$5,000	$0	Heavy Rain	Heavy rain resulted in flash flooding in the town of Aberdeen. Several cars became stranded in flood waters, and one driver became trapped in their vehicle.	Numerous showers and thunderstorms developed along differential heating boundaries in an abnormally hot and moderately unstable environment. Many of the thunderstorms became severe, producing widespread wind damage and isolated flash flooding.
Harnett	Duncan	10/8/201	Flood	1	0	$9,100,000	$0	Heavy Rain / Tropical System	Torrential rainfall of 8 to 12 inches caused widespread flash flooding across the county. Additional heavy rainfall	Hurricane Matthew skirted by the North Carolina coast on October 8, 2016, dropping torrential rainfall of 8 to 15

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									upstream caused moderate flooding along the Cape River Basin. Flooding damaged approximately 744 structures throughout the county, resulting in $9.1 million in property damage. Numerous streets and roads were reported flooded, including Interstate 95 near Dunn, with several washouts reported on secondary roads. The flooding resulted in 1 direct fatality. A 74-year-old man died when he drove past a barricade near Carolina Drive and was swept away into a flooded creek.	inches and producing wind gusts of 50 to 70 mph across Central and Eastern North Carolina. The large swath of 8 to 15 inches of rain across Eastern and Central North Carolina caused devastating and life-threatening flash flooding, which evolved into major and record-setting river flooding along portions of the Neuse, Cape Fear, and Tar river basins. Inland flood waters resulted in 11 direct fatalities within the WFO RAH CWA, approximately $686 million in property damage to flooded homes and businesses, and $150 million in crop damage. Countless roads and highways were underwater, along with numerous roads washed out, including sections of Interstates 95 and 40. Besides the 11 direct fatalities, at least three indirect fatalities also occurred. ||In addition, the associated strong wind gusts of 50 to 70 mph resulted in 1 fatality, when
Johnston	Drug Store		Flood	4	0	$24,700,000	$20,000,000	Heavy Rain / Tropical System	Torrential rainfall of 9 to 12 inches caused widespread flash flooding across the county. An additional 5 to 6 inches of rainfall upstream caused all-time record major flooding along the Neuse River Basin. Flooding damaged approximately 1,160 structures throughout the county, resulting in $24.7 million in property damage and $20 million in crop damage. Numerous streets and roads were reported flooded, causing sinkholes to form,	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									including a large sinkhole at mile marker 334 on Interstate 40. The flooding resulted in 4 direct fatalities. A 19-year-old female died when her car was swept away by floodwaters into Hannah Creek on Interstate 95 at mile marker 83, near Four Oaks. A 30 year old male died when his vehicle was swept off the road while attempting to drive through flood waters on Cornwallis Road near NC Highway 42. A 67-year-old male died when his vehicle was swept away while attempting to go across a flood-covered bridge on Highway 210 near Galilee Road. A 51-year-old male died when he was swept away while walking and was found 3 days later in a water-filled ditch on NC Highway 96, south of the Meadow community.	a tree fell onto a moving vehicle. Finally, the associated EF-1 tornado in Wayne County resulted in $75 thousand in property damage.
Chatham	Farrington	10/8/2016 -	Flash Flood	0	0	$50,000	$0	Heavy Rain / Tropical System	Widespread heavy rainfall of 6 to 8 inches caused flash flooding on several roads across the county. Cedar Lake Road was washed out.	Hurricane Matthew skirted by the North Carolina coast on October 8, 2016, dropping torrential rainfall of 8 to 15 inches and producing wind

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Harnett	Pineview		Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Torrential rainfall of 8 to 12 inches caused widespread flash flooding across the county. Numerous roads were closed due to flooding, especially across eastern portions of the county. Numerous homes and businesses were flooded as well, with numerous water rescues from people trapped in homes and vehicles.	gusts of 50 to 70 mph across Central and Eastern North Carolina. The large swath of 8 to 15 inches of rain across Eastern and Central North Carolina caused devastating and life-threatening flash flooding, which evolved into major and record-setting river flooding along portions of the Neuse, Cape Fear, and Tar river basins. Inland flood waters resulted in 11 direct fatalities within the WFO RAH CWA, approximately $686 million in property damage to flooded homes and businesses, and $150 million in crop damage. Countless roads and highways were underwater, along with numerous roads washed out, including sections of Interstates 95 and 40. Besides the 11 direct fatalities, at least three indirect fatalities also occurred. ||In addition, the associated strong wind gusts of 50 to 70 mph resulted in 1 fatality, when a tree fell onto a moving
Johnston	Hardy Xrds		Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Torrential rainfall of 9 to 12 inches caused widespread flash flooding across the county. The heavy rains caused flash flooding on several creeks. Numerous roads are closed due to flooding, including portions of Interstate 40 between exit 319 and Exit 325. Numerous homes and businesses were flooded as well, with multiple water rescues from people trapped in homes and vehicles.	
Lee	Tramway		Flash Flood	0	0	$535,000	$0	Heavy Rain / Tropical System	Widespread heavy rainfall of 6 to 8 inches caused flash flooding on several roads across the county. Flooding damaged approximately 36 structures throughout the	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									county, resulting in $535 thousand in property damage.	vehicle. Finally, the associated EF-1 tornado in Wayne County resulted in $75 thousand in property damage.
Moore	Robbins		Flash Flood	0	0	$3,900,000	$0	Heavy Rain / Tropical System	Widespread heavy rainfall of 4 to 8 inches caused widespread flash flooding across the county. Numerous roads were closed due to flooding. Numerous homes and businesses were flooded as well. Flooding damaged approximately 838 structures throughout the county, resulting in $3.9 million in property damage.	
Harnett	Pineview	9/28/2016-9/29/2016	Flash Flood	0	0	$25,000	$0	Heavy Rain	Heavy rain resulted in flash flooding, which closed 10 to 15 roads in the Anderson Creek area. A section of Thompson Road was washed out by floodwaters.	A slow-moving cold front moving into the area, coupled with a deep upper low settling southward into the Tennessee Valley, set the stage for multiple rounds of convection during the afternoon and evening. Some of these storms produced large hail and flash flooding. Some of the flooding was significant across the Sandhills region, where 6 to 10 inches of rain fell. Multiple
Moore	Lobelia		Flash Flood	0	0	$100,000	$0	Heavy Rain	Heavy rain resulted in flash flooding southeast of Vass, mainly at residences along the Little River, but also near the intersection of Lobelia Road and McGill Road. Sections of Lobelia Road were either partially or	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									completely washed out between McGill Road and Sarason Place.	roads were flooded and/or washed out, homes and businesses flooded, and dams were topped or breached across the Sandhills region.
	Pinehurst		Flash Flood	0	0	$0	$0	Heavy Rain	Heavy rain resulted in flash flooding at the intersection of Morganton Road and Highway 5. The flood waters were up to the door of multiple vehicles.	
	Southern Pines Airport		Flash Flood	0	0	$0	$0	Heavy Rain	Lakeview Drive at Thagard Lane was closed due to flash flooding.	
Harnett	Dunn		Flash Flood	0	0	$0	$0	Heavy Rain	Heavy rain caused flash flooding in and around the Dunn area. Several roads were flooded or closed, including George Perry Lee Road on the northeast side of Dunn.	
Moore Co.	Cameron	12/30/2015	Flash Flood	0	0	$0	$0	Heavy Rain	Several roads were flooded in Cameron.	An approaching cold front triggered showers and a few isolated storms across the region. With an extremely moist air mass in place, moderate to heavy rain fell. Given the very saturated soils, flash flooding quickly developed.

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Moore Co.	Robbins	10/3/2015	Flash Flood	0	0	$0	$0	Heavy Rain	Twenty inches of water were reported flowing across South Broad Street.	With a strong upper low nearly stationary over the Florida Gulf Coast, a steady moisture feed resulted in a very moist air mass over the region. An old front was aligned along the Carolina coast, and isentropic lift over this boundary produced a prolonged period of moderate to heavy rain. All of central North Carolina received 3-6 inches of rain during this time frame. Given the saturated soils, some locations experienced flash flooding.
Johnston	Coats Crossroads	9/8/2014	Flash Flood	0	0	$0	$0	Heavy Rain	Several roads were impassible and had to be closed near Coats Crossroads, including Polenta Road at Raleigh Road and Old Fairground Road near Zacks Mill Road.	Deep tropical moisture was in place across the region as a slow-moving low-pressure system tracked northeast across eastern North Carolina. A large swath of 5 to 8 inches of rain fell across the eastern Piedmont and coastal plain counties of North Carolina throughout the day and into the overnight hours. This heavy rainfall resulted in minor flooding and closed numerous roads across the area. The most severe flooding occurred
	Drug Store		Flash Flood	0	0	$0	$0	Heavy Rain	Several roads were impassable, including Government Road near Jack Road and Amelia Church Road near Shotwell Road.	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
										in Warren County, where as much as 9 inches fell that leading to the collapse of two roads and resulting in minor injuries.
Johnston	Clayton	8/12/2014	Flash Flood	0	0	$0	$0	Heavy Rain	Numerous roads in Clayton were reported closed due to flooding.	A cluster of showers and storms develops across the triangle region of central North Carolina. A few of these storms became severe, producing damaging wind gusts. In addition, these storms produced heavy rain, resulting in significant flash flooding in Wake and Johnston Counties.
	Selma		Flash Flood	0	0	$5,000	$0	Heavy Rain	A car was reported stalled in the flood waters on South Raiford Street near East Jones Avenue.	
	Smithfield		Flood	0	0	$5,000	$0	Heavy Rain	One person was reported rescued from flood waters at North 9th Street at Market Street.	
	Wilsons Mills		Flash Flood	0	0	$5,000	$0	Heavy Rain	One person was rescued from their car in flood waters in the Wilson's Mills area.	

According to the NCDC Storm Events Database, 215 recorded instances of flooding have affected the planning area since 1996, causing an estimated $66,700,310 in property losses, $100,030,000 in agricultural crop losses, 12 deaths, and no injuries.[123]

Table 5-51 provides a summary of this historical information by participating jurisdiction. It is important to note that many of the events attributed to the county are countywide or cover large portions of the county. The individual counts by jurisdiction are for those events that are only attributed to that one jurisdiction.

***Table 5-51**: Summary of Flooding Impacts from the NCDC Storm Events Database from 1996 to 2025*[124]

Jurisdiction	Number of events	Direct Deaths	Direct Injuries	Indirect Deaths	Indirect Injuries	Property Damage	Crop Damage
Chatham County	**32**	**0**	**0**	**0**	**0**	**$6,434,000**	**$20,000,000**
Goldston	2	0	0	0	0	$0	$0
Pittsboro	6	0	0	0	0	$52,000	$0
Siler City	4	0	0	0	0	$2,000	$0
Unincorporated Area	20	0	0	0	0	$6,380,000	$20,000,000
Harnett County	**39**	**1**	**0**	**0**	**0**	**$16,730,000**	**$20,000,000**
Angier	5	0	0	0	0	$10,000	$0
Coats	2	0	0	0	0	$0	$0
Dunn	7	0	0	0	0	$0	$0
Erwin	0	0	0	0	0	$0	$0
Lillington	4	0	0	0	0	$0	$0
Unincorporated Area	21	1	0	0	0	$16,720,000	$20,000,000
Johnston County	**75**	**9**	**0**	**2**	**0**	**$25,021,310**	**$20,030,000**
Archer Lodge	1	0	0	0	0	$0	$0
Benson	2	0	0	0	0	$0	$0
Clayton	8	0	0	0	0	$0	$0
Four Oaks	3	0	0	0	0	$95,000	$0
Kenly	3	0	0	0	0	$0	$0
Micro	0	0	0	0	0	$0	$0
Pine Level	2	0	0	0	0	$0	$0
Princeton	7	0	0	0	0	$125,000	$0
Selma	3	0	0	0	0	$5,000	$0
Smithfield	12	2	0	0	0	$80,000	$0
Wilson's Mill	3	0	0	2	0	$5,000	$0
Unincorporated Area	31	7	0	0	0	$24,711,310	$20,030,000
Lee County	**24**	**0**	**0**	**0**	**0**	**$5,955,000**	**$20,000,000**
Broadway	0	0	0	0	0	$0	$0
Sanford	6	0	0	0	0	$0	$0
Unincorporated Area	18	0	0	0	0	$5,955,000	$20,000,000
Moore County	**46**	**0**	**0**	**0**	**0**	**$12,560,000**	**$20,000,000**
Aberdeen	3	0	0	0	0	$5,000	$0
Cameron	2	0	0	0	0	$0	$0
Carthage	7	0	0	0	0	$10,000	$0
Foxfire Village	0	0	0	0	0	$0	$0

[123] National Oceanic and Atmospheric Organization [NOAA] & National Center for Environmental Information [NCEI]. (n.d.). Storm Events Database [Dataset]. NOAA.
[124] National Oceanic and Atmospheric Organization [NOAA] & National Center for Environmental Information [NCEI]. (n.d.). Storm Events Database [Dataset]. NOAA.

Jurisdiction	Number of events	Direct Deaths	Direct Injuries	Indirect Deaths	Indirect Injuries	Property Damage	Crop Damage
Pinebluff	1	0	0	0	0	$0	$0
Pinehurst	1	0	0	0	0	$0	$0
Robbins	8	0	0	0	0	$3,900,000	$0
Southern Pines	1	0	0	0	0	$0	$0
Taylortown	1	0	0	0	0	$0	$0
Vass	2	0	0	0	0	$0	$0
Whispering Pines	0	0	0	0	0	$0	$0
Unincorporated Area	20	0	0	0	0	$8,645,000	$20,000,000
Planning Area Total	**216**	**10**	**0**	**2**	**0**	**$66,700,310**	**$100,030,000**

Table 5-52 In Section 5: Capability Assessment, the number of insured losses and total claims payments for historical flood damage in each jurisdiction are listed as recorded under the NFIP. Table 5-52 below provides the NFIP entry date for each participating jurisdiction. As explained in subsection 4.3, the NFIP entry date for each jurisdiction was used to determine buildings that were built pre-FIRM and are therefore assumed to be at greater risk to the flood hazard.

***Table 5-52**: NFIP Entry Dates*

Jurisdiction	NFIP Entry Date
Chatham County (Unincorporated Area)	07/16/91
Town of Goldston*	02/02/07
Town of Pittsboro	02/02/07
Town of Siler City	07/02/87
City of Dunn	09/04/96
Harnett County (Unincorporated Area)	04/16/90
Town of Angier	04/16/90
Town of Benson	10/20/00
Town of Broadway	09/06/06
Town of Coats*	10/03/06
Town of Erwin	04/16/90
Town of Lillington	09/04/86
Johnston County (Unincorporated Area)	09/30/83
Town of Clayton	04/01/82
Town of Four Oaks	10/20/00
Town of Kenly	10/20/00
Town of Micro	10/20/00
Town of Pine Level	10/20/00
Town of Princeton	09/30/83
Town of Selma	10/20/00

Jurisdiction	NFIP Entry Date
Town of Smithfield	04/01/82
Town of Wilson's Mills	10/20/00
City of Sanford	09/06/89
Lee County (Unincorporated Area)	09/06/89
Moore County (Unincorporated Area)	12/15/89
Town of Aberdeen	05/15/86
Town of Cameron	12/15/89
Town of Carthage	10/17/06
Town of Pinebluff	07/17/86
Town of Robbins	06/03/86
Town of Southern Pines	03/04/88
Town of Taylortown*	10/17/06
Town of Vass	10/17/06
Village of Foxfire	12/15/89
Village of Pinehurst	12/15/89
Village of Whispering Pines	12/15/89

Source: Federal Emergency Management Agency Community Status Book
* These communities do not participate in the National Flood Insurance Program.

5.11.5 Repetitive Loss and Severe Repetitive Loss Properties

A repetitive loss property may or may not be currently insured by the NFIP. Properties that have suffered repeated flooding damage are currently limited to residential structures. According to FEMA, the following are definitions of the NFIP and FEMA Severe Repetitive Loss and Repetitive Loss Properties:

- **NFIP Repetitive Loss Property:** An NFIP-insured structure with two or more claims/losses resulting in claim payments (including building and contents) totaling more than $1000 per claim that are recorded in any 10-year period.
- **NFIP Severe Repetitive Loss Property:** An NFIP-Insured structure that has incurred flood-related damage for which four or more separate claims payments have been made, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or for which at least two separate claims payments (building payments only) have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the building. In both instances, at least two of the claims must be within 10 years of each other, and claims made within 10 days of each other will be counted as one claim.

- **FMA Repetitive Loss:** An NFIP-insured structure that has incurred flood-related damage on two occasions, in which the cost of repair, on average, equaled or exceeded 25 percent of the value of the structure at the time of each such flood event.
- **FMA Severe Repetitive Loss:** An NFIP-Insured structure that has incurred flood-related damage for which four or more separate claims payments have been made, with the amount of each claim (including building and contents payments) exceeding $5,000, and with the cumulative amount of such claims payments exceeding $20,000; or for which at least two separate claims payments (building payments only) have been made under such coverage, with the cumulative amount of such claims exceeding the market value of the building.

Without mitigation, these properties will likely continue to experience flood losses. Table 5-53 presents a summary of these figures for the Cape Fear Region.

***Table 5-53**: Summary of FMA and NFIP Repetitive Loss and Severe Repetitive Loss Properties*[125]

Community Name	Occupancy Type	NFIP	FMA	NFIP	FMA	Total Losses
		Repetitive Loss		Severe Repetitive Loss		
Chatham County	Single-Family Residential Building	1	0	0	0	3
Town of Siler City	Non-residential Building	1	0	0	0	2
Chatham County Total		2	0	0	0	5
City of Dunn	Single-family residence	1	0	0	0	2
	Single-family Residential Building	1	0	0	0	2
Town of Erwin	Single-family residence	2	0	0	0	4
	Single-family Residential Building	2	0	0	0	4
Harnett County	Single Family Residence	3	1	1	1	6
Harnett County Total		9	1	1	1	18
Town of Four Oaks	Single-family residence	1	0	0	0	3
	Single-family Residential Building	1	0	0	0	2
Johnston County	Single-family residence	5	0	0	0	12
	Non-residential Business	2	0	0	0	4
	Single-family Residential Building	3	0	0	0	6
Town of Kenly	Single-family Residential Building	1	0	0	0	3
Town of Smithfield	Single-family residence	8	2	0	2	22
	2-4 Unit Residential Building	1	0	0	0	2

[125] National Flood Insurance Program [NFIP]. (2025). NFIP Multiple Loss Properties [Dataset]. In Federal Emergency Management Administration [FEMA], OpenFEMA Dataset (Version V1). FEMA. https://www.fema.gov/openfema-data-page/nfip-multiple-loss-properties-v1

Community Name	Occupancy Type	NFIP Repetitive Loss	FMA Repetitive Loss	NFIP Severe Repetitive Loss	FMA Severe Repetitive Loss	Total Losses
	Residential Building with more than four units	1	0	0	0	2
	Single-family Residential Building	6	0	2	2	23
	Non-Residential Building	2	1	1	1	8
Johnston County Total		31	3	3	5	87
Lee County	Single-family residence	2	0	0	0	5
	Single-family Residential Building	1	0	0	0	2
City of Sanford	Single-family residence	2	0	0	0	4
	Single-family Residential Building	1	0	0	0	3
Lee County Total		6	0	0	0	14
Moore County *	Single-family residence	4	1	0	0	9
	Single-family Residential Building	1	0	0	0	2
Village of Pinehurst	Single-family residence	1	0	0	0	2
	Non-residential Building	1	0	0	0	4
Moore County Total		7	1	0	0	17
Planning Area Total		**55**	**5**	**4**	**6**	**141**

5.11.6 Probability of Future Occurrences

The NRI calculates the probability and risk of riverine flooding based on the NFIP National Flood Hazard Layer, which depicts the 1% annual-chance floodplain. The historical event source for flooding is the NCDC/NCEI Storm Events Database from 1/1/1996 to 12/31/2019, which includes reported losses, dates of occurrence, and counties of occurrence to calculate the annualized frequency of Riverine Flooding.

According to the NRI, Johnston County has the highest expected annual frequency (1.59), followed by Moore County (1.24), Chatham County (1.13), Harnett County (0.93), and Lee County. Moore County, Harnett County, and Chatham County have a “Relatively Moderate” average EAL rating, while Johnston County and Lee County have a “Relatively High” average EAL Rating. Johnston County has the highest Total EAL of Riverine Flooding at $2,513,222, followed by Harnett County ($1,183,260), Moore County ($1,144,487), Lee County ($494,075), and Chatham County ($298,149).

***Table 5-54**: NRI Riverine Flooding annualized frequency, EAL total, EAL score, and Hazard Risk Index Score*

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Chatham County	**1.13**	**$298,149.00**	**53.40**	**Relatively Moderate**	**53.56**	**Relatively Moderate**
Goldston	1.13	$34,426.05	72.68	Relatively High	74.11	Relatively High

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Pittsboro	1.13	$41,298.81	53.35	Relatively Moderate	51.96	Relatively Moderate
Siler City	1.13	$105,741.50	65.59	Relatively High	70.63	Relatively High
Area outside Jurisdictional Boundaries	1.13	$116,682.65	48.76	Relatively Moderate	47.98	Relatively Moderate
Harnett County	**0.93**	**$1,183,260.50**	**58.60**	**Relatively Moderate**	**60.76**	**Relatively High**
Angier	0.50	$30,116.85	29.97	Relatively Low	32.35	Relatively Low
Coats	1.00	$13,437.44	49.28	Relatively Moderate	52.95	Relatively Moderate
Dunn	1.00	$462,271.93	84.00	Very High	87.64	Very High
Erwin	1.00	$458,069.13	78.70	Relatively High	80.82	Very High
Lillington	0.88	$242,452.87	55.91	Relatively Moderate	57.48	Relatively Moderate
Area outside Jurisdictional Boundaries	1.00	$293,186.76	61.53	Relatively High	63.44	Relatively High
Johnston County	**1.59**	**$2,513,222.36**	**64.10**	**Relatively High**	**64.47**	**Relatively High**
Archer Lodge	1.63	$198,347.29	67.90	Relatively High	64.92	Relatively High
Benson	1.47	$81,767.57	56.42	Relatively Moderate	59.07	Relatively Moderate
Clayton	1.63	$352,982.78	63.40	Relatively High	62.81	Relatively High
Four Oaks	1.63	$173,976.99	63.84	Relatively High	65.86	Relatively High
Kenly	1.63	$125,194.35	79.12	Relatively High	81.08	Very High
Micro	1.63	$369,607.74	82.21	Very High	84.29	Very High
Pine Level	1.63	$124,548.01	80.13	Very High	82.69	Very High
Princeton	1.63	$137,838.41	82.09	Very High	82.06	Very High
Selma	1.63	$657,514.49	77.29	Relatively High	79.71	Relatively High
Smithfield	1.63	$954,034.94	84.48	Very High	86.84	Very High
Wilson's Mill	1.63	$341,296.99	76.06	Relatively High	76.96	Relatively High
Area outside Jurisdictional Boundaries	1.53	$419,842.04	52.50	Relatively Moderate	51.53	Relatively Moderate
Lee County	**0.92**	**$494,075.64**	**66.27**	**Relatively High**	**68.97**	**Relatively High**
Broadway	0.96	$15,848.37	51.28	Relatively Moderate	54.04	Relatively Moderate
Sanford	0.92	$461,367.93	66.94	Relatively High	69.47	Relatively High
Areas Outside Jurisdictional Boundaries	0.92	$32,707.72	61.57	Relatively High	65.46	Relatively High
Moore County	**1.24**	**$1,144,487.46**	**58.96**	**Relatively Moderate**	**58.60**	**Relatively Moderate**
Aberdeen	1.00	$297,189.71	50.33	Relatively Moderate	50.22	Relatively Moderate
Cameron	1.33	$7,959.94	51.86	Relatively Moderate	52.96	Relatively Moderate

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Carthage	1.33	$98,014.60	56.10	Relatively Moderate	56.40	Relatively Moderate
Foxfire Village	1.33	$27,689.37	53.05	Relatively Moderate	52.23	Relatively Moderate
Pinebluff	1.33	$29,170.82	59.97	Relatively Moderate	61.40	Relatively High
Pinehurst	1.33	$349,854.38	62.92	Relatively High	62.76	Relatively High
Robbins	1.33	$57,320.81	62.77	Relatively High	65.72	Relatively High
Southern Pines	1.07	$310,688.85	50.09	Relatively Moderate	50.16	Relatively Moderate
Taylortown	1.33	$58,941.45	68.11	Relatively High	68.27	Relatively High
Vass	1.33	$33,451.94	72.26	Relatively High	74.93	Relatively High
Whispering Pines	1.33	$68,848.70	82.09	Very High	77.23	Relatively High
Areas Outside Jurisdictional Boundaries	1.33	$525,027.53	75.50	Relatively High	72.67	Relatively High

5.11.7 Impact

5.11.7.1 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 on the ground that upstream runoff picked up, including dirt, oil, animal waste, and lawn, farm, and industrial chemicals. Pastures and areas where farm animals are kept or their wastes are stored can contribute to polluted waters in receiving streams.

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 overload sewer lines, causing backups into low-lying areas and homes. Even when flood waters dilute it, raw sewage can be a breeding ground for bacteria such as E. coli and other disease-causing agents. All jurisdictions in the Region are susceptible to this type of impact.

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 are not properly cleaned can breed mold and mildew. A building that is not thoroughly cleaned becomes a health hazard, especially for small children and the elderly. Individuals who have limited mobility, who require medical equipment, or who have limited capabilities to prepare for flooding, which includes Individuals with disabilities (11.8% in Chatham County, 15.5% in Harnett County, 13% in Johnston County, 17.7% in Lee County, and 14% in Moore County of residents in the

planning area),[126] can be disproportionately impacted by flooding events and are at an increased risk of injury or death.

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 the City 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 put 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.

- Technology has become a critical resource for communicating flooding risks, impacts, preparedness information, and safety. However, some residents have of housing units are estimated to not have access to a computing device (5% of housing units in Chatham County, 6.1% in Harnett County, 3.2% in Johnston County, 5.1% in Lee County, and 5.3% in Moore County estimated in 2023) in their household or to have an internet subscription (13.2% of housing units in Chatham County, 16.3% in Harnett County, 13.7% in Johnston County, 23.8% in Lee County, and 10.2% in Moore County in 2023).[127] Residents in the planning area without telephone service (Chatham County 0.5%, Harnett County 0.4%, Johnston County 1.1%, Lee County 0.9%, and Moore County, 0.9% of housing units) may have limited access to any emergency alerts sent with reverse-911 systems or SMS and therefore have a limited capacity to prepare for flooding impacts. It is important that residents in the planning area have some method of receiving emergency alerts and preparedness information.

5.11.7.2 Changes in Development

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. Any infrastructure or development may be impacted by flooding. As the planning area increases in population (16.54% increase in Moore County, 11.58% in Lee County, 34.19% in Johnston County, 19.03% in Harnett County, and 23.33% in Chatham County between 2010 and 2023),[128] the number of housing units and development should continue to increase (Housing units have increased between 2013 and 2023 in Chatham County by 20.8%, Harnett

[126] U.S. Census Bureau, U.S. Department of Commerce. "Disability Characteristics." American Community Survey, ACS 5-Year Estimates Subject Tables, Table S1810, https://data.census.gov/table/ACSST5Y2023.S1810

[127] U.S. Census Bureau, U.S. Department of Commerce. (n.d.). Selected Housing Characteristics. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP04. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP04

[128] U.S. Census Bureau. (n.d.). TOTAL POPULATION. Decennial Census, DEC Summary File 1, Table P1. Retrieved June 16, 2025, from https://data.census.gov/table/DECENNIALSF12010.P1

U.S. Census Bureau, U.S. Department of Commerce. (n.d.). ACS Demographic and Housing Estimates. American Community Survey, ACS 5-Year Estimates Data Profiles, Table DP05. Retrieved June 16, 2025, from https://data.census.gov/table/ACSDP5Y2023.DP05

County by 14.08%, Johnston County by 29.87%, Lee County by 11.35%, Moore County by 11.92%, and the planning area by 19.3% total). This means there is likely to be a large increase in housing units that could be susceptible.

5.11.7.3 Economy

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 rebuilt and businesses to return to normal. Property damage can impact residents by damaging property, requiring its restoration, repair, or replacement.

5.11.7.4 Natural 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, causing habitat alteration and degradation of impacted areas.

5.11.7.5 First 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 mentioned above. Flood waters may prevent access to areas in need of response, or to the critical facilities themselves, prolonging response time. Flooding may also impact the ability of first responders to reach residents who are trapped by floodwaters or who require medical attention during flooding events.

5.11.7.6 Future Conditions

According to the NCCSR, it is likely that extreme precipitation will increase inland flooding in NC, and there is a high confidence that the frequency and intensity of heavy precipitation are projected to increase.[129]

OTHER HAZARDS

5.12 Hazardous Materials Incidents

5.12.1 Hazard Description and Background

Hazardous materials can be found in many forms and quantities that can potentially cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property in varying degrees. Such materials are routinely used and stored in many homes and businesses and are also shipped daily on the nation's highways, railroads, waterways, and pipelines. This subsection on the hazardous material hazard is intended to provide a general overview of the hazard, and the threshold for identifying fixed and mobile sources of hazardous materials is limited to general information on rail, highway, and FEMA-identified fixed HAZMAT sites determined to be of greatest significance, as appropriate for the purposes of this plan.

[129] North Carolina Institute for Climate Studies [NCICS]. (2020). North Carolina Climate Science Report. NCICS. Retrieved August 6, 2025, from https://ncics.org/wp-content/uploads/2020/10/NC_Climate_Science_Report_FullReport_Final_revised_September2020.pdf

Hazardous material (HAZMAT) incidents can apply to fixed facilities as well as mobile, transportation- related accidents in the air, by rail, on the nation's highways, and on the water. Approximately 6,774 HAZMAT events occur each year, 5,517 of which are highway incidents, 991 are railroad incidents, and 266 are due to other causes.[130] In essence, HAZMAT incidents consist of solid, liquid, and/or gaseous contaminants that are released from fixed or mobile containers, whether by accident or by design, as with an intentional terrorist attack. A HAZMAT incident can last hours to days, while some chemicals can be corrosive or otherwise damaging over longer periods of time. In addition to the primary release, explosions and/or fires can result from a release, and contaminants can be extended beyond the initial area by people, vehicles, water, wind, and possibly wildlife as well.

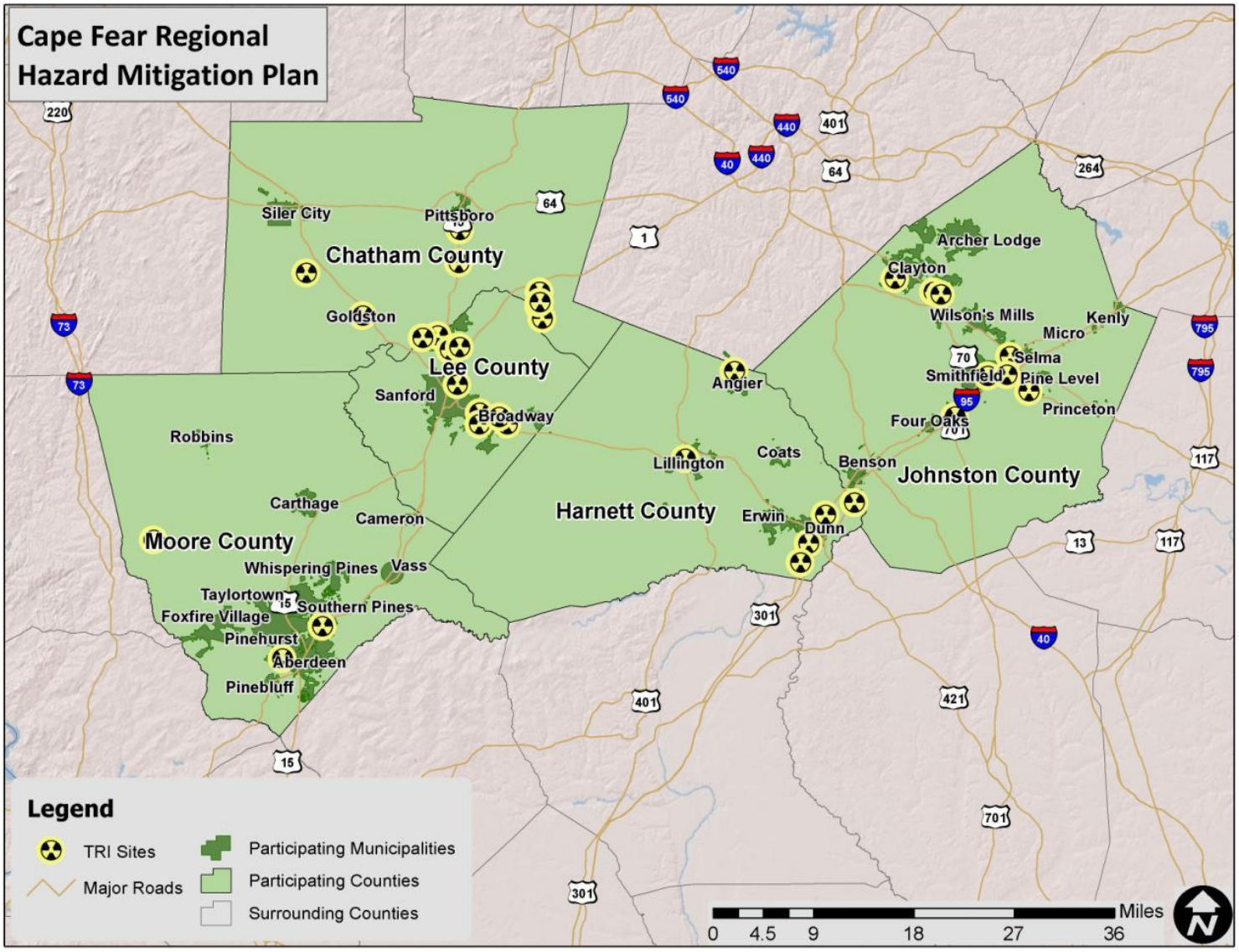
HAZMAT incidents can also occur as a result of or in tandem with natural hazard events, such as floods, hurricanes, tornadoes, and earthquakes, which, in addition to causing incidents, can also hinder response efforts. In the case of Hurricane Floyd in September 1999, communities along the Eastern United States were faced with flooded junkyards, disturbed cemeteries, deceased livestock, floating propane tanks, uncontrolled fertilizer spills, and a variety of other environmental pollutants that caused widespread toxicological concern.

Hazardous material incidents can include the spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of a hazardous material, but exclude: (1) any release which results in exposure to poisons solely within the workplace with respect to claims which such persons may assert against the employer of such persons; (2) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel or pipeline pumping station engine; (3) release of source, byproduct, or special nuclear material from a nuclear incident; and (4) the normal application of fertilizer.

5.12.2 Location and Spatial Extent

As a result of the 1986 Emergency Planning and Community Right-to-Know Act (EPCRA), the Environmental Protection Agency provides public information on hazardous materials. One facet of this program is to collect information from industrial facilities on the releases and transfers of certain toxic agents. This information is then reported in the Toxic Release Inventory (TRI). TRI sites indicate where such activity is occurring. The Cape Fear Region has 36 TRI sites. These sites are shown in Figure 5-352.

[130] FEMA, 1997.



Source: Environmental Protection Agency

***Figure 5-352**: Toxic Release Inventory (TRI) Sites in the Cape Fear Region*

In addition to “fixed” hazardous materials locations, hazardous materials may also impact the region via roadways and rail. Many roads in the region are subject to hazardous materials transport, and all roads that permit hazardous material transport are considered potentially at risk of an incident.

5.12.3 Extent

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
Chatham County	**16**	**0/4**	**$0**
Goldston	2	0/0	$0
Pittsboro	2	0/0	$0
Siler City	5	0/1	$0
Unincorporated Area	7	0/3	$0
Harnett County	**11**	**1/1**	**$16,607**
Coats	1	0/0	$0
Dunn	4	1/1	$0
Erwin	1	0/0	$0
Lillington	5	0/0	$16,607
Unincorporated Area	0	0/0	$0
Johnston County	**76**	**2/2**	**$23,280**
Archer Lodge	0	0/0	$0
Benson	3	0/0	$2,144
Clayton	7	0/0	$0
Four Oaks	1	0/0	$0
Kenly	10	0/1	$5,597
Pine Level	1	0/0	$0
Princeton	2	0/0	$2,356
Selma	36	2/1	$11,918
Smithfield	14	0/0	$0
Wilson’s Mills	1	0/0	$0
Unincorporated Area	1	0/0	$1,266
Lee County	**32**	**0/1**	**$1,661**
Broadway	1	0/0	$0
Sanford	30	0/1	$1,661
Unincorporated Area	1	0/0	$0

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
Moore County	**24**	**0/0**	**$596**
Aberdeen	14	0/0	$0
Carthage	2	0/0	$0
Pinehurst	1	0/0	$0
Robbins	3	0/0	$596
Southern Pines	4	0/0	$0
Cape Fear Regional Total	**159**	**3/8**	**$42,144**

Source: United States Department of Transportation Pipeline and Hazardous Materials Safety Administration

5.12.4 Historical Occurrences

The U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) lists historical incidents nationwide. A “serious incident” is a hazardous materials incident that involves:

- a fatality or major injury caused by the release of a hazardous material,
- the evacuation of 25 or more persons as a result of the release of a hazardous material or exposure to fire,
- a release or exposure to fire which results in the closure of a major transportation artery,
- the alteration of an aircraft flight plan or operation,
- the release of radioactive materials from Type B packaging,
- the release of over 11.9 gallons or 88.2 pounds of a severe marine pollutant, or
- the release of a bulk quantity (over 199 gallons or 882 pounds) of a hazardous material.

However, before 2002, a hazardous material “serious incident” was defined as follows:

- a fatality or major injury due to a hazardous material,
- closure of a major transportation artery or facility, or evacuation of six or more persons due to the presence of hazardous material, or
- a vehicle accident or derailment resulting in the release of a hazardous material.

A total of 159 HAZMAT incidents have been recorded in the Cape Fear Region since 1971. These events resulted in over $42,000 (2013 dollars) in property damages as well as three fatalities and eight injuries. Table 5-55 summarizes the HAZMAT incidents reported in the Cape Fear Region.

Table 5-55: Summary of Hazmat Incidents in the Cape Fear Region

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
Chatham County	**16**	**0/4**	**$0**
Goldston	2	0/0	$0
Pittsboro	2	0/0	$0
Siler City	5	0/1	$0
Unincorporated Area	7	0/3	$0
Harnett County	**11**	**1/1**	**$16,607**
Angier	0	0/0	$0
Coats	1	0/0	$0
Dunn	4	1/1	$0
Erwin	1	0/0	$0
Lillington	5	0/0	$16,607
Unincorporated Area	0	0/0	$0
Johnston County	**76**	**2/2**	**$23,280**
Archer Lodge	0	0/0	$0
Benson	3	0/0	$2,144
Clayton	7	0/0	$0
Four Oaks	1	0/0	$0
Kenly	10	0/1	$5,597
Micro	0	0/0	$0
Pine Level	1	0/0	$0
Princeton	2	0/0	$2,356
Selma	36	2/1	$11,918
Smithfield	14	0/0	$0
Wilson's Mills	1	0/0	$0
Unincorporated Area	1	0/0	$1,266
Lee County	**32**	**0/1**	**$1,661**
Broadway	1	0/0	$0
Sanford	30	0/1	$1,661
Unincorporated Area	1	0/0	$0
Moore County	**24**	**0/0**	**$596**
Aberdeen	14	0/0	$0
Cameron	0	0/0	$0
Carthage	2	0/0	$0

Location	Number of Occurrences	Deaths / Injuries	Property Damage (2013)
Foxfire Village	0	0/0	$0
Pinebluff	0	0/0	$0
Pinehurst	1	0/0	$0
Robbins	3	0/0	$596
Southern Pines	4	0/0	$0
Taylortown	0	0/0	$0
Vass	0	0/0	$0
Whispering Pines	0	0/0	$0
Unincorporated Area	0	0/0	$0
Cape Fear Regional Total	**159**	**3/8**	**$42,144**

Source: United States Department of Transportation Pipeline and Hazardous Materials Safety Administration

5.12.5 Probability of Future Occurrence

Given the location of 36 toxic release inventory sites in the Cape Fear Region and prior rail and roadway incidents, it is likely that a hazardous material incident may occur in the region (between 10 and 100 percent annual probability). County and municipal officials are mindful of this possibility and take precautions to prevent such an event. Furthermore, detailed plans are in place to respond to an occurrence.

5.13 Wildfire

5.13.1 Hazard Description and Background

A wildfire is any outdoor fire (i.e., grassland, forest, brushland) that is not under control, supervised, or prescribed.[131] Wildfires are part of the natural management of forest ecosystems, but may also be caused by human factors.

Nationally, over 80 percent of forest fires are started by negligent human behavior, such as smoking in wooded areas or improperly extinguishing campfires. The second most common cause of wildfire is lightning. In North Carolina, most fires are caused by debris burning.

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

[131] Prescription burning, or "controlled burn," undertaken by land management agencies is the process of igniting fires under selected conditions, in accordance with strict parameters.

move quickly by jumping along the tops of trees. Wildfires are usually signaled by dense smoke that fills the area for miles around.

Wildfire probability depends on local weather conditions, outdoor activities such as camping, debris burning, and construction, and the degree of public cooperation with fire prevention measures. Drought conditions and other natural hazards (such as tornadoes and hurricanes) increase the likelihood of wildfires by creating fuel in both urban and rural areas.

Many individual homes and cabins, subdivisions, resorts, recreational areas, organizational camps, businesses, and industries are located within high wildfire hazard areas. Furthermore, the increasing demand for outdoor recreation places more people in wildlands during holidays, weekends, and vacation periods. Unfortunately, wildland residents and visitors are rarely educated or prepared for wildfires that can sweep through brush and timber, destroying property within minutes.

Wildfires can also result in severe economic losses. Businesses that depend on timber, such as paper mills and lumber companies, experience losses that are often passed along to consumers through higher prices, and sometimes jobs are lost. The high cost of responding to and recovering from wildfires can deplete state resources and increase insurance rates. The economic impact of wildfires can also be felt in the tourism industry if roads and tourist attractions are closed due to health and safety concerns.

State and local governments can impose fire safety regulations on home sites and developments to help curb wildfires. Land treatment measures such as fire access roads, water storage, helipads, safety zones, buffers, firebreaks, fuel breaks, and fuel management can be designed as part of an overall fire defense system to aid in fire control. Fuel management, prescribed burning, and cooperative land management planning can also be encouraged to reduce fire hazards.

5.13.2 Location and Spatial Extent

The entire region is at risk of wildfires. However, several factors, such as drought or high levels of fuel on the forest floor, may increase the likelihood of wildfire. Furthermore, areas in the urban-wildland interface are particularly susceptible to fire hazards, as populations have moved into formerly undeveloped areas. The Fire Occurrence Areas in the figure below indicate the historical locations impacted. Furthermore, areas in the wildland-urban interface are particularly susceptible to fire hazards as populations about formerly undeveloped areas. The Wildfire Ignition Density data shown in the figure below indicate the historical locations of wildfires in the Region. Data was collected from the South Wildfire Risk Assessment Portal.[132] The Fire Intensity Scale (FIS) layer was used to develop risk maps. The Fire Intensity Scale is based on the severity wildfire if it occurred but does not provide a measure of susceptibility. See Table 5-56 for descriptions of the FIS.

[132] Pyrologix. (2023). Characteristic Fire Intensity Scale [Dataset]. In Southern Wildfire Risk Assessment Portal. Southern Wildfire Risk Assessment.

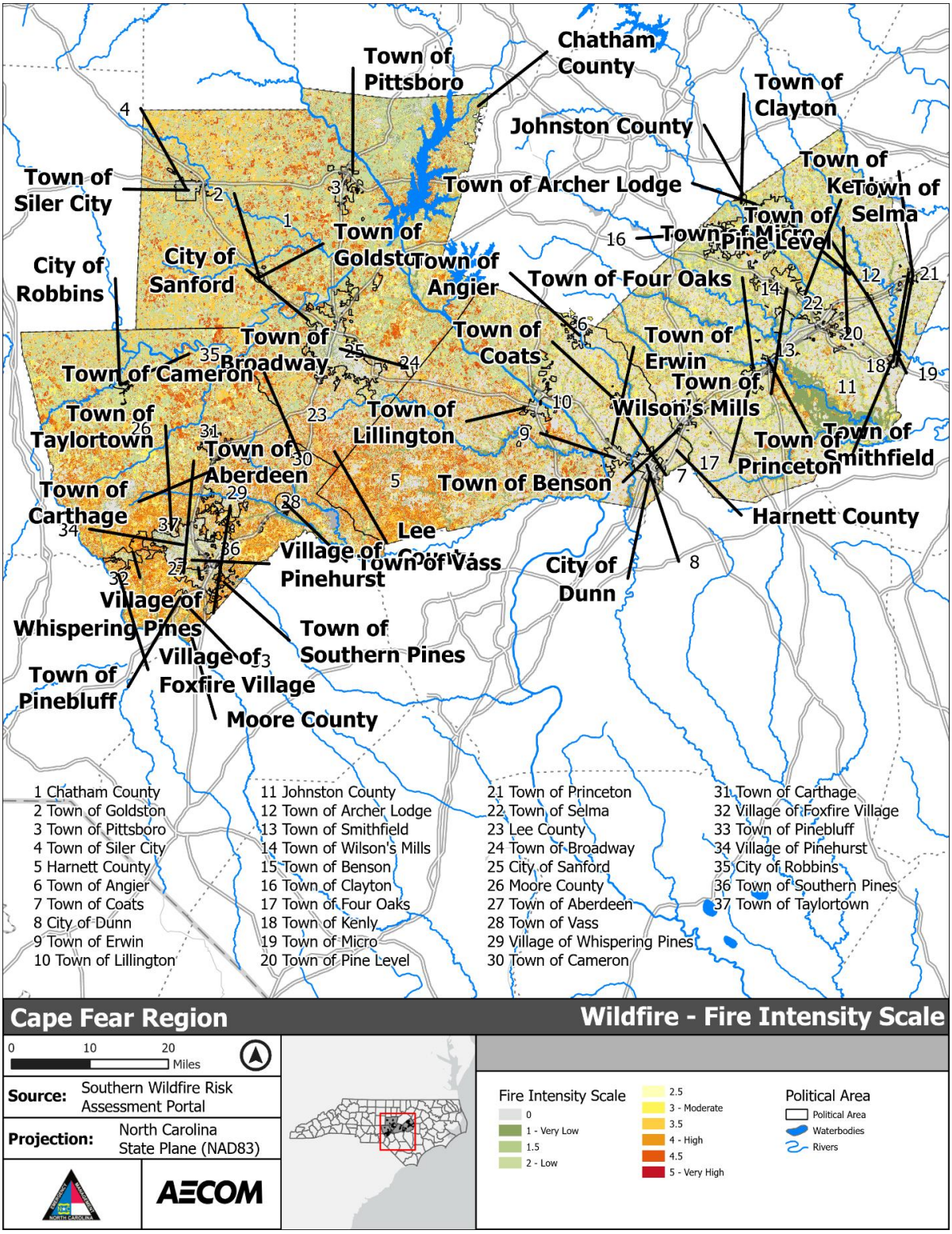


***Figure 5-353**: Wildfire Hazard Areas – Cape Fear Region*

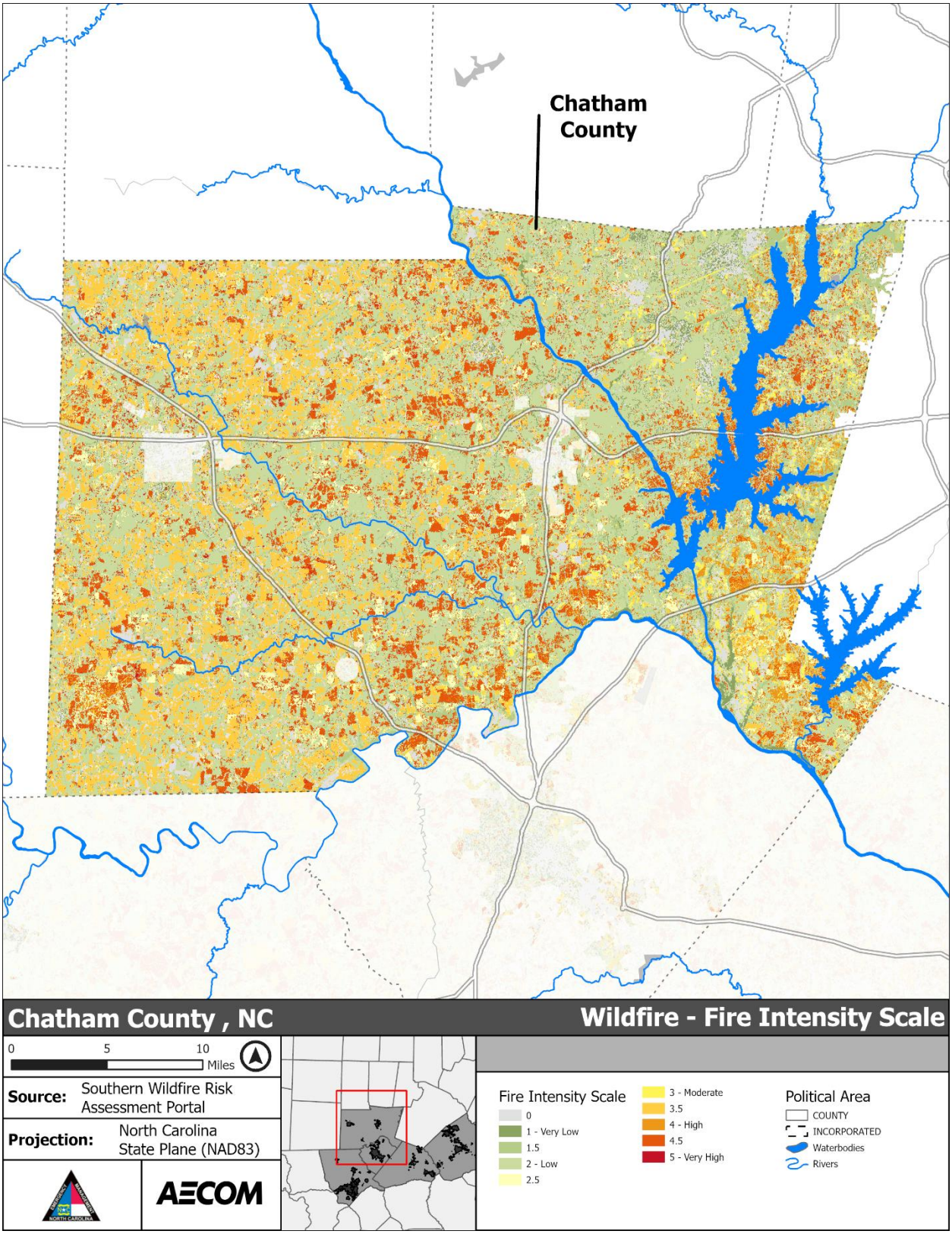


***Figure 5-354**: Wildfire Hazard Area – Chatham County*

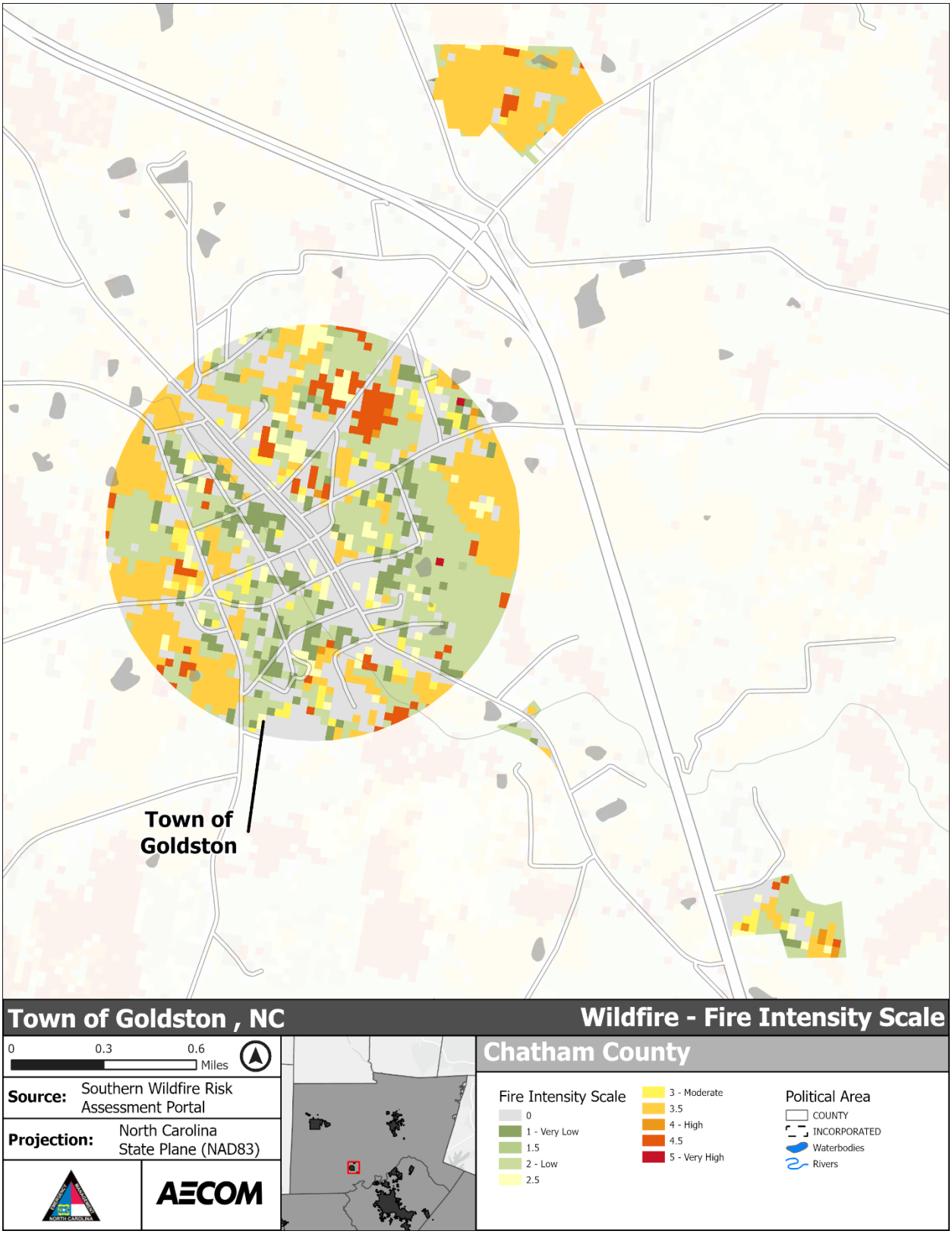


***Figure 5-355**: Wildfire Hazard Area – Town of Goldston*

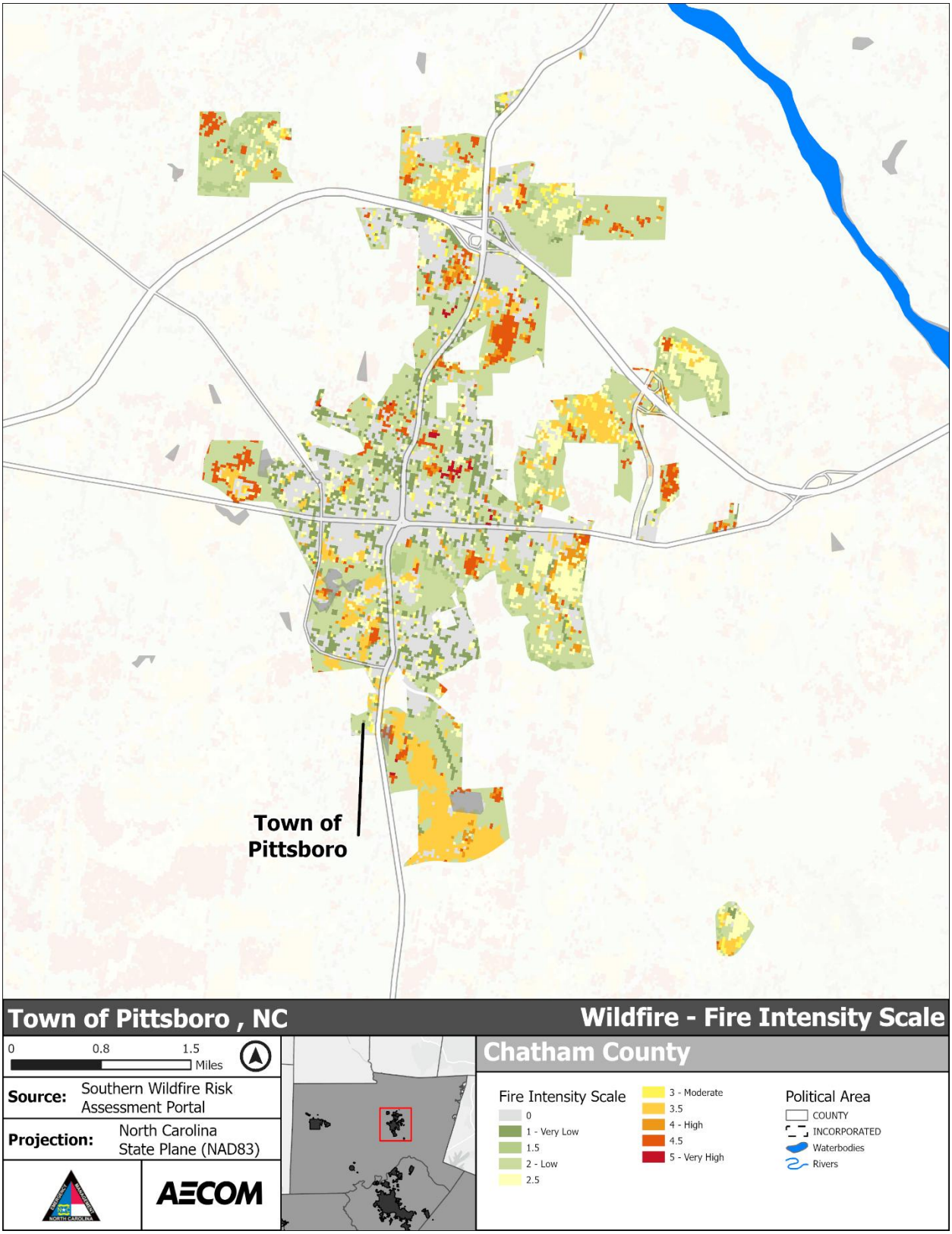


***Figure 5-356**: Wildfire Hazard Area – Town of Pittsboro*

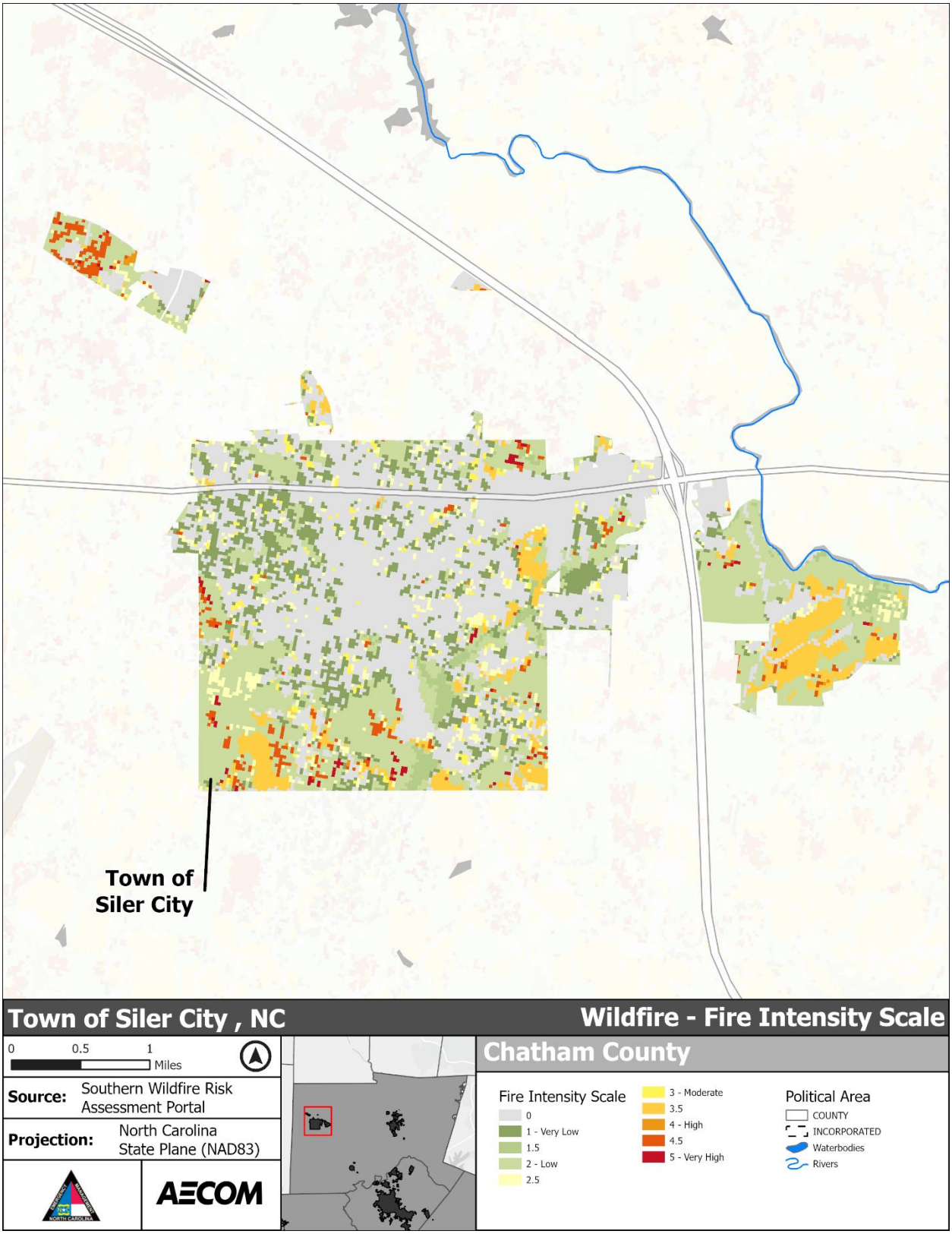


***Figure 5-357**: Wildfire Hazard Area – Town of Siler City*

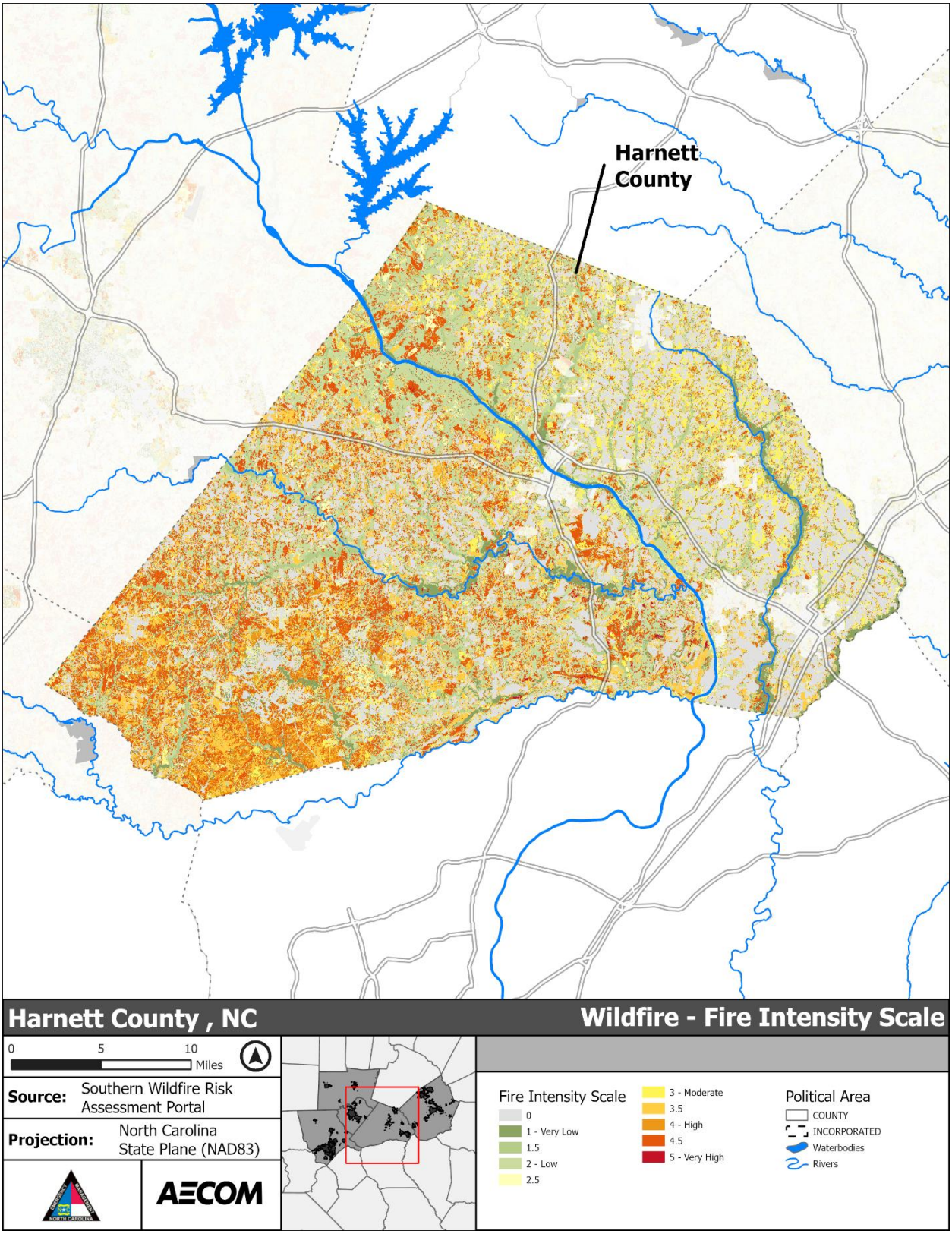


***Figure 5-358**: Wildfire Hazard Area – Harnett County*

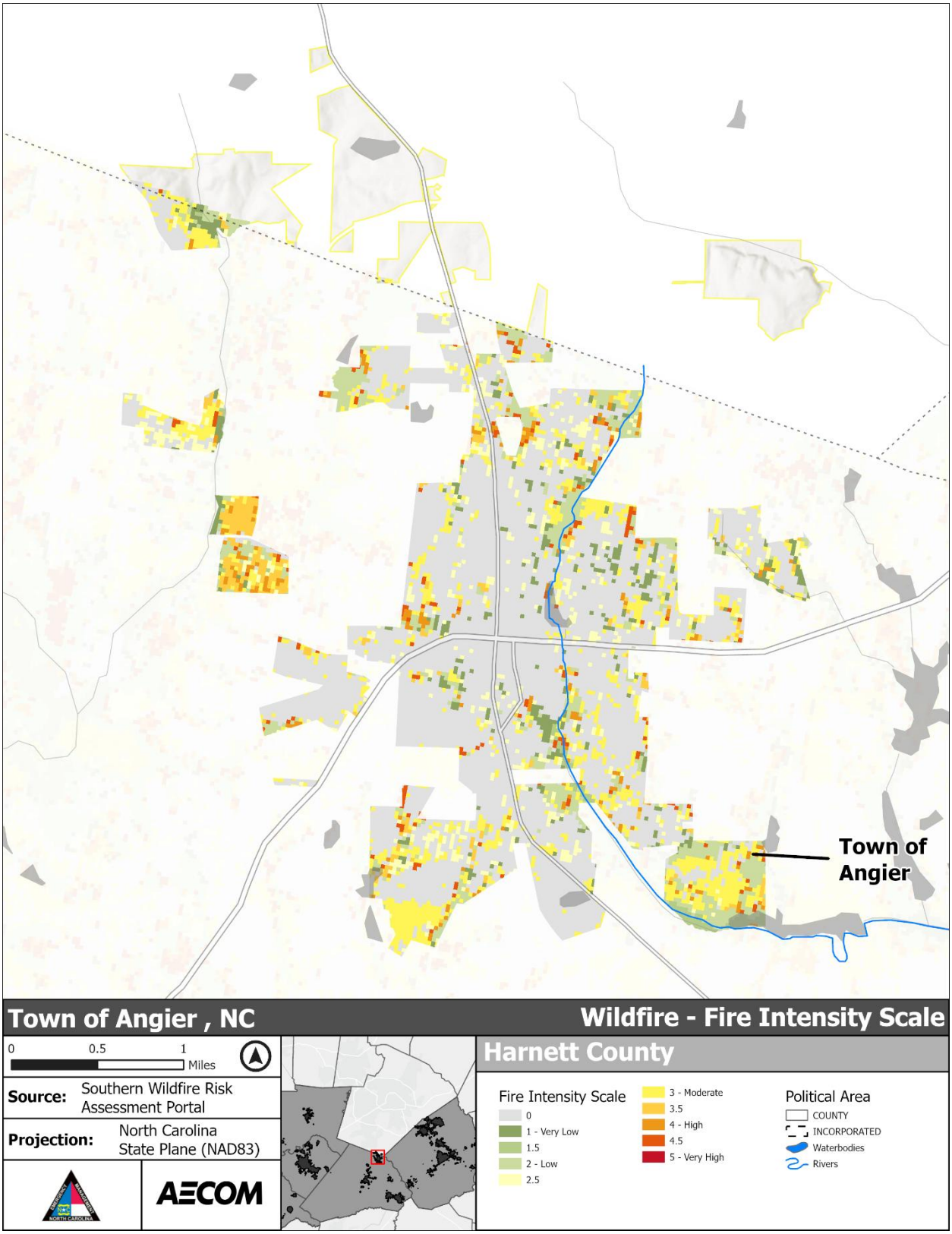


***Figure 5-359**: Wildfire Hazard Area – Town of Angier*

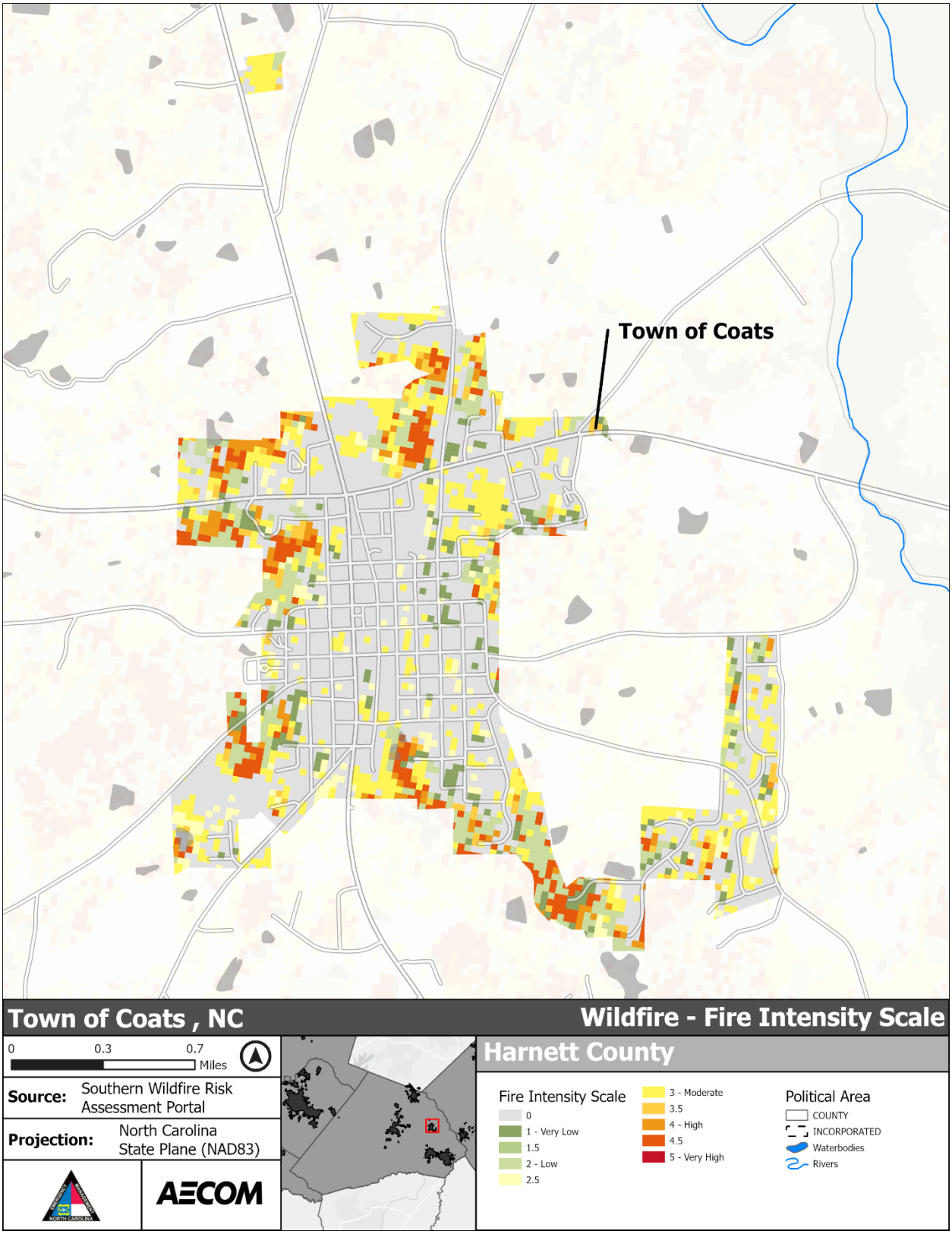


***Figure 5-360**: Wildfire Hazard Area – Town of Coats*

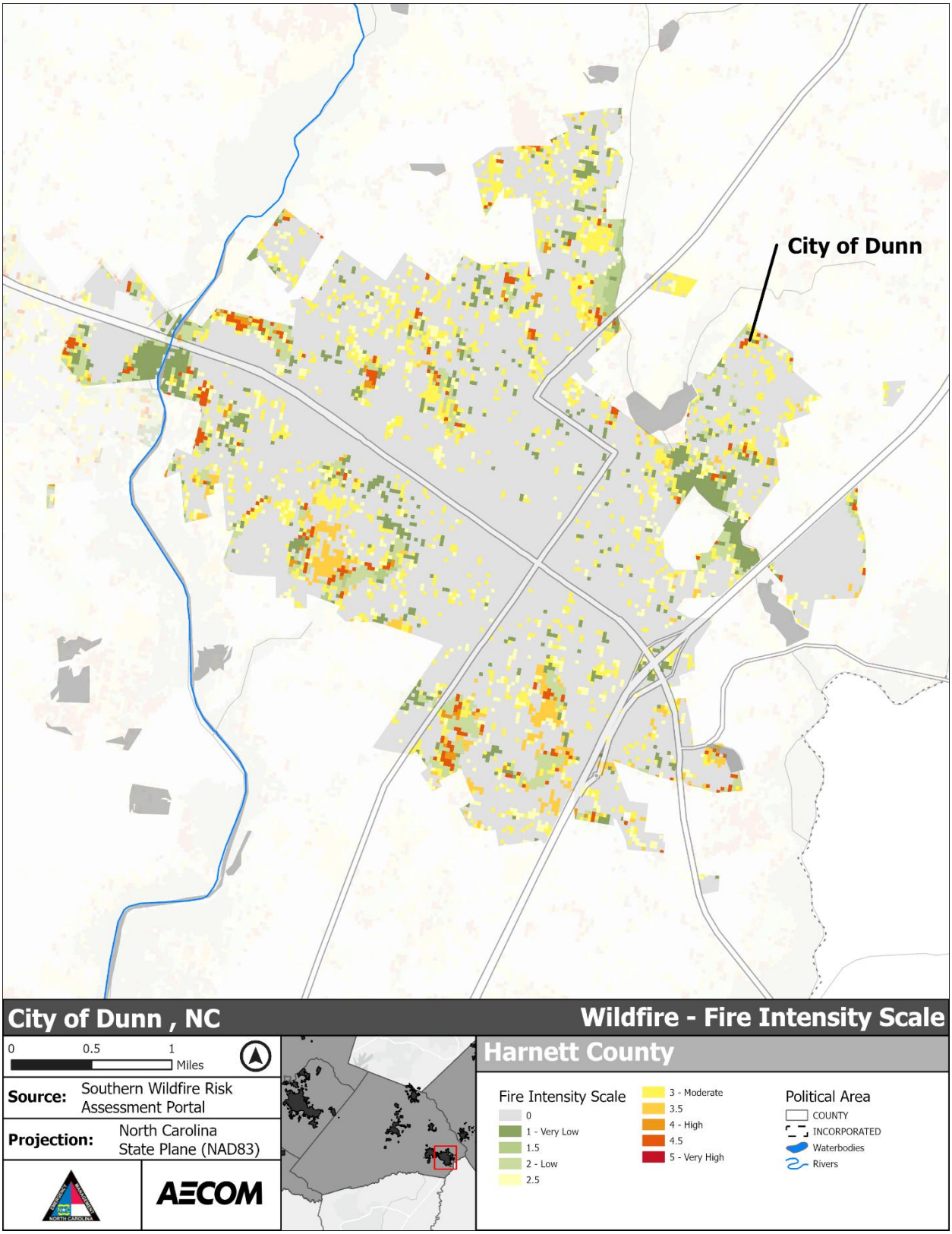


***Figure 5-361**: Wildfire Hazard Area – City of Dunn*

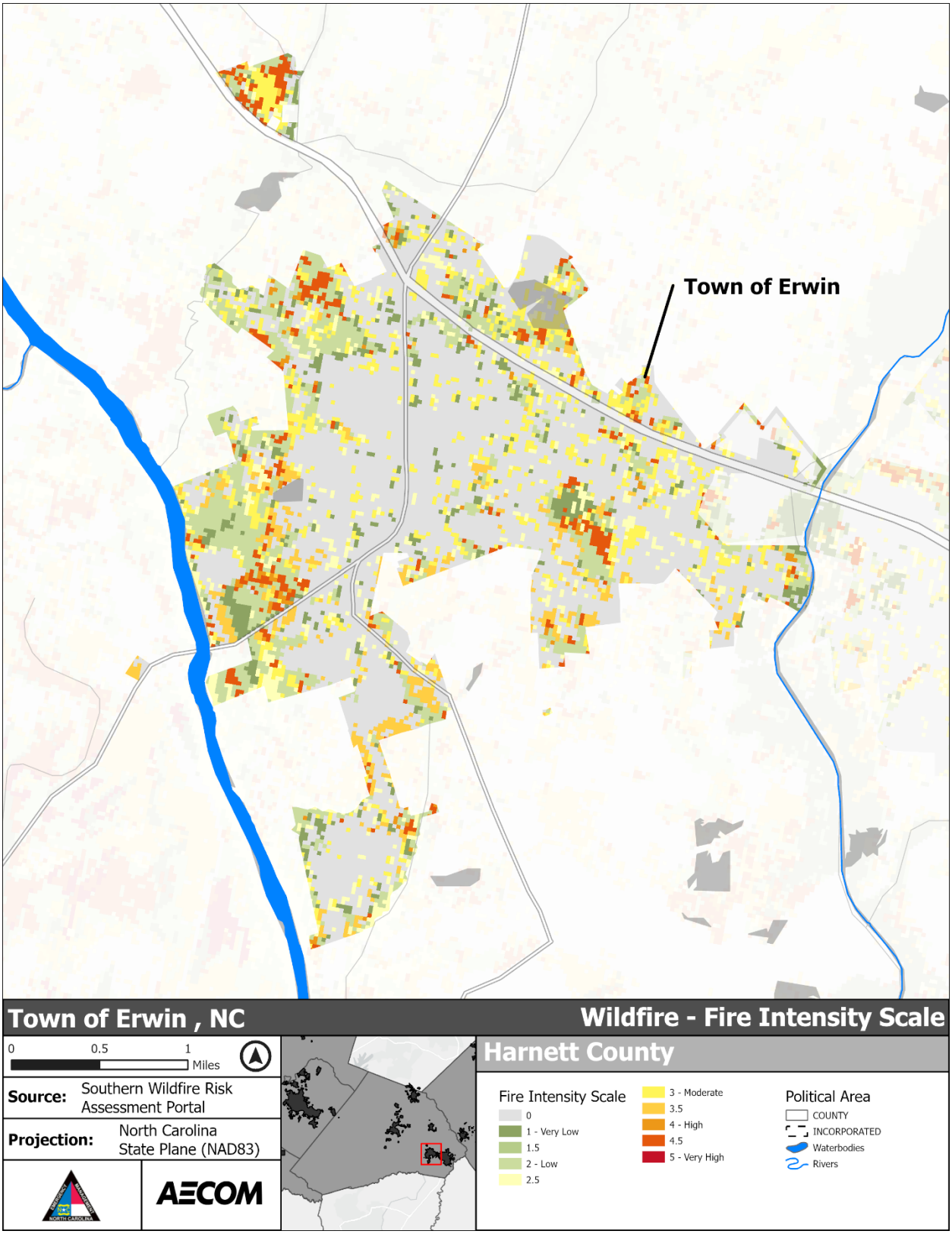


***Figure 5-362**: Wildfire Hazard Area – Town of Erwin*

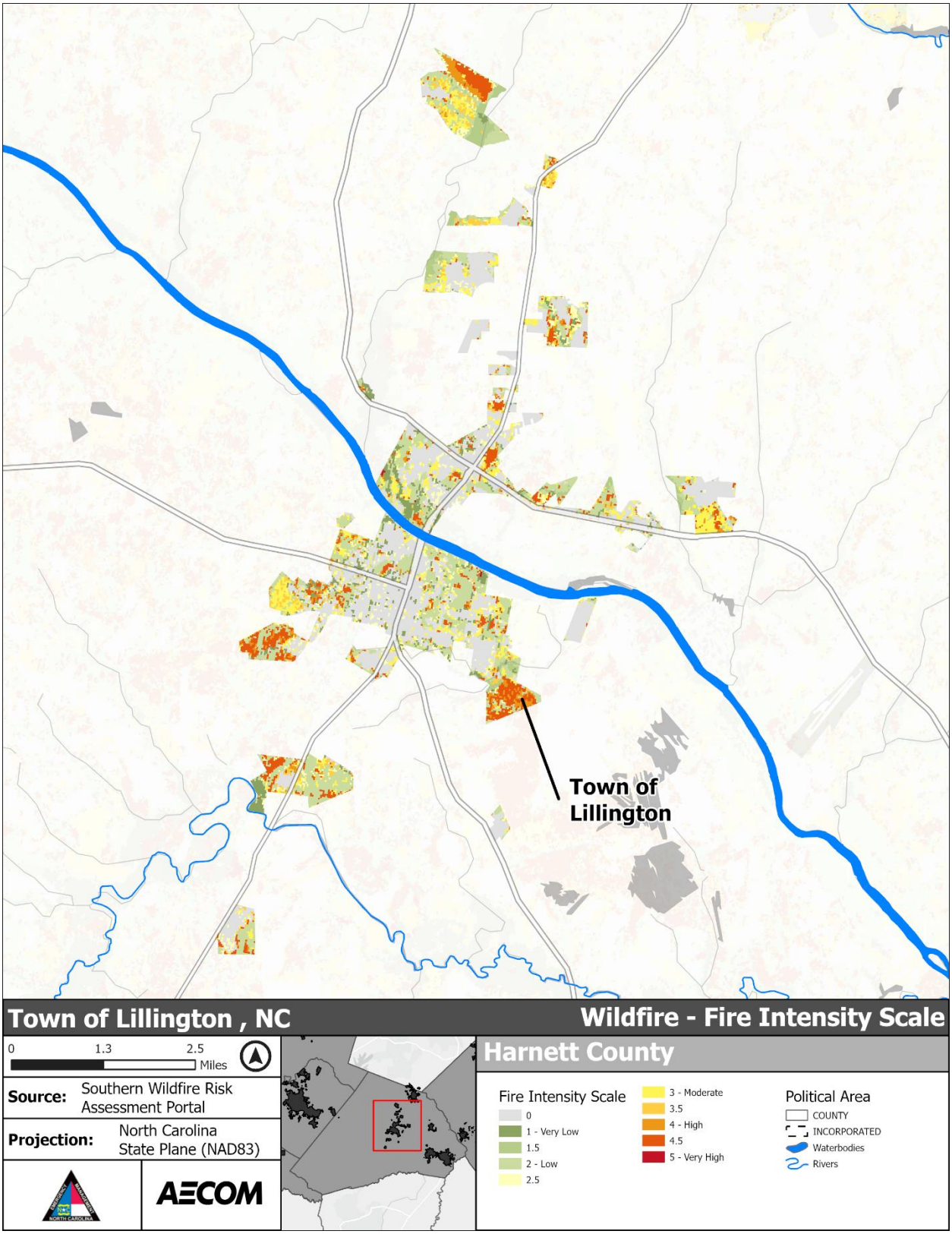


***Figure 5-363**: Wildfire Hazard Area – Town of Lillington*

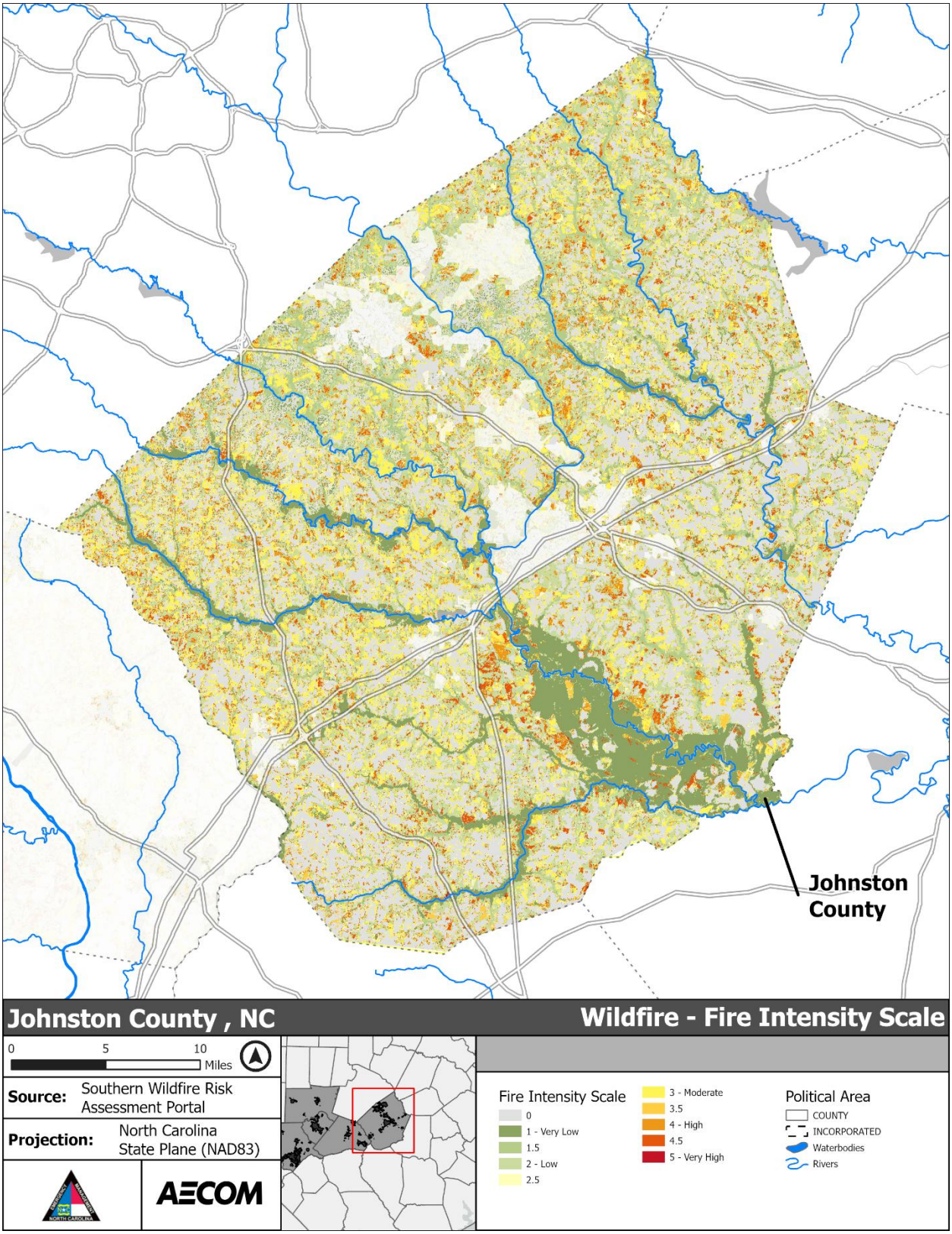


***Figure 5-364**: Wildfire Hazard Area – Johnston County*

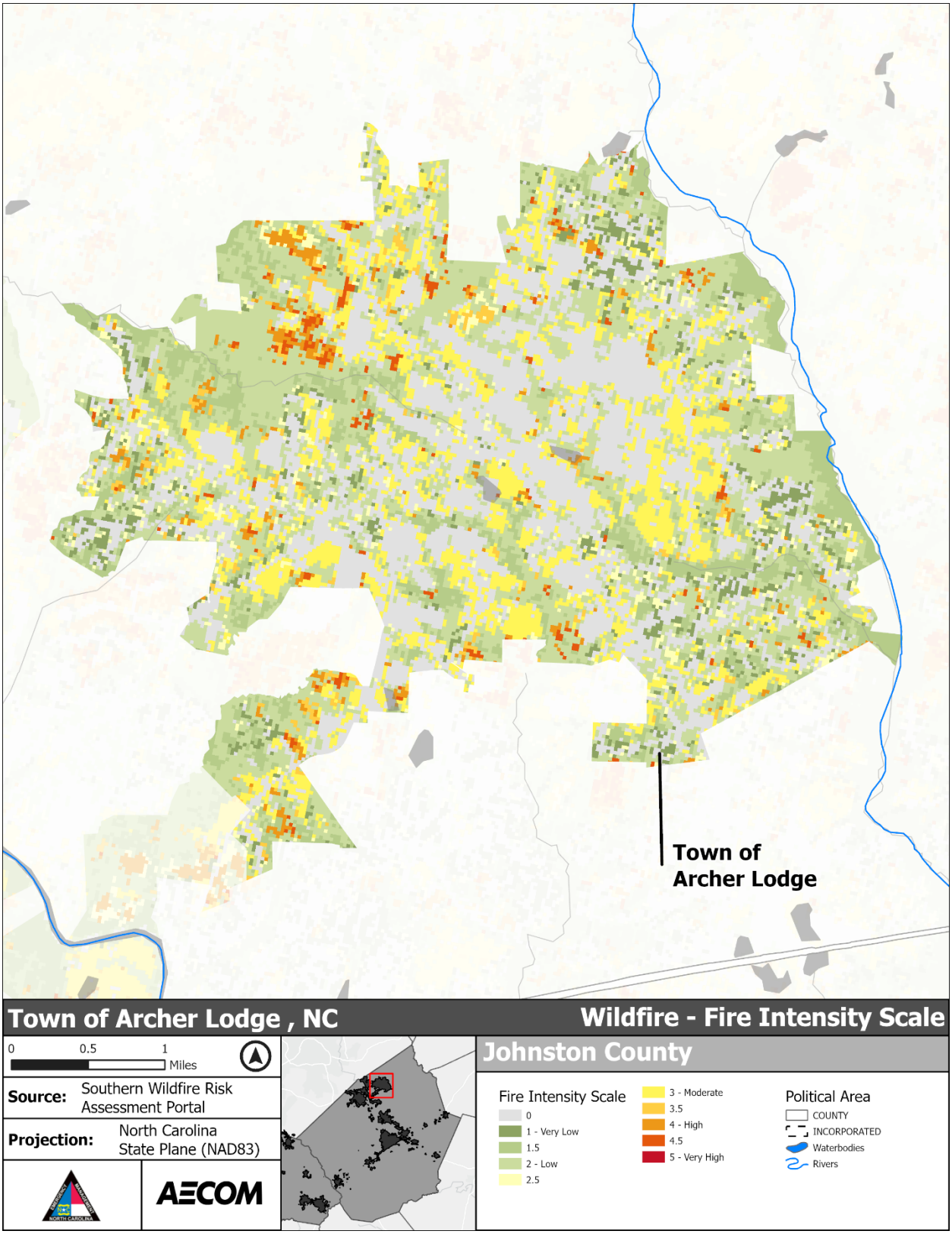


***Figure 5-365**: Wildfire Hazard Area – Town of Archer Lodge*

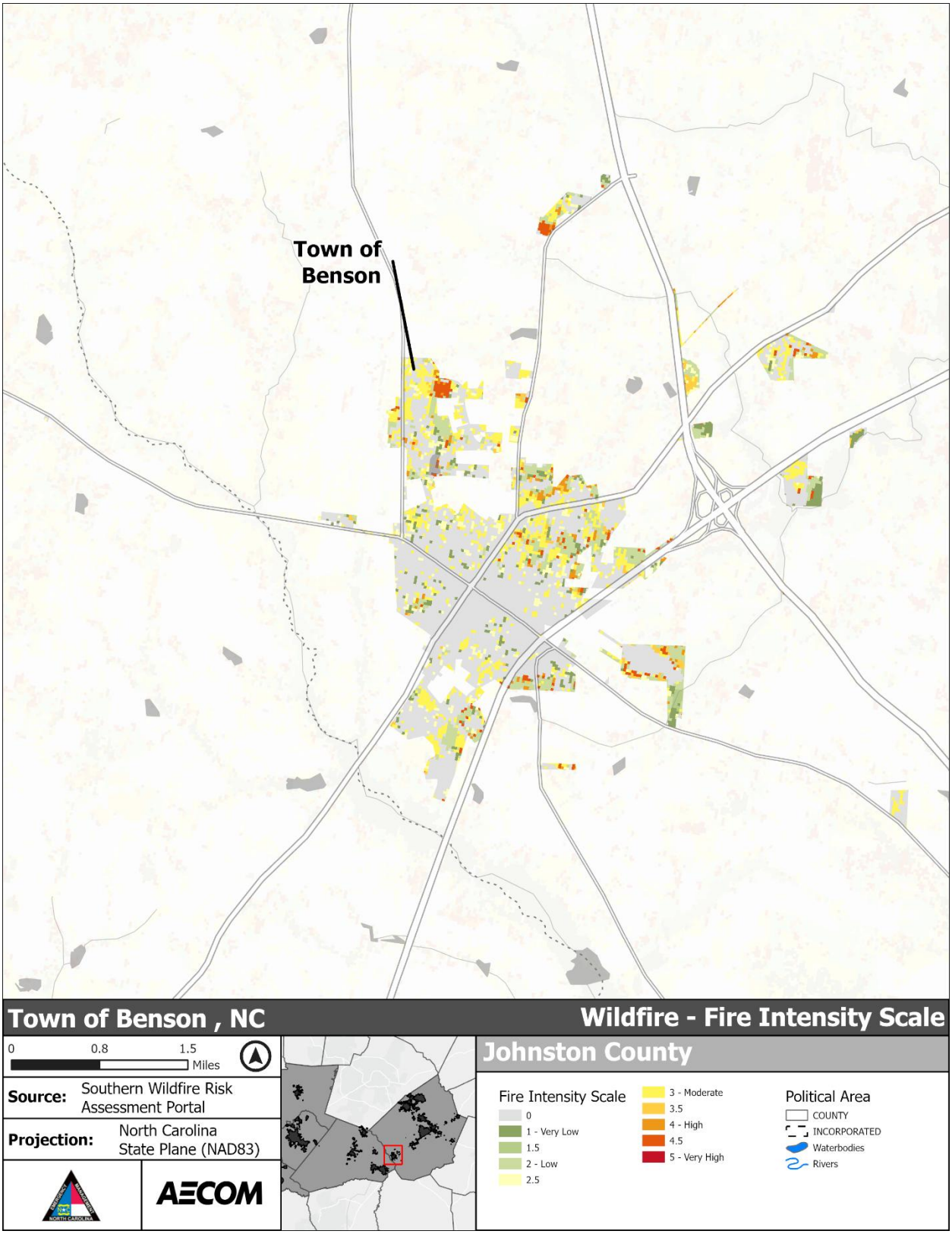


***Figure 5-366**: Wildfire Hazard Area – Town of Benson*

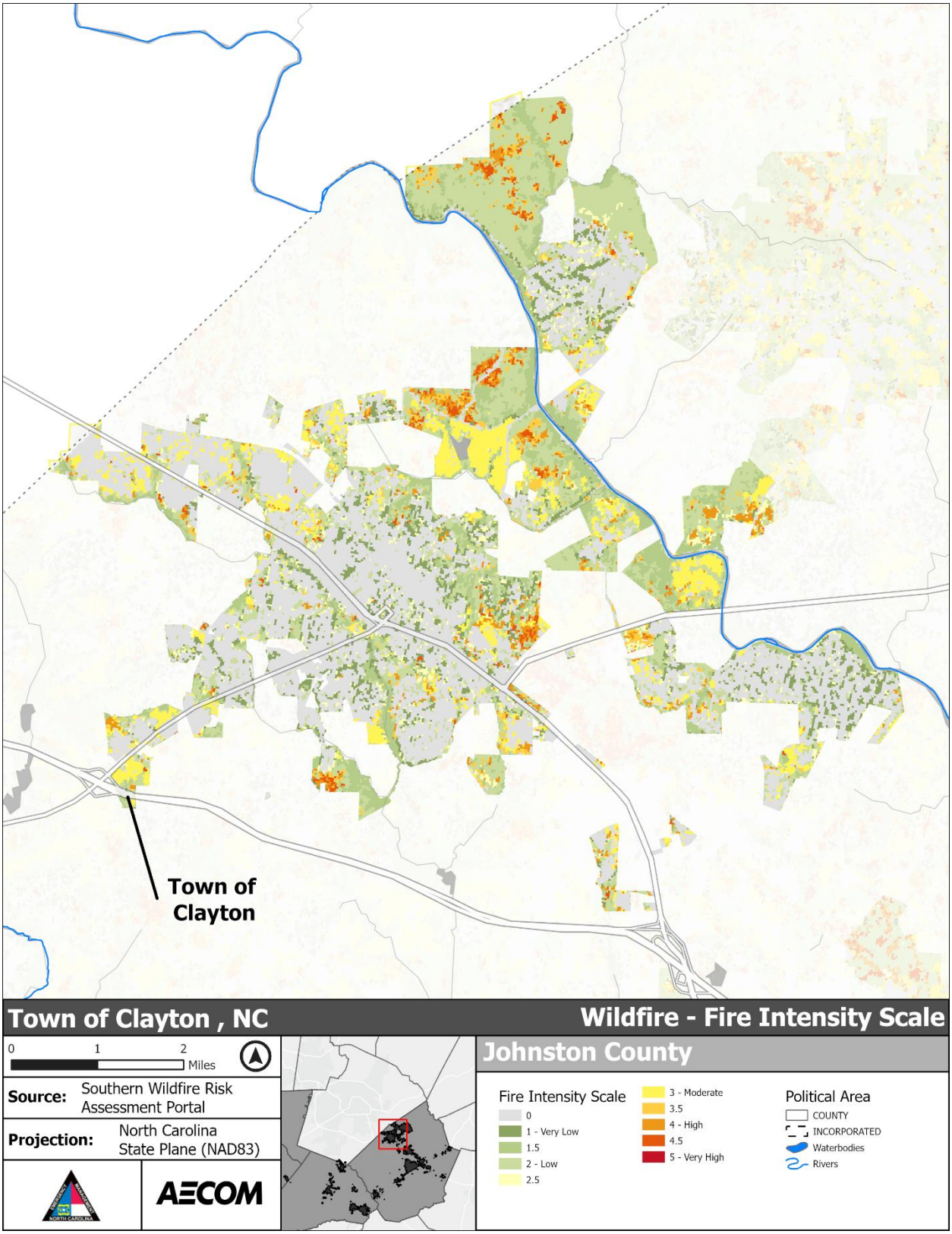


***Figure 5-367**: Wildfire Hazard Area – Town of Clayton*

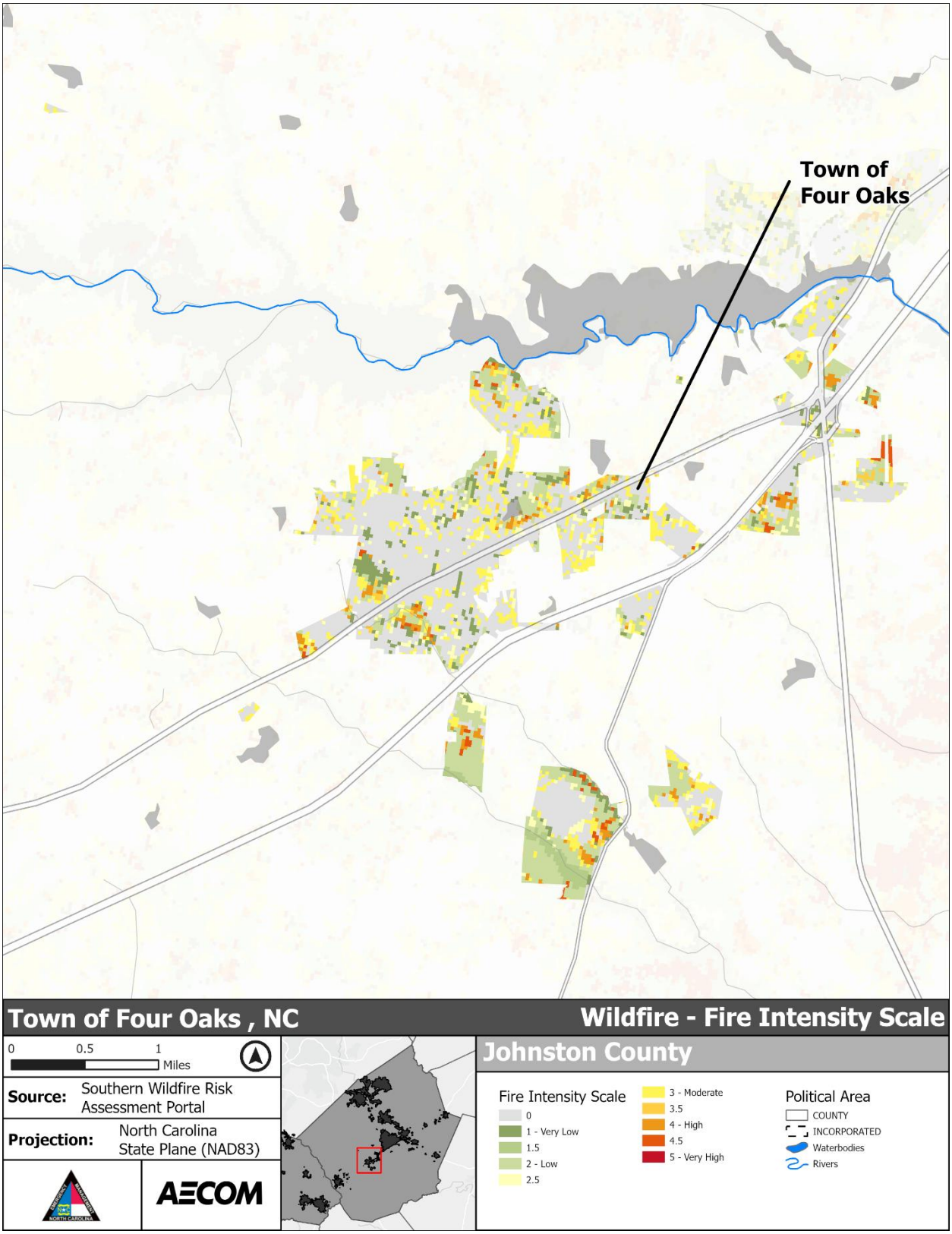


***Figure 5-368**: Wildfire Hazard Area – Town of Four Oaks*

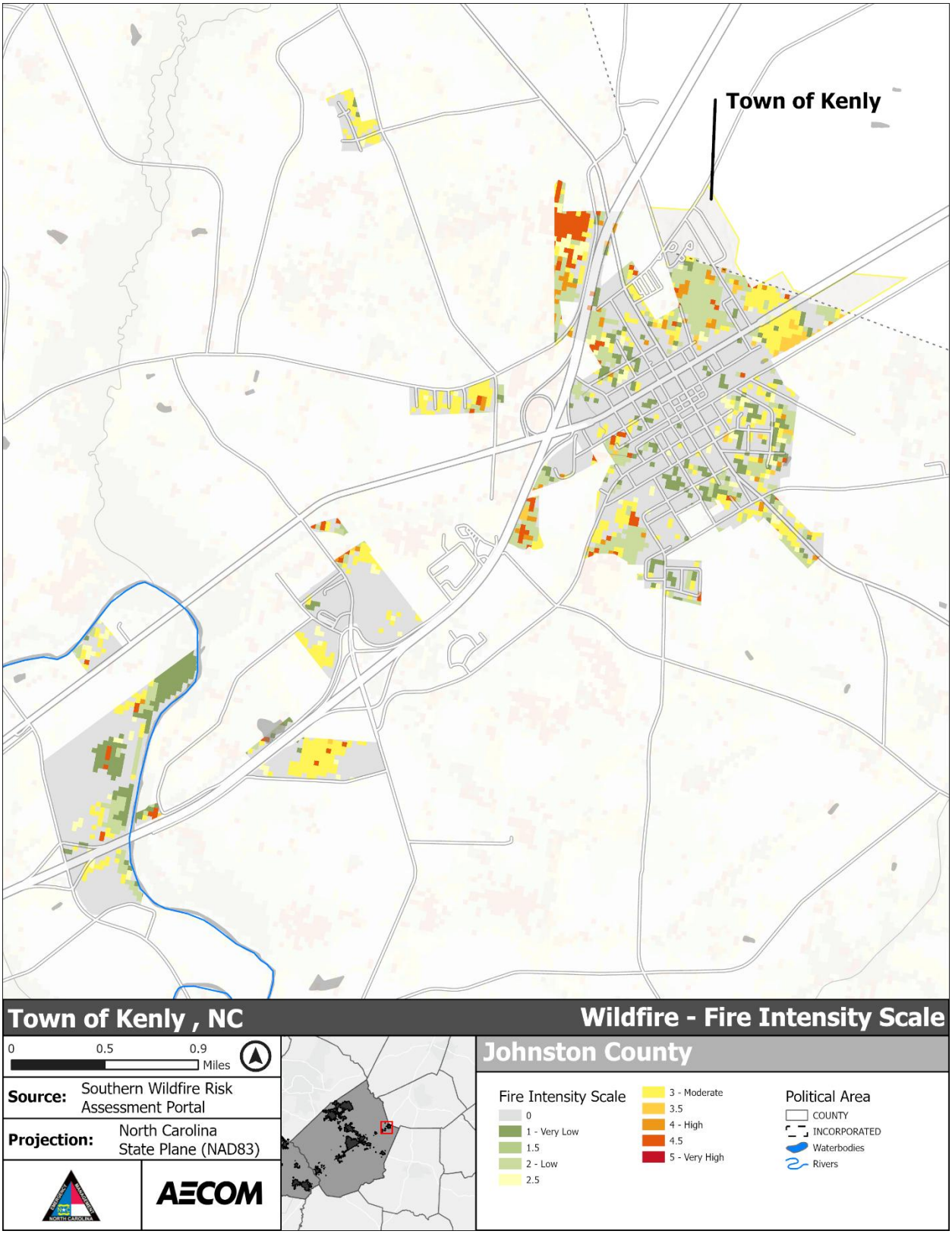


***Figure 5-369**: Wildfire Hazard Area – Town of Kenly*

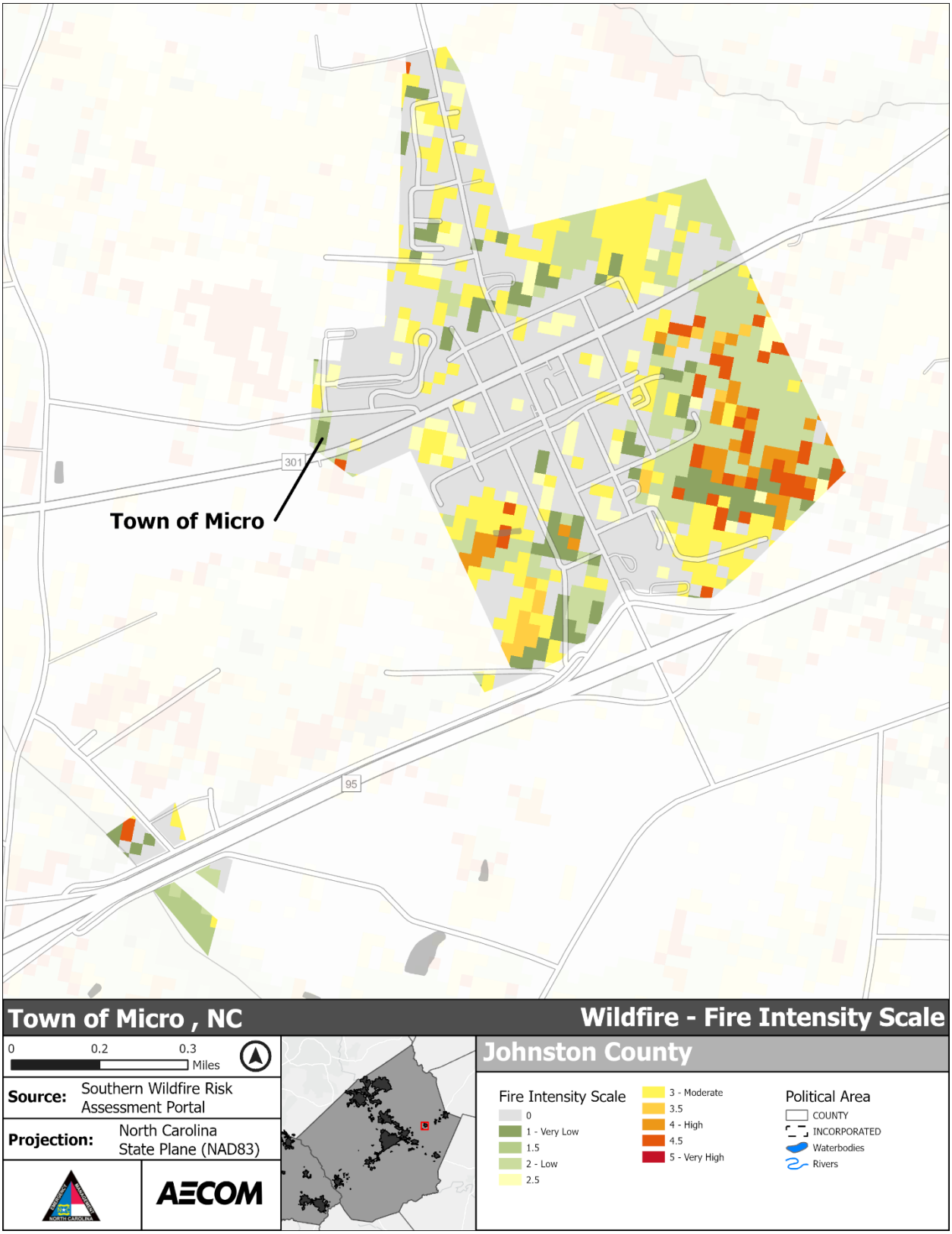


***Figure 5-370**: Wildfire Hazard Area – Town of Micro*

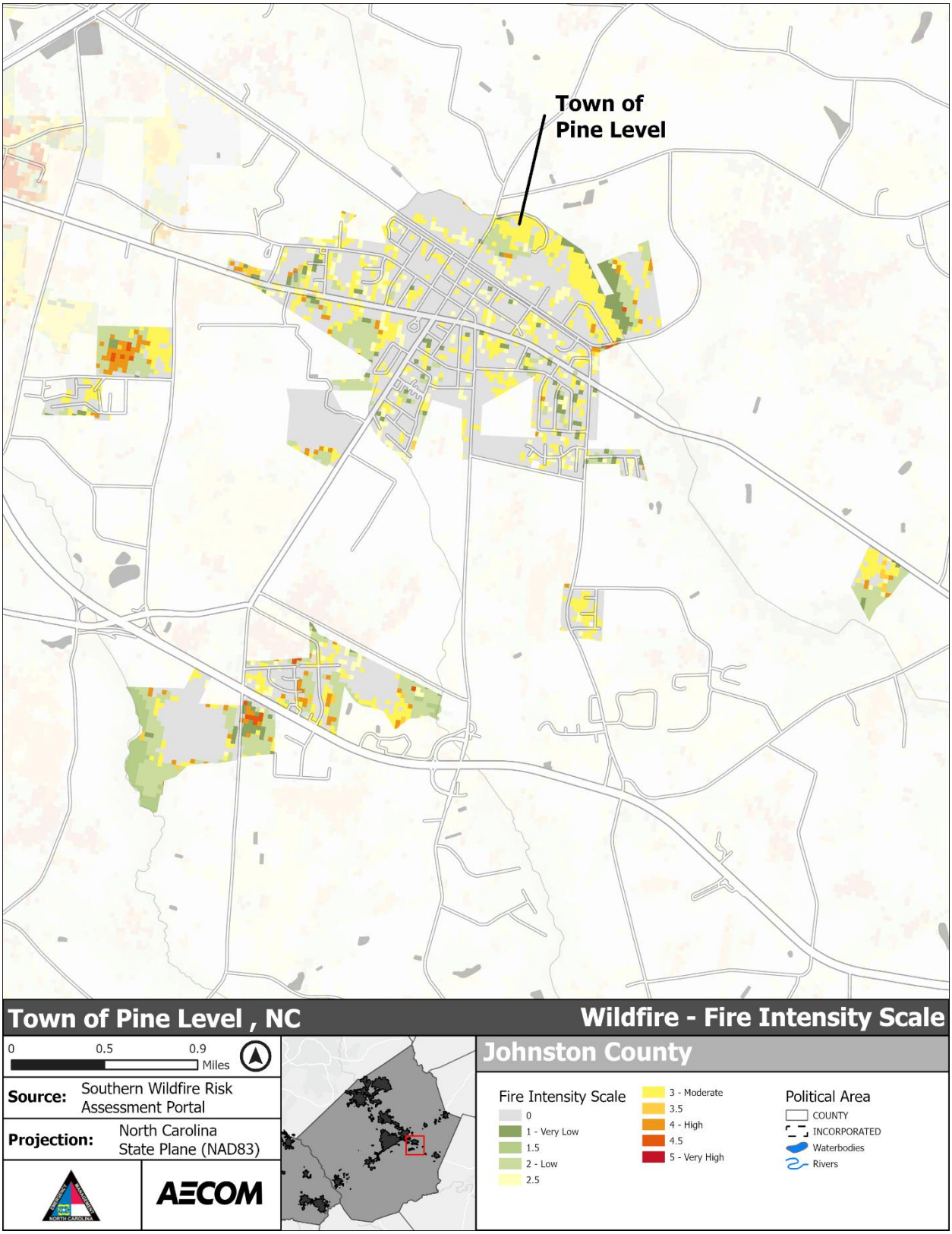


***Figure 5-371**: Wildfire Hazard Area – Town of Pine Level*

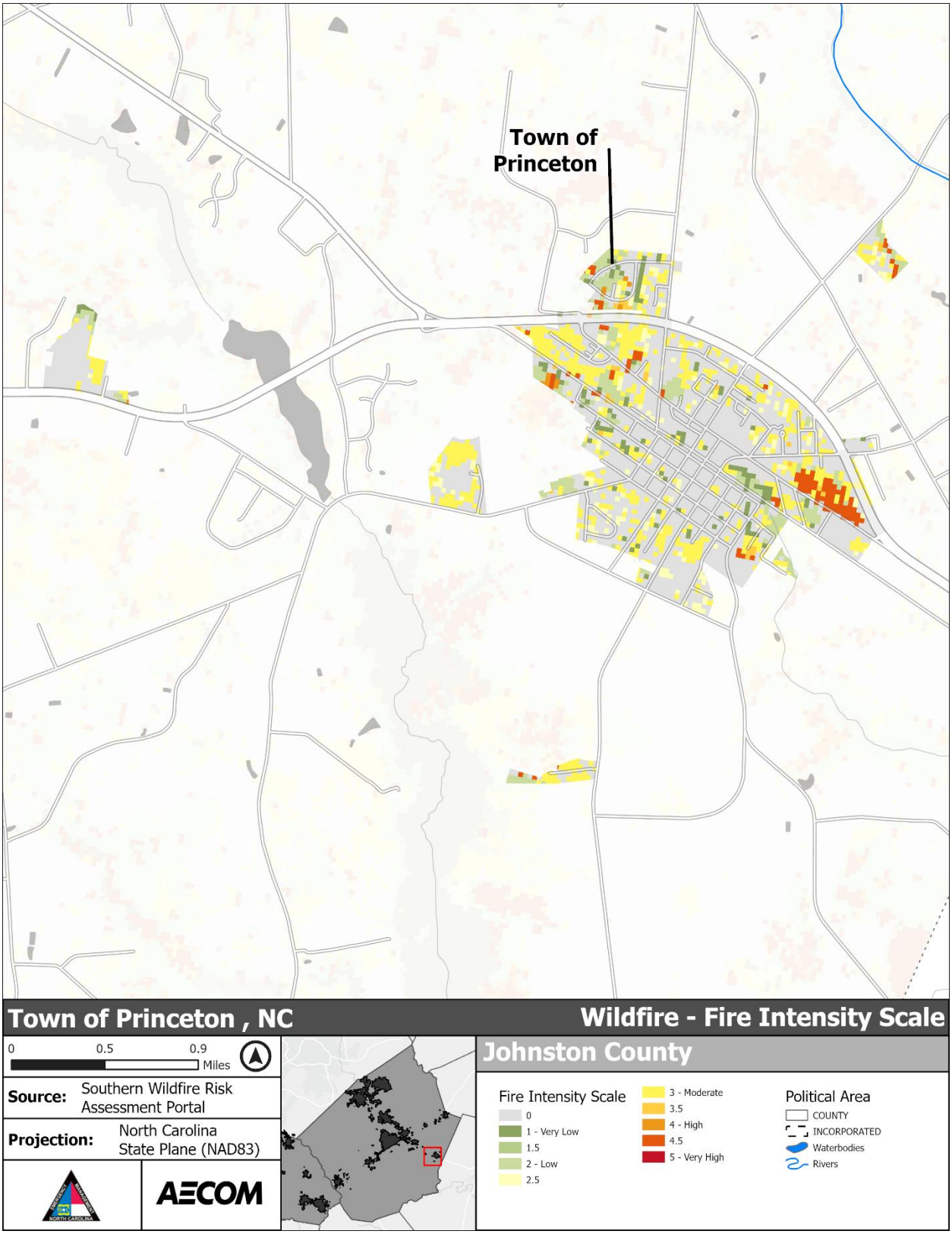


***Figure 5-372**: Wildfire Hazard Area – Town of Princeton*

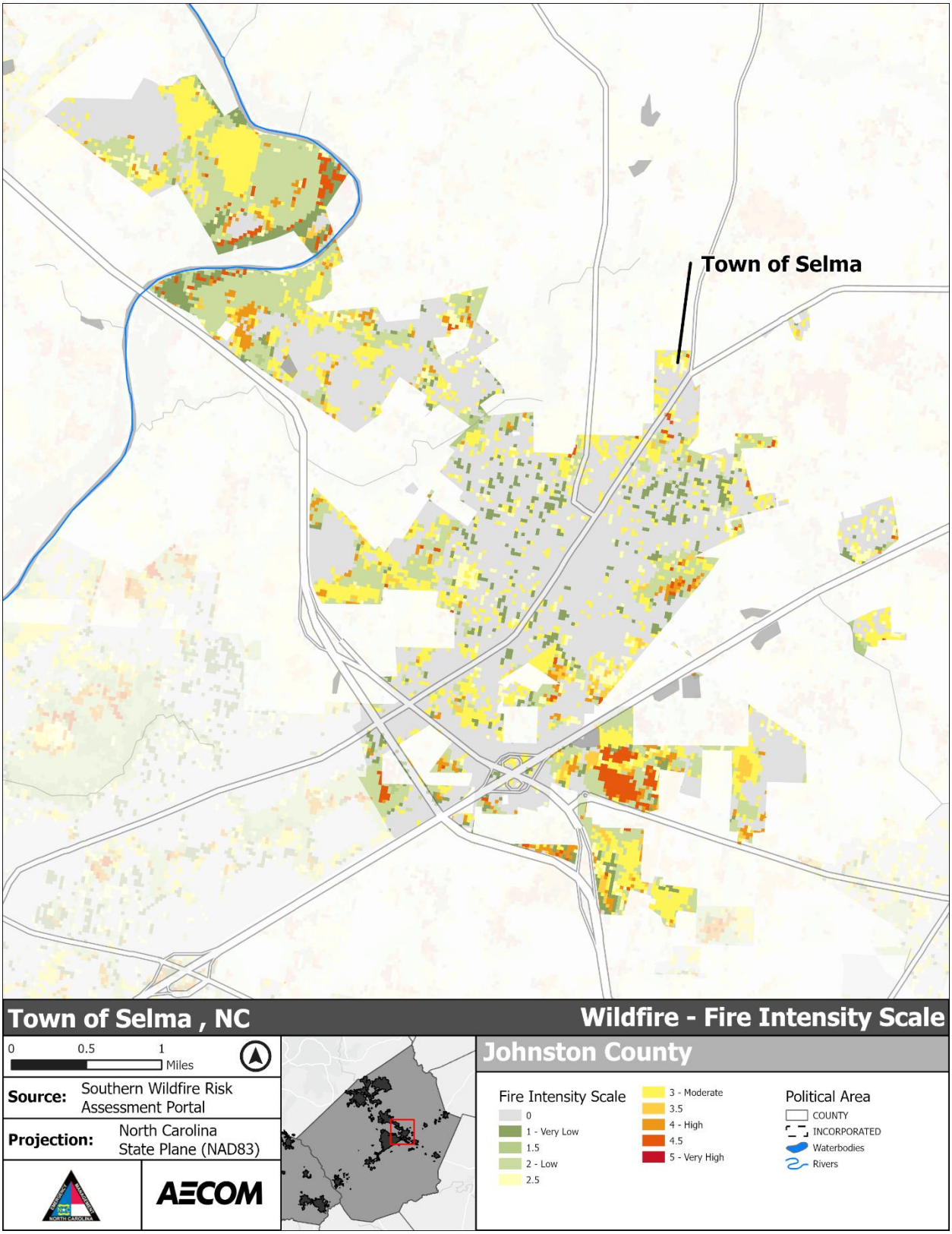


***Figure 5-373**: Wildfire Hazard Area – Town of Selma*

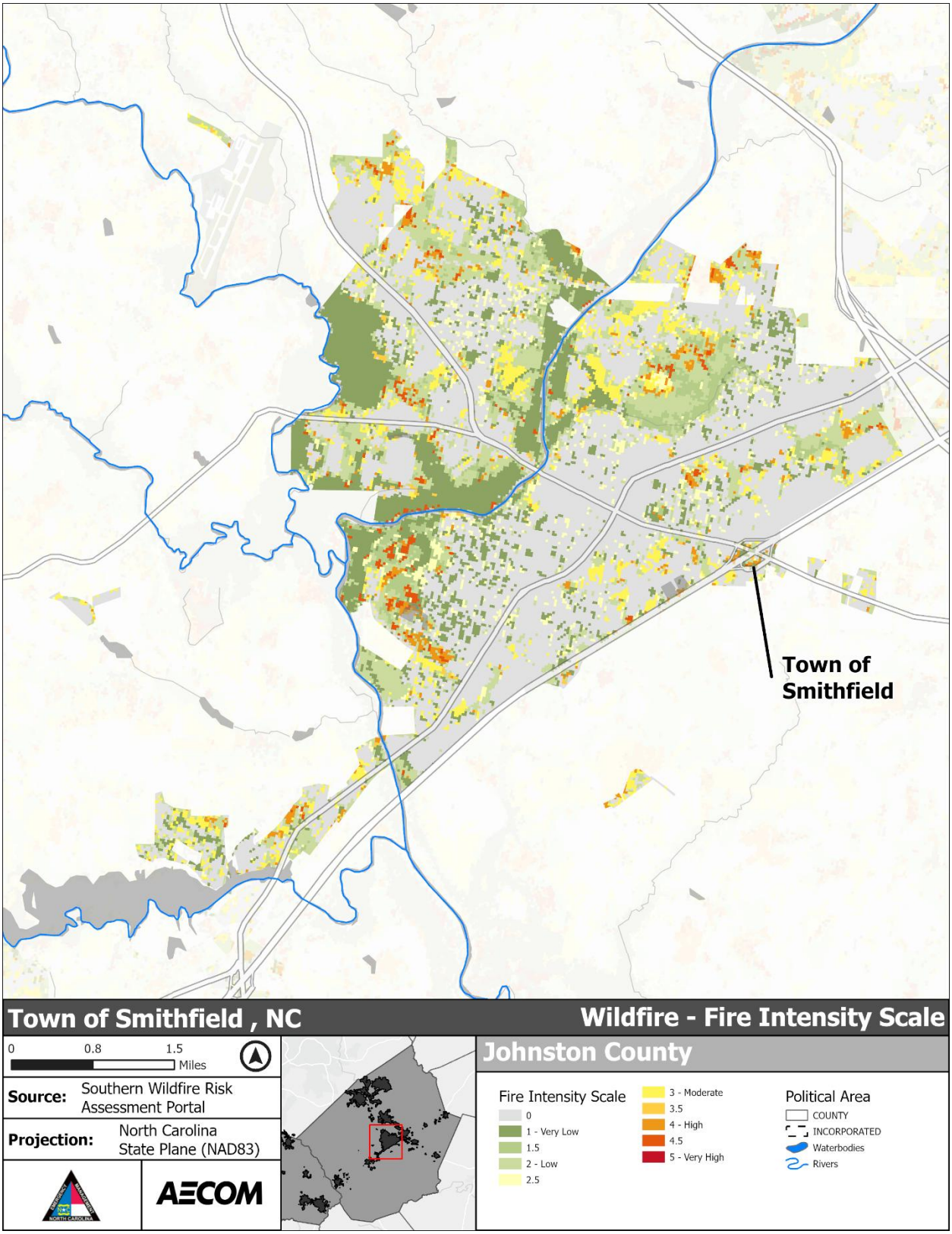


***Figure 5-374**: Wildfire Hazard Area – Town of Smithfield*

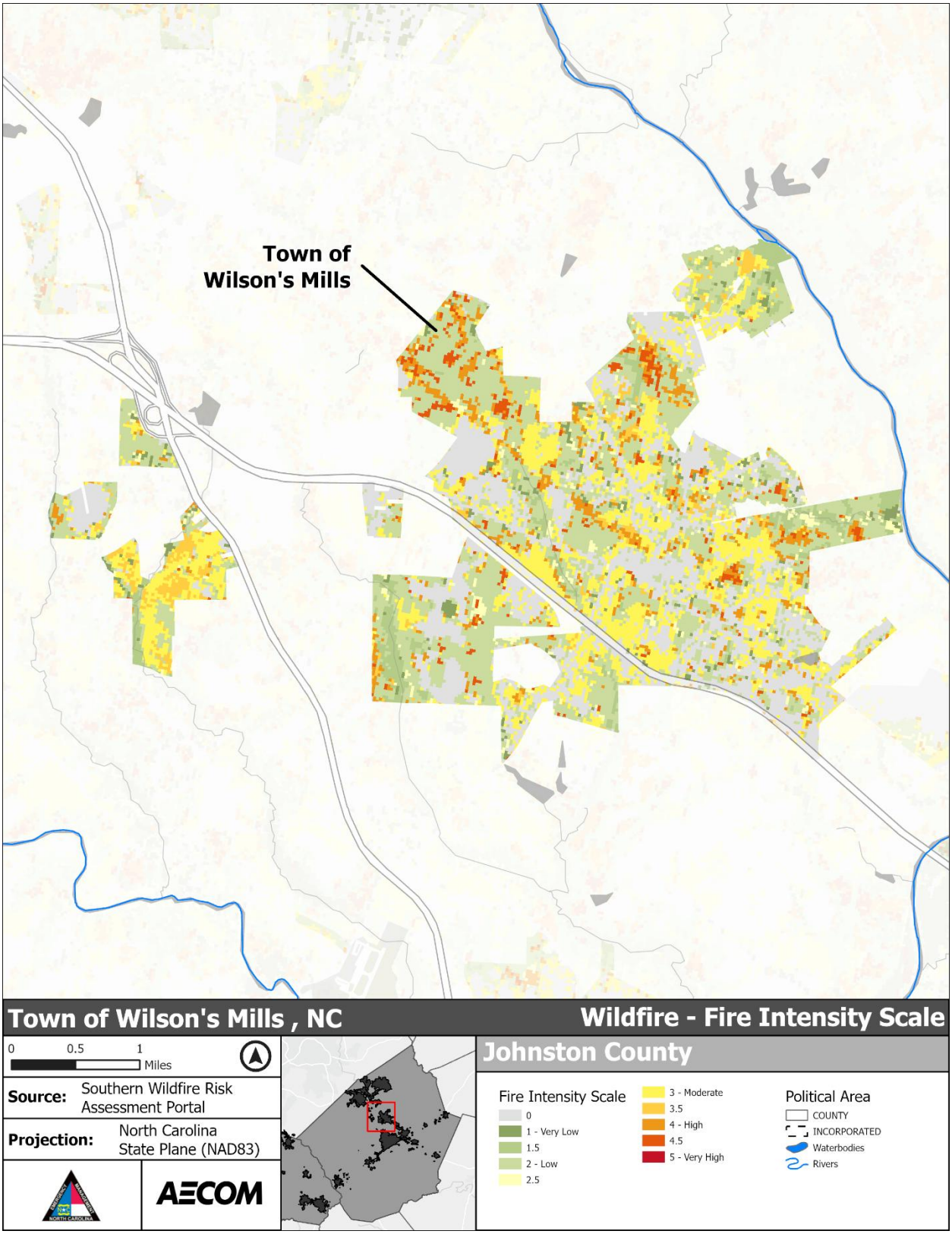


***Figure 5-375**: Wildfire Hazard Area – Town of Wilson's Mills*

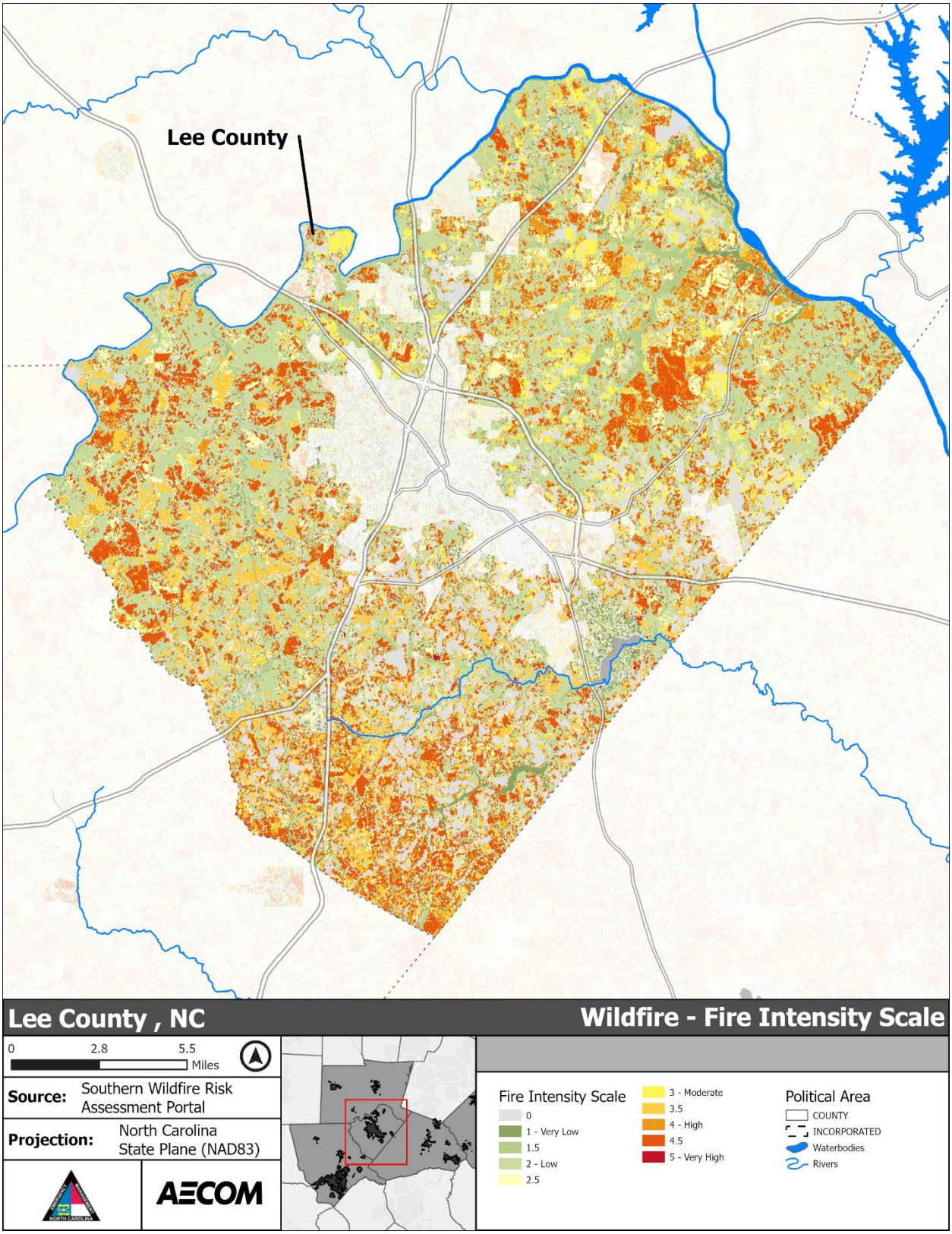


***Figure 5-376**: Wildfire Hazard Area – Lee County*

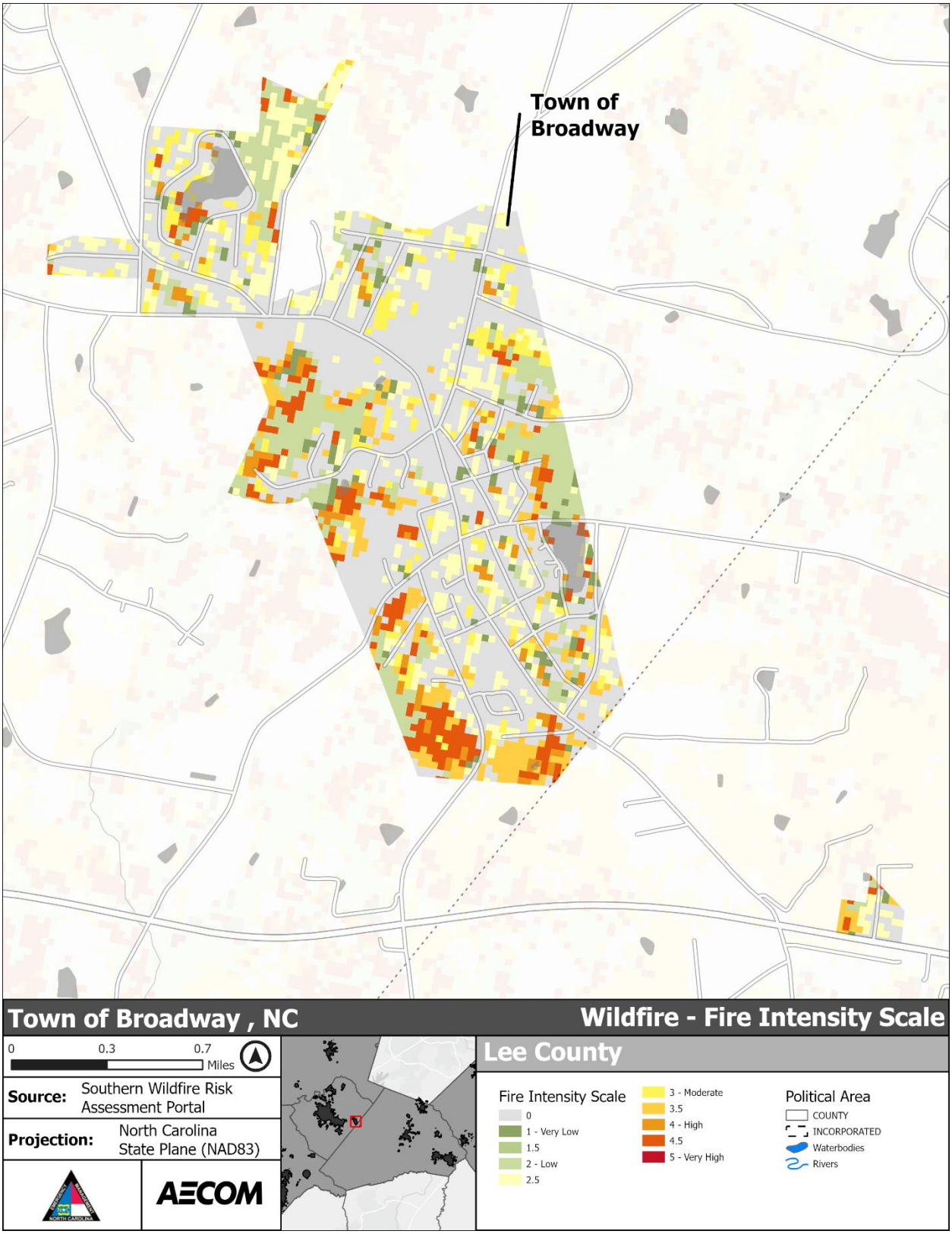


***Figure 5-377**: Wildfire Hazard Area – Town of Broadway*

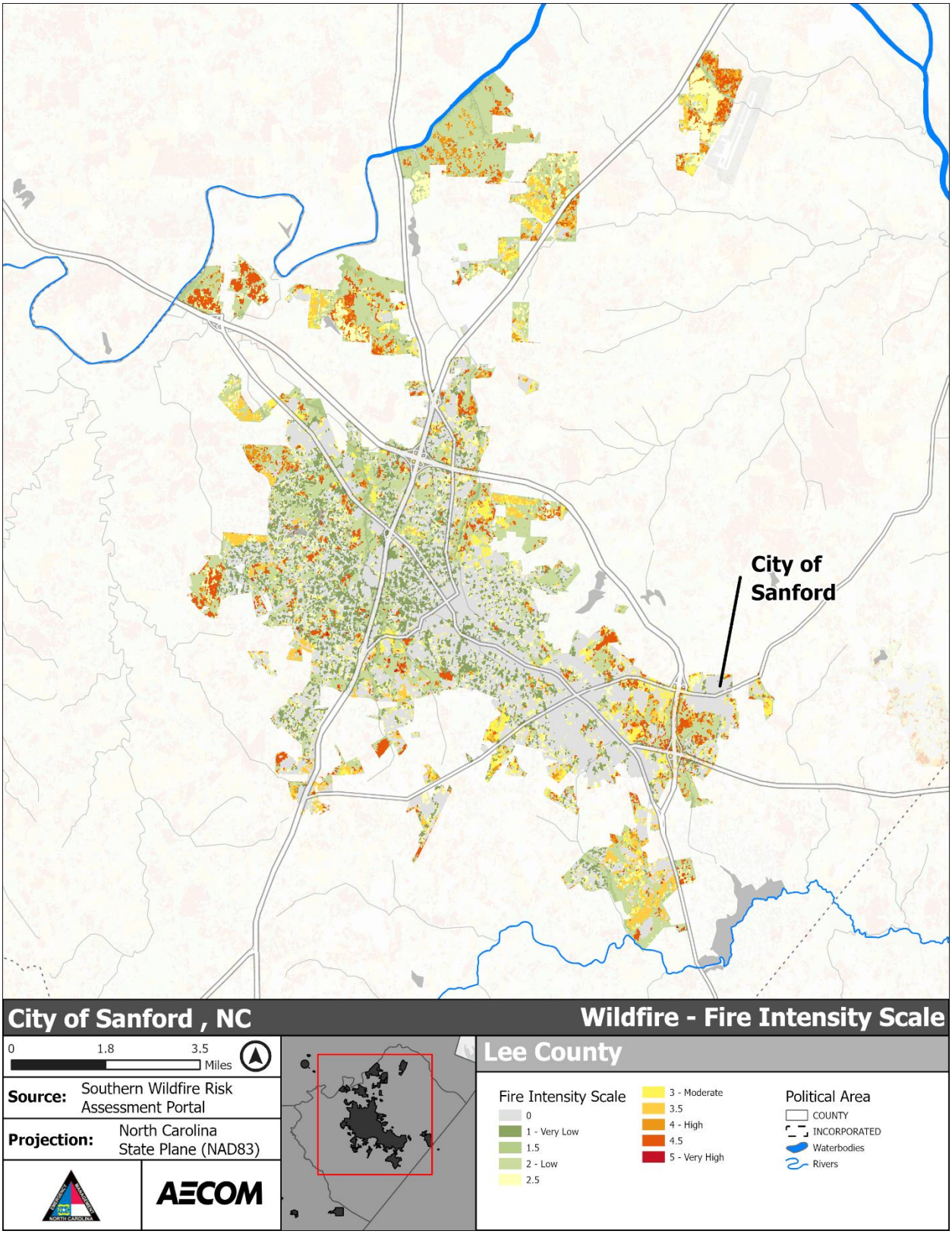


***Figure 5-378**: Wildfire Hazard Area – City of Sanford*

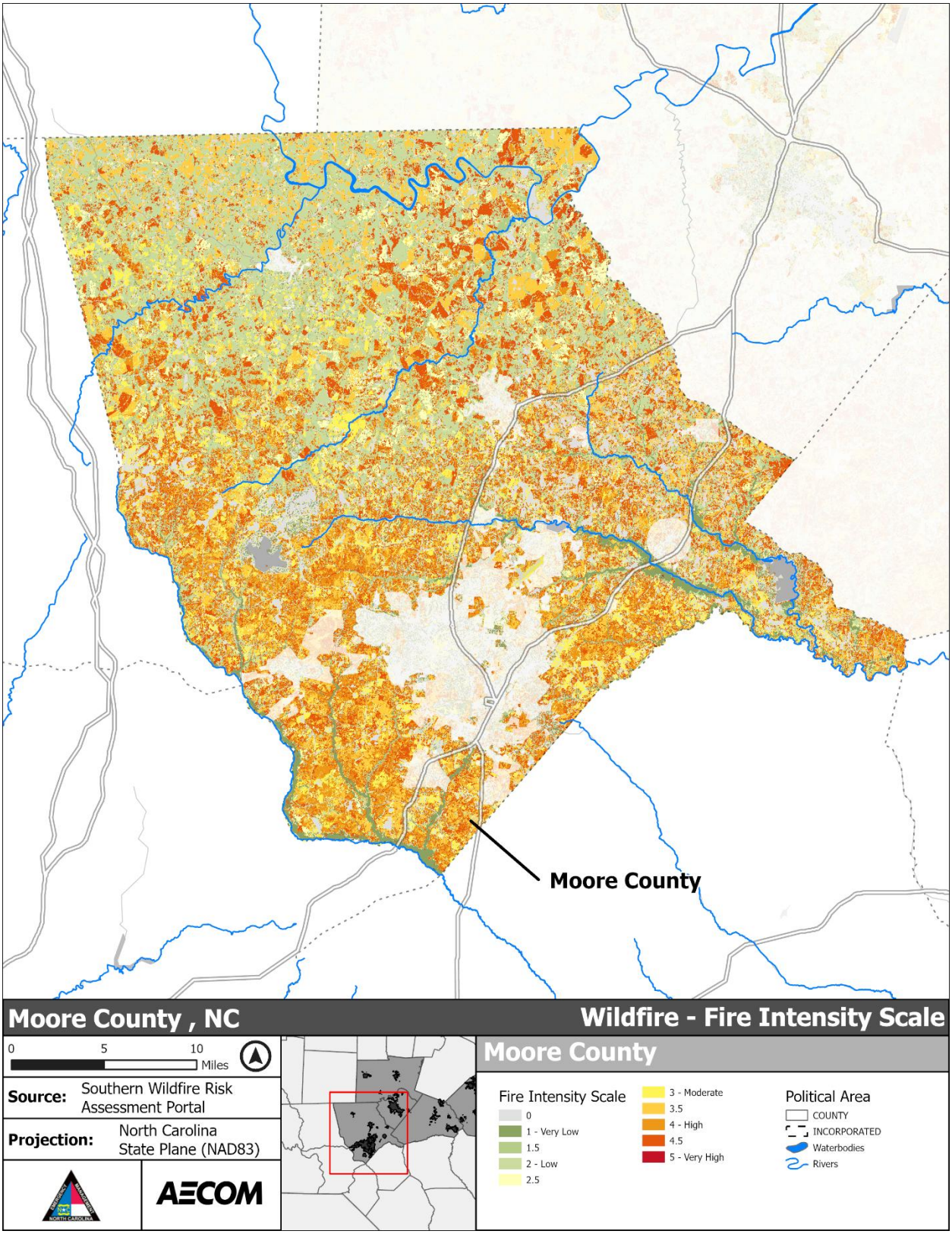


***Figure 5-379**: Wildfire Hazard Area – Moore County*

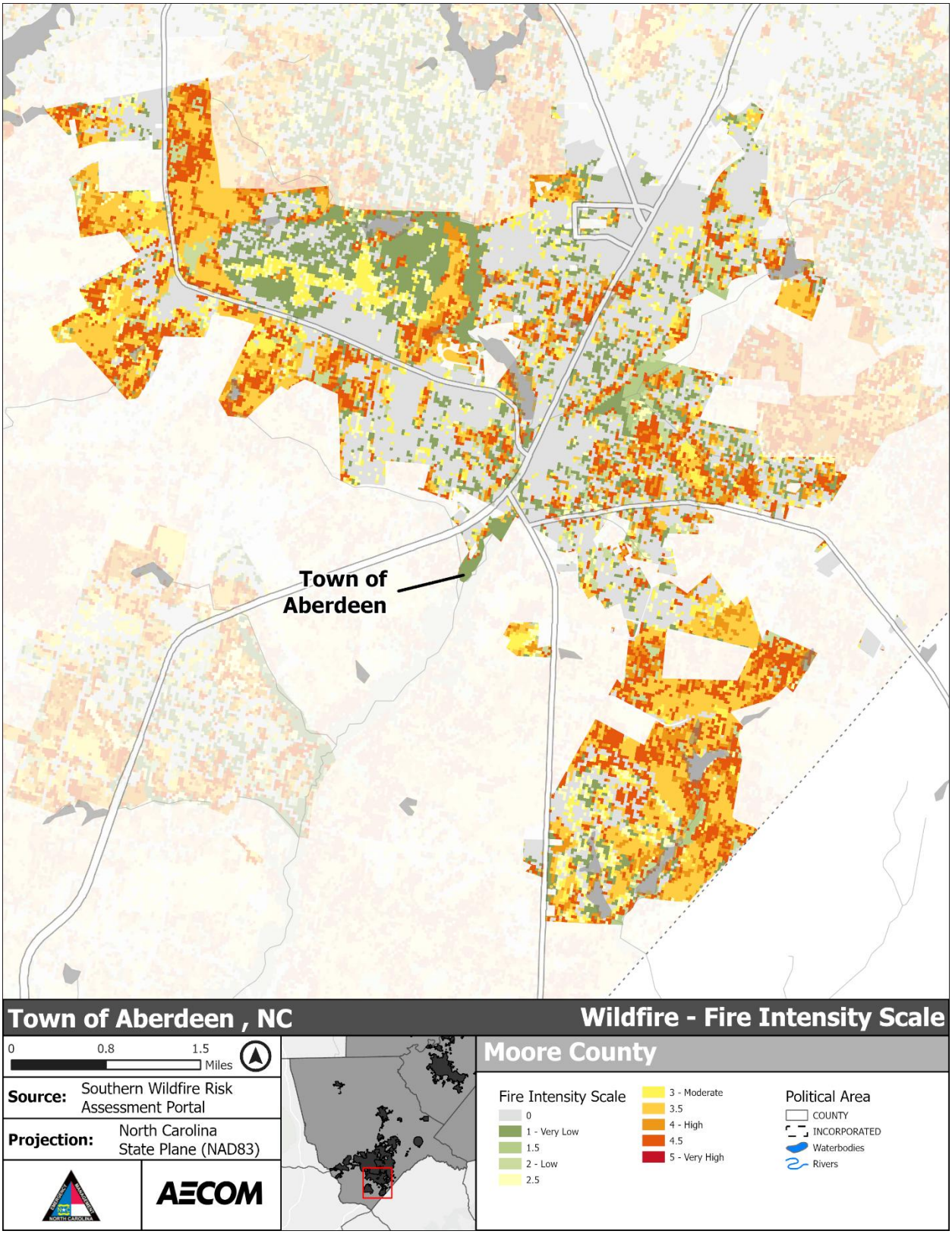


***Figure 5-380**: Wildfire Hazard Area – Town of Aberdeen*

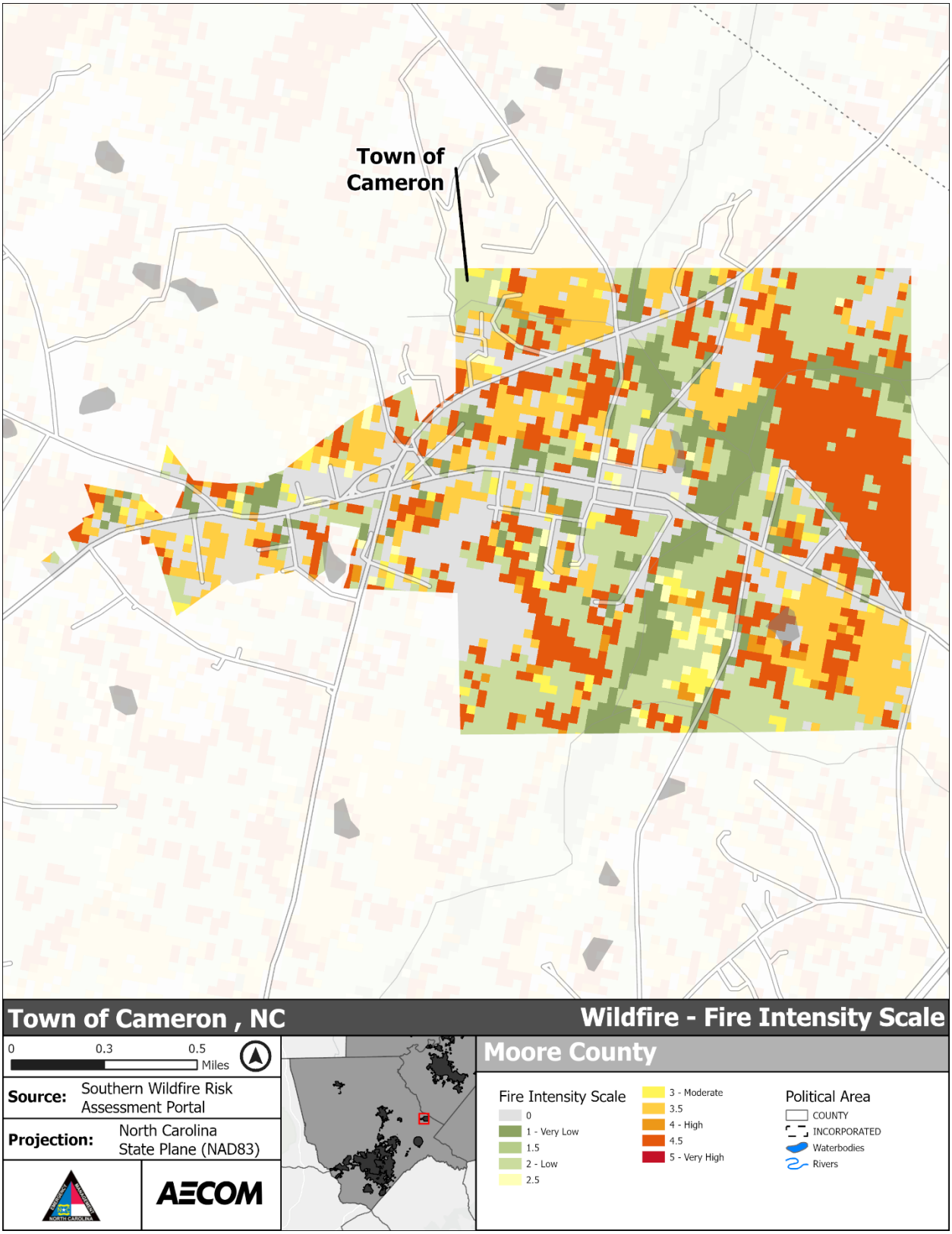


***Figure 5-381**: Wildfire Hazard Area – Town of Cameron*

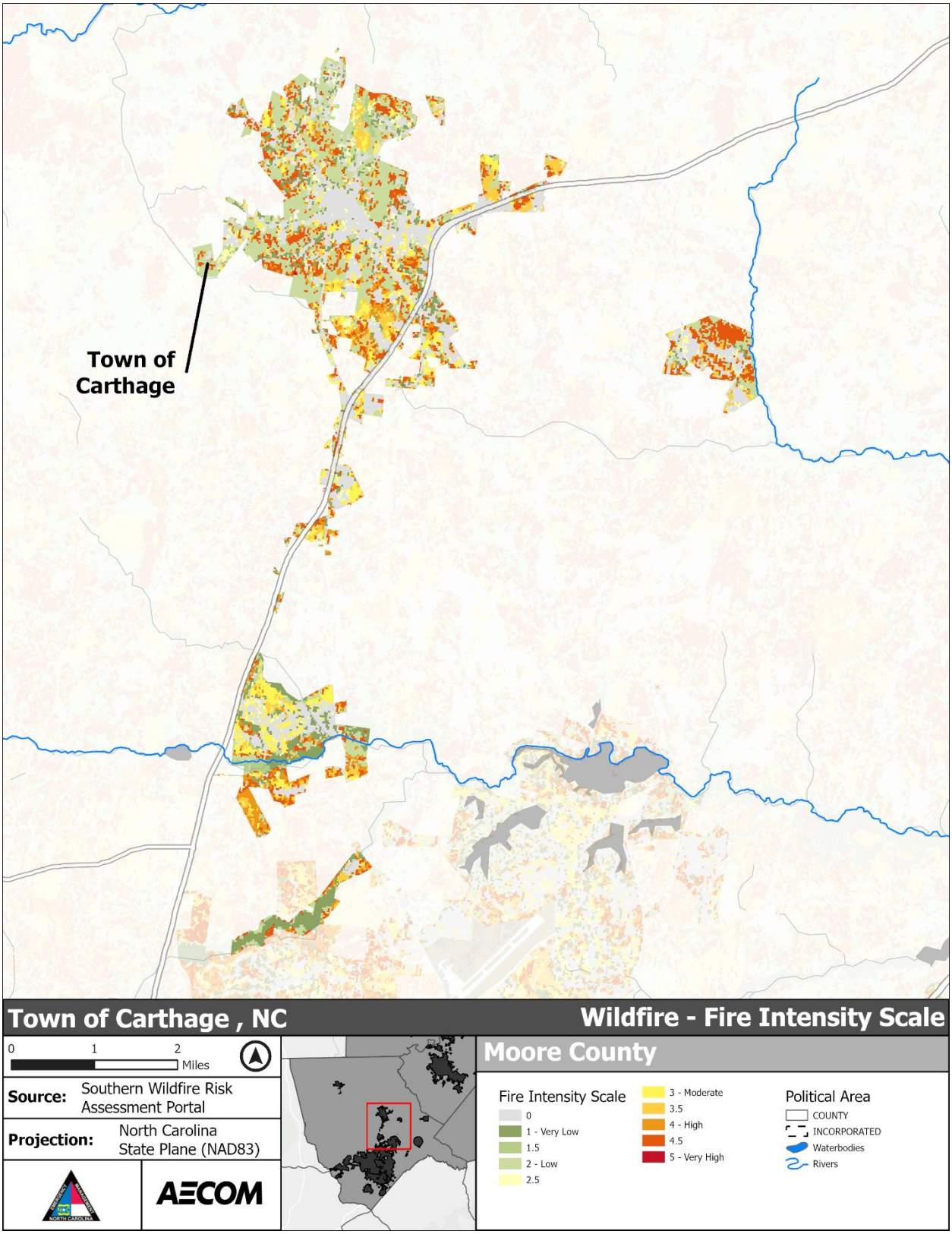


***Figure 5-382**: Wildfire Hazard Area – Town of Carthage*

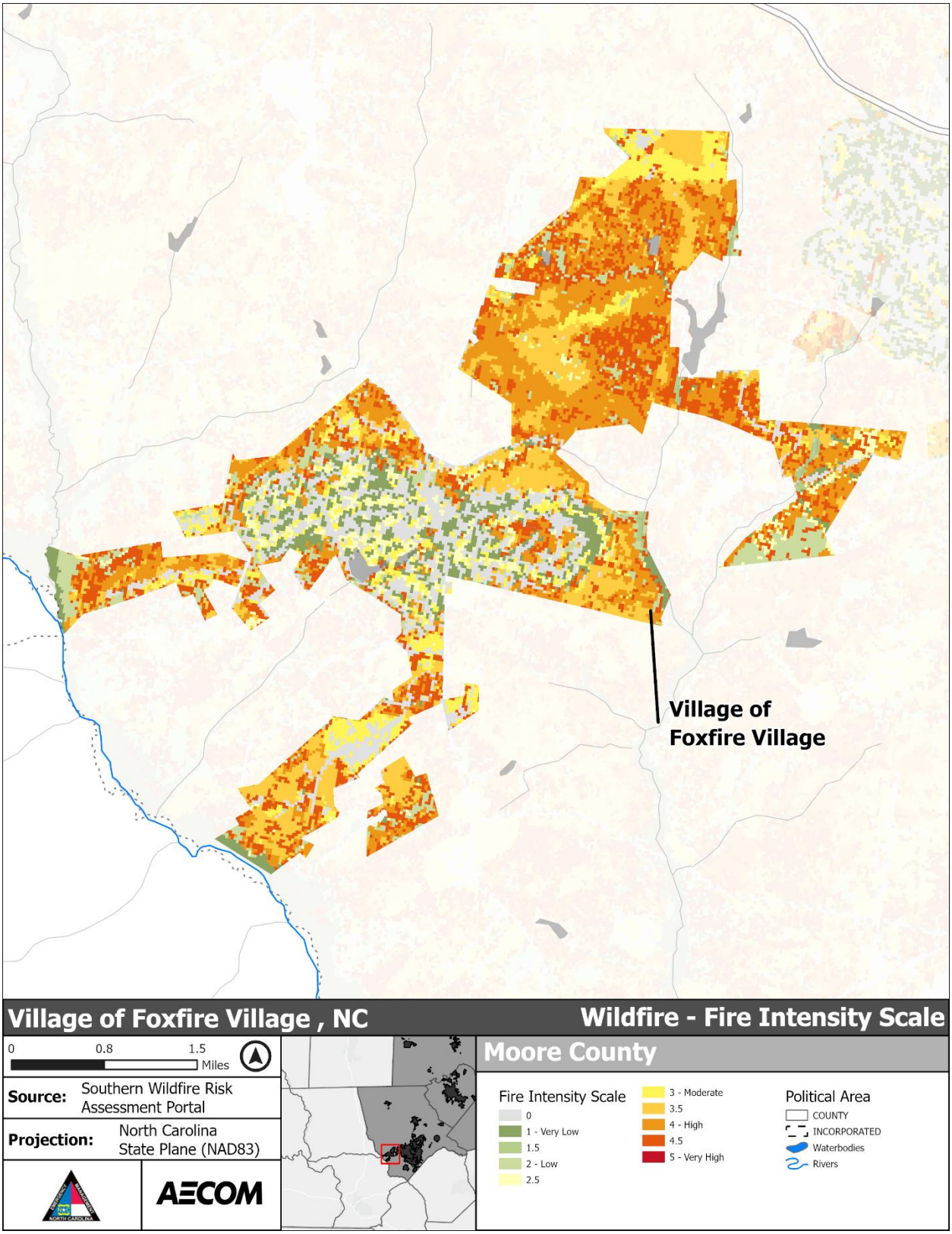


***Figure 5-383**: Wildfire Hazard Area – Foxfire Village*

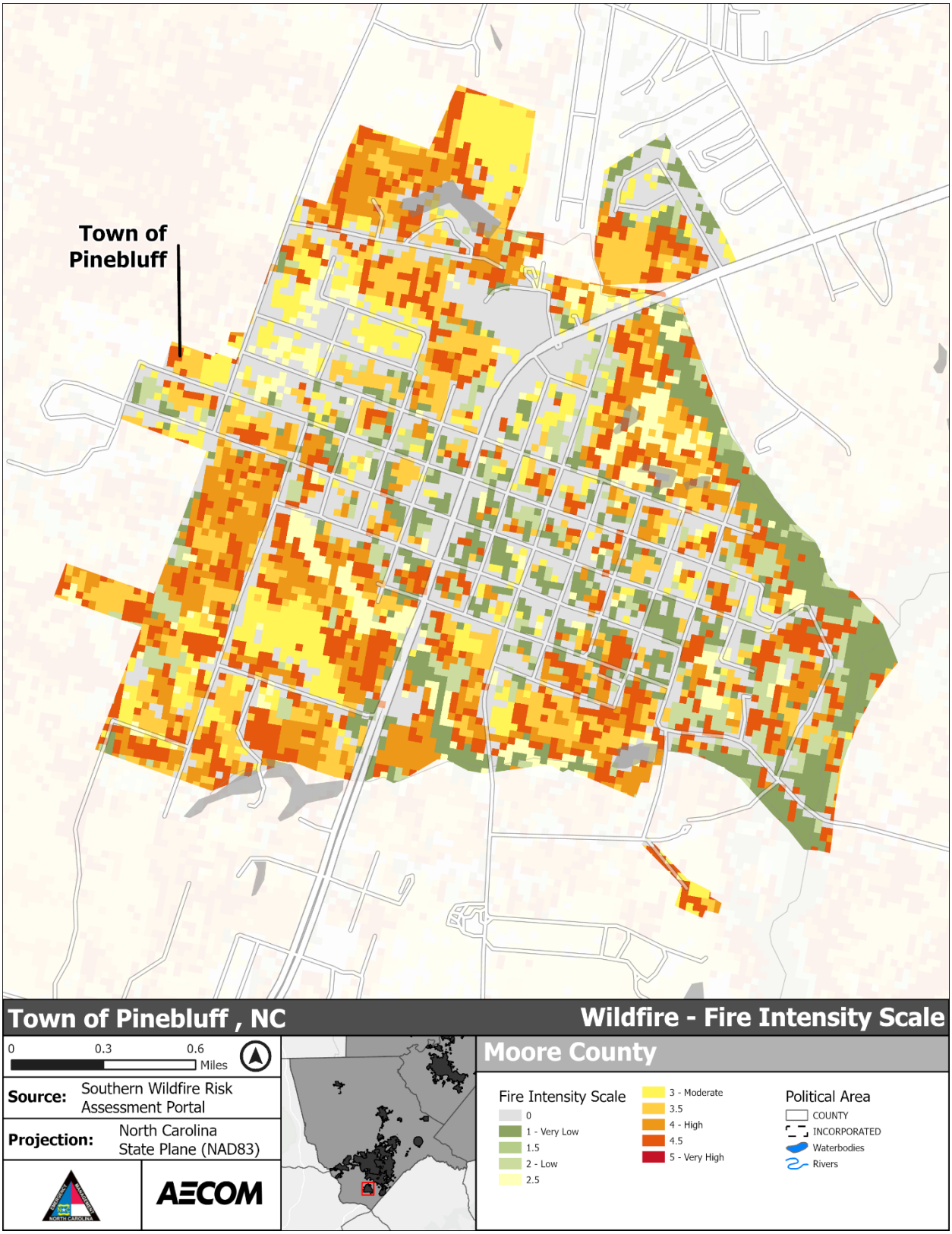


Figure 5-384: Wildfire Hazard Area – Town of Pinebluff

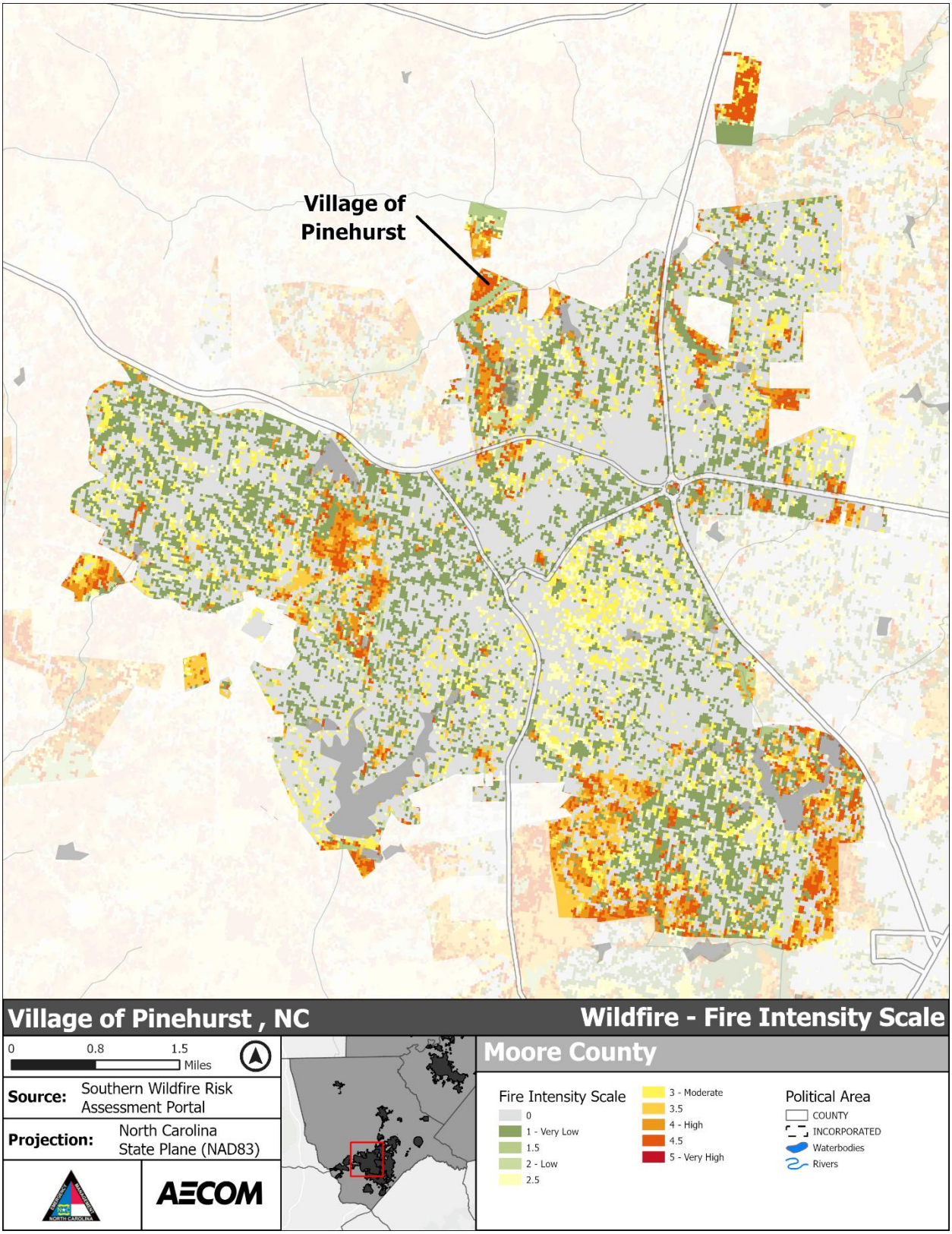


***Figure 5-385**: Wildfire Hazard Area – Village of Pinehurst*

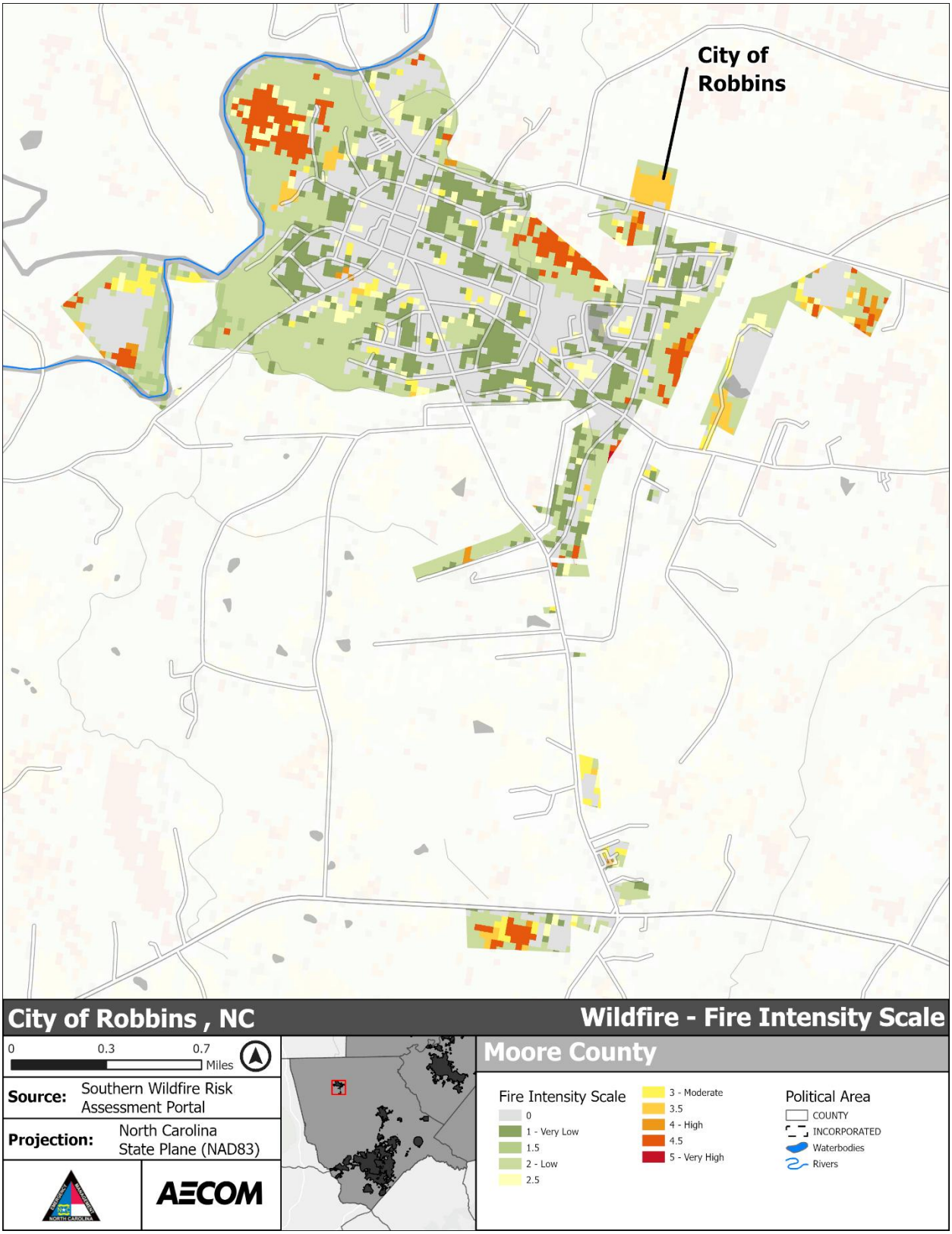


***Figure 5-386**: Wildfire Hazard Area – City of Robbins*

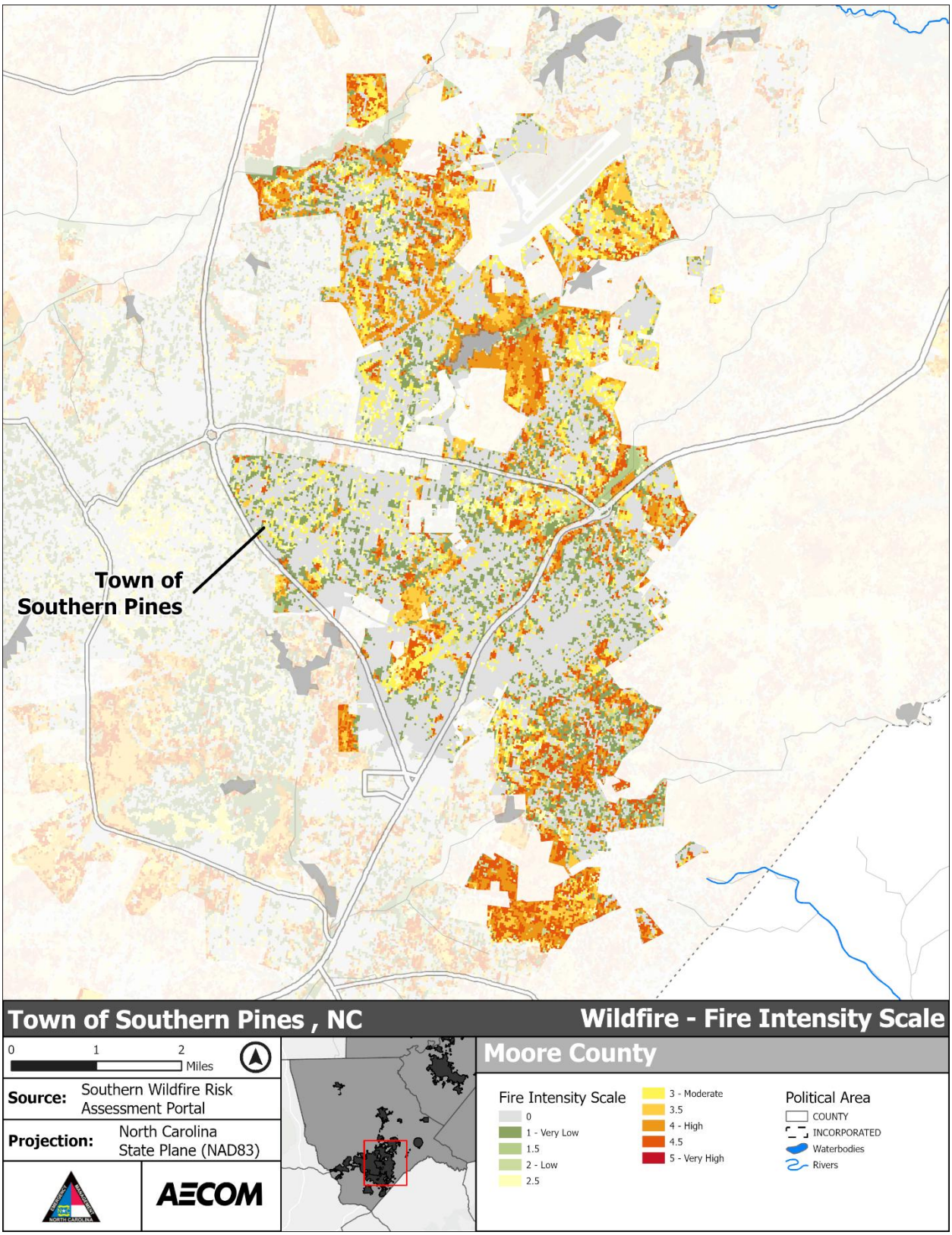


***Figure 5-387**: Wildfire Hazard Area – Town of Southern Pines*

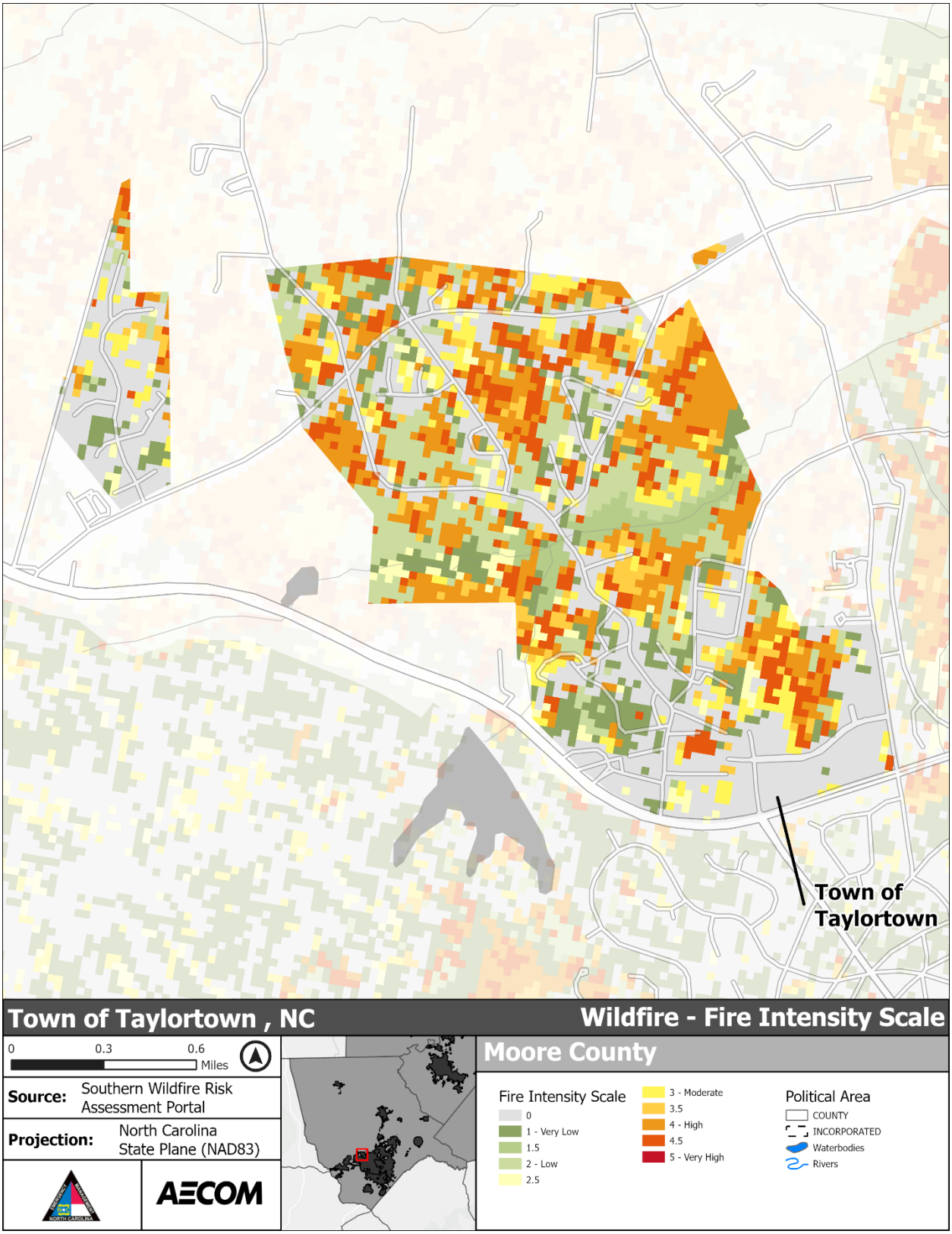


***Figure 5-388**: Wildfire Hazard Area – Town of Taylortown*

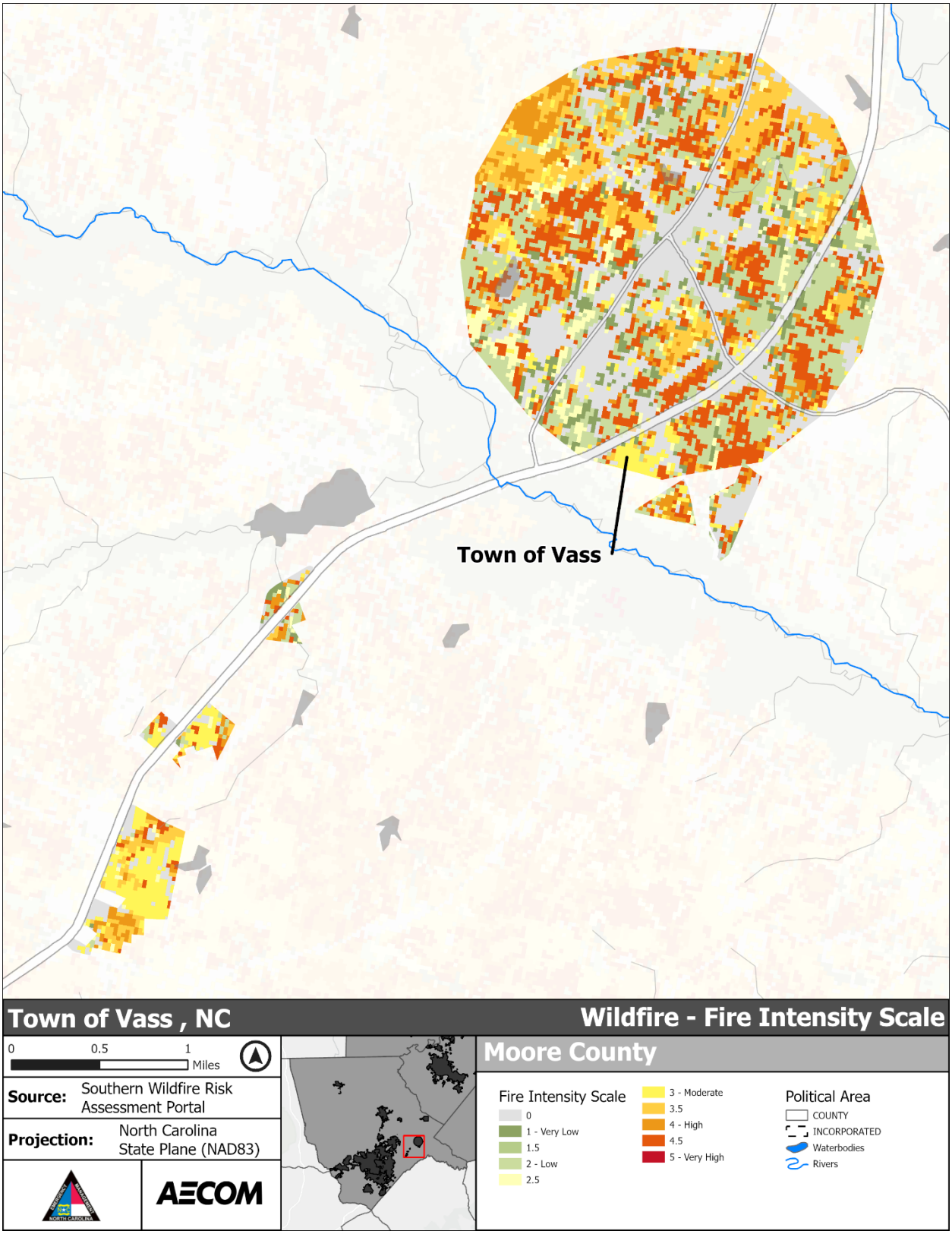


***Figure 5-389**: Wildfire Hazard Area – Town of Vass*

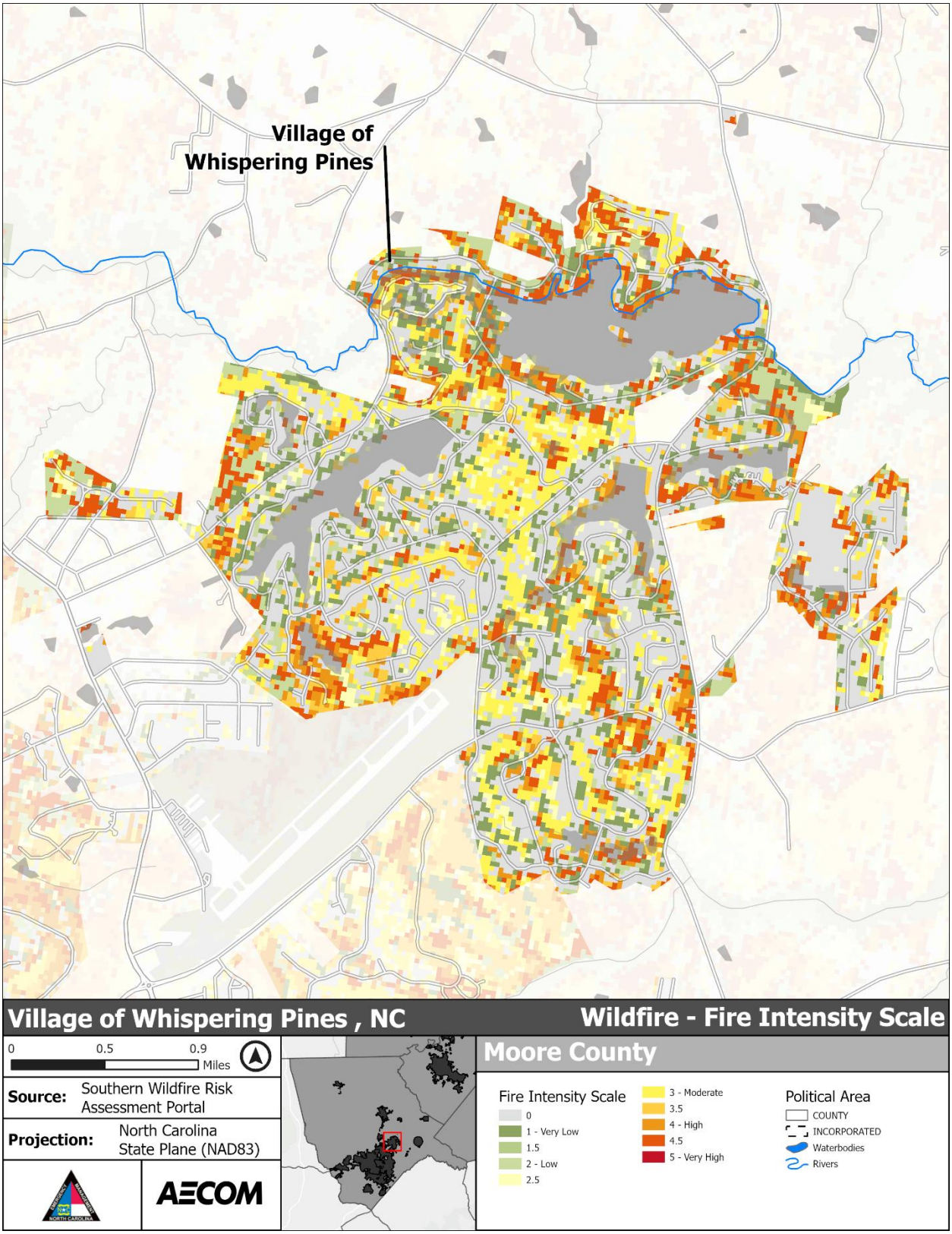


***Figure 5-390**: Wildfire Hazard Area – Village of Whispering Pines*

Table 5-56: SWRAP Fire Intensity Scale Descriptions and Definitions[133]

Class	Rating	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; a small amount of very short-range spotting is possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.
3	Moderate	Flames up to 9 feet in length; short-range spotting is possible. Trained firefighters will find these fires difficult to suppress without support from aircraft or engines, but dozers and plows are generally effective. Increasing potential for harm or damage to life and property.
4	High	Large Flames, up to 40 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	Flames exceed 200 feet in length; expect extreme fire behavior.

The Functional Wildland Urban Interface (WUI) is also used to illustrate the mitigation actions that are appropriate for each zone. The categories identify which zones buildings are located within and the types of mitigation actions that may reduce the risk of exposure to wildfires. See Table 5-57 for WUI categories, descriptions, and recommended mitigation activities for buildings located in each zone.

Table 5-57: Functional Wildland Urban Interface (WUI) Category Descriptions from SWRAP[134]

Category	Definition	Recommended Mitigation Activity
Direct Exposure	The Direct Exposure zone is burnable land cover within 75 m of a structure. Reducing fire intensity and ember production in this zone would reduce the exposure of nearby buildings to heat and embers.	Buildings in this zone also require hardening of the structure to resist ignition.
Indirect Exposure	The Indirect Exposure zone is non-burnable land cover within 1500 m of burnable land cover that is within 75 m of a structure, meaning that embers and home-to-home spread could reach within this zone.	Indirectly exposed structures would benefit from the hardening of the structure to resist ignition from embers and nearby structures, but defensible space is usually not required due to the heavily developed nature of the zone.
Critical Fireshed	The Critical Fireshed is the unpopulated land within about 2.4 km of a group of structures. Fires that originate within or spread to the Critical	Fuel treatments that slow fire spread in this zone can reduce risk to these structures.

[133] Pyrologix. (2023). Characteristic Fire Intensity Scale [Dataset]. In Southern Wildfire Risk Assessment Portal. Southern Wildfire Risk Assessment.
[134] Pyrologix. (2023b). Functional Wildland Urban Interface [Dataset]. In Southern Wildfire Risk Assessment Portal, Southern Wildfire Risk Assessment Portal. Southern Wildfire Risk Assessment.

	Fireshed have an immediate threat of reaching the nearby structures.	
Sources of Ember Load to Buildings	These are areas of burnable land cover that produce embers capable of reaching nearby buildings. Ember production is a function of fire type and intensity, and ember travel is a function of wind speed and direction.	Fuel treatment in this zone is a priority for reducing ember load to the nearby buildings.
Little to No Exposure	The Little-to-No Exposure zone is non-burnable land that is within 75 m of a structure but greater than 1500 m from a large (500 ha) contiguous block of burnable land cover. Flames—even from home-to-home spread—and embers are unlikely to reach the Little-to-No-Exposure zone, but smoke and evacuations could still impact this area.	

5.13.3 Extent

According to SWRAP, the FIS describes areas where significant fuel hazards and dangerous fire behavior can exist based on fuel and a range of wind and weather calculations. The highest FIS category found within the planning area is 4.5, which represents impacts that range from 40 feet in length to 200 feet in length. Harnett County has 392 acres, Johnston County has 2 acres, Lee County has 2 acres, and Moore County has 15 acres that fall within the 4.5 FIS category, but Chatham County does not have any area located within a 4.5 FIS category. 22.37% of the planning area falls within a 0 FIS category, which represents negligible or unclassified fire intensity impacts. FIS Class 1 area, 8.19% of the total planning area, represents very low intensity wildfires that are easily suppressed by firefighters with basic training and non-specialized equipment. 30.56% of the planning area, Class 0 to Class 1 areas, should expect fire behavior that has a low enough intensity to not require specialized equipment or training to suppress. However, the remaining 69.44% of the planning area is classified as having fire behavior that potentially requires specialized tools and equipment to suppress.

Any area that is a Class 2 or higher, flames less than 2ft long, and short-range spotting possible, on the FIS scale, is susceptible to fires that require protective equipment and specialized tools, with approximately 43% of the planning area at a Class 2 or higher FIS. Class 2 or higher FIS land represents 45% of Chatham County, 42% of Harnett County, 28% of Johnston County, 46% of Lee County, and 57% of Moore County.

Areas that are categorized as Class 3 FIS, flames up to 9ft in length, are susceptible to fires that are difficult to suppress without aircraft or engine support, increasing the potential for impacting property and threatening those in the impacted areas. Class 3 or higher FIS land represents 30% of Chatham County, 33% of Harnett County, 15% of Johnston County, 31% of Lee County, 45% of Moore County, and 30.24% of the total planning area.

Areas that are categorized as Class 4 FIS, large flames up to 40ft in length, are not effectively suppressed with indirect methods such as firefighters, engines, or dozers. This represents 4.17% of the planning area, 3% of Chatham County, 6% of Harnett County, 2% of Johnston County, 5% of Lee County, and 5% of Moore County.

***Table 5-58**: SWRAP Characteristic Fire Intensity Scale (FIS) Ratings for the Planning Area acres and percent of total planning area*[135]

FIS Category	Chatham		Harnett		Johnston		Lee		Moore		Planning Area Total
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
0	58,097	13 %	109,467	28 %	177,135	35 %	32,073	19 %	62,848	14 %	22.37%
1	27,121	6 %	28,113	7 %	63,916	13 %	10,857	7 %	30,976	7 %	8.19%
1.5	168,122	37 %	82,959	22 %	121,576	24 %	47,479	29 %	99,576	22 %	26.44%
2	54,065	12 %	27,850	7 %	31,974	6 %	20,976	13 %	46,483	10 %	9.23%
2.5	12,476	3 %	8,724	2 %	36,167	7 %	3,777	2 %	8,327	2 %	3.53%
3	94,327	21 %	60,966	16 %	55,026	11 %	27,571	17 %	108,176	24 %	17.61%
3.5	26,530	6 %	41,861	11 %	12,127	2 %	14,496	9 %	71,381	16 %	8.47%
4	12,836	3 %	24,851	6 %	11,318	2 %	8,661	5 %	23,846	5 %	4.15%
4.5	0	0 %	392	0 %	2	0 %	2	0 %	15	0 %	0.02%
5	0	0 %	0	0 %	0	0 %	0	0 %	0	0 %	0.00%
> 5	0	0 %	0	0 %	0	0 %	0	0 %	0	0 %	0.00%
Total	**453,574**	**-**	**385,182**	**-**	**509,241**	**100 %**	**165,892**	**-**	**451,628**	**-**	**-**

The Functional Wildland Urban Interface (WUI) represents the classification of land near buildings into zones to describe the type of mitigation activities that would help prevent wildfire impacts to buildings in the zone. According to the SWRAP, the planning area has 47.04% of the total planning area within Critical Fireshed Zones, which represents unpopulated land within approximately 2.4km, or approximately 1.49 miles, of a group of structures. Fires that originate in these areas have an immediate threat of reaching nearby structures, and the suitable mitigation actions to reduce wildfire impacts include fuel treatments to slow fire spread. Sources of Ember Load to Buildings areas represent 27.46% of the planning area, which are areas of burnable land cover that produce embers that can reach nearby buildings, and mitigation actions for these areas also include fuel treatment to reduce ember load in these areas. Approximately 19.81% of the planning area is in a Direct Exposure zone, which is burnable land cover zones within 75 m, or approximately 246.06 ft, of a structure, and suitable mitigation activities are focused on reducing the fire intensity or ember production to reduce exposure of nearby buildings. These mitigation actions could also include actions to harden structures to resist ignition.

Approximately 6.79% of the planning area is in an Indirect Exposure Zone, which are zones that have non-burnable land cover within 1500m of burnable land within 75m of a structure, and home-to-home spread is possible in these zones. Structures within the indirect exposure zones would benefit from structural hardening to resist ignition, but defensible space is usually not required in these zones due to the heavily developed nature of the surroundings. The counties

[135] Pyrologix. (2023). Characteristic Fire Intensity Scale [Dataset]. In Southern Wildfire Risk Assessment Portal. Southern Wildfire Risk Assessment.

in the planning area have a similar distribution of WUI exposure area, while none of the planning areas are in a zone with little to no exposure.

Table 5-59: Functional Wildland Urban Interface Acres in each Exposure Category in the Planning Area from SWRAP, with acres and percent of the total planning area[136]

Functional Wildland Urban Interface (WUI) Category	Chatham		Harnett		Johnston		Lee		Moore		% of Total Planning Area
	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	Acres	Percent	
Direct Exposure	75,506	17 %	58,305	15 %	85,187	17 %	33,573	20 %	77,741	17 %	16.81%
Indirect Exposure	6,024	1 %	35,450	9 %	61,779	12 %	12,081	7 %	18,221	4 %	6.79%
Critical Fireshed	244,467	54 %	168,062	44 %	241,024	47 %	68,914	42 %	202,166	45 %	47.04%
Sources of Ember Load to Buildings	109,832	24 %	117,683	31 %	115,098	23 %	49,610	30 %	147,447	33 %	27.46%
Little to No Exposure	0	0 %	0	0 %	0	0 %	0	0 %	0	0 %	0.00%
Water	17,745	4 %	5,683	1 %	6,153	1 %	1,714	1 %	6,054	1 %	1.90%
Total	**453,574**	-	**385,182**	-	**509,242**	-	**165,892**	-	**451,628**	-	-

5.13.4 Historical Occurrences

Table 5-60 shows the summary of wildfire incidents reported by the National Interagency Fire Center (NIFC) in the Cape Fear Region based on all wildfire incidents from the Integrated Reporting of Wildland Fire Information (IRWIN) incident service for incidents from 2014 to the present day.

Table 5-60: Wildfire events reported by the National Interagency Fire Center in the Wildfire Incident Locations Dataset between 2014 to 2025.[137]

County	Incident Name	Incident Year	Incident Size	Estimated Cost
Harnett	Acorn Lane	2022	2.5	$5,000
	Bass Lake	2024	8.5	$3,000
	Deerview Fire	2019	4	$4,000
	Robin Hill	2019	0.5	$5,000
	Will Lucas Rd	2018	125	$20,000
	Total		140.5	$37,000
Johnston	Austin Pond	2017	2	$1,000

[136] Pyrologix. (2023b). Functional Wildland Urban Interface [Dataset]. In Southern Wildfire Risk Assessment Portal, Southern Wildfire Risk Assessment Portal. Southern Wildfire Risk Assessment.

[137] National Interagency Fire Center. (2025). Wildland Fire Incident Locations [Dataset]. https://data-nifc.opendata.arcgis.com/datasets/nifc::wildland-fire-incident-locations/about

County	Incident Name	Incident Year	Incident Size	Estimated Cost
	Castleberry	2018	0.1	$3,000
	Memory Lane	2017	1	$10,000
	Old Bailey Rd.	2019	1	$3,000
	Total		4.1	$17,000
Lee	Buckhorn Road	2016	375	$16,645
	Total		375	$16,645
Moore	Black Cherry	2023	155	$1,651
	Condo	2018	2	$10,000
	Crabtree Road	2022	0.5	$760
	Dog	2019	0.3	$2,443
	Fire Tower	2022	113	$2,000
	Jeans Loop	2019	0.1	$1,910
	Kelly Drive	2023	1	$330
	Radio Tower	2022	270	$1,500
	Thunder Road	2020	119	$5,841
	Total		660.9	$26,435
Planning Area Total			**1,180.5**	**$97,080**

Based on data from the National Association of State Foresters from 2001 to 2021, the Cape Fear Region experienced an average of 481 wildfires annually, burning a combined average of 1,165 acres per year. The data indicate that most of these fires are small, with an average of 2.42 acres burned per fire. Table 5-61 provides a summary table for wildfire occurrences in the Cape Fear Region.

***Table 5-61**: National Association of State Foresters Summary of Wildfire Occurrences between 2001-2021*[138]

County	Total acres Burned	Acres Burned per year	Wildfire Incidents	Average Incidents per year	Average Acres per fire
Chatham	2,577.1	129	1,424	71.2	1.81
Harnett	9,154.2	458	3,052	153	3
Johnston	3,040.96	152	738	36.9	4.12
Lee	2,309.05	115	1,542	77.1	1.5
Moore	6,213.41	311	2,865	143	2.17
Total	**23,295**	**1,165**	**9,621**	**481**	**2.42**

5.13.5 Probability of Future Occurrences

The NRI uses the USDA Forest Service's Probabilistic Wildfire Risk Components for the U.S. to determine the susceptible areas and probability of occurrence. The U.S. Forest Service Missoula Fire Sciences Laboratory has a raster dataset that represents burn probability (BP)

[138] National Association of State Foresters. (2025). NASF Fire Data Extract [Dataset]. In Fire and Aviation Management Web Applications [FAMWeb], FAMWEB Data Warehouse. FAMWeb. https://famprod.nwcg.gov/cognos11/bi/?pathRef=.public_folders%2FFAMWEB%2BData%2BWarehouse%2FPublic%2BAccess%2BReports%2FFire%2BData%2BExtract%2FNASF%2BState%2BData%2BExtract

and conditional fire intensity level (FIL) through its geospatial Fire Simulation (FSIM) System, which simulates wildfire occurrence across tens of thousands of hypothetical fire seasons under 2014 landscape conditions. Areas that have a Burn Probability of greater than 0 are considered to be susceptible, so any area with a BP higher than zero would be considered exposed.

Based on NRI Wildfire Risk Data, Chatham County has an exposure area of 11.06 mi^2 and an EAL of $27,652 with a "Relatively High" Average EAL Rating and Average Hazard Risk Rating. Harnett County has an exposure area of 9.93 mi^2 and an EAL total of $161,929, with a "Relatively High" Average EAL Rating and Average Hazard Risk Rating. Johnston County has an exposure area of 32.82 mi^2 and EAL of $49,917.02 with a "Relatively High" Average EAL Rating and Average Hazard Risk Rating. Lee County has an exposure area of 4.2 mi^2 and EAL of $62,773.00 with a "Relatively High" Average EAL Rating and Average Hazard Risk Rating. Moore County has an exposure area of 11 mi^2 and EAL of $346,036 with a "Very High" Average EAL Rating and Average Hazard Risk Rating.

***Table 5-62**: NRI Wildfire Exposure Area, Annualized Frequency, EAL Total, EAL Score, and Hazard Risk Index Score*

Jurisdiction	Exposure Area (Mi^2)	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Chatham County	**11.06**	**0.000058**	**$27,652.38**	**66.68**	**Relatively High**	**66.98**	**Relatively High**
Goldston	1.03	0.000105	$2,118.47	75.12	Relatively High	76.45	Relatively High
Pittsboro	0.93	0.000034	$3,711.09	64.20	Relatively High	63.02	Relatively High
Siler City	1.31	0.000054	$2,918.58	64.09	Relatively High	70.18	Relatively High
Area outside Jurisdictional Boundaries	7.78	0.000044	$18,904.23	67.24	Relatively High	66.38	Relatively High
Harnett County	**9.93**	**0.000188**	**$161,929.62**	**73.21**	**Relatively High**	**75.06**	**Relatively High**
Angier	0.91	0.000115	$8,060.92	69.46	Relatively High	72.12	Relatively High
Coats	1.23	0.000077	$3,456.34	72.58	Relatively High	75.62	Relatively High
Dunn	1.04	0.000020	$1,385.08	48.87	Relatively Moderate	54.16	Relatively Moderate
Erwin	1.50	0.000096	$6,562.36	61.87	Relatively High	65.35	Relatively High
Lillington	2.36	0.000151	$23,207.67	74.23	Relatively High	74.94	Relatively High
Area outside Jurisdictional Boundaries	3.11	0.000277	$71,749.09	82.28	Very High	82.98	Very High
Johnston County	**32.82**	**0.000038**	**$49,917.02**	**60.49**	**Relatively High**	**61.50**	**Relatively High**
Archer Lodge	2.35	0.000029	$6,076.84	62.13	Relatively High	59.77	Relatively Moderate

Jurisdiction	Exposure Area (Mi^2)	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Benson	1.81	0.000063	$5,168.49	62.09	Relatively High	64.34	Relatively High
Clayton	3.79	0.000048	$17,828.64	65.40	Relatively High	64.93	Relatively High
Four Oaks	2.41	0.000032	$2,354.54	57.10	Relatively Moderate	60.36	Relatively High
Kenly	3.07	0.000011	$1,010.62	56.04	Relatively Moderate	58.81	Relatively Moderate
Micro	4.80	0.000011	$1,415.31	55.11	Relatively Moderate	59.26	Relatively Moderate
Pine Level	2.98	0.000013	$1,360.48	59.94	Relatively Moderate	64.22	Relatively High
Princeton	2.83	0.000011	$701.56	50.63	Relatively Moderate	52.17	Relatively Moderate
Selma	6.04	0.000013	$5,382.51	58.49	Relatively Moderate	62.69	Relatively High
Smithfield	4.54	0.000019	$4,598.95	58.72	Relatively Moderate	63.61	Relatively High
Wilson's Mill	2.47	0.000044	$6,968.74	68.68	Relatively High	70.74	Relatively High
Area outside Jurisdictional Boundaries	8.55	0.000052	$16,443.26	61.76	Relatively High	60.86	Relatively High
Lee County	**4.20**	**0.000163**	**$62,773.00**	**69.14**	**Relatively High**	**70.74**	**Relatively High**
Broadway	1.09	0.000198	$6,192.80	78.13	Relatively High	79.48	Relatively High
Sanford	2.89	0.000155	$36,576.51	66.80	Relatively High	68.46	Relatively High
Areas Outside Jurisdictional Boundaries	1.31	0.000332	$26,196.49	85.54	Very High	86.67	Very High
Moore County	**11.00**	**0.000313**	**$346,036.39**	**82.27**	**Very High**	**82.03**	**Very High**
Aberdeen	2.04	0.000394	$115,614.55	82.99	Very High	82.49	Very High
Cameron	0.85	0.000258	$12,531.88	85.42	Very High	85.68	Very High
Carthage	3.29	0.000304	$79,119.12	83.71	Very High	83.88	Very High
Foxfire Village	1.31	0.000401	$62,286.37	86.26	Very High	85.72	Very High
Pinebluff	1.04	0.000507	$64,165.43	89.52	Very High	89.74	Very High
Pinehurst	1.87	0.000307	$114,973.74	81.94	Very High	81.63	Very High
Robbins	1.98	0.000195	$18,684.67	72.06	Relatively High	74.06	Relatively High
Southern Pines	2.17	0.000331	$125,951.62	83.06	Very High	82.79	Very High
Taylortown	0.58	0.000381	$28,842.56	85.98	Very High	85.93	Very High
Vass	0.82	0.000388	$26,329.09	88.87	Very High	89.66	Very High
Whispering Pines	0.54	0.000393	$34,568.86	90.06	Very High	88.42	Very High

Jurisdiction	Exposure Area (Mi^2)	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Areas Outside Jurisdictional Boundaries	1.91	0.000351	$37,255.04	83.39	Very High	82.01	Very High

5.13.6 Impact

5.13.6.1 People

The potential health risk from wildfire events and the resulting diminished air quality is a concern. 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 people with respiratory problems or with heart disease. Even healthy citizens may experience minor symptoms, such as sore throats and itchy eyes.

5.13.6.2 Changes in Development or Housing Characteristics

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. All counties in the planning area have experienced an increase in housing units between 2013 and 2023, increasing in Chatham County by 20.8%, Harnett County by 14.08%, Johnston County by 29.87%, Lee County by 11.35%, Moore County by 11.92%, and the planning area by 19.3% total. This means that as the planning area continues to expand in population and development, there is likely to be more community infrastructure, roadways, structures, and houses that can be exposed to wildfire impacts.

5.13.6.3 Economy

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.

5.13.6.4 Natural Environment

Wildfires cause damage to the natural environment, killing vegetation and occasionally animals. The risk of floods and debris flows increases due to the exposure of bare ground and the loss of vegetation. In addition, the secondary effects of wildfires, including erosion, landslides, the introduction of invasive species, and changes in water quality, are often more disastrous than the fire itself.

5.13.6.5 First Responders

Public and firefighter safety is the first priority in all wildland fire management activities. Wildfire poses a real threat to the health and safety of emergency services personnel. Most firefighters 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. The more severe and widespread a wildfire is, the higher the threat to the health and safety of first responders who assist with wildfire suppression and response.

5.13.6.6 Future Conditions

According to the NCCSR, higher annual and seasonal temperatures will increase drying vegetation and conditions that favor wildfires.[139] The increases in wildfires will pose a greater threat to human health, emergency services, the economy, first responders, and the planning area.

5.14 Nuclear Accident

5.14.1 Hazard Description and Background

The International Atomic Energy Agency defines a nuclear and radiation accident as “an event that has led to significant consequences to people, the environment, or the facility. Often, this type of incident results from damage to a nuclear power plant's reactor core, which can release radioactivity into the environment. The degree of exposure from nuclear accidents has varied from serious to catastrophic.

By some estimates, over 50 percent of nuclear accidents that have ever occurred were in the United States.[140] However, it is also important to note that generally, nuclear accidents are a rare occurrence. Many incidents are well-known for their large-scale impact and serious effects on people and the environment.

One of the most notorious accidents in the United States was the Three Mile Island accident, which occurred in 1979 and released small amounts of radioactive gases and iodine into the environment. Although no deaths have been directly attributed to the accident, it invoked a strong public reaction and demonstrated the potential dangers associated with nuclear power generation.

Shearon Harris Nuclear Station, which is in southwest Wake County, is a 2,948-megawatt power plant that began commercial operation in 1987. Its reactor is a pressurized water reactor, and the plant operates with a very high level of security.

5.14.2 Location and Spatial Extent

Almost the entire region is at risk of a nuclear incident. However, areas in the northeastern part of the region are more susceptible due to their proximity to the Shearon Harris Nuclear Station.

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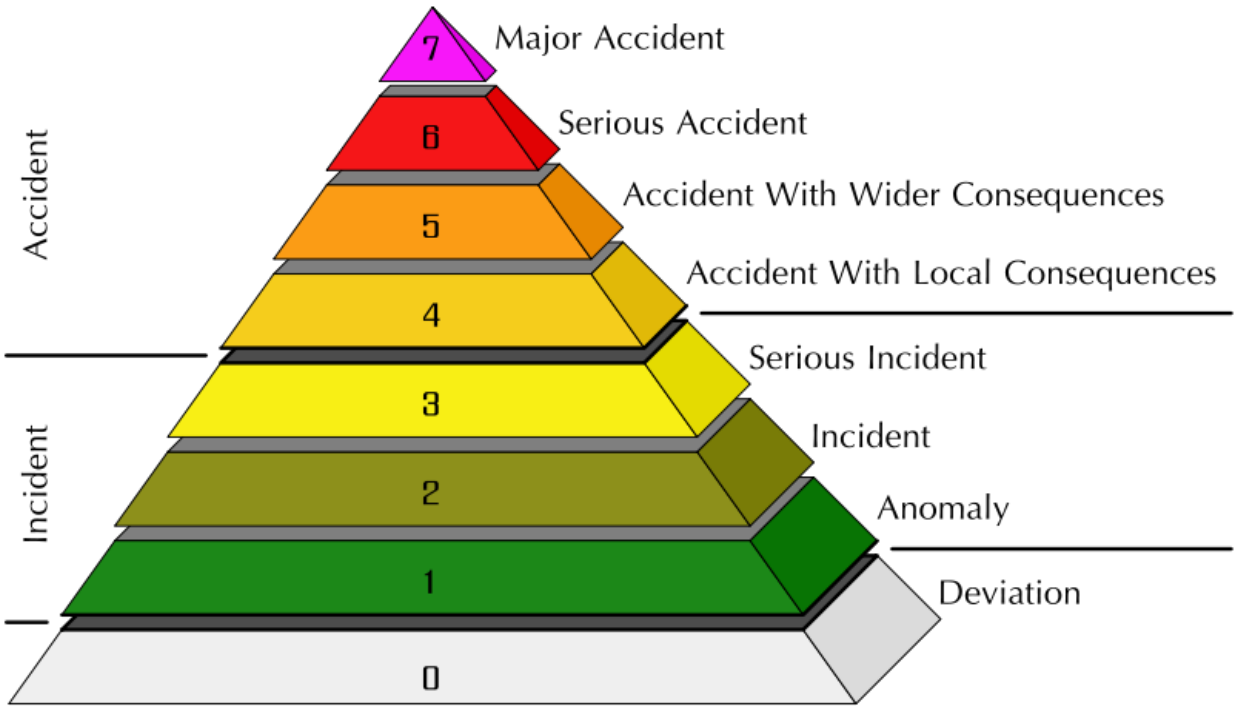
[139] North Carolina Institute for Climate Studies [NCICS]. (2020). North Carolina Climate Science Report. NCICS. Retrieved August 7, 2025, from https://ncics.org/wp-content/uploads/2020/10/NC_Climate_Science_Report_FullReport_Final_revised_September2020.pdf

[140] Benjamin K. Sovacool. A Critical Evaluation of Nuclear Power and Renewable Electricity in Asia Journal of Contemporary Asia, Vol. 40, No. 3, August 2010, pp. 393–400.

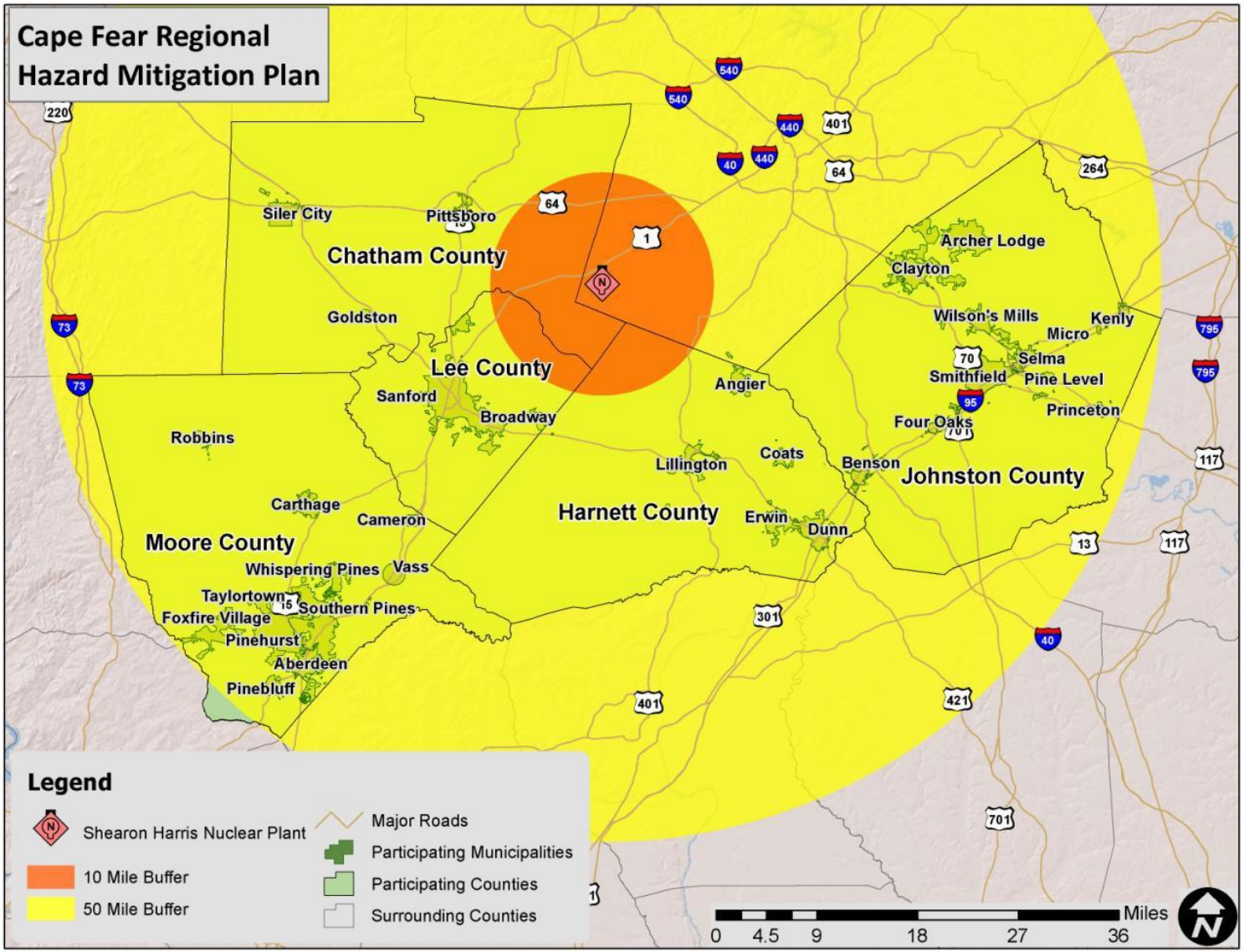
The International Atomic Energy Association has developed a scale called the International Nuclear and Radiological Event Scale (INES), which provides a quantitative means of assessing the extent of a nuclear event. This scale, like the MMI used for earthquakes, is logarithmic, which means that each increasing level on the scale represents an event 10 times more severe than the previous level (Figure 5-391).



Source: International Atomic Energy Agency

***Figure 5-391**: International Nuclear Event Scale*

The Nuclear Regulatory Commission defines two emergency planning zones around nuclear plants. Areas located within 10 miles of the station are considered to be within the zone of highest risk to a nuclear incident, and this radius is the designated evacuation radius recommended by the Nuclear Regulatory Commission (Figure 5-392). Within the 10-mile zone, the primary concern is exposure to and inhalation of radioactive contamination. The most concerning effects in the secondary 50-mile zone are related to ingestion of food and liquids that may have been contaminated. Nearly all areas of the region that are not located within a 10-mile radius are located within this 50-mile radius, which is still considered to be at risk of some impacts from a nuclear incident.



Source: International Atomic Energy Agency

***Figure 5-392**: Shearon Harris Nuclear Power Station Incident Hazard Zones*

5.14.3 Historical Occurrences

Although there have been no major nuclear events at the Shearon Harris Nuclear Station, there is some possibility that one could occur, as there have been incidents in the past in the United States at other facilities and at facilities around the world. In May of 2013, the plant was shut down unexpectedly due to the discovery of a ¼-inch crack in the Reactor Pressure Vessel Head.

Shearon Harris has declared 2 "Alerts" and 28 "Notice of Unusual Events" since 1986, which are shown in Table 5-63. There have also been 338 additional incidents reported to the NRC since 1986, but none necessitated an emergency declaration and were therefore not included in this analysis.

***Table 5-63**: Shearon Harris Emergency Declaration History*

Emergency Declaration	Date	Description
Alert	08/12/1988	Loss of greater than 50% of main control board (MCB) alarms due to electrical problems; normal power supply to the annunciator panel failed and did not transfer to its backup inverter.
Alert	10/09/1988	Fire on "B" Main Electrical Transformer; release of flammable gas in the Protected Area.
Unusual Event	11/28/1986	Loss of the ERFIS computer system to display the Safety Parameter Display System (SPDS) (55 lapsed minutes).
Unusual Event	11/29/1986	Loss of the ERFIS computer system to display SPDS (58 lapsed minutes).
Unusual Event	11/30/1986	Loss of the ERFIS computer system to display SPDS (48 lapsed minutes).
Unusual Event	12/03/1986	Loss of the ERFIS computer system to display SPDS (27 lapsed minutes).
Unusual Event	12/11/1986	Safety Injection (an Emergency Core Cooling System) actuated while testing electronic circuitry.
Unusual Event	01/27/1987	Loss of the ERFIS computer system to display SPDS (23 lapsed minutes).
Unusual Event	07/11/1987	Loss of the ERFIS computer system to display SPDS (22 lapsed minutes).
Unusual Event	07/24/1987	Loss of the ERFIS computer system to display SPDS (32 lapsed minutes).
Unusual Event	07/25/1987	Loss of the ERFIS computer system to display SPDS (28 lapsed minutes).
Unusual Event	02/04/1988	Fire within the Protected Area greater than 10 minutes; smoke observed coming from the motor for the reactor auxiliary building supply fan.
Unusual Event	10/06/1988	RCS leakage in excess of Tech Specs (unidentified leakage > 1.0 gpm).

Emergency Declaration	Date	Description
Unusual Event	10/20/1988	RCS leakage in excess of Tech Specs; pressure-operated relief valve opened and admitted RCS inventory to the pressurized relief tank (PRT).
Unusual Event	11/17/1988	Loss of the ERFIS computer system to display SPDS for > 60 minutes.
Unusual Event	12/01/1988	Reactor coolant system (RCS) leakage in excess of Tech Specs (unidentified leakage > 1.0 gpm).
Unusual Event	12/16/1988	High-level alarm on radiological effluent release monitor (Treated Laundry and Hot Shower high-level alarm was set just above background).
Unusual Event	03/13/1989	Loss of the ERFIS computer system to display SPDS for > 60 minutes.
Unusual Event	01/24/1991	Plant shutdown required by Technical Specifications. Excessive leakage of a containment penetration; leakage discovered during surveillance testing.
Unusual Event	02/15/1991	Loss of the ERFIS computer system to display SPDS for > 4 hours.
Unusual Event	03/05/1991	Plant shutdown required by Technical Specifications (testing of “A” Reactor Coolant Pump (RCP) electrical protection function).
Unusual Event	04/14/1992	Loss of the ERFIS computer system to display SPDS for > 4 hours.
Unusual Event	02/06/1993	Loss of the ERFIS computer system to display SPDS for > 4 hours.
Unusual Event	02/17/1994	Loss of the ERFIS computer system to display SPDS for > 4 hours.
Unusual Event	07/22/1994	Loss of both emergency diesel generators - “B” diesel generator was being worked on; in accordance with test procedures, “A” diesel generator is required to be tested within 24 hours following having a redundant diesel out of service; did not pass test.
Unusual Event	11/05/1995	Unplanned emergency core cooling system (ECCS) discharge to the reactor vessel; reactor trip and safety injection (SI) occurred during the performance of testing.
Unusual Event	12/14/1995	Train derailment on site - while removing an empty cask car from the Protected Area, the rail cars were moved onto the Engine Spur to allow passage of the CSX engine on adjacent Plant Spur; cask car shifted; 4 wheels of the car left the rails.
Unusual Event	01/22/1997	Security Event - while working on Work Request and Authorization (WR&A), I&C Tech investigation found a cut wire in a Turbine Building radiation monitor. Later determined not to be vandalism (i.e., not a security threat).
Unusual Event	04/02/2000	Loss of Emergency Response Facility Information System (ERFIS) computer system to display Safety Parameter Display System (SPDS) for more than 4 hours.
Unusual Event	08/23/2011	Seismic activity at the site due to a magnitude 5.8 earthquake near Mineral, VA.

Source: Nuclear Regulatory Commission

5.14.4 Probability of Future Occurrences

A major nuclear event is a very rare occurrence in the United States due to the intense regulation of the industry. There have been incidents in the past, but it is considered unlikely (less than 1 percent annual probability).

5.15 Terror Threat

5.15.1 Hazard Description and Background

Terrorism is defined in the United States by the Code of Federal Regulations as: "the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives."[141] Academic literature identifies some overarching political goals that terrorism seeks to achieve, including spreading anxiety and alarm among immediate victims, families, and the general public; eliminating opponents and destroying symbolic targets; and generating direct damage on society, such as affecting business confidence. In the following sections, general background information on terrorism is presented before the county's hazard identification and risk assessment findings.

There are two general types of terrorist groups: network and hierarchical. The type of organization a group adopts largely depends on how long the group has existed. More recently developed groups tend to organize or adapt to the opportunities offered by the network model. Older, more established groups lean toward hierarchical structures and are often associated with political violence.[142] Terrorist acts can be committed by large, formally organized groups with terrorist cells in different parts of the world, or by smaller groups or individuals in a small city or a domestic "homegrown" location. In the United States, terrorists that are "homegrown" do not belong to a defined group, may operate very effectively "under the radar," and may pose the biggest threat initially at the local level.[143]

5.15.2 Location and Spatial Extent

A terror threat could potentially occur at any location in the region. However, the very definition of a terrorist event indicates that it is most likely to target a critical or symbolic resource/location. Ensuring and protecting the continuity of critical infrastructure and key resources (CIKR) of the United States is essential to the Nation's security, public health and safety, economic vitality, and way of life. CIKR includes physical and/or virtual systems or assets that, if damaged, would have a detrimental impact on national security, including large-scale human casualties, property destruction, economic disruption, and significant damage to morale and public confidence. Table 5-64 lists the U.S. Department of Homeland Security's (DHS) identified main critical infrastructure sectors.

***Table 5-64**: U.S. Department of Homeland Security Critical Infrastructure Sectors*

[141] U.S. Code of Federal Regulations. 23 C.F.R. Section 0.85
[142] Terrorism Research. *Terrorist groups*. Retrieved December 27, 2011, from http://www.terrorism-research.com/groups/
[143] Ibid.

- Agriculture and Food
- Banking and Finance
- Chemical
- Commercial Facilities
- Communications
- Critical Manufacturing
- Dams
- Defense Industrial Base
- Emergency Services
- Energy
- Government Facilities
- Healthcare and Public Health
- Information Technology
- National Monuments and Icons
- Nuclear Reactors, Materials, and Waste
- Postal and Shipping
- Transportation Systems
- Water

Although all critical facilities (see Section 6: *Vulnerability Assessment*) are at heightened risk in the Cape Fear Region, several have been identified as likely primary targets. These are listed in Table 5-65.

***Table 5-65**: Critical Facilities at Elevated Risk of Terror Threat in the Cape Fear Region*

Critical Facility
Chatham County
Chatham County Emergency Operations Center
Chatham Hospital
Harnett County
Harnett County Emergency Operations Center
Central Harnett Hospital
Betsy Johnson Hospital
Johnston County
Johnston County Emergency Operations Center
Johnston Medical Center
Lee County
Lee County Emergency Operations Center
Central Carolina Hospital
Moore County
Rick Rhyne Public Safety: Moore County Emergency Operations Center
Moore Regional Hospital

Source: Local Governments

5.15.3 Historical Occurrences

Although there have been no major terror events in the Cape Fear Region, there is some possibility that one could occur in the future, as there have been incidents in the United States in the past. Several facilities could be potential targets.

5.15.4 Probability of Future Occurrences

The Cape Fear Region has had no recorded terrorist events. Given no recorded incidents in the region, the probability of a future terrorist attack is unlikely (less than 1 percent per year).

5.16 Conclusions on Hazard Risk

The hazard profiles presented in this section were developed using the best available data and constitute a principally qualitative assessment, as recommended by FEMA in its “How-to” guidance document titled *Understanding Your Risks: Identifying Hazards and Estimating Losses* (FEMA Publication 386-2). It relies heavily on historical and anecdotal data, stakeholder input, and professional and experienced judgment regarding observed and/or anticipated hazard impacts. It also carefully considers the findings in other relevant plans, studies, and technical reports.

The conclusions drawn from the hazard profiling process for the Cape Fear Region, including the NRI results and input from the Regional Hazard Mitigation Planning Team, resulted in the classification of risk for each identified hazard according to the following categories: Very Low, Relatively Low, Relatively Moderate, Relatively High, and Very High.

***Table 5-66**: NRI Average Hazard Risk Rating for Jurisdictions and Counties in the planning area*

Jurisdiction	Drought	Extreme Heat / Heat Wave	Hurricane and Tropical Storm	Severe Weather			Tornado	Winter Storm	Ice Storm	Earthquake	Flood	Wildfire
				Hail	Lightning	Strong Wind						
Chatham County	**Relatively High**	**Relatively High**	**Relatively High**	**Very High**	**Relatively High**	**Relatively High**	**Relatively High**	**Very High**	**Relatively High**	**Relatively Moderate**	**Relatively Moderate**	**Relatively High**
Goldston	Very High	Relatively High	Very High	Very High	Relatively High	Relatively High	Very High	Very High	Very High	Relatively High	Relatively High	Relatively High
Pittsboro	Relatively Moderate	Relatively Moderate	Relatively High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High	Very High	Relatively High	Relatively Low	Relatively Moderate	Relatively High
Siler City	Relatively Moderate	Relatively High	Relatively High	Very High	Relatively High	Relatively High	Relatively High	Very High	Very High	Relatively High	Relatively High	Relatively High
Area outside Jurisdictional Boundaries	Very High	Relatively High	Relatively High	Very High	Relatively Moderate	Relatively Moderate	Relatively High	Very High	Relatively High	Relatively Low	Relatively Moderate	Relatively High
Harnett County	**Very High**	**Relatively High**	**Very High**	**Relatively High**	**Very High**	**Very High**	**Relatively High**	**Very High**	**Relatively High**	**Relatively Moderate**	**Relatively High**	**Relatively High**
Angier	Very High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively Moderate	Relatively Low	Relatively High
Coats	Very High	Relatively High	Very High	Relatively High	Very High	Very High	Very High	Very High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High
Dunn	Very High	Relatively High	Very High	Relatively High	Very High	Very High	Very High	Very High	Relatively High	Relatively High	Very High	Relatively Moderate
Erwin	Very High	Relatively High	Very High	Relatively High	Very High	Very High	Very High	Very High	Relatively High	Relatively Moderate	Very High	Relatively High
Lillington	Very High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High

Jurisdiction	Drought	Extreme Heat / Heat Wave	Hurricane and Tropical Storm	Severe Weather			Tornado	Winter Storm	Ice Storm	Earthquake	Flood	Wildfire
				Hail	Lightning	Strong Wind						
Area outside Jurisdictional Boundaries	Very High	Relatively High	Very High	Relatively High	Very High	Very High	Very High	Very High	Relatively High	Relatively Moderate	Relatively High	Very High
Johnston County	**Very High**	**Relatively Moderate**	**Relatively High**	**Relatively High**	**Relatively Moderate**	**Relatively Moderate**	**Relatively High**	**Very High**	**Relatively High**	**Relatively Low**	**Relatively High**	**Relatively High**
Archer Lodge	Very High	Relatively High	Relatively High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High	Very High	Relatively Moderate	Relatively Low	Relatively High	Relatively Moderate
Benson	Very High	Relatively High	Relatively High	Very High	Relatively High	Relatively High	Relatively High	Very High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High
Clayton	Very High	Relatively High	Relatively High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High	Very High	Relatively High	Relatively Low	Relatively High	Relatively High
Four Oaks	Very High	Relatively Moderate	Relatively High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High	Very High	Relatively Moderate	Relatively Low	Relatively High	Relatively High
Kenly	Very High	Relatively Moderate	Relatively High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High	Very High	Relatively Moderate	Relatively Moderate	Very High	Relatively Moderate
Micro	Very High	Relatively Moderate	Relatively High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High	Very High	Relatively Moderate	Relatively Low	Very High	Relatively Moderate
Pine Level	Very High	Relatively High	Relatively High	Very High	Relatively High	Relatively High	Very High	Very High	Relatively High	Relatively Moderate	Very High	Relatively High
Princeton	Very High	Relatively Moderate	Relatively High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High	Very High	Relatively Moderate	Relatively Low	Very High	Relatively Moderate
Selma	Very High	Relatively Moderate	Relatively High	Very High	Relatively High	Relatively High	Very High	Very High	Relatively High	Relatively Moderate	Relatively High	Relatively High
Smithfield	Very High	Relatively Moderate	Relatively High	Very High	Relatively High	Relatively High	Very High	Very High	Relatively High	Relatively Moderate	Very High	Relatively High
Wilson's Mill	Very High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Very High	Very High	Relatively High	Relatively Moderate	Relatively High	Relatively High

Jurisdiction	Drought	Extreme Heat / Heat Wave	Hurricane and Tropical Storm	Severe Weather			Tornado	Winter Storm	Ice Storm	Earthquake	Flood	Wildfire
				Hail	Lightning	Strong Wind						
Area outside Jurisdictional Boundaries	Very High	Relatively Moderate	Relatively High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High	Very High	Relatively High	Relatively Low	Relatively Moderate	Relatively High
Lee County	**Very High**	**Relatively High**	**Relatively High**	**Very High**	**Relatively High**	**Relatively High**	**Relatively High**	**Very High**	**Relatively High**	**Relatively Moderate**	**Relatively High**	**Relatively High**
Broadway	Very High	Relatively High	Very High	Very High	Very High	Very High	Relatively High	Very High	Relatively High	Relatively Low	Relatively Moderate	Relatively High
Sanford	Very High	Relatively High	Relatively High	Very High	Relatively High	Relatively High	Relatively High	Very High	Relatively High	Relatively Moderate	Relatively High	Relatively High
Areas Outside Jurisdictional Boundaries	Very High	Relatively High	Relatively High	Very High	Very High	Very High	Relatively High	Very High	Relatively High	Relatively Moderate	Relatively High	Very High
Moore County	**Relatively High**	**Relatively High**	**Relatively High**	**Relatively High**	**Relatively High**	**Relatively High**	**Relatively High**	**Very High**	**Relatively High**	**Relatively Moderate**	**Relatively Moderate**	**Very High**
Aberdeen	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Very High	Relatively High	Relatively Moderate	Relatively Moderate	Very High
Cameron	Very High	Relatively High	Very High	Relatively High	Relatively High	Relatively High	Relatively High	Very High	Relatively High	Relatively Moderate	Relatively Moderate	Very High
Carthage	Very High	Relatively High	Very High	Relatively High	Relatively High	Relatively High	Relatively High	Very High	Relatively High	Relatively Moderate	Relatively Moderate	Very High
Foxfire Village	Very High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Relatively High	Very High	Relatively High	Relatively Moderate	Relatively Moderate	Very High
Pinebluff	Very High	Relatively High	Very High	Relatively High	Very High	Very High	Relatively High	Very High	Relatively High	Relatively High	Relatively High	Very High
Pinehurst	Relatively High	Relatively High	Very High	Relatively High	Very High	Very High	Relatively High	Very High	Relatively High	Relatively Moderate	Relatively High	Very High

Jurisdiction	Drought	Extreme Heat / Heat Wave	Hurricane and Tropical Storm	Severe Weather			Tornado	Winter Storm	Ice Storm	Earthquake	Flood	Wildfire
				Hail	Lightning	Strong Wind						
Robbins	Very High	Relatively High	Very High	Very High	Relatively High	Relatively High	Relatively High	Very High	Relatively High	Relatively High	Relatively High	Relatively High
Southern Pines	Relatively High	Relatively High	Relatively High	Relatively High	Very High	Very High	Relatively High	Very High	Relatively High	Relatively Moderate	Relatively Moderate	Very High
Taylortown	Very High	Relatively High	Very High	Relatively High	Very High	Very High	Relatively High	Very High	Relatively High	Relatively High	Relatively High	Very High
Vass	Very High	Relatively High	Very High	Very High	Very High	Very High	Very High	Very High	Very High	Relatively High	Relatively High	Very High
Whispering Pines	Very High	Very High	Relatively High	Relatively High	Very High	Very High	Relatively High	Very High	Relatively High	Relatively Moderate	Relatively High	Very High
Areas Outside Jurisdictional Boundaries	Very High	Relatively Moderate	Relatively High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively Moderate	Relatively High	Relatively Moderate	Relatively Low	Relatively High	Relatively High

SECTION 6: CAPABILITY ASSESSMENT

This section of the Plan discusses the capability of the communities in the Cape Fear Region to implement hazard mitigation activities. It consists of the following four subsections:

- 6.1 What is a Capability Assessment?
- 6.2 Conducting the Capability Assessment
- 6.3 Capability Assessment Findings
- 6.4 Conclusions on Local Capability

6.1 What is a Capability Assessment?

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[1]. As in any planning process, it is essential to determine which goals, objectives, and/or actions are feasible based on an understanding of the agencies or departments' organizational capacity to implement them. A capability assessment helps 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, fiscal resources, and current political climate.

A capability assessment has two primary components: 1) an inventory of a local jurisdiction's relevant plans, ordinances, or programs already in place, and 2) an analysis of its capacity to carry them out. A careful examination of local capabilities will identify any existing gaps, shortfalls, or weaknesses in ongoing government activities that could hinder proposed mitigation activities and potentially exacerbate community hazard vulnerability. A 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 Assessments completed for the Cape Fear Region serve as a critical planning step and an integral part of the foundation for designing an effective hazard mitigation strategy. Coupled with the Risk Assessment, the Capability Assessment helps identify and target meaningful mitigation actions for incorporation in the Mitigation Strategy portion of the Plan. The assessment not only helps establish the goals and objectives the Region will pursue but also ensures they are realistically achievable under existing local conditions.

6.2 Conducting the Capability Assessment

To facilitate the inventory and analysis of local government capabilities within the Cape Fear Region, a detailed Capability Assessment Survey was completed by each participating jurisdiction, based on information found in existing hazard mitigation plans and local government

[1] While the Final Rule for implementing the Disaster Mitigation Act of 2000 does not require a local capability assessment to be completed for local hazard mitigation plans, it is a critical step in developing a mitigation strategy that meets the needs of the region while considering their own unique abilities. The Rule does state that a community's mitigation strategy should be "based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools" (44 CFR, Part 201.6(c)(3)).

websites. The survey questionnaire collected information on a variety of “capability indicators,” such as existing local plans, policies, programs, or ordinances that contribute to or hinder the region’s ability to implement hazard mitigation actions. Other indicators included in the survey were information on a community’s fiscal, administrative, and educational and outreach capabilities, such as access to local budgetary and personnel resources for mitigation. The current political climate, a crucial consideration for any local planning or decision-making process, was also assessed in relation to hazard mitigation.

Participating jurisdictions complete the survey by filling out a local self-assessment, in which communities rate their overall capability for each overarching indicator (Planning & Regulatory, Administrative & Technical, Fiscal, Political, and Education & Outreach) as well as their overall ability to implement mitigation activities, categorized as either Limited, Moderate, or High. Lastly, communities rate their jurisdiction’s overall capability to implement mitigation actions on a scale of one through ten. While these classifications are designed to provide nothing more than a general assessment of local government capability, the results of the capability assessments provide critical information for developing an effective and meaningful mitigation strategy. Survey results provide an extensive inventory of existing local plans, ordinances, programs, and resources, and identify gaps, weaknesses, or conflicts that counties and local jurisdictions can recast as opportunities for specific actions to be proposed as part of the hazard mitigation strategy.

6.3 Capability Assessment Findings

The findings of the Capability Assessments are summarized in this Plan to provide insight into the jurisdictions in the Cape Fear Region's capacity to implement hazard mitigation activities. All information is primarily based on the Capability Assessment Survey and supplemented by reviews of existing hazard mitigation plans, local government websites, and input from local government officials during meetings of the Cape Fear Regional Hazard Mitigation Planning Team. Each category of the Capability Assessment also includes a section named “Community Notes,” which includes formatted, free-response statements provided by participating jurisdictions. These Community Notes allow jurisdictions to highlight any information not captured by the standardized Capability Assessment Survey. Specifically, many of the responding jurisdictions used the Community Notes to identify areas of their communities' mitigation capabilities they would like to expand or improve. By identifying these points for future improvement early in the planning process, the participating jurisdictions were then able to translate those gaps into mitigation actions to address and track desired growth in their hazard mitigation capabilities.

All relevant local and regional planning mechanisms, including comprehensive land use plans, floodplain management plans, stormwater ordinances, and other regulatory and programmatic tools, were reviewed and incorporated into the Cape Fear Regional Hazard Mitigation Plan through the Capability Assessment process. Participating jurisdictions identified whether these mechanisms were in place, assessed their effectiveness in addressing hazard risk, and provided information on how each supports hazard mitigation, risk reduction, and community resilience. Data and policies from these existing mechanisms informed both the Risk Assessment, by identifying known hazards, vulnerable assets, and previously documented impacts, and the Mitigation Strategy, by capturing previously planned but unimplemented

actions. The integration of these existing plans and ordinances ensures that the regional mitigation strategy builds on established local frameworks and aligns ongoing hazard mitigation efforts with broader land-use, environmental protection, and infrastructure investment objectives. Table 6-1 captures the types of planning mechanisms participating jurisdictions identified through the Capability Assessment Survey, the parts of the Plan they support, and what the Planning Committee sought to incorporate from those mechanisms.

***Table 6-1**: Existing Plans, Studies, Reports, and Technical Information Reviewed for and Incorporated into the Cape Fear Regional Hazard Mitigation Plan*

Planning Mechanism	What It Supports	What to Look For
Comprehensive Land Use Plan	Risk Assessment; Capability Assessment	Information on hazards, development trends, goals and policies, land use plans, and ordinances that support risk reduction
Floodplain Management Plan	Risk Assessment; Mitigation Strategy	Identification of flood-prone areas, mitigation priorities, and recommended flood-hazard reduction measures
Open Space Management Plan	Mitigation Strategy; Capability Assessment	Protected lands that provide flood storage or ecological benefits; policies for maintaining or expanding open space in flood-prone areas
Stormwater Management Ordinance	Risk Assessment; Capability Assessment	Regulations addressing drainage, runoff reduction, low-impact development, and infrastructure to reduce localized flooding
Natural Resource Protection Plan	Mitigation Strategy; Capability Assessment	Conservation goals; identification of wetlands, riparian buffers, and other natural systems that support hazard mitigation
Flood Response Plan	Risk Assessment; Planning Process	Procedures for flood monitoring, emergency response, communication, and resource deployment during flood events
Emergency Operations Plan	Risk Assessment; Capability Assessment	Data on hazards or events of concern and community vulnerabilities; coordination protocols and response responsibilities
Continuity of Operations Plan	Capability Assessment; Planning Process	Identification of critical facilities, backup procedures, and protection measures to maintain essential operations during disasters
Evacuation Plan	Planning Process; Risk Assessment	Evacuation routes, at-risk populations, special needs considerations, and coordination with transportation agencies
Disaster Recovery Plan	Planning Process; Mitigation Strategy	Post-disaster rebuilding policies, recovery priorities, and integration of long-term mitigation objectives
Capital Improvements Plan	Mitigation Strategy; Capability Assessment	Planned infrastructure investments that reduce hazard risks or address repetitive loss facilities
Economic Development Plan	Planning Process; Risk Assessment; Mitigation Strategy	Existing partners, priority growth areas, and industries; strategies for resilient economic development and risk reduction
Historic Preservation Plan	Risk Assessment; Mitigation Strategy	Inventory of historic assets at risk; strategies for protecting historic properties and cultural resources from hazards

Planning Mechanism	What It Supports	What to Look For
Flood Damage Prevention Ordinance	Risk Assessment; Capability Assessment	Floodplain development standards, elevation requirements, permitting procedures, and National Flood Insurance (NFIP) compliance measures
Zoning Ordinance	Risk Assessment; Capability Assessment	Land use designations, density limits, overlay zones, and standards that minimize development in hazard-prone areas
Subdivision Ordinance	Risk Assessment; Mitigation Strategy	Design standards for drainage and infrastructure; site-planning requirements that minimize exposure to flood hazards
Unified Development Ordinance	Capability Assessment; Mitigation Strategy	Consolidated zoning, subdivision, and floodplain regulations that promote hazard-resilient growth and risk reduction
Post-Disaster Redevelopment Plan	Planning Process; Mitigation Strategy	Strategies for rebuilding safer and stronger; policies integrating mitigation into reconstruction and long-term recovery
Building Code	Risk Assessment; Capability Assessment	Construction standards that reduce vulnerability to floods, wind, and other hazards; adoption and enforcement details
Fire Code	Risk Assessment; Capability Assessment	Fire-resistant design standards, evacuation routes, and coordination with emergency response plans

6.3.1 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 responsibly while maintaining the community's general welfare. It includes emergency response and mitigation planning, comprehensive land use planning, and transportation planning; the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed, and structures are built; and the protection of environmental, historic, and cultural resources in the community. Although conflicts can arise, these planning initiatives generally offer significant opportunities to integrate hazard mitigation principles and practices into local decision-making. This assessment provides a general overview of the key planning and regulatory tools and programs in place or under development for the jurisdictions in the Cape Fear Region. This information will help identify opportunities to address existing gaps, weaknesses, or conflicts with other initiatives, as well as assist in integrating the implementation of this Plan with existing planning mechanisms, where appropriate.

Local jurisdictions can expand their planning and regulatory capabilities by ensuring that hazard mitigation principles are systematically integrated across local and regional plans, ordinances, and policies. This may include strengthening coordination between land use, transportation, stormwater, and environmental planning processes; maintaining consistency between comprehensive plans and hazard mitigation goals; and regularly updating development standards to reflect the latest hazard data and best practices. Jurisdictions could also adopt new ordinances or overlay zones that limit development in high-risk areas and promote resilient building and infrastructure design.

Table 6-2 provides a summary of the relevant local plans, ordinances, and programs already in place or under development for the jurisdictions in the Cape Fear Region. A checkmark (✓) indicates that the given item is currently in place and being implemented. A dash (**–**) indicates that the given item is not included or in place. Each of these local plans, ordinances, and programs should be considered available mechanisms for reviewing and incorporating existing plans, studies, reports, and technical information into the Cape Fear Regional Hazard Mitigation Plan. This will help identify existing data and capabilities that can support the implementation of mitigation strategies.

***Table 6-**2: Relevant Plans, Ordinances, and Programs*

Planning / Regulatory Tool	CHATHAM COUNTY	Goldston	Pittsboro	Siler City	HARNETT COUNTY	Angier	Coats	*Dunn	Erwin	Lillington	JOHNSTON COUNTY	Archer Lodge	Benson	Clayton	Four Oaks	Kenly	Micro	Pine Level	Princeton	Selma	Smithfield	Wilson' s Mills	LEE COUNTY	Broadway	*Sanford	MOORE COUNTY	Aberdeen	Cameron	Carthage	Foxfire Village	Pinebluff	Pinehurst	Robbins	Southern Pines	*Taylortown	Vass	*Whispering Pines
Comprehensive Land Use Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Hazard Mitigation Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Floodplain Management Plan	✓	✓	–	–	–	✓	–	–	✓	–	–	–	–	✓	–	✓	–	–	–	–	–	✓	✓	–	–	–	–	✓	–	–	–	✓	–	–	–	–	–
Open Space Management Plan (Parks & Rec/Greenway Plan)	✓	–	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	✓	–	–	✓	✓	✓	–	✓	–	–	–	–	–	–	✓	–	–	–	–	✓
Stormwater Management Plan/Ordinance	✓	✓	✓	–	✓	✓	✓	✓	–	✓	✓	–	✓	✓	–	–	✓	✓	✓	–	✓	✓	–	–	✓	✓	–	–	–	–	–	✓	–	✓	–	–	✓
Natural Resource Protection Plan	✓	–	✓	–	–	–	–	–	–	✓	–	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓
Flood Response Plan	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Emergency Operations Plan	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Continuity of Operations Plan	✓	–	✓	–	✓	–	–	–	–	✓	✓	–	✓	✓	–	–	–	–	–	–	–	–	✓	–	–	✓	–	–	–	–	–	✓	–	✓	–	–	–
Evacuation Plan	✓	–	✓	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Disaster Recovery Plan	–	–	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–	–

Planning / Regulatory Tool	CHATHAM COUNTY	Goldston	Pittsboro	Siler City	HARNETT COUNTY	Angier	Coats	*Dunn	Erwin	Lillington	JOHNSTON COUNTY	Archer Lodge	Benson	Clayton	Four Oaks	Kenly	Micro	Pine Level	Princeton	Selma	Smithfield	Wilson' s Mills	LEE COUNTY	Broadway	*Sanford	MOORE COUNTY	Aberdeen	Cameron	Carthage	Foxfire Village	Pinebluff	Pinehurst	Robbins	Southern Pines	*Taylortown	Vass	*Whispering Pines
Capital Improvements Plan	✓	–	✓	✓	✓	–	✓	✓	–	✓	✓	–	✓	✓	✓	–	–	–	–	–	✓	✓	✓	–	✓	✓	–	–	–	–	✓	✓	✓	✓	–	–	✓
Economic Development Plan	✓	✓	✓	✓	✓	–	✓	✓	–	–	✓	–	✓	✓	–	–	–	–	–	–	✓	–	–	✓	✓	✓	–	–	–	–	–	–	–	✓	–	–	–
Historic Preservation Plan	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–	✓	–	–	–	–	–	✓	–	–	–
Flood Damage Prevention Ordinance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	✓
Zoning Ordinance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Subdivision Ordinance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Unified Development Ordinance	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓	–	–	✓
Post-Disaster Redevelopment	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Building Code	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	✓	✓	✓	✓	✓	✓	✓	✓
Fire Code	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	✓	–	✓	✓	–	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓
National Flood Insurance Program (NFIP)	✓	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	✓
NFIP Community Rating System	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–

**Indicates the planning team used the results of the Capability Assessment Survey from the previous planning cycle for these jurisdictions to populate this table, along with a review of the jurisdictions' websites and other relevant materials, which were completed to supplement/update information not collected from the surveys.*

A more detailed discussion on the region's planning and regulatory capability is provided in the following sections.

6.3.1.1 Community Notes

The bulleted list below captures additional community notes from participating jurisdictions that provide more details on their planning and regulatory capabilities.

- **Chatham County's** evacuation planning efforts focus on the emergency planning zone for the Harris Nuclear Plant.
- The **Town of Pittsboro** maintains a planning and engineering department, including Certified Zoning Officials on staff. The Town relies on Chatham County for building and fire inspections as well as stormwater management and erosion control.
- The **Town of Siler City** regulates building and fire codes under Chatham County's standards.
- The **Town of Angier** is in partnership with Harnett County.
- Due to the **Town of Coats'** small staff size (no full- or part-time planner positions), the Town's planning and regulatory capabilities are limited. The Town is reliant on Harnett County for building and fire code enforcement. The stormwater management and flood damage prevention ordinances are included in the Town's Unified Development Ordinance (last updated in 2022). A revised Comprehensive Land Use Plan was adopted in July 2025. An Economic Development Strategic Plan is currently underway and expected to be adopted in late 2025. The Capital Improvements Plan is not current and will be updated as part of the following fiscal year budget process.
- The **Town of Erwin** is starting to experience some economic and population growth. The Town hired a full-time Town Planner around two years ago and has begun developing additional plans to manage this growth. Erwin has a strong relationship with Harnett County, which provides building inspections, fire code inspections, emergency management services, and economic development. The Town is in the process of completing a Stormwater Management Plan and has also reached out to North Carolina state agencies for assistance with economic development.
- The **Town of Archer Lodge** has a full-time Town Planner, alongside a Town Administrator, who enforces land use regulations and code violations through the Unified Development Ordinance. If situations arise beyond the Town's technical capabilities, Archer Lodge has partnerships with other organizations to support these functions.
- The **Town of Four Oaks** is currently working on a Unified Development Ordinance and has hired a full-time Planning and Zoning Director.
- The **Town of Kenly** has its own planning department, supported by the Central Pines Regional Council.
- The **Town of Micro** has an appointed planning board and board of adjustments, made up of professionals and concerned residents.
- The **Town of Princeton** often partners with Johnston County to assist with permitting and inspections.

- The **Town of Selma** has a planning department, planning board, and town council that are responsible for planning and regulatory functions.
- The **Town of Smithfield** has a planning staff that is well-versed in urban and rural planning, who work with all departments to ensure that development adheres to the Town's Unified Development Ordinance. The Town addresses environmental concerns as they arise and maintains staff for hazard mitigation within our emergency services.
- The **Town of Wilson's Mill** coordinates with Johnston County if a disaster occurs.
- The **Town of Broadway** contracts with the City of Sanford's Planning & Community Development Department for inspections, permitting, planning, and zoning.
- The **Town of Carthage** provides planning and zoning services within the jurisdiction and has a full-time Fire Department.
- The **Town of Pinebluff** is a small town in Moore County with a Town Board and a Planning Board. The Town's Building Code Inspector handles building code inspections within the jurisdiction; however, the Moore County Fire Marshal's Office is responsible for fire code inspections.
- The **Village of Pinehurst** has a fully staffed career Fire Department where the Fire Chief serves as the Emergency Manager. Pinehurst also has a Planning and Inspections Department that oversees zoning, development, historic properties, floodplain management, building code enforcement, and other related duties.
- The **Town of Robbins** has a Fire Chief who serves as the Town's Emergency Response Coordinator.
- The **Town of Southern Pines** regulates development within the town limits and extraterritorial jurisdiction through the Town's Unified Development Ordinance and other local ordinances. The Town's current Planning Department has seven staff members who work closely with the public and developers daily.
- The **Town of Vass** has a limited Land Use Plan that was adopted in 2022, as well as a Gateway Economic Development Plan that covers the area at the intersection of SR 690 and US Hwy 1. The Town also has a zoning ordinance.
- The **Village of Whispering Pines**, in addition to the plans and regulations in place and outlined in the table above, administers a Dams Improvement Plan (2024) that aims to improve the overall function and resilience of eight dam structures identified by the Town.

6.3.1.2 Emergency Management

Hazard mitigation is widely recognized as one of the four primary phases of emergency management. The three other phases include preparedness, response, and recovery. Each phase is interconnected with hazard mitigation, as Figure 6-1 suggests. Opportunities to reduce potential losses through mitigation practices are most often implemented before disaster events occur, such as elevating flood-prone structures or continuously enforcing policies that prevent and regulate development vulnerable to hazards due to its location, design, or other characteristics. Mitigation opportunities will also be presented during immediate preparedness or response activities, such as installing storm shutters in advance of a hurricane, and certainly during the long-term recovery and redevelopment process following a hazard event.



***Figure 6-1**: 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 a result, the Capability Assessment Survey posed several questions across a range of emergency management plans to assess the Cape Fear Region's willingness to perform planning activities and its level of technical planning proficiency.

Hazard Mitigation Plan: A community's hazard mitigation plan serves as its blueprint for reducing the impact of natural and 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.

- Each of the five counties participating in this multi-jurisdictional plan has previously adopted the hazard mitigation plan.

Disaster Recovery Plan: A disaster recovery plan guides the physical, social, environmental, and economic recovery and reconstruction following a disaster. In many instances, hazard mitigation principles and practices are incorporated into local disaster recovery plans to capitalize on opportunities to break the cycle of repetitive disaster losses. Disaster recovery plans can also lead to the preparation of disaster redevelopment policies and ordinances to be enacted following a hazard event.

- Harnett County, the Town of Princeton (Johnston County), and the Town of Southern Pines (Moore County) indicated they have disaster recovery plans, while Moore County is currently developing one. The other jurisdictions should consider creating plans to guide recovery and reconstruction processes following a disaster.

Emergency Operations Plan: An emergency operations plan outlines the responsibilities of staff and departments, as well as the deployment of resources during and following an emergency or disaster.

- Chatham County, Harnett County, Johnston County, Lee County, and Moore County each maintain emergency operations plans through their respective Emergency Management Departments. Each municipality has formally adopted these plans within its respective county.

- The Village of Pinehurst also maintains a village emergency operation plan that is updated annually.

Continuity of Operations Plan: A continuity of operations plan establishes a chain of command, a line of succession, and plans for backup or alternate emergency facilities in the event of an extreme emergency or disaster.

- Chatham County, Harnett County, Johnston County, Lee County, and Moore County each have continuity of operations plans in place. In addition to the participating counties, the Town of Pittsboro (Chatham County), the Town of Lillington (Harnett County), the Town of Benson (Harnett County), the Town of Clayton (Johnston County), the Village of Pinehurst (Moore County), and the Town of Southern Pines indicated that they also have Continuity of Operations Plans in place.

6.3.1.3 General Planning

Implementing 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 other relevant parties. In many instances, concurrent local planning efforts can help achieve or complement hazard mitigation goals, even though they are not explicitly designed to do so. Therefore, the Capability Assessment Survey also asked questions regarding general planning capabilities and the degree to which hazard mitigation is integrated into other ongoing planning efforts in the Cape Fear Region.

Comprehensive Land Use Plan: A comprehensive land use plan establishes the overall vision for a community and serves as a guide for future government decision-making. Typically, a comprehensive plan includes sections on demographics, land use, transportation, and community facilities. Given the broad nature of the plan and its regulatory standing in many communities, integrating hazard mitigation measures into the comprehensive plan can increase the likelihood of achieving risk-reduction goals, objectives, and actions.

- Chatham County and the Town of Cary have adopted a joint land use plan that covers the area located east of Jordan Lake in Chatham County. The county has also adopted a countywide land conservation and development plan, which was signed by the governing boards of Goldston, Pittsboro, and Siler City. Pittsboro and Siler City have also adopted municipal land-use plans.
- Harnett County has adopted a comprehensive land use plan. Each participating municipality in the county has also adopted a land-use or comprehensive plan.
- Johnston County has adopted a comprehensive plan. Each participating municipality has also adopted a land-use or comprehensive plan, except for the Town of Four Oaks.
- Lee County, the City of Sanford, and the Town of Broadway have adopted the Sanford-Lee County 2020 Land Use Plan.
- Moore County has also adopted a land use plan. Each municipality in the county has also adopted a land-use or comprehensive plan.

Capital Improvements Plan: A capital improvements plan guides the scheduling of public improvement spending. A capital improvements plan can serve as an essential 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.

- Chatham County, Pittsboro, and Siler City have capital improvement plans in place.
- Harnett County, Coats, Dunn, and Lillington have capital improvement plans in place.
- Johnston County maintains a tax-supported capital improvement plan. The Towns of Benson, Clayton, Four Oaks, Smithfield, and Wilson's Mills also have capital improvement plans in place.
- Lee County and the City of Sanford both have five-year capital improvement plans.
- Moore County, Pinebluff, Pinehurst, Robbins, Southern Pines, and Whispering Pines also have capital improvement plans.

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 prone to natural hazards, as well as the identification of measures to mitigate future damage. This may involve retrofitting or relocation techniques that account for the need to protect buildings that do not meet current building standards or are located within a historic district that cannot be easily relocated out of harm's way.

- The City of Sanford (Lee County), the Town of Cameron (Moore County), and the Town of Southern Pines (Moore County) are the only participating jurisdictions with Historic Preservation Plans in place.

Zoning Ordinance: Zoning represents the primary means by which local governments control land use. As part of a community's police power, zoning is used to protect the public health, safety, and welfare of those in each 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.

- All the counties and municipalities participating in this plan have adopted zoning ordinances.

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 future development's exposure.

- All the counties and municipalities participating in this plan have adopted subdivision ordinances.

Unified Development Ordinance: A Unified Development Ordinance (UDO) is a single, comprehensive document that consolidates a community's zoning, subdivision, and other land development regulations into a unified set of rules. It is authorized under Chapter 160D of the North Carolina General Statutes, which requires consistency in how local governments regulate land use. The UDO provides clear standards for property development, striking a balance between growth and community priorities such as public safety, infrastructure, and

environmental protection. Consolidating regulations into a single ordinance helps streamline permitting, improve transparency, and ensure consistent decisions across various types of development.

- Every participating jurisdiction has adopted a UDO, except for the Town of Erwin (Harnett County), the Town of Four Oaks (Johnston County), the Town of Cameron (Moore County), the Town of Taylortown (Moore County), and the Town of Vass (Moore County).

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 before and after a disaster, and the enforcement of inspection protocols all affect the level of hazard risk a community faces.

- North Carolina has a state compulsory building code, which applies throughout the state; however, jurisdictions may adopt codes if approved as providing adequate minimum standards. All the participating counties and municipalities have adopted a building code.
- Chatham County Inspections is responsible for building code enforcement within the county, Pittsboro, and Goldston. Siler City enforces its own building code.
- Harnett County Inspections provides building code inspections and enforcement to the county and all municipalities within the county, except for Dunn, which enforces the building code within its jurisdiction.
- Johnston County Building Inspections provides building code enforcement to the unincorporated county as well as the following municipalities: Archer Lodge, Kenly, Micro, Pine Level, Smithfield, and Wilson's Mills. The remaining municipalities administer their own building code enforcement.
- Sanford/Lee County Inspections Services provides building code inspection services for Sanford, Broadway, and Lee County.
- Moore County Inspections provides building inspection services to the county and all municipalities except Aberdeen, Pinehurst, Southern Pines, and Pinebluff, which administer their own building code enforcement.

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).[2] In North Carolina, the North Carolina Department of Insurance assesses the building codes in effect in a particular community and the community's enforcement of those codes, *with a special emphasis on mitigating losses from natural hazards*. The results of BCEGS assessments are routinely provided to ISO's member private insurance companies, which, in turn, may offer rating credits for new buildings constructed in communities with strong BCEGS classifications. The concept 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.

[2] Participation in BCEGS is voluntary and may be declined by local governments if they do not wish to have their local building codes evaluated.

During the assessment, ISO collects information on personnel qualifications and continuing education, as well as the number of inspections conducted daily. This type of information, combined with local building codes, is used to determine a grade for that jurisdiction. The grades range from one to ten, with a BCEGS grade of one representing exemplary commitment to building code enforcement and a grade of ten indicating less than minimum recognized protection.

6.3.1.4 Floodplain Management

Flooding represents the most significant natural hazard facing the nation. At the same time, the tools available to reduce the impacts of flooding are among the most developed hazard-specific mitigation techniques. In addition to approaches that address hazards across various sectors, such as education, outreach, and training for local officials, the *National Flood Insurance Program* (NFIP) includes specific regulatory measures that enable government officials to determine where and how growth occurs in relation to flood hazards. Participation in the NFIP is voluntary for local governments; however, the Federal Emergency Management Agency (FEMA) strongly encourages local governments to participate as a first step in implementing and sustaining an effective hazard mitigation program. It is therefore used in this assessment as a key indicator of local capability.

For a county or municipality to participate in the NFIP, it must adopt a local flood damage prevention ordinance that requires adherence to established minimum building standards within the floodplain. These standards require that all new buildings and substantial improvements to existing buildings will be protected from damage by a 100-year flood event, and that new development in the floodplain will 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 a crucial source of information for educating residents, government officials, and the private sector about the likelihood of flooding in their community.

The jurisdictions of Goldston (Chatham County) and Broadway (Lee/Harnett County) participate in the National Flood Insurance Program; however, neither has land in the Special Flood Hazard Area. Taylortown (Moore County) does not participate in the National Flood Insurance Program, despite having an effective Flood Insurance Rate Map issued by FEMA. This means that while mapped flood hazard areas exist within the Town's jurisdiction, Taylortown has not adopted or enforced the floodplain management regulations required for NFIP participation. As a result, property owners in Taylortown are ineligible to purchase federally backed flood insurance, and the town is not eligible for certain forms of federal disaster assistance related to flooding. Communities may choose not to participate in the NFIP for a variety of reasons, such as limited administrative capacity to enforce floodplain regulations, a lack of perceived flood risk or development pressure in mapped areas, or the belief that participation may impose additional permitting and regulatory responsibilities on local government staff. Table 6-3 provides NFIP policy and claim information for each participating jurisdiction in the Cape Fear Region.

Table 6-3: *NFIP Policy and Claim Information*

Jurisdiction	Date Joined NFIP[3]	Current Effective Map Date[3]	NFIP Policies in Force	Insurance in Force	Written Premium in Force	Closed Losses	Total Payments
Chatham							
Chatham County (Unincorporated Area)	05/19/1978	07/19/2022	139	$45,366,000	$100,227	15	$765,482
Town of Goldston	02/02/2007	No SFHA	-	-	-	-	-
Town of Pittsboro	10/20/1978	11/17/2017	32	$9,584,000	$29,143	14	$267,578
Town of Siler City	02/15/1974	11/17/2017	25	$5,096,000	$16,127	8	$157,020
Subtotal Chatham	**-**	**-**	**196**	**$60,046,000**	**$145,497**	**37**	**$1,190,079**
Harnett							
Harnett County (Unincorporated Area)	08/18/1978	07/19/2022	275	$83,492,000	$229,599	79	$1,702,793
Town of Angier	08/18/1978	07/19/2022	17	$4,850,000	$14,121	2	$0
Town of Coats	-	-	-	-	-	-	-
City of Dunn	09/09/1977	07/17/2007	54	$15,039,000	$43,561	23	$373,436
Town of Erwin	04/16/1990	07/17/2007	18	$4,827,000	$17,579	4	$220,172
Town of Lillington	05/05/1978	07/17/2007	9	$2,712,000	$7,160	1	$7,617
Subtotal Harnett	**-**	**-**	**373**	**$110,920,000**	**$312,020**	**109**	**$2,304,018**
Lee							
Lee County (Unincorporated Area)	06/30/1978	11/17/2017	76	$20,955,000	$83,966	28	$624,010
Town of Broadway	09/06/2006	No SFHA	4	$1,278,000	$2,126	1	$20,240
City of Sanford	04/15/1977	02/02/2007	58	$17,493,000	$85,877	24	$331,283
Subtotal Lee	**-**	**-**	**138**	**$39,726,000**	**$171,969**	**53**	**$975,533**
Johnston							
Johnston County (Unincorporated Area)	01/03/1975	07/19/2022	275	$85,987,000	$201,627	106	$3,537,039
Town of Clayton	12/28/1973	07/19/2022	69	$22,357,000	$51,781	10	$54,755
Town of Four Oaks	10/20/2000	06/20/2018	21	$5,768,000	$21,297	8	$72,325
Town of Kenly	-	-	4	$1,208,000	$2,835	6	$158,525

[3] **Source**: FEMA's NFIP Community Status Book – v1 (10/06/2025)

Jurisdiction	Date Joined NFIP[3]	Current Effective Map Date[3]	NFIP Policies in Force	Insurance in Force	Written Premium in Force	Closed Losses	Total Payments
Town of Micro	10/20/2000	06/20/2018	3	$608,000	$4,667	0	$0
Town of Pine Level	10/20/2000	06/20/2018	7	$2,054,000	$4,031	1	$4,490
Town of Princeton	01/03/1975	06/20/2018	4	$1,065,000	$2,621	3	$105,336
Town of Selma	10/20/2000	06/20/2018	36	$11,718,000	$32,695	5	$158,814
Town of Smithfield	10/29/1976	06/20/2018	121	$34,759,000	$134,826	153	$7,472,856
Town of Wilson's Mills	10/20/2000	06/20/2018	6	$1,780,000	$4,551	0	$0
Subtotal Johnston	**-**	**-**	**546**	**$167,304,000**	**$460,931**	**292**	$11,564,140
Moore							
Moore County (Unincorporated Area)	10/13/1978	11/17/2017	234	$65,745,000	$221,167	75	$1,119,801
Town of Aberdeen	11/30/1973	01/02/2008	38	$11,030,000	$48,838	5	$72,895
Town of Cameron	12/15/1989	01/02/2008	-	-	-	-	-
Town of Carthage	10/17/2006	01/02/2008	2	$552,000	$1,072	0	$0
Village of Foxfire	12/15/1989	01/02/2008	3	$1,050,000	$1,355	0	$0
Town of Pinebluff	07/11/1975	01/02/2008	1	$350,000	$438	0	$0
Village of Pinehurst	12/15/1989	01/02/2008	117	$36,318,000	$87,033	37	$792,882
Town of Robbins	11/22/1974	01/02/2008	1	$350,000	$435	0	$0
Town of Southern Pines	04/25/1975	01/02/2008	77	$23,705,000	$43,410	14	$85,129
Town of Taylortown	10/13/1978	01/02/2008	-	-	-	-	-
Town of Vass	10/17/2006	01/02/2008	4	$1,400,000	$2,449	2	$79,347
Village of Whispering Pines	12/15/1989	01/02/2008	46	$14,296,000	$52,347	17	$195,910
Subtotal Moore	**-**	**-**	**523**	**$154,796,000**	**$458,544**	**150**	**$2,345,964**
TOTAL PLAN	**-**	**-**	**1776**	**$532,792,000**	**$1,548,961**	**641**	**$18,379,734**

Source: FEMA Flood Insurance Data's HUDEX Report (08/31/2025)

Community Rating System: An additional indicator of floodplain management capability is the active participation of local jurisdictions in the Community Rating System (CRS). The CRS is an incentive-based program that encourages counties and municipalities to undertake defined flood

mitigation activities that exceed the minimum requirements of the NFIP by implementing additional local measures to reduce the impacts of flooding. All 19 creditable CRS mitigation activities are assigned point values. As points accumulate and thresholds are met, communities can apply for an improved CRS class rating. Class ratings, which range from ten to one, are tied to flood insurance premium reductions, as shown in Table 6-4. As class ratings improve (with lower numbers indicating better ratings), the percentage reduction in flood insurance premiums for NFIP policyholders in that community increases.

Table 6-4: *CRS Premium Discounts, By Class*

CRS Class	Premium Reduction
1	45%
2	40%
3	35%
4	30%
5	25%
6	20%
7	15%
8	10%
9	5%
10	0

Source: FEMA

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 undergone significant simplification over the past several years, based on community feedback. Changes have been made to make the CRS more user-friendly and to provide extensive technical assistance to communities that request it.

- Effective April 2025, Whispering Pines is the only jurisdiction that is eligible for the CRS (National Flood Insurance Program - Community Rating System).

Flood Damage Prevention Ordinance: A flood damage prevention ordinance establishes minimum building standards in the floodplain to minimize public and private losses from flooding.

- All communities participating in the NFIP are required to adopt a local flood damage prevention ordinance. All participating counties and municipalities in this hazard mitigation plan, except for Coats (Harnett County) and Taylortown (Moore County), participate in the NFIP and have flood damage prevention ordinances in place.
- Vass has an Interlocal Agreement, passed by Resolution, with Moore County, where the Town contracts with the County to use the services of the County to administer the Town's ordinance within the corporate limits and extra-territorial jurisdiction of the Town.

- Micro has adopted Johnston County's Flood Damage Prevention Ordinance by Resolution.
- Coats adopted a Flood Damage Prevention Ordinance in 2022 and submitted an NFIP enrollment package to FEMA Region 4 on July 11, 2025. The jurisdiction is still waiting for an enrollment letter from FEMA, which means Coats is not participating in the NFIP at the time of this plan update (2026).

Floodplain Management Plan: A floodplain management plan (also known as a flood mitigation plan) provides a framework for implementing preventive and corrective measures to reduce flood-related impacts.

- Chatham County, Goldston (Chatham County), Angier (Harnett County), Erwin (Harnett County), Clayton (Johnston County), Kenly (Johnston County), Wilson's Mills (Johnston County), Lee County, Cameron (Moore County), and Pinehurst (Moore County) indicated on the Capability Assessment Survey that they have adopted floodplain management plans.

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 align with the goal of reducing hazard losses, such as preserving wetlands or other flood-prone areas in their natural state for perpetuity.

- Chatham County has adopted a comprehensive parks and recreation master plan, which the Town of Pittsboro has also adopted.
- Harnett County has adopted a comprehensive recreation and parks system-wide master plan that includes all its municipalities. The City of Dunn and the Town of Lillington have also adopted municipal-level parks and recreation plans.
- Johnston County has adopted a county-wide parks and recreation master plan. The Towns of Archer Lodge, Benson, Clayton, Four Oaks, Pine Level, and Wilson's Mills indicated on the Capability Survey that they already have municipal parks and recreation plans in place. Johnston County, Clayton, and Smithfield have also developed a master plan for the county's portion of the Mountains-to-Sea Trail.
- Lee County has a parks and recreation master plan that the City of Sanford also adopted.
- Moore County does not have an open space management plan in place; however, Pinehurst and Whispering Pines have adopted parks, recreation, greenway, and/or open space plans.

Stormwater Management Plan: A stormwater management plan is designed to address flooding associated with stormwater runoff. The stormwater management plan typically focuses on design and construction measures to mitigate the impact of minor urban flooding, which occurs more frequently.

- The following jurisdictions have adopted stormwater management regulations through various local ordinances: Chatham County, Goldston, Pittsboro, Harnett County, Angier,

Coats, Dunn, Lillington, Johnston County, Benson, Clayton, Micro, Pine Level, Princeton, Smithfield, Wilson's Mills, Sanford (Lee County), Moore County, Pinehurst, Southern Pines, and Whispering Pines.

6.3.2 Administrative and Technical Capability

The ability of a local government to develop and implement mitigation projects, policies, and programs is directly tied to its capacity to allocate staff time and resources for this purpose. Administrative capability can be evaluated by determining how mitigation-related activities are assigned to local departments and whether there are adequate personnel resources to complete them. The degree of intergovernmental coordination among departments will also impact the administrative capability to implement and achieve the success of proposed mitigation activities.

Technical capability can generally be evaluated by assessing the level of knowledge and technical expertise of local government employees, such as personnel skilled in using Geographic Information Systems (GIS) to analyze and assess community vulnerability to hazards. The Capability Assessment Survey was used to gather information on administrative and technical capabilities by identifying available staff and personnel resources.

Counties and municipalities can improve their administrative and technical capabilities by expanding staff expertise, resources, and interdepartmental coordination to implement mitigation activities. This includes enhancing technical proficiency in areas such as mapping, data management, engineering, emergency management, and grant administration. Jurisdictions may also strengthen coordination among planning, public works, and emergency management staff, participate in regional partnerships, and seek state or federal technical assistance to improve the analysis and execution of mitigation actions.

Table 6-5 provides a summary of the capability assessment results for the Cape Fear Region, specifically regarding relevant staff and personnel resources. A checkmark (✓) indicates the presence of a staff member(s) in that jurisdiction with the specified knowledge or skill. A dash (**–**) indicates that the given item is not included or in place.

Table 6-5: *Relevant Staff / Personnel Resources*

Staff / Personnel Resource	CHATHAM COUNTY	Goldston	Pittsboro	Siler City	HARNETT COUNTY	Angier	Coats	*Dunn	Erwin	Lillington	JOHNSTON COUNTY	Archer Lodge	Benson	Clayton	Four Oaks	Kenly	Micro	Pine Level	Princeton	Selma	Smithfield	Wilson' s Mills	LEE COUNTY	Broadway	*Sanford	MOORE COUNTY	Aberdeen	Cameron	Carthage	Foxfire Village	Pinebluff	Pinehurst	Robbins	Southern Pines	*Taylortown	Vass	*Whispering Pines
Planners with knowledge of land development / 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	–	✓	✓	✓	✓	✓	–	✓	–	✓	✓	–	–	✓	–	–	–	–	✓	✓	–	✓	–	–	✓	✓	✓	✓	–	–	–	✓	✓	✓	–	–	✓
Emergency Manager	✓	–	✓	–	✓	–	–	✓	–	–	✓	–	–	✓	✓	–	✓	✓	✓	✓	✓	–	✓	✓	✓	✓	✓	–	–	–	✓	✓	✓	✓	✓	–	✓
Floodplain Manager	–	–	–	✓	✓	–	–	✓	–	✓	✓	✓	–	✓	✓	–	✓	✓	✓	–	✓	✓	✓	–	✓	✓	✓	–	–	✓	–	✓		✓	✓	–	✓
Land Surveyors	✓	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–	–	–	–	–	–	–	–
Scientists familiar with the hazards of the community	–	–	–	–	✓	–	–	✓	–	–	–	–	–	–	✓	–	–	✓	–	–	✓	–	–	–	✓	✓	–	–	–	–	–	✓	–	–	✓	–	✓
Staff with education or expertise to assess the community's vulnerability to hazards	–	–	✓	–	✓	✓	–	✓	✓	✓	✓	–	–	–	✓	–	✓	✓	✓	–	✓	✓	–	–	✓	✓	–	–	✓	–	✓	✓	✓	✓	✓	–	✓

Staff / Personnel Resource	CHATHAM COUNTY	Goldston	Pittsboro	Siler City	HARNETT COUNTY	Angier	Coats	*Dunn	Erwin	Lillington	JOHNSTON COUNTY	Archer Lodge	Benson	Clayton	Four Oaks	Kenly	Micro	Pine Level	Princeton	Selma	Smithfield	Wilson's Mills	LEE COUNTY	Broadway	*Sanford	MOORE COUNTY	Aberdeen	Cameron	Carthage	Foxfire Village	Pinebluff	Pinehurst	Robbins	Southern Pines	*Taylortown	Vass	*Whispering Pines
Personnel skilled in GIS and/or HAZUS	✓	–	✓	✓	✓	✓	✓	–	–	✓	✓	–	–	✓	–	–	–	✓	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	–	–	–	✓	–	✓	–	–	–
Resource development staff or grant writers	✓	–	✓	–	✓	✓	–	–	–	✓	✓	✓	✓	✓	–	–	–	–	✓	–	✓	✓	✓	–	–	–	–	✓	✓	–	✓	–	–	✓	–	✓	–

**Indicates the planning team used the results of the Capability Assessment Survey from the previous planning cycle for these jurisdictions to populate this table, along with a review of the jurisdictions' websites and other relevant materials, which were completed to supplement/update information not collected from the surveys.*

Credit for having a floodplain manager was given to those jurisdictions that have a flood damage prevention ordinance and, therefore, an appointed floodplain administrator, regardless of whether the appointee was dedicated solely to floodplain management. Credit was given for having a scientist familiar with the community's hazards if a jurisdiction has a Cooperative Extension Service or a Soil and Water Conservation Department. Credit was also given for having staff with education or expertise to assess the community's vulnerability to hazards, if a staff member from the jurisdiction was a member of the existing hazard mitigation planning committee.

6.3.2.1 Community Notes

- The **Town of Siler City** has staff trained in land use and development, two floodplain administrators (not certified), and staff capable of working in GIS. The Town uses on-call engineers for hazard/flood mitigation.
- **Harnett County** departments and municipalities within the county often collaborate to meet the needs of their communities. The following personnel are the three primary county representatives.
    - Jay Sikes, Assistant Director of Development Services/Manager of Planning Services
    - Lynn Lambert, Natural Resources Director/Conservation Education Coordinator
    - Zach Shean, Emergency Management Coordinator
- The **Town of Coats** utilizes an outside engineering firm for construction management. The Town Manager has planning experience in another state, and the Town also contracts with an outside firm to provide planning, zoning, and permitting support.
- The **Town of Erwin** has hired a Town Planner to help with the economic and population growth they are experiencing. The town manager has handled the impacts of Hurricane Matthew and Hurricane Florence and has some experience obtaining hazard mitigation grant funding. The Town feels confident it can handle these tasks when needed.
- The **Town of Lillington** is still small in terms of operational staff. In the event of an emergency response, all Town departments would assist. The Town Manager serves as the point of contact for operational management. Engineering & Public Works is the primary department tasked with assessing damage or deficiencies. The Planning Department assesses risk during development activities to help prevent losses and mitigate environmental impacts. During a disaster, the Administration Department would be tasked with updating the public with news and information.
- The **Town of Archer Lodge** has a Town Administrator and a Town Planner who are primarily responsible for planning and regulatory functions. If those capabilities are beyond their expertise, the Town has partnerships with other organizations to help in these functions. The Town also contracts with individuals and companies that assist in these duties.
- The **Town of Four Oaks** currently has a Grant Administrator and a full-time Planning and Zoning Director.
- The **Town of Kenly's** Town Manager is Tony Sears, and Janie Holland serves as Planner I.

- The **Town of Micro** contracts with Municipal Engineering for engineering services. Marty Parnell serves as the Town's Mayor, and Jason Banks serves as the Public Works Director and the Emergency and Floodplain Manager.
- The **Town of Broadway** contracts with the City of Sanford's Planning & Community Development for inspections, permitting, planning, and zoning.
- The **Town of Carthage** maintains Fire and Police Departments, as well as a Public Works Department to help with repairs caused by natural hazards.
- The **Town of Micro** contracts with Municipal Engineering for engineering services. Marty Parnell serves as the Town's Mayor, and Jason Banks serves as the Public Works Director and the Emergency and Floodplain Manager.
- The **Town of Pine Level's** Interim Town Administrator is Sharon Evans. The Town's Zoning Administrator is currently Scottie Hayes, and the Town Clerk is Ashley Willoughby.
- The **Town of Smithfield** utilizes its Planning & Zoning Departments as well as the Fire Department. For larger issues, such as hazard mitigation, the Town defers to the County for aid and assistance.
- The **Town of Pinebluff** has a Police Department and a Fire Department with staff trained in multiple disciplines: fire, rescue, emergency medical services (EMS), hazardous materials (HAZMAT) at the operations level, and basic water rescue. The Town has the following administrative and technical capabilities:
    - Mayor & Town Board (5 Commissioners)
    - Town Administrator
    - Finance Officer
    - Town Clerk/Tax Collector
    - 3-PT Customer Service Staff at Town Hall
    - Fire Chief/Assistant Town Administrator
    - Deputy Fire Chief
    - Four Fire Captains (three full-time, one part-time)
    - 18 Firefighters (part-time)
    - Four Volunteers
    - The Fire Department has 24-hour staffing with two full-time personnel on duty 24/7/365 at a minimum.
    - Police Chief
    - Deputy Police Chief
    - Two Police Sergeants
    - Two Police Officers
    - Public Works Supervisor
    - Assistant Public Works Supervisor
    - Three Public Works Staff

- The **Village of Pinehurst** has a staff of approximately 14 people in its Planning and Inspections Office, and the Town's Fire Department is staffed with 40 employees, which include Fire Inspectors and the Emergency Manager. The Village also has a full-time GIS Analyst on staff.
- The **Town of Robbins** has a full-time Town Manager with military emergency response and inter-agency coordination training.
- The **Town of Southern Pines** uses a combination of staff from both the Planning Department and its Engineering Department to manage and develop mitigation plans.
- The **Town of Vass's** staff/personnel are all contracted on a part-time as-needed basis, including the Town Planner.

6.3.2.2 Floodplain Managers

While local staffing changes are common in many communities, the following table highlights the Floodplain Administrators as of October 2025, along with their contact information for participating jurisdictions that completed this question in the Capability Assessment Survey.

***Table 6-6**: Floodplain Administrators reported by participating jurisdictions*

Jurisdiction	Floodplain Manager Name	Title	Email Address
Chatham County	–	–	–
Goldston	–	–	–
Pittsboro	–	–	rcahoon-tingle@pittsboronc.gov
Siler City	Tim Mack	–	tmack@silercity.gov
	Tim Garner	–	tgarner@silercity.gov
Harnett County	Jay Sikes	–	jsikes@harnett.org
Angier	Jeff Jones	–	jajones@angier.org
Coats	–	–	–
Dunn	–	–	–
Erwin	Dylan Eure	–	deure@erwin-nc.org
Lillington	Landon Chandler	–	ltchandler@lillingtonnc.org
Johnston County	Braston Newton	–	braston.newton@johnstonnc.gov
Archer Lodge	Jason Kress	–	jason.kress@archerlodgenc.gov
Benson	–	–	–
Clayton	Kinsey Holton	–	kholton@townofclaytonnc.org
Four Oaks	James Bryan	Public Works Director	james.bryan@fouroaks-nc.com
Kenly	–	–	–
Micro	Marty Parnell	–	martyparnell@gmail.com
	Jason Banks	Public Works Director	publicworksdirector@townofmicro.com
Pine Level	Scottie Hayes	Zoning Administrator	s.hayes@pinelevel.org
Princeton	–	–	b.thompson@myprincetonnc.com
Selma	–	–	–

Smithfield	Stephen Wensman	–	stephen.wensman@smithfield-nc.com
Wilson's Mill	Wendy Oldham	–	woldham@wilsonsmillsnc.org
Lee County	Amy McNeill	Senior Planner (City of Sanford)	–
Broadway	–	–	–
Sanford	Amy McNeill	Senior Planner	–
Moore County	Chuck Hill	–	chill@moorecountync.gov
Aberdeen	Phillip Richardson	–	prichardson@townofaberdeen.net
Cameron	–	–	cameronnc@townofcameron.com
Carthage	–	–	–
Foxfire Village	Lisa Kivett	–	–
Pinebluff	–	–	–
Pinehurst	Michael Mandeville	–	mmandeville@vopnc.org
Robbins	–	–	manager@townofrobbins.com
Southern Pines	James Michel	–	michel@southernpines.net
Taylortown	–	–	–
Vass	–	–	–
Whispering Pines	–	–	–

6.3.3 Fiscal Capability

A local government's ability to act is often closely tied to the funds available to implement policies and projects. This may take the form of external 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 primarily tied to staff time or to administrative costs associated with the creation and monitoring of a specific program. In other instances, direct expenses are linked to a particular project, such as the acquisition of flood-prone homes, which may require substantial commitments from local, state, and federal funding sources.

Local governments can strengthen fiscal capabilities by diversifying funding sources and integrating hazard mitigation into long-term financial planning. This may involve pursuing additional state and federal grant opportunities, establishing local funding mechanisms to support preparedness and resilience, and incorporating mitigation priorities into annual budgets or capital improvement programs. Jurisdictions can also explore cost-sharing arrangements, regional funding collaborations, and partnerships with private or nonprofit organizations to sustain mitigation projects and improve financial readiness for future resilience investments.

The Capability Assessment Survey was used to capture information on the region's fiscal capability by identifying locally available financial resources. Table 6-7 provides a summary of the results for the Cape Fear Region concerning relevant fiscal resources. A checkmark (✓) indicates that the given fiscal resource is locally available for hazard mitigation purposes (including match funds for state and federal mitigation grant funds) according to the previous county hazard mitigation plans. A dash (**–**) indicates a jurisdiction has not implemented an item.

Table 6-7: *Relevant Fiscal Resources*

Fiscal Tool / Resource	CHATHAM COUNTY	Goldston	Pittsboro	Siler City	HARNETT COUNTY	Angier	Coats	*Dunn	Erwin	Lillington	JOHNSTON COUNTY	Archer Lodge	Benson	Clayton	Four Oaks	Kenly	Micro	Pine Level	Princeton	Selma	Smithfield	Wilson's Mills	LEE COUNTY	Broadway	*Sanford	MOORE COUNTY	Aberdeen	Cameron	Carthage	Foxfire Village	Pinebluff	Pinehurst	Robbins	Southern Pines	*Taylortown	Vass	*Whispering Pines
Capital Improvement Programming	✓	–	✓	✓	✓	–	✓	✓	✓	✓	✓	–	✓	✓	✓	–	–	✓	–	✓	✓	–	✓	✓	✓	✓	✓	–	–	–	✓	✓	✓	✓	✓	–	✓
Community Development Block Grants (CDBG)	✓	–	–	✓	✓	–	–	✓	–	✓	✓	–	✓	–	✓	–	–	–	–	✓	✓	–	–	–	✓	✓	–	–	–	–	–	–	✓	✓	✓	–	✓
Special Purpose Taxes (or taxing districts)	✓	–	–	–	✓	–	–	✓	–	–	–	✓	–	–	✓	–	–	✓	–	–	✓	–	–	–	✓	✓	–	–	–	–	–	–	–	✓	✓	–	✓
Gas / Electric Utility Fees	✓	–	–	–	–	–	–	–	–	–	–	–	✓	✓	–	–	–	–	–	✓	✓	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Water / Sewer Fees	✓	✓	–	–	✓	✓	✓	–	–	✓	✓	–	✓	✓	–	✓	✓	✓	✓	✓	✓	✓	✓	–	–	✓	–	✓	✓	✓	✓	–	✓	✓	–	–	–
Stormwater Utility Fees	–	–	–	–	✓	–	–	–	✓	–	–	–	✓	–	–	–	–	–	✓	–	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	–	–
Development Impact Fees	–	–	✓	–	✓	–	–	–	–	✓	–	✓	✓	✓	–	–	–	✓	–	✓	✓	–	✓	–	–	–	–	–	–	–	–	✓	✓	–	–	–	–
General Obligation, Revenue, and/or Special Tax Bonds	–	–	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–	–

Fiscal Tool / Resource	CHATHAM COUNTY	Goldston	Pittsboro	Siler City	HARNETT COUNTY	Angier	Coats	*Dunn	Erwin	Lillington	JOHNSTON COUNTY	Archer Lodge	Benson	Clayton	Four Oaks	Kenly	Micro	Pine Level	Princeton	Selma	Smithfield	Wilson's Mills	LEE COUNTY	Broadway	*Sanford	MOORE COUNTY	Aberdeen	Cameron	Carthage	Foxfire Village	Pinebluff	Pinehurst	Robbins	Southern Pines	*Taylortown	Vass	*Whispering Pines
Partnering Arrangements or Intergovernmental Agreements	–	–	–	–	✓	–	–	✓	–	–	–	–	–	–	–	–	–	✓	–	–	✓	–	–	–	✓	–	–	–	–	–	–	–	–	✓	✓	–	✓
Other: PDM, FMAP, HMGP, PA, SBA, and other Federal and state funding sources, etc.	–	–	–	–	–	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–	–	✓	–	–	–	–	–	–	–	–	–	✓	–	✓

**Indicates the planning team used the results of the Capability Assessment Survey from the previous planning cycle for these jurisdictions to populate this table, along with a review of the jurisdictions' websites and other relevant materials, which were completed to supplement/update information not collected from the surveys.*

6.3.3.1 Community Notes

- The **Town of Siler City** has a yearly Capital Improvement Program and is currently administering a Community Development Block Grant. The Town's trash bill is included with a property's tax bill. Water/sewer bills are no longer collected or managed by the Town.
- **Harnett County's** approved fees start on page 274 of its budget document.
- The **Town of Coats'** Capital Improvements Program is out of date but will be updated in the next fiscal year.
- The **Town of Erwin** has a stormwater utility fee. The Town is considering changing the rate structure for the next Fiscal Year, once the Town's Stormwater Management Plan is completed.
- The **Town of Lillington** has fees associated with reviews, utility development, and recreation.
- The **Town of Archer Lodge** sets aside tax revenues that directly impact parks and open space preservation.
- The **Town of Four Oaks** works closely with a grant administrator to help with funding.
- The **Town of Micro** has an appointed finance officer and works closely with the Central Pines Council of Government.
- The **Town of Pine Level's** Department of Administration is responsible for fiscal capabilities.
- The **Town of Smithfield's** department heads are well versed in setting fees and establishing fiscal policy. The Finance Department Director is a Certified Public Administrator and works with all other staff to ensure that policies are followed and in line with General Statutes. Grants are administered according to the rules established by the program that awards them.
- The **Town of Carthage** has considered starting a Capital Improvement Program but does not currently administer one.
- The **Town of Pinebluff** employs one Finance Officer. The Town operates on an annual budget that runs from July 1st to June 30th.
- The **Village of Pinehurst's** primary means of funding is property tax and sales tax. The Town's Finance Department is staffed with five full-time employees. A Village Council, comprised of five elected members, controls taxation and fees.
- The **Town of Robbins** has an Ad Valorem Tax, sales tax, internal water and sewer systems, tapping fees, as well as sewer and water rates.
- The **Town of Southern Pines'** Administration Department manages a Capital Improvements Program. The Town's Planning Department oversees Community Development Block Grants. Fees are established by the Town Council and collected by the Town's Finance Department.

6.3.4 Education & Outreach Capability

This type of local capability refers to education and outreach programs and methods already in place that can be utilized 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 Tornado Awareness Month. Jurisdictions can expand their education and outreach capabilities by developing consistent, inclusive strategies to inform and engage the public about local hazards and mitigation opportunities. This may include incorporating hazard awareness into public communications, community events, and school programs; maintaining accessible online resources; and fostering partnerships with civic groups, businesses, and regional organizations to amplify outreach efforts. Enhancing communication channels before, during, and after disasters can also increase community understanding of risk and support long-term participation in mitigation.

This section of the Capability Assessment summarizes the Plan Area's results for relevant education and outreach resources. A check mark (✓) indicates that the given resource is locally available for hazard mitigation. A dash (**–**) indicates a capability is not in place for the relevant jurisdiction.

***Table 6-8**: Education & Outreach Capability*

Education & Outreach	CHATHAM COUNTY	Goldston	Pittsboro	Siler City	HARNETT COUNTY	Angier	Coats	*Dunn	Erwin	Lillington	JOHNSTON COUNTY	Archer Lodge	Benson	Clayton	Four Oaks	Kenly	Micro	Pine Level	Princeton	Selma	Smithfield	Wilson's Mills	LEE COUNTY	Broadway	*Sanford	MOORE COUNTY	Aberdeen	Cameron	Carthage	Foxfire Village	Pinebluff	Pinehurst	Robbins	Southern Pines	*Taylortown	Vass	*Whispering Pines
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	✓	–	✓	–	✓	–	–	–	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	✓	–	–	✓	–	–	–	–	–	–	–	–	–	–	–

Education & Outreach	CHATHAM COUNTY	Goldston	Pittsboro	Siler City	HARNETT COUNTY	Angier	Coats	*Dunn	Erwin	Lillington	JOHNSTON COUNTY	Archer Lodge	Benson	Clayton	Four Oaks	Kenly	Micro	Pine Level	Princeton	Selma	Smithfield	Wilson's Mills	LEE COUNTY	Broadway	*Sanford	MOORE COUNTY	Aberdeen	Cameron	Carthage	Foxfire Village	Pinebluff	Pinehurst	Robbins	Southern Pines	*Taylortown	Vass	*Whispering Pines
Firewise Communities certification	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	–	–
Public-private partnership initiatives addressing disaster-related issues	–	–	✓	–	✓	✓	–	–	–	–	✓	✓	–	–	–	–	–	–	✓	–	–	–	–	–	–	–	–	–	–	–	–	–	–	✓	–	–	–

**Indicates the planning team used the results of the Capability Assessment Survey from the previous planning cycle for these jurisdictions to populate this table, along with a review of the jurisdictions' websites and other relevant materials, which were completed to supplement/update information not collected from the surveys*

6.3.4.1 Community Notes

- **Chatham County** provides outreach services upon request.
- The **Town of Siler City** has a climate change advisory committee (citizen-run) and a Watershed Stewards group.
- **Harnett County** is involved in numerous county outreach events involving all levels of preparedness and mitigation from the County's respective disciplines.
- The **Town of Benson's** Public Information Officer and Fire Department conduct education and outreach activities.
- The **Town of Four Oaks** uses the Town's website and Facebook for educational purposes. The Town's Fire Department and Police Department also contribute to educational programs.
- The **Town of Princeton** partners with Johnston County on many education and outreach activities.
- The **Town of Pinebluff** conducts community outreach using various methods, including fire & life safety education to the public and businesses in our jurisdiction through in-person sessions, social media, flyers, and road signage.
- The **Town of Robbin's** has a local fire and emergency prevention week and training, as well as a local Rotary group, churches, and Masonic Lodge that assist in community needs as requested.
- The **Town of Southern Pines** has a Fire Marshal's Office that provides all types of public education through four staff members.

6.3.5 Local Self-Assessment

In addition to inventorying and analyzing specific local capabilities, the Local Capability Assessment Survey asked counties and local jurisdictions within the Region to conduct a self-assessment of their perceived capacity to implement hazard mitigation activities. As part of this process, local officials were encouraged to consider the barriers to implementing proposed mitigation strategies, as well as mechanisms that could enhance or further such strategies. In response to the survey questionnaire, county officials classified each capability indicator and their overall capability as either “limited,” “moderate,” or “high.” Participants also rated their jurisdiction’s overall capability on a scale of 1 to 10 (10 representing the highest level of capability).

Table 6-9: Capability Self-Assessment and Overall Rating

Capability	CHATHAM COUNTY	Goldston	Pittsboro	Siler City	HARNETT COUNTY	Angier	Coats	*Dunn	Erwin	Lillington	JOHNSTON COUNTY	Archer Lodge	Benson	Clayton	Four Oaks	Kenly	Micro	Pine Level	Princeton	Selma	Smithfield	Wilson's Mills	LEE COUNTY	Broadway	*Sanford	MOORE COUNTY	Aberdeen	Cameron	Carthage	Foxfire Village	Pinebluff	Pinehurst	Robbins	Southern Pines	*Taylortown	Vass	*Whispering Pines
Plans, ordinances, codes, and programs	Moderate	Moderate	High	High	Moderate	High	Limited	-	Moderate	Moderate	Moderate	High	Moderate	High	Moderate	Moderate	Moderate	High	Moderate	Moderate	High	Moderate	High	Moderate	-	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	High	Limited	High	-	Limited	Moderate
Administrative and Technical Capabilities	Moderate	Limited	High	Moderate	Moderate	Moderate	Limited	-	Limited	Moderate	Moderate	Moderate	Limited	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	High	Moderate	High	Moderate	-	Limited	Limited	Moderate	Limited	Limited	Moderate	Moderate	Limited	High	-	Limited	Moderate
Fiscal Capability	Moderate	Moderate	Moderate	Limited	Moderate	Moderate	Moderate	-	Limited	Moderate	Moderate	Limited	Limited	Moderate	Moderate	Moderate	Moderate	Limited	Moderate	Moderate	High	Moderate	High	Limited	-	Moderate	Limited	Moderate	Limited	Limited	Limited	Moderate	Limited	Moderate	-	Limited	Moderate
Education and Outreach Capability	Moderate	Moderate	High	Moderate	Moderate	Moderate	Limited	-	Moderate	Moderate	High	Limited	Moderate	High	Moderate	Moderate	Limited	Limited	Moderate	Moderate	High	Moderate	Moderate	Moderate	-	Moderate	Limited	Moderate	Limited	Limited	Moderate	Limited	Limited	Moderate	-	Limited	Limited
Political Capability	Moderate	Moderate	High	Limited	Moderate	Moderate	Limited	-	High	High	Moderate	Limited	Limited	High	Moderate	Moderate	Limited	Moderate	Moderate	Moderate	High	Moderate	High	Limited	-	Moderate	Limited	Moderate	Limited	Limited	Limited	Moderate	Limited	High	-	Moderate	Limited

Capability	CHATHAM COUNTY	Goldston	Pittsboro	Siler City	HARNETT COUNTY	Angier	Coats	*Dunn	Erwin	Lillington	JOHNSTON COUNTY	Archer Lodge	Benson	Clayton	Four Oaks	Kenly	Micro	Pine Level	Princeton	Selma	Smithfield	Wilson's Mills	LEE COUNTY	Broadway	*Sanford	MOORE COUNTY	Aberdeen	Cameron	Carthage	Foxfire Village	Pinebluff	Pinehurst	Robbins	Southern Pines	*Taylortown	Vass	*Whispering Pines
Overall Capability Rating	Moderate	Limited	High	Limited	Moderate	Moderate	Limited	Moderate	Limited	High	Moderate	Limited	Limited	High	Moderate	Moderate	Limited	Moderate	Moderate	Moderate	High	Moderate	High	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Limited	Limited	Moderate	Limited	Moderate	Moderate	Limited	Moderate
Overall Capability Score (1-10)	7	5	9	3	8	7	2	–	6	8	7	4	3	9	5	5	2	6	6	6	10	6	5	5	–	8	8	7	5	3	5	7	3	8	–	2	–

**Indicates the planning team used the results of the Capability Assessment Survey from the previous planning cycle for these jurisdictions to populate this table, along with a review of the jurisdictions' websites and other relevant materials, which were completed to supplement/update information not collected from the surveys.*

6.3.5.1 Community Notes

- **Chatham County** would like to increase its logistics capacity for emergency management.
- The **Town of Siler City** would like to have a stormwater mitigation fund (considering for 2026) and is committed to making improvements to its current drainage systems where possible.
- **Harnett County** has worked to expand its mitigation efforts, including various acquisition projects, in recent years; however, the hurdles at the state and federal levels to implement these projects have been challenging to navigate.
- The **Town of Angier** has implemented new plans to assist with its overall capabilities. Due to these efforts, the Town believes it will soon reach higher overall capabilities.
- The **Town of Coats** staff is currently 13 positions for a population of 2,400 and growing. Almost half (six) of those staff are law enforcement personnel. With limited resources, staff members serve in multiple roles, including the Town Manager, who also oversees the Planning, Zoning, and Subdivision Administration. The Town uses contract personnel to meet any additional needs.
- The **Town of Erwin** has limited funds but has political support to implement positive changes. The Town also has limited staffing capacity.
- The **Town of Lillington** is growing rapidly. The Town's desire for the future is to have additional resources available to better serve all residents and become a more resilient community.
- The **Town of Archer Lodge** has a limited staff size that makes it challenging to provide adequate resources.
- The **Town of Kenly** is a small organization with limited staff and financial resources. While the Town actively participates in regional planning efforts, its internal capacity to dedicate personnel and funding toward hazard mitigation initiatives is constrained. Kenly relies heavily on county and regional partnerships, as well as state and federal programs, to strengthen its preparedness and response capabilities. The Town would like to continue improving our capabilities through access to additional grant opportunities, technical assistance, and shared resources with neighboring jurisdictions.
- The **Town of Micro** has a very small staff as well as limited resources. The Town has a dedicated staff that will do everything possible to assist with any hazard mitigation activity; however, the success of these projects still depends on those with additional resources and knowledge.
- The **Town of Pine Level** has made some significant improvements over the years; however, the Town will continue to strive for more improvements in the coming years.
- The **Town of Princeton** has support from its local fire and rescue, along with Johnston County.
- The **Town of Smithfield** would be ready to handle challenges as they arise.
- **Lee County** has limited staffing, and addressing time-consuming hazard mitigation projects can be a challenge.

- **Moore County** has historically managed successful hazard mitigation programs; however, due to the long-term commitment and our limited staffing, it is challenging to commit emergency response staff to these activities.
- The **Town of Carthage** is like many smaller towns that are experiencing a high percentage of population growth, attempting to balance the budget against the many needs of the Town. With current staffing levels, the Town believes it lacks sufficient capability to respond to an impactful natural hazard.
- The **Town of Pinebluff** is a small town with limited capabilities and funding. While the Town has worked to increase its capacity over the past five years, it would still appreciate and welcome any assistance in enhancing capabilities and funding to make the community safer.
- The **Village of Pinehurst** has baseline capabilities as it relates to planning, development, code enforcement, historical preservation, and other land use functions. The Village's outreach has a baseline capability; the challenge in this area is the limited number of staff available to focus on those functions daily.
- The **Town of Robbins** has strong leadership, communication, and ability to coordinate; however, resources, equipment, and funding are limited.
- The **Town of Southern Pines** has more technically capable staff than ever before.
- Currently, the **Town Vass** doesn't have the resources to expand its capabilities but may in the future with more development in the region.

6.4 Conclusions on Local Capability

The overall capability to implement hazard mitigation actions varies among the participating jurisdictions. For planning and regulatory capability, many jurisdictions fall within the moderate to high range, with only three out of the 33 jurisdictions that responded to the Capability Assessment Survey rating themselves as having limited capacity. There is also variation in administrative and technical capabilities among jurisdictions, with larger jurisdictions generally having greater staff and technical resources. Only nine of the 33 jurisdictions that responded to the Survey rated themselves as having limited capacity in administrative and technical capabilities. The fiscal capability category emerged as the most significant gap in the region's capabilities, with 12 of the 33 responding jurisdictions rating themselves as limited. Participating jurisdictions were also asked to rate their community's overall capability to implement hazard mitigation actions between zero and ten. Across the 33 jurisdictions that completed the Survey, the average overall rating is 5.8/10 (rounded to one decimal). For a complete depiction of the self-assessment results, please refer to Figure 6-2.

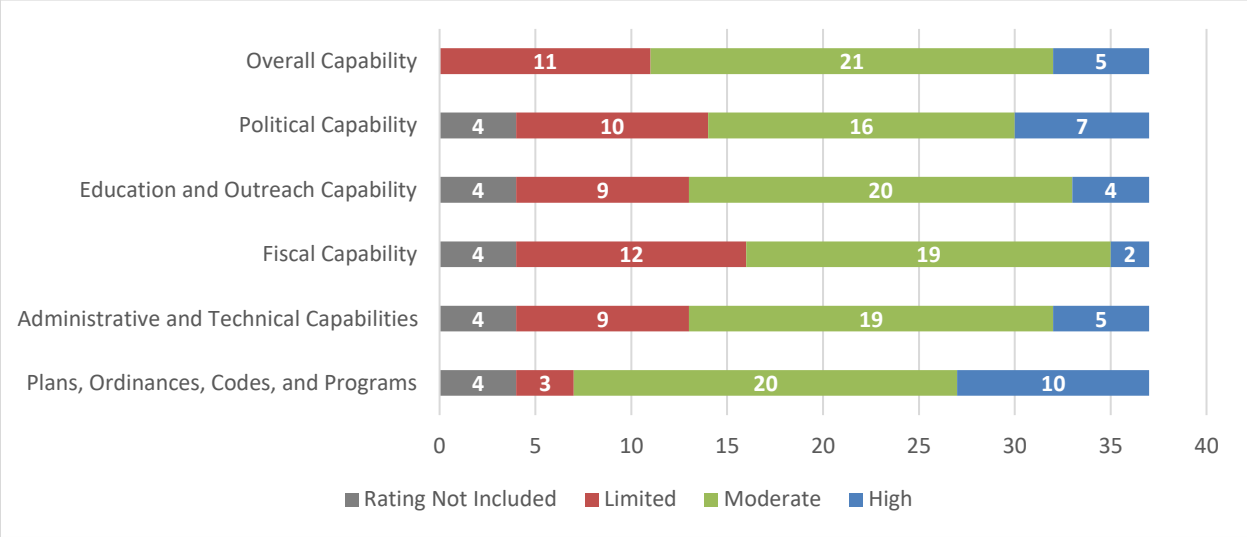


***Figure 6-2**: Local Capability Self-Assessment Results*

As previously discussed, one reason for conducting a Capability Assessment is to examine local capabilities and identify gaps or weaknesses in ongoing government activities that could hinder proposed mitigation efforts and potentially exacerbate community vulnerability to hazards. These gaps or deficiencies 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 identified in Section 9; therefore, each jurisdiction addresses its ability to expand and improve its existing capabilities through the identification of its mitigation actions.

6.4.1 Linking the Capability Assessment with the Risk Assessment and Mitigation Strategy

The results of the Risk Assessment and Capability Assessment serve as the foundation for developing a comprehensive and effective hazard mitigation strategy. During the process of

identifying specific mitigation actions to pursue, the Planning Committee considered not only each jurisdiction's level of hazard risk, but also their existing capability to minimize or eliminate that risk.

SECTION 7: MITIGATION STRATEGY

This section of the Plan provides the blueprint for the participating jurisdictions in the Cape Fear Region to become less vulnerable to the identified hazards. It is based on the consensus of the Cape Fear Regional Hazard Mitigation Planning Team and the findings and conclusions of the *Capability Assessment* and *Risk Assessment*. It consists of the following five subsections:

- 7.1 Introduction
- 7.2 Mitigation Goals
- 7.3 Identification and Analysis of Mitigation Techniques
- 7.4 Selection of Mitigation Techniques of the Cape Fear Region
- 7.5 Plan Update Requirement

7.1 Introduction

The Mitigation Strategy aims to provide the Cape Fear Region communities with goals that will serve as guiding principles for future mitigation policy and project administration, along with an analysis of available mitigation techniques to meet those goals and reduce the impact of identified hazards. It is designed to be comprehensive, strategic, and functional in nature:

- In being *comprehensive*, the development of the strategy includes a thorough review of all hazards. It identifies extensive mitigation measures intended not only to reduce the future impacts of high-risk hazards but also to help the region achieve compatible economic, environmental, and social goals.
- In being *strategic*, the development of the strategy ensures that all policies and projects proposed for implementation are consistent with pre-identified, long-term planning goals.
- In being *functional,* each proposed mitigation action is linked to established priorities and assigned to specific departments or individuals responsible for their implementation with target completion deadlines. When necessary, funding sources are identified to support project implementation.

The first step in designing the Mitigation Strategy is identifying mitigation goals. Mitigation goals represent broad statements that are achieved through the implementation of more specific mitigation actions. These actions include both hazard mitigation policies (such as regulating land in known hazard areas through a local ordinance) and hazard mitigation projects that address specifically targeted hazard risks (such as the acquisition and relocation of a repetitive-loss structure).

The second step involves identifying, considering, and analyzing available mitigation measures to achieve the identified mitigation goals. This is a long-term, continuous process sustained through the development and maintenance of this Plan. Alternative mitigation measures will continue to be considered as future mitigation opportunities are identified, data and technology improve, mitigation funding becomes available, and this Plan is maintained over time.

The third and last step in designing the Mitigation Strategy is the selection and prioritization of specific mitigation actions for the Cape Fear Region (provided separately in Section 9: *Mitigation Action Plan*). Each county and participating jurisdiction has its own Mitigation Action

Plan (MAP) that reflects the needs and concerns of that jurisdiction. The MAP represents an unambiguous, functional plan of action and is considered the most essential outcome of the mitigation planning process.

The MAP includes a prioritized list of proposed hazard mitigation actions (policies and projects) for Chatham, Lee, Harnett, Johnston, and Moore Counties, and their municipal jurisdictions, to complete. Each action has accompanying information, such as those departments or individuals assigned responsibility for implementation, potential funding sources, and an estimated target date for completion. The MAP provides the departments or individuals responsible for implementing mitigation actions with a clear roadmap that also serves as an important tool for monitoring progress over time. The cohesive collection of actions listed in the MAP can also serve as an easily understandable menu of mitigation policies and projects for local decision-makers who want to quickly review the recommendations and proposed actions of the Regional Hazard Mitigation Plan.

In preparing each Mitigation Action Plan for the Cape Fear Region, officials considered the overall risk and the capability to mitigate the effects of hazards, as recorded through the risk and capability assessment process, as well as meeting the adopted mitigation goals and the community's unique needs.

7.1.1 Mitigation Action Prioritization

The Regional Hazard Mitigation Planning Committee members were tasked with establishing priorities, implementation statuses, and completion timelines for each action. Prioritization of the proposed mitigation actions was based on the following six factors:

- Effect on overall risk to life and property
- Ease of implementation
- Political and community support
- A general economic cost/benefit review[1]
- Funding availability
- Continued compliance with the National Flood Insurance Program (NFIP)

The point of contact for each county helped coordinate the prioritization process by reviewing each action and working with the lead agency/department responsible to determine a priority for each action using the six factors listed above.

Using these criteria, participating jurisdiction officials classified actions as high, moderate, or low priority.

[1] Only a general economic cost/benefit review was considered by the Regional Hazard Mitigation Planning Committee through the process of selecting and prioritizing mitigation actions. Mitigation actions with “high” priority were determined to be the most cost effective and most compatible with the participating jurisdictions’ unique needs. Actions with a “moderate” priority were determined to be cost-effective and compatible with jurisdictional needs but may be more challenging to complete administratively or fiscally than “high” priority actions. Actions with a “low” priority were determined to be important community needs, but the community likely identified several potential challenges in terms of implementation (e.g. lack of funding, technical obstacles). A more detailed cost/benefit analysis will be applied to particular projects prior to the application for or obligation of funding, as appropriate.

44 CFR Requirement
44 CFR Part 201.6(c)(3)(i): The mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

7.2 Mitigation Goals

The primary goal of all local governments is to promote the public health, safety, and welfare of its citizens. In keeping with this standard, Chatham, Lee, Harnett, Johnston, and Moore Counties, along with the participating municipalities, have developed six goal statements for local hazard mitigation planning in the region. These goals are broad, long-term policy and vision statements that explain what is to be achieved by implementing the mitigation strategy. In developing these goals, the previous Plan's goals were reviewed to determine if they were still valid. The regional goals were presented, reviewed, voted on, and accepted by the Planning Team at their second meeting. Each goal is deliberately broad and establishes the parameters for developing additional mitigation actions. The Cape Fear Regional Mitigation Goals are presented in Table 7-1. Consistent implementation of actions over time will ensure that community goals are achieved.

***Table 7-1**: Cape Fear Regional Mitigation Goals*

	Goal
Goal #1	Increase public awareness of hazards and encourage collective and individual responsibility for mitigating hazard risks.
Goal #2	Strive to reduce loss of life, personal injury, and property damage from natural hazards.
Goal #3	Strive to maintain existing structures and infrastructure in such a manner that they will be as resilient as possible from natural hazards.
Goal #4	Protect the most vulnerable populations, buildings, and critical facilities through the implementation of cost-effective and technically feasible mitigation actions.
Goal #5	Manage future development to minimize vulnerability of public and private property to natural hazards.
Goal #6	Protect and preserve the natural resources and environmentally sensitive areas within the region.

7.3 Identification and Analysis of Mitigation Techniques

44 CFR Requirement
44 CFR Part 201.6(c)(3)(ii): The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effect of each hazard, with particular emphasis on new and existing buildings and infrastructure.

In formulating the Mitigation Strategy for the Cape Fear Region, a wide range of activities was considered to help achieve the established mitigation goals and address specific hazard concerns. These activities were discussed during the Planning Team meetings. In general, all activities considered by the Planning Team can be classified under one of the following six broad categories of mitigation techniques: Prevention, Property Protection, Natural Resource Protection, Structural Projects, Emergency Services, and Public Awareness and Education. These are discussed in detail below.

7.3.1 Prevention

Preventive activities are intended to prevent hazards from worsening and are typically implemented through government programs or regulatory actions that influence how land is developed, and buildings are built. They are particularly effective at reducing a community's future vulnerability, especially in areas where development has not occurred or capital improvements have been limited. Examples of preventative activities include:

- Planning and zoning
- Building codes
- Open space preservation
- Floodplain regulations
- Stormwater management regulations
- Drainage system maintenance
- Capital improvements programming
- Riverine / fault zone setbacks

7.3.2 Property Protection

Property protection measures involve modifying existing buildings and structures to better withstand the forces of a hazard or removing structures from hazardous locations. Examples include:

- Acquisition
- Relocation
- Building elevation
- Critical facilities protection/generators
- Retrofitting (e.g., wind proofing, floodproofing, seismic design techniques, etc.)
- Safe rooms, shutters, shatter-resistant glass
- Insurance

7.3.3 Natural Resource Protection

Natural resource protection activities reduce the impact of natural hazards by preserving or restoring natural areas and their protective functions. Such areas include floodplains, wetlands, steep slopes, and sand dunes. Parks, recreation, or conservation agencies and organizations often implement these protective measures. Examples include:

- Floodplain protection
- Watershed management
- Riparian buffers

- Forest and vegetation management (e.g., fire-resistant landscaping, fuel breaks, etc.)
- Erosion and sediment control
- Wetland preservation and restoration
- Habitat preservation
- Slope stabilization

7.3.4 Structural Projects

Structural mitigation projects are intended to lessen the impact of a hazard by modifying the natural progression of the hazard event through construction. They are usually designed by engineers and managed or maintained by public works staff. Examples include:

- Reservoirs
- Dams / levees / dikes / floodwalls
- Diversions / detention / retention
- Channel modification
- Storm sewers

7.3.5 Emergency Services

Although not typically considered a “mitigation” technique, emergency service measures do minimize the impact of a hazard event on people and property. These are common actions taken immediately before, during, or in response to a hazard event. Examples include:

- Warning systems
- Generators
- Evacuation planning and management
- Emergency response training and exercises
- Sandbagging for flood protection
- Installing temporary shutters for wind protection

7.3.6 Public Education and Awareness

Public education and awareness activities inform residents, elected officials, business owners, potential property buyers, and visitors about hazards, hazardous areas, and mitigation techniques they can use to protect themselves and their property. Examples of measures to educate and inform the public include:

- Outreach projects
- Speaker series / demonstration events
- Hazard map information
- Real estate disclosure
- Library materials
- School children educational programs
- Hazard expositions

7.4 Selection of Mitigation Techniques for the Cape Fear Region

To determine the most appropriate mitigation techniques for communities in the Cape Fear Region, the Planning Team members thoroughly reviewed and considered the findings of the Capability Assessment and Risk Assessment to identify the best activities for their respective communities. Other considerations included the effect of each mitigation action on overall risk to life and property, its ease of implementation, its degree of political and community support, its general cost-effectiveness, and funding availability (if necessary).

7.5 Plan Update Requirement

In keeping with the Federal Emergency Management Agency (FEMA) requirements for plan updates, the Mitigation Actions identified in the previous plan were evaluated to determine their current implementation status. Updates on the implementation status of each action are provided. The mitigation actions in Section 9: Mitigation Action Plan include those from the previous plan, as well as any new actions proposed through the current planning process.

7.6 Integrating the Mitigation Plan with Other Planning Mechanisms

An overarching method by which the Planning Committee integrated the previous version of the Cape Fear Regional Hazard Mitigation Plan into other planning mechanisms was by coordinating with the North Carolina Department of Environmental Quality's North Carolina Flood Resiliency Blueprint and related decision-support tool. The North Carolina Flood Resiliency Blueprint (the Blueprint) is the State's science-based and stakeholder-driven initiative designed to support the planning, evaluation, and implementation of flood resilience strategies. The Blueprint consists of several components developed in phases. This includes a decision-support tool (Blueprint Tool) and a strategic framework for creating local resilience action plans and River Basin Action Strategies. It also involves sound investments and leveraging available funds through partnerships with state programs and local governments to build flood resilience. Mitigation actions from the previous planning cycle were refined and inputted into the Blueprint Tool as pre-identified actions. By entering these actions into the Blueprint Tool platform, the Planning Committee can more easily visualize and track planned actions across the planning area, promoting regional collaboration and learning more about what other regions are planning, potentially inspiring new actions for this update cycle. Newly added mitigation actions and other information from this Plan's update will continue to be entered into the Blueprint Tool to foster collaboration and support the integration of this Plan into other planning mechanisms.

SECTION 8: Mitigation Action Plan

This section includes a listing of the mitigation actions proposed by participating jurisdictions in the Cape Fear Region. It consists of the following two subsections:

- 8.1 Mitigation Action Plans
- 8.2 Overview

8.1 Mitigation Action Plans

As described in the previous section, the Mitigation Action Plan, or MAP, provides a functional plan of action for each jurisdiction. It is designed to achieve the mitigation goals established in Section 8: Mitigation Strategy and will be maintained regularly in accordance with the plan maintenance procedures established in Section 10: Plan Maintenance.

Each proposed mitigation action has been identified as an effective measure (policy or project) to reduce hazard risk for the Region. Each action is listed in the MAP, along with background information such as the hazard(s) addressed and the relative priority. Other information provided in the MAP includes potential funding sources to implement the action, should funding be required (not all proposed actions are contingent upon funding). Most importantly, implementation mechanisms are provided for each action, including the designation of the leading agency or department responsible for carrying it out, as well as a timeframe for its completion. These implementation mechanisms ensure that the Plan remains a functional document that can be monitored for progress over time. The proposed actions are not listed in priority order, though each has been assigned a priority level of “high,” “moderate,” or “low” as described below and in Section 8 (page 8.2). Priorities have not changed since the previous plan was approved.

The Mitigation Action Plan is organized by mitigation strategy category (Prevention, Property Protection, Natural Resource Protection, Structural Projects, Emergency Services, or Public Education and Awareness). The following are the key elements described in the *Mitigation Action Plan*.

Hazard(s) Addressed — Hazard that the action addresses.

Relative Priority — High, moderate, or low priority as assigned by the jurisdiction. Mitigation actions with “high” priority were determined to be the most cost-effective and most compatible with the participating jurisdictions’ unique needs. Actions with a “moderate” priority were determined to be cost-effective and compatible with jurisdictional needs but may be more challenging to complete administratively or fiscally than “high” priority actions. Actions with a “low” priority were deemed important to community needs, but the community likely identified several potential implementation challenges (e.g., lack of funding, technical obstacles).

Lead Agency/Department — Department responsible for undertaking the action.

Potential Funding Sources — Local, State, or Federal sources of funds are noted here, where applicable.

Estimated Cost — Anticipated cost of the action. (Low- less than $25k, Medium- $25k-$75k, High- more than $75k)

Timeframe — Date by which the action should be completed. More information is provided when possible.

Status — Indication of completion, progress, deferment, or no change since the previous plan. If the action is new, that will be noted here.

Table 8- 1: *definitions for mitigation action plan details*

Category	Definition	
Hazards	Hazard that the action addresses.	
Relative Priority	High	Highly cost-effective, administratively feasible, and politically feasible strategies that could be implemented in 2 fiscal years and continued.
	Medium	Strategies that have at least two of the following characteristics (but not all three) could be implemented in 3 fiscal years: Highly cost-effective; or administratively feasible, given current levels of staffing and resources; or are politically popular and supportable given the current environment.
	Low	Strategies that have one of the following characteristics and could be implemented in the next five years): Highly cost-effective; or administratively feasible, given current levels of staffing and resources; or are politically popular and supportable given the current environment.
Action Type	Prevention	Preventative activities are intended to keep hazard problems from worsening and are typically implemented through government programs or regulatory actions that influence how land is developed, and buildings are built.
	Property Protection	Property protection measures involve modifying existing buildings and structures to better withstand the forces of a hazard or removing structures from hazardous locations.
	Natural Resource Protection	Natural resource protection activities reduce the impact of natural hazards by preserving or restoring natural areas and their protective functions. Such areas include floodplains, wetlands, steep slopes, and sand dunes.
	Structural Projects	Structural mitigation projects are intended to lessen the impact of a hazard by modifying the natural progression of the hazard event through construction.

Category	Definition	
	Public Education	Public education and awareness activities inform residents, elected officials, business owners, potential property buyers, and visitors about hazards, hazardous areas, and mitigation techniques they can use to protect themselves and their property.
	Emergency Services	Although not typically considered a "mitigation" technique, emergency service measures do minimize the impact of a hazard event on people and property.
Action Status	To Be Continued:	Continuing an action or program requires annual or periodic maintenance to sustain it.
	Complete:	No further action is required to implement or use the mitigation action.
	In Progress:	Action is currently being implemented.
	Deferred:	Action will be reevaluated later.
	Deleted:	The Jurisdiction will no longer consider the action a viable mitigation measure.
	New	The mitigation action has just been added to the Hazard Mitigation Plan (HMP).
Estimated Cost	Low	Less than $25,000
	Moderate	$25,000 -$75,000
	High	More than $75,000
Potential Funding Sources	Local, State, or Federal sources such as grant funds or general operating budgets are noted here, where applicable.	
Responsible Party	Department responsible for undertaking the action.	
Time frame	Short-Term	1-2 years
	Medium-Term	3-5 years
	Long-Term	greater than 5 years

8.2 Mitigation Action Plans

The mitigation actions proposed by each of the participating jurisdictions are listed on the following pages.

Table 8-1: Chatham County Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Chatham County	Emergency Services	Ensure adequate hazard warnings for all major hazard events.	All Hazards	High	Chatham County Emergency Services, County Manager	Local	High	2-5 Years	In Progress	Chatham is continuing to improve its warning times using notification systems. In addition, reviewing improved notification platforms. This action will be implemented as new improvement projects are identified and will be updated as needed or during the next HMP update process.
Chatham County	Prevention	At the next Land Use Plan Update, review and include hazard mitigation objectives for all hazards.	All Hazards	Moderate	Chatham County Planning and Zoning, County Manager	Local	Medium	5+ Years	Complete	The Chatham County Comprehensive Plan was adopted in 2017, and these objectives were completed as part of that.
Chatham County	Prevention	Building Inspections—Flood-Damaged Structures. All portions of buildings that have been submerged for any length of time will be inspected for flood-related damage as well as other conditions that may be dangerous to life, health, or other property. Plan for	Flood	High	Chatham County Building Inspections, County Manager	Local	Low	5 years	To Be Continued	Building inspectors have been trained to inspect flood-damaged structures and will perform those duties as needed. This action will be completed and updated as needed, or during the next HMP update Process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		Damaged Structures: 1. Overall damage assessment/data collection (visual inspection from roadways). 2. Data compiled and geographical areas assigned to teams. 3. Second detailed assessment by area teams. 4. Portions of walls, floors, ceilings, etc. that have been exposed to water will be opened for evaluation. 5. All construction that is repaired, replaced, dried, or sealed will be inspected before being covered. 6. Structure inspected for certificate of compliance.								

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Chatham County	Prevention	Policy and procedures related to all-hazard damage and disconnected utility services: 1) inform the public via television, radio, and newspaper of the necessary steps to have utilities restored; 2) restrict travel as necessary while collecting damage assessment data; 3) conduct inspections on a first-come, first-served basis; 4) work overtime to expedite utility reconnections.	All Hazards	High	Chatham County Building Inspections, County Manager	Local	Medium	5+ Years	To Be Continued	In addition to coordinating media communications, the Public Information Office/Officer (PIO) pre-identifies subject matter experts to consult with, depending on the hazard. Also, securing additional Spanish-speaking spokespersons. This action will be updated as needed or during the next HMP update process.
Chatham County	Prevention	Create a Storm Water Management Ordinance to require storm water control from development.	Flood	High	Chatham County Public Works, County Manager	Local	Medium		Complete	Chatham County Watershed Protection has taken over these duties for stormwater inspections and field visits.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Chatham County	Prevention	Revise the existing Watershed Protection Ordinance to provide onsite stream determinations and increase riparian buffer widths on existing streams and newly classified riparian areas.	Flood	High	Chatham County Planning and Zoning, Chatham County Public Works, County Manager	Local	Medium	5+ Years	To Be Continued	Chatham County watershed protection advised that this task has been addressed and will be updated in the future as needed. This action will be updated as needed or during the next HMP review process.
Chatham County	Property Protection	Create and maintain a list of repetitive flood loss properties.	Flood	Moderate	Chatham County Planning and Zoning, County Manager	Local	Medium	5+ Years	To Be Continued	This list is updated periodically or as needed. Action will be updated as needed or during the next HMP update process.
Chatham County	Property Protection	Improve critical facilities and shelter capacities with alternate power sources. (such as generators)	All Hazards	High	Chatham County Emergency Services, County Manager	Local	Medium	5+ Years	In Progress	Chatham continues to plan to increase shelter capacity and backup power solutions or upgrades for shelters and critical facilities. Improvements will be made as projects are identified or as funding becomes available. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Chatham County	Property Protection	Create/Review a zoning map (digital) that can be easily reproduced/updated for staff and public use.	All Hazards	High	Chatham County Planning and Zoning, County Manager	Local	Medium	5+ Years	To Be Continued	Maps are updated regularly or as needed for staff and public use. Action will be updated as needed or during the next HMP update process.
Chatham County	Public Education and Awareness	Advertise all natural hazards education materials for public consumption.	All Hazards	High	Chatham County Planning and Zoning, County Manager	Local	Low	5+ Years	To Be Continued	The Planning Department has not been provided with hazard education materials but will advertise materials if supplied. This will be implemented when materials are provided or when funding is allowed. This action will be updated as needed or during the next HMP update process.
Chatham County	Public Education and Awareness	Develop an Environmental Health program that will, in part, address environmental concerns that might develop from a natural disaster.	All Hazards	High	Chatham County Environmental Health, Chatham County Public Works, County Manager	Local	High	5+ Years	To Be Continued	Chatham Departments are continuously seeking resources for public outreach for disaster resilience. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Chatham County	Public Education and Awareness	Update/Review the Floodplain Ordinance to raise the minimum flood protection level.	Flood	Moderate	Chatham County Planning and Zoning, County Manager	Local	Medium	5+ Years	To Be Continued	Chatham Departments are continuously seeking resources for public outreach for disaster resilience. Actions will be implemented when resources or funding for disaster resilience are obtained.
Chatham County	Public Education and Awareness	Update/Review the Subdivision Ordinance by reviewing and incorporating hazard mitigation objectives.	All Hazards	Moderate	Chatham County Planning and Zoning, County Manager	Local	Medium	2-5 Years	To Be Continued	The Recode Chatham Unified Development Ordinance project will incorporate hazard mitigation objectives into its language. This action be updated as needed or during the next HMP update process.
Chatham County	Public Education and Awareness	Review and revise the Planning Ordinance to allow for clustering of residential lots.	Flood	Moderate	Chatham County Planning and Zoning, County Manager	Local	Medium	2-5 Years	In Progress	The Recode Chatham Unified Development Ordinance project will revise and incorporate clustering of residential lots into its language. This will be revised regularly, and this action will be updated as needed or during the next HMP review process.
Chatham County	Public Education and Awareness	Revise/Review and update the regulator floodplain maps.	Flood	High	Chatham County Planning and Zoning, County Manager	Federal, State	Medium	5+ Years	To Be Continued	This is a continuous effort and is implemented as needed. This action will be updated as needed or during the next HMP review process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Chatham County	Natural Resource Protection	Ensure that mitigation projects incorporate nature-based solutions whenever possible to support habitat preservation, habitat connectivity, and environmental health. Design mitigation projects that accommodate safe passage of wildlife and habitat connectivity to reduce impact on surrounding environment.	All Hazards	Moderate	Chatham County Planning, County Manager	Local, Federal, State	Medium	5+ Years	New	This is a stakeholder suggested mitigation action that was added after the Cape Fear HMP update review process.
Chatham County	Prevention	Develop inundation modeling for each dam in the planning area that does not already have inundation data. Evaluate infrastructure, property, and people at risk of dam failure impacts to identify and implement projects that improve resiliency to dam failure impacts	Dam Failure	High	Chatham County Planning	Local, Federal, State	High	5+ Years	New	

Table 8-2: *Town of Goldston Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Goldston	Emergency Services	Ensure adequate evacuation warning in case of all major hazard events.	All Hazards	High	Chatham County Emergency Services, Town Mayor	Local	High	5+ Years	To Be Continued	The County has a public information officer who coordinates all communication with the media. Building inspectors' job responsibilities include damage assessments, inspections, and overtime duty to expedite utility reconnections, as needed. This action will be updated as needed or during the next HMP update process,
Goldston	Prevention	At the next Chatham County Comprehensive Plan, review and include hazard mitigation objectives regarding land use and development.	All Hazards	Moderate	Chatham County Planning and Zoning, Town Mayor	Local	Low	5+ Years	To Be Continued	This will be reevaluated annually. This action will be updated as needed or during the next HMP update process,
Goldston	Prevention	"Building Inspections—Flood Damaged Structures. All portions of buildings that have been submerged for any length of time will be inspected for flood related damage as well as other conditions that may be dangerous to life, health, or other property. Plan for	Flood	High	Chatham County Building Inspections, Town Mayor	Local	Medium	5+ Years	To Be Continued	The Watershed Protection Ordinance will be reevaluated annually. This action will be updated when possible or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		Damaged Structures: 1.Overall damage assessment/data collection (visual inspection from roadways). 2.Data compiled, and geographical areas assigned to teams. 3.Second detailed assessment by area teams. 4.Portions of walls, floors, ceilings, etc. that have been exposed to water will be opened for evaluation. 5.All construction that is repaired, replaced, dried, or sealed will be inspected before being covered. 6.Structure inspected for certificate of compliance."								

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Goldston	Prevention	Revaluate Storm Water Management Ordinance to require storm water control from development.	Flood	High	Chatham County Public Works, Town Mayor	Local	Low	5+ Years	In Progress	Increased from 4 to 6 shelters. The shelters either have backup generators, or the county has portable generators for each shelter. The county will continue to try to improve shelter capacity and will work to outfit those shelters with alternate power. New improvement projects will be implemented as funding becomes available or as new projects are identified. This action will be updated as needed or during the next HMP update process.
Goldston	Prevention	Policy and procedures related to hazard damage and disconnected utility services: 1) inform public via television, radio and newspaper of the necessary steps to have utilities restored; 2) restrict travel as necessary while collecting damage assessment data; 3) conduct inspections on first come, first serve basis; 4) work overtime to expedite utility reconnections.	All Hazards	High	Chatham County Building Inspections, Town Mayor	Local	Medium	5+ Years	To Be Continued	A list of repetitive flood loss properties is available from the North Carolina (NC) Department of Public Safety, and staff have direct contact with floodplain management staff. This list will continue to be updated annually. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Goldston	Prevention	Reevaluate Storm Water Management Ordinance to require storm water control from development.	Flood	High	Chatham County Public Works, Town Mayor	Local	Low	5+ Years	In Progress	Increased from 4 to 6 shelters. The shelters either have backup generators, or the county has portable generators for each shelter. The county will continue to try to improve shelter capacity and will work to outfit those shelters with alternate power. New improvement projects will be implemented as funding becomes available or as new projects are identified. This action will be updated as needed or during the next HMP update process.
Goldston	Prevention	Reevaluate the existing Watershed Protection Ordinance to provide onsite stream determinations and increased riparian buffer widths on existing streams and newly classified riparian areas.	Flood	High	Chatham County Planning and Zoning, Chatham County Public Works, Town Mayor	Local	Low	5+ Years	To Be Continued	Educational materials are provided to the public as they are made available to the county. The county will continue to evaluate public education materials and update them as necessary on an annual basis. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Goldston	Property Protection	Create and maintain a list of repetitive flood loss properties.	Flood	Moderate	Chatham County Planning and Zoning, Town Mayor	Local	Low	5+ Years	To Be Continued	This program has been restructured to be in the Chatham County Public Works Department and includes two positions. The County has also created the position of Director of Environmental Quality within the department and filled the position with a professional engineer. On an annual basis, these people make numerous site visits to assist property owners and developers with problems and potential problems associated with drainage, erosion, and flooding. Site visits are made at the request of the property owners or developers and are usually handled through the development review process. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Goldston	Property Protection	Improve critical facilities and shelter capacities with alternate power sources.	All Hazards	High	Chatham County Emergency Services, Town Mayor	Local	High	5+ Years	To Be Continued	The County has a public information officer who coordinates all communication with the media. Building inspectors' job responsibilities include damage assessments, inspections, and overtime duty to expedite utility reconnections, as needed. This action will be updated as needed or during the next HMP update process,
Goldston	Public Education and Awareness	Advertise all hazard education materials for public consumption.	All Hazards	High	Chatham County Planning and Zoning, Town Mayor	Local	Low	5+ Years	To Be Continued	This will be reevaluated annually. This action will be updated as needed or during the next HMP update process,
Goldston	Public Education and Awareness	Develop an Environmental Health program that will, in part, address environmental concerns that might develop from a natural disaster.	All Hazards	High	Chatham County Environmental Health, Chatham County Public Works, Town Mayor	Local	High	5+ Years	To Be Continued	The Watershed Protection Ordinance will be reevaluated annually. This action will be updated when possible or during the next HMP update process.

Table 8-3: Town of Pittsboro Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pittsboro	Emergency Services	Ensure adequate evacuation warnings in case of all major hazard events.	All Hazards	High	Chatham County Emergency Services, Jurisdiction (Town Mayor)	Local	Low	5+ Years	In Progress	Code Red emergency notification system. The minutes available for notifications increased from 30,000 to 60,000 in 2019. Going forward, the county will continue to work to improve warning time for citizens to evacuate. This action will be updated as needed or during the next HMP update process.
Pittsboro	Property Protection	Improve shelter capacities with alternate power and heat sources.	All Hazards	High	Chatham County Emergency Services, Town Mayor	Local	Low	5+ Years	In Progress	Increased from 4 to 6 shelters. The shelters either have backup generators, or the county has portable generators for each shelter. The jurisdiction will continue to try to improve shelter capacity and will work to outfit those shelters with alternate power as new projects are identified. This action will be implemented as new projects are identified and as funding is identified. This action will be updated as needed or during the next HMP update process.
Pittsboro	Public Education	Chatham County Environmental Health has	Flood	High	Chatham County	Local	Low	5+ Years	In Progress	This program has been restructured to be in the Chatham County Public

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
	and Awareness	received training on erosion and sedimentation methods. This program has been restructured to be in the Chatham County Public Works Department and includes two positions. The County has also created a position of Director of Environmental Resources within the department and filled the position with a professional engineer that is also a certified flood manager (CFM). On an annual basis, these people make numerous site visits to assist property owners and developers with problems and potential problems associated with drainage, erosion, and flooding. Site visits are made at the request of the property owners or developer and are usually handled through the development review process.			Environmental Health, Chatham County Public Works, Town Mayor					Works Department and includes two positions. The County has also created the position of Director of Environmental Quality within the department and filled the position with a professional engineer. On an annual basis, these people make numerous site visits to assist property owners and developers with problems and potential problems associated with drainage, erosion, and flooding. Site visits are made at the request of property owners or developers and are usually handled through the development review process. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pittsboro	Prevention	Policy and procedures related to storm damage and disconnected utility services: 1) inform public via television, radio and newspaper of the necessary steps to have utilities restored; 2) restrict travel as necessary while collecting damage assessment data; 3) conduct inspections on first come, first serve basis; 4) work overtime to expedite utility reconnections.	All Hazards	High	Chatham County Building Inspections, Town Mayor	Local	High	5+ Years	In Progress	Code Red emergency notification system. The minutes available for notifications increased from 30,000 to 60,000 in 2019. Going forward, the county will continue to work to improve warning time for citizens to evacuate. This action will be updated as needed or during the next HMP update process.
Pittsboro	Prevention	At the next Land Use Plan Update, review and include hazard mitigation objectives.	All Hazards	Moderate	Chatham County Planning and Zoning, Town Mayor	Local	Low	5+ Years	To Be Continued	Land Use Plan Adopted October 22, 2012. This plan will be re-evaluated and updated on a regular basis and as needed, so this action will remain in the plan. This action will be updated as needed or during the next HMP update process.
Pittsboro	Prevention	Building Inspections—Flood Damaged Structures. All portions of buildings that have been submerged for any length of time will be inspected for flood related damage as well as other	Flood	High	Chatham County Building Inspections, Town Mayor	Local	High	5+ Years	To Be Continued	Building inspectors have been trained to perform inspections of flood damaged structures and will perform those duties as needed after a disaster. This action will be updated as needed or during the

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		conditions that may be dangerous to life, health, or other property. Plan for Damaged Structures: 1.Overall damage assessment/data collection (visual inspection from roadways). 2.Data compiled, and geographical areas assigned to teams. 3.Second detailed assessment by area teams. 4.Portions of walls, floors, ceilings, etc. that have been exposed to water will be opened for evaluation. 5.All construction that is repaired, replaced, dried, or sealed will be inspected before being covered. 6.Structure inspected for certificate of compliance.									next HMP update process.
Pittsboro	Prevention	Policy and procedures related to storm damage	All Hazards	High	Chatham County	Local	High	5+ Years	To Be Continued	The County has a public information officer who coordinates

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		and disconnected utility services: 1) inform public via television, radio and newspaper of the necessary steps to have utilities restored; 2) restrict travel as necessary while collecting damage assessment data; 3) conduct inspections on first come, first serve basis; 4) work overtime to expedite utility reconnections.			Building Inspections, Town Mayor					all communication with the media as needed. Building inspectors' job responsibilities include damage assessments, inspections, and overtime duty to expedite utility reconnections. Building inspections occur as needed. This action will be updated as needed or during the next HMP update process.
Pittsboro	Prevention	Reevaluate Storm Water Management Ordinance to require storm water control from development.	Flood	High	Chatham County Public Works, Town Mayor	Local	Low	5+ Years	To Be Continued	Adopted Stormwater Ordinance November 12, 2013. The Stormwater Ordinance will need to be re-evaluated and updated in the future. The stormwater ordinance will be updated as needed, and this action will be updated as needed during the next HMP update process.
Pittsboro	Prevention	Reevaluate the existing Watershed Protection Ordinance (WPO) to provide onsite stream determinations and increased riparian buffer widths on existing streams	Flood	High	Chatham County Planning and Zoning, Chatham County Public	Local	Low	5+ Years	To Be Continued	Adopted Riparian Buffer Ordinance February 14, 2011. The WPO will need to be re-evaluated and updated in the future, as needed. This action will be updated as needed or during the next HMP

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		and newly classified riparian areas.			Works, Town Mayor					update process.
Pittsboro	Prevention	Work collaboratively with planners, engineers, and stakeholders to identify flood-prone zones and prioritize mitigation projects that ensure new developments maintain post-construction runoff levels at or below pre-development conditions through effective stormwater management practices. This includes Upgrading and expanding stormwater infrastructure to protect low-lying and vulnerable areas from increased runoff and flooding.	Flooding	High	Chatham County Emergency Services, Jurisdiction	Local, State, Federal	High	5+ Years	New	Residents of Pittsboro have expressed concern about flooding in low-lying areas due to construction erosion and have asked that Pittsboro addresses and mitigates the impacts of development and construction on flooding vulnerability. This is a stakeholder identified mitigation action that has been added during the draft period of review for the planning area's consideration.
Pittsboro	Prevention	Assess and repair areas near Highway 902 and Fayetteville Street in Pittsboro to reduce washout events, protect nearby property, homes, businesses, and transportation infrastructure.	Flood	High	Chatham County, Pittsboro	Local, State, Federal	High	5+ Years	New	Residents of Pittsboro have expressed concern with an area of Highway 902 that frequently washes out during heavy rain events which threatens to impact local property owners, businesses, residents, and others near Fayetteville Street. This is a

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		Prioritize improvements to drainage infrastructure and erosion control measures to enhance flood resilience in these areas and other areas identified to be at risk to enhance flood resilience and ensure safe access during and after heavy rain events,								stakeholder identified mitigation action that has been added during the draft period of review for the planning area's consideration.
Pittsboro	Property Protection	Maintain a list of repetitive flood loss properties.	Flood	Moderate	Chatham County Planning and Zoning, Town Mayor	Local	Low	5+ Years	To Be Continued	A list of repetitive flood loss properties is available from the NC Department of Public Safety, and staff have direct contact with floodplain management staff. This list will continue to be updated annually or as needed. This action will be updated as needed or during the next HMP update process.
Pittsboro	Public Education and Awareness	Advertise all hazard education materials for public consumption.	All Hazards	High	Chatham County Planning and Zoning, Jurisdiction (Town Mayor)	Local	Medium	5+ Years	To Be Continued	Educational materials are provided to the public as they are made available to the county. The jurisdiction will continue to re-evaluate public education materials and update them on an annual basis, as necessary. This action will be updated as needed or during the next HMP update process.

Table 8-4: *Town of Siler City Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Siler City	Emergency Services	Ensure adequate warning in case of major hazard events.	All Hazards	High	Chatham County Emergency Services, Jurisdiction Manager	Local	High	5+ Years	To Be Continued	Siler City works with Chatham County Emergency Management during events to provide information to the public. This action will be maintained and implemented as needed, and action details will be updated as needed or during the next HMP update process.
Siler City	Emergency Services	Identify alternate detour routes from major arteries in the jurisdiction.	All Hazards	High	Chatham County Emergency Services, Jurisdiction Manager	Local	Low, Staff Time	0-1 Years	To Be Continued	Emergency Access is reviewed during the permitting process and evaluated after each emergency event by Siler City Public Safety Staff. This action will be updated as needed or during the next HMP update process.
Siler City	Prevention	At the next Land Use Plan Update, review and include hazard mitigation objectives.	All Hazards	Moderate	Siler City Planning Department, Jurisdiction Manager	Local	Medium		Complete	A new Comprehensive Land Use Plan was adopted in July 2024 and includes goals and objectives related to hazard mitigation.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Siler City	Prevention	Building Inspections—Flood Damaged Structures. All portions of buildings that have been submerged for any length of time will be inspected for flood related damage as well as other conditions that may be dangerous to life, health, or other property. Plan for Damaged Structures:	Flood	High	Siler City Management, Chatham County for actual inspections.	Local	Medium	5+ Years	To Be Continued	Town will continue to work with the Chatham County Inspections Department to inspect properties after weather events including flooding. This action is implemented as needed, and the action will be updated as needed.
Siler City	Prevention	Policy and procedures related to storm damage and disconnected utility services: 1) inform public via television, radio and newspaper of the necessary steps to have utilities restored; 2) restrict travel as necessary while collecting damage assessment data; 3) conduct inspections on first come, first serve basis; 4) work overtime to expedite utility reconnections.	All Hazards	High	Siler City Planning Department	Local	Low	5+ Years	To Be Continued	The Town has transitioned utility services to Tri River Water, so we will develop a notification plan to provide citizens with information on utility outages within the Siler City jurisdiction which will be maintained regularly. This action will be implemented as needed or during the HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Siler City	Prevention	Reevaluate Storm Water Management Ordinance to require storm water control from development.	Flood	High	Siler City Planning Department	Local	Low	0-1 Years	In Progress	The Town is currently in the process of a complete rewrite of the UDO to include revised stormwater regulations. Estimated completion date is the first quarter of 2026. This action will be updated upon completion of the stormwater regulation revisions or during the next HMP update process.
Siler City	Prevention	Reevaluate the existing Watershed Protection Ordinance to provide onsite stream determinations and increased riparian buffer widths on existing streams and newly classified riparian areas.	Flood	High	Siler City Planning Department	Local	Low	0-1 Years	In Progress	The Town is currently in the process of a complete rewrite of the UDO to include revised watershed and riparian buffer standards. Estimated completion date is the first quarter of 2026. This action will be updated upon completion of the stormwater regulation revisions or during the next HMP update process.
Siler City	Public Education and Awareness	Advertise all hazard education materials for public consumption.	All Hazards	High	Chatham County Planning, Jurisdiction Manager	Local	Low, Staff Time	5+ Years	To Be Continued	Town will update their website to include educational information about flooding and all-hazards, links to NC Flood Risk Information System (FRIS), NC Flood Inundation Mapping and Alert Network (FIMAN), READYCHATHAM.ORG, and

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										others. Information to assist citizens with educational materials added to town websites with links to other organizations as needed or as new resources are identified. Action will be updated as needed or during the next HMP update process.
Siler City	Public Education and Awareness	Chatham County Environmental Health has received training on erosion and sedimentation methods. This program has been restructured to be in the Chatham County Public Works Department and includes two positions. The County has also created a position of Director of Environmental Resources within the department and filled the position with a professional engineer that is also a certified flood manager (CFM). On an annual basis, these people make numerous	Flood	High	Siler City Planning Department	Local	Low, Staff Time	5+ Years	To Be Continued	Sedimentation and Erosion Control during construction is handled by the North Carolina Department of Environmental Quality (NCDEQ) under their permitting process. Post-construction stormwater is under the authority of NCDEQ within Siler City Planning jurisdiction. This is implemented as needed or as requested by property owners as part of the permitting process. This action will be updated as needed.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		site visits to assist jurisdictions, property owners and developers with problems and potential problems associated with drainage, erosion, and flooding. Site visits are made at the request of the property owners or developer and are usually handled through the development review process.								
Siler City	Property Protection	Maintain a list of repetitive flood loss properties.	Flood	Moderate	Siler City Planning Department	Local	Low	5+ Years	To Be Continued	Staff will continue to request a list of repetitive loss properties from the North Carolina Division of Emergency Management (NCEM) annually, and this action will be updated as needed or during the next HMP update process.
Siler City	Property Protection	Improve shelter capacities with alternate power and heat sources.	All Hazards	High	Chatham County Emergency Services, Jurisdiction Manager	Local	High	5+ Years	Deferred	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.

Table 8-5: Harnett County Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Harnett County	Emergency Services	The County will conduct a training exercise each year to ensure that County emergency resource distribution operations, such as response time, communication, and coordination with the NC Department of Transportation (NCDOT), are adequate for all-natural hazard events.	All Hazards	High	Harnett County Emergency Management	Local	Low	5+ Years	To Be Continued	This has been accomplished on an annual basis and continues into the next hazard mitigation plan cycle, which is when this action will be updated.
Harnett County	Natural Resource Protection	Explore requiring all new major subdivisions to set aside land for open space and restrict any building in environmentally sensitive areas.	Flood	High	Harnett County Planning Department	Local	Low	2-5 Years	In Progress	This open space requirement has been added to the County's UDO but restricting it to all environmentally sensitive areas is still under discussion. This action will be updated as needed or during the next HMP update process.
Harnett County	Prevention	The County will make it policy that any property owner wanting to build in a floodplain, must wait for 48 hours until a complete review of the elevation certificate can be made, to	Flood	High	Harnett County Planning Department	Local	Low	0-1 Years	In Progress	Planners and Permitting staff understand the importance of a pre-construction Elevation Certificate. This action will be implemented continuously and as needed as part of the standard operating procedure. This action

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		determine that the Federal Emergency Management Agency (FEMA) form is filled out correctly and the information is accurate.								will be updated as needed or during the next HMP update process.
Harnett County	Prevention	The County will create a data layer of all known properties that are located within the floodplain to be used for future development planning purposes.	Flood	High	Harnett County GIS, Planning Department	Local, State	High	2-5 Years	To Be Continued	Pieces of strategy exist; however, fine-tuning and implementation needs more discussion. This action will continue as funding or opportunities for implementation are identified, and this action will be updated as needed or during the next HMP update process.
Harnett County	Prevention	The County will further extend its conservation zoning overlay district to protect more riparian zones of intermittent blue-line streams.	Flood	High	Harnett County Planning Department	Local	Medium	5+ Years	Deferred	Due to lack of funding and increased level of effort, the action is not complete and is deferred. The County has been working on extending the conservation overlay district, but there were more affected blue line streams than anticipated. This action will be reevaluated if funding is obtained and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Harnett County	Prevention	Explore adding a Civil Engineer position to address concerns resulting from development related issues	All Hazards	Low	Harnett County Development Services	Local	High	2-5 Years	New	Staff are currently in discussion with county administration to determine the feasibility and necessity of obtaining a dedicated staff member that addresses stormwater and development design related issues.
Harnett County	Prevention	Explore green infrastructure options to implement within residential and non-residential design criteria	Extreme Heat, Hurricane and Tropical Storm, Severe Weather, Flood	Low	Harnett County Development Services	Local	Low	2-5 Years	New	Staff are in the process of conducting research to add policies within the Unified Development Ordinance to support green infrastructure options. Adding a civil engineer position would further assist in this effort.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Harnett County	Public Education and Awareness	The County will hold an Emergency Management open house on October 1st each year to inform the public and County employees about all natural hazards and their corresponding mitigation techniques. The County will conduct community engagements, preparedness videos and regular educational efforts for the employees and citizens of the county.	All Hazards	Moderate	Emergency Management Director	Local, State, sell advertisements for public information handed out at meetings	Medium	5+ Years	To Be Continued	This is a continuous effort that has remained successful.
Harnett County	Public Education and Awareness	The County will provide a Geographic Information System (GIS) training tool that will be aimed at educating surveyors and builders about responsible growth in regard to hazard mitigation.	All Hazards	High	Harnett County GIS, Planning Department	Local, State	High	2-5 Years	To Be Continued	Pieces of strategy exist; however, fine-tuning and implementation needs more discussion. Staff does communicate with surveyors on a regular basis in reference to floodplain development and related items, such as updated Elevation Certificate forms.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Harnett County	Property Protection	Distribute information to citizens on how to retrofit homes to help prevent wind and flood damage during natural hazards.	Flood, High Wind, Hurricane, Thunderstorm, Tornado	Moderate	Harnett County Planning Department	FEMA, NCEM	Medium	1-2 Years	In Progress	Information is ready as needed for affected property owners. Brochures are available for all residents that visit the inspection department and are distributed as needed. This action will be updated as needed.
Harnett County	Property Protection	Continue to apply for pre- & post- disaster grants to buyout or elevate flood prone properties within Country Walk subdivision.	Flood	High	Planning Department, Community Development, Building Inspections	Local/State/Federal	Low	5+ Years	To Be Continued	This is on an as-needed basis per declared storm events and damaged structures. This action will continue to be implemented as funding becomes available, or as new flood prone properties are identified. This action is reviewed annually.
Harnett County	Property Protection	The County will partner with a local sand mining facility to retrofit a pit into a future reservoir.	Flood	Moderate	Harnett County Planning Department	None; unless BRAC Regional Task Force acquires other funding	Low	5+ Years	To Be Continued	No measurable progress due to lack of funding, staff, and opportunities. This action will be reevaluated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Harnett County	Property Protection	Provide backup power for critical facilities.	All Hazards	High	Harnett County Planning Department	Local/State/Federal	High	5+ Years	To Be Continued	Progress has been made with improvements to power generation at critical facilities, with the most recent in progress is the Sheriff's Office full building generator. This action will be implemented as opportunities for backup power for critical facilities and as funding opportunities are identified.
Harnett County	Prevention	Develop inundation modeling for each dam in the planning area that does not already have inundation data. Evaluate infrastructure, property, and people at risk of dam failure impacts to identify and implement projects that improve resiliency to dam failure impacts	Dam Failure	High	Chatham County Planning	Local, Federal, State	High	5+ Years	New	

Table 8-6: Town of Angier Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Angier	Prevention	Create and define suitable areas for growth by updating existing land use plans or creating a new land use plan that considers mitigation of all hazards.	All Hazards	Moderate	Zoning/ Planning Administrator, Town Administrator	Local	Low	5+ Years	To Be Continued	Woking on Comprehensive Land Use Plan which will be reviewed annually. This action will be updated as needed or during the next HMP update Process.
Angier	Prevention	Create a yearly checklist that will help monitor and protect infrastructure and existing structures from all hazards.	All Hazards	High	Public Works Director, Building Inspector	Local, State	Low	5+ Years	To Be Continued	This action will be reviewed and reviewed annually. The town has developed a checklist that will help it monitor its infrastructure and existing structures.
Angier	Prevention	The Town will involve county officials with future growth plans and patterns and hold community- visioning meetings to educate the public and developers about future growth and hazard mitigation planning for all hazards.	All Hazards	Moderate	Town Administrator, Planning Director, Town/County Boards	Local	Low	5+ Years	To Be Continued	Planning Staff are in periodic communication with County Planners to be sure County officials are aware of growth projections in Angier, and this action will be implemented regularly or as needed. The Town has also held public input sessions for various growth-related initiatives including updates to the Ordinance and the 2019 Land Use Plan update. This action will be reviewed and updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Angier	Prevention	Create new ordinances and/or strengthen existing ordinances to protect and preserve environmentally sensitive areas and open space.	Flood	High	Town Administrator, Planning/ Zoning Administrator, Town/County Boards	Local	Medium	5+ Years	To Be Continued	Planning Staff have recently overhauled the Open Space chapter of the UDO to ensure adequate open space is dedicated to new development, ensure recreational opportunities are widely available, and to protect wetlands and flood plains as vacant land is developed. Ordinances have been developed in a way that attempts to minimize degradation to environmentally sensitive areas and to preserve open space. Nevertheless, there are still revisions that could be made to the town's ordinances that would further reduce risk, and the town will investigate making those changes going forward.
Angier	Prevention	Pursue state and Federal grants that would help improve emergency services along with mitigation planning for all hazards.	All Hazards	Moderate	Town/County Manager, Planning Director, Finance Director	Local	Low	5+ Years	To Be Continued	Town staff will continue to monitor and apply for grants as it relates to identified mitigation projects, and it will be implemented as new projects are identified to improve emergency services and mitigation planning. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Angier	Public Education and Awareness	Make a list available for distribution at the Inspections Department of contractors and consultants knowledgeable or experienced in retrofitting/construction techniques for mitigation of all hazards.	All Hazards	Moderate	Chief Building Inspector, Harnett County Planning and Inspections Department	Low	Local, Possible Grant	5+ Years	To Be Continued	Created Town of Angier's own Inspections Department in July 2024. We no longer use the Harnett County Inspections Department. We will continue to review and update this list annually, and this action will be reviewed and updated as needed or during the next HMP update process.
Angier	Property Protection	Provide backup power for critical facilities.	All Hazards	High	Town/County Manager, Planning Director	Local, State, Federal	Medium	5+ Years	To Be Continued	This action will be implemented as funding and project opportunities become identified. This action will be updated as needed or during the next HMP update process.
Angier	Structural Project	Try to set aside monies for long range Capital Improvement Projects that would help protect public health and safety from all hazards.	All Hazards	Moderate	Town/County Manager, Planning Director, Finance Director	Local	Medium	5+ Years	To Be Continued	Through the collection of System Development Fees for new development, the Town has and will continue to set aside money for long-range capital improvement projects as new projects are identified, such as partnering in the future expansion of the Northwest Harnett Regional Treatment Plant to serve the needs of new development. This action will be updated as needed or during the

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										next HMP update process.

Table 8-7: Town of Coats Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Coats	Emergency Services	The Town will update and revise its Emergency Services and Disaster Response Readiness Plan.	All Hazards	High	Town of Coats Public Works Department, Coats Police Department, Town Manager, Town Board	Local	Medium	5+ Years	To Be Continued	No measurable progress has been made due to staffing limitations. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Coats	Prevention	The Town will initiate a policy to identify and remove potentially dangerous trees and vegetation along public roadways.	Thunderstorm, High Wind, Hurricane, Winter Storm	High	Town of Coats Board of Commissioners	Local	Medium	5+ Years	To Be Continued	No measurable progress has been made after 2024 due to staffing limitations. As resources allow, staff will resume a program for identifying and removing dangerous trees and vegetation. This action will be updated as needed or during the next HMP update process.
Coats	Prevention	The Town will conduct quarterly inspections of all storm sewers and open ditches to evaluate their readiness and to make corrections as needed. The Town will review and update its Storm Water Readiness Plan.	Flood	High	Town of Coats Public Works Department	Local	High	1-2 Years	To Be Continued	No measurable progress has been made after 2024 due to staffing limitations. As resources allow, staff will restart a program of quarterly inspections of storm sewers and open ditches. Action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Coats	Prevention	Ensure that all redevelopment and growth is sustainable to all hazards through the development of new Zoning and Subdivision regulations.	All Hazards	High	Town of Coats Planning Board and Board of Commissioners	Local	High	5+ Years	To Be Continued	Monthly Planning Board updates had been discontinued after 2024 due to staff changes but will resume beginning in 2026 and continue moving forward. Beginning in 2026, zoning and subdivision regulations will be reviewed semiannually to ensure that hazard mitigation planning continues to evolve as the Town grows and redevelops. This action will be implemented as staffing limitations are resolved and will be updated as needed or during the next HMP update process.
Coats	Prevention	The Town will develop a checklist to be used for an annual inspection of all Public Buildings to ensure they remain as structurally secure as possible during all hazard events.	All Hazards	High	Coats Public Works Department, Town Manager, Town Board	Local	Low		Complete	Major renovations were completed to keep stormwater from entering parts of the Town Hall complex.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Coats	Prevention	The Town will utilize information obtained from the county GIS floodplain project to prevent redevelopment in flood prone areas and to help identify any currently developed areas that may be at risk.	Flood	Moderate	Town Manager, Town Planning Board, Town Board	Local	Medium	5+ Years	In Progress	The Town will continue to regulate development in the floodplain to mitigate risk continuously. Additional coordination with County staff is needed to develop a consistent planning and review process.as needed and the action will be updated as needed or during the next HMP update process
Coats	Prevention	The Town will include in its new Zoning Ordinance an Open Space District Classification that will effectively set aside any environmentally sensitive areas and restrict any development therein.	Flood	Moderate	Town Manager, Town Planning Board	Local	Medium	5+ Years	In Progress	The Town is continually enforcing code changes included in the 2022 Coats Development Ordinance that require reservation of open space in residential zoning districts. The Town continues to explore opportunities for acquiring additional acreage for public parks. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Coats	Prevention	The Town will update its Land Use Plan with special emphasis being given to any environmentally sensitive or flood-prone areas.	Flood	Moderate	Town Manager, Town Planning Board	Local	Medium	5+ Years	To Be Continued	Coats's Land Use Plan and map was adopted in July 2025. The Comprehensive Land Use Plan (CLUP) includes the "Conservation and Open Space" character area that discourages development near streams, floodplains, and large wetland areas. This land use will be maintained regularly. This action status will be updated as needed or during the next HMP update process.
Coats	Property Protection	Provide backup power for critical facilities.	All Hazards	High	City Council, Planning Department, Public Works Department	Local, State, Federal	Medium	5+ Years	New	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available. This action will be updated as needed or during the next HMP update process.
Coats	Public Education and Awareness	The Town will educate and solicit public input concerning hazard mitigation strategies and policies through semiannual Town Meetings.	All Hazards	Moderate	Board of Commissioners& Planning Board, Harnett County EMC	Local	Medium	5+ Years	To Be Continued	No measurable progress has been made after 2024 due to staffing limitations. As resources allow, staff will restart a program of promoting semi-annual town meetings to seek resident input. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Coats	Public Education and Awareness	The Town will develop an informational flier to be distributed each year that will provide our citizenry with information and suggestions useful during natural disasters.	All Hazards	Moderate	Coats Public Works Department, Town Manager, Town Board	Local	Medium	5+ Years	To Be Continued	No measurable progress has been made after 2024 due to staffing limitations. The information flyer will be updated and printed as funding becomes available. This action will be updated as needed or during the next HMP update process.
Coats	Structural Project	The Town will target infrastructure needs during the development of the annual Town budget.	All Hazards	High	Coats Public Works Department, Town Manager, Town Board	Local	Low	5+ Years	To Be Continued	Beginning with the Fiscal Year (FY) 2026-27 budget, the Town will begin including a Capital Improvement Plan with its proposed budget. The Capital Improvement Plan (CIP) will include infrastructure projects that mitigate hazards for property owners and residents. This action will be updated as needed or during the next HMP update process.

Table 8-8: City of Dunn Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Dunn	Natural Resource Protection	Create a policy to establish vegetative buffers on all properties bordering drainage canals, creeks, streams, etc. to prevent water contamination.	Flood	Moderate	Planning Department, Planning Board, Inspections Department, City Council, Public Works, County Environmental Health Department	Local, State	Low		Complete	We have a landscape ordinance that requires buffers.
Dunn	Natural Resource Protection	Create a policy to require quarterly checks on these buffers to ensure that they are free of debris and are maintained properly.	Flood	Moderate	Planning Department, Planning Board, Inspections Department, City Council, Public Works, County Environmental Health Department	Local, State	Low	5+ Years	To Be Continued	Currently laying the foundation on the combined effort of the Planning Department and Public works to adequately locate and create a maintenance plan to ensure compliance in these specific areas. This will be implemented when possible and updated as needed or during the next HMP update process.
Dunn	Prevention	Create policy to annually trim trees and cut down dead trees under the city's supervision prior to April 15th.	Thunderstorm , High Wind, Hurricane, Winter Storm	Moderate	Public Works Department, City Council & Planning Board	Local	Medium	5+ Years	To Be Continued	A policy has been adopted to trim trees and cut down dead trees. This is done every year, at least twice a year. The city will continue to implement this action going forward, and this action will be updated as needed or during the next HMP

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										update process.
Dunn	Prevention	Create and modify existing policies to prevent buildings in areas prone to flooding and/or wind damage.	Flood, Thunderstorm, High Wind, Hurricane, Tornado	Moderate	Planning Department, City Council & Planning Board	Local, State	Medium	5+ Years	In Progress	The city has some policies in place to prevent building in flood/wind prone areas but needs to do a study of its stormwater system and lacks the funding to do so. This action will be implemented as funding allows, and the action will be updated as needed or during the next HMP update process.
Dunn	Prevention	Create a policy to require private property owners to remove storm debris (trees, limbs, etc.) within 45 days to prevent potential fire hazards to existing structures.	Wildfire	Moderate	Planning Department, Planning Board, Inspections Department, City Council	Local, State, Federal	Medium	5+ Years	In Progress	An ordinance was created allowing inspections to sit down and dead trees. A 45-day storm specific policy will be looked at as a possible revision when funding allows. This action will be updated as needed or during the next HMP update process.
Dunn	Prevention	Create policy to inspect public buildings on an annual basis for areas that need repair to keep the buildings as structurally sound as possible.	All Hazards	Moderate	Planning Department, Planning Board, Inspections Department, City Council	Local, State, Federal	Medium	5+ Years	To Be Continued	Building inspectors do this at least once a year. The building inspections department will continue to inspect public buildings to ensure they are structurally sound. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Dunn	Prevention	Create a policy to prevent redevelopment in areas that are especially prone to flooding and wind damage, especially repetitive loss of structures in the City.	Flood, High Wind, Hurricane, Thunderstorm, Tornado	Moderate	Inspections & Planning Department, Planning Board, City Council, Public Works	Local, State	Medium	5+ Years	Deferred	Deferred due to lack of funding for locating all flood and wind prone areas within the city. This action will be implemented as funding allows and updated as needed or during the next HMP update process.
Dunn	Prevention	Create a stormwater management ordinance and provide the inspectors and/or code enforcement officers with the authority to complete inspections of businesses that could cause potential harm to the environment in the case of a natural hazard occurrence.	Flood	Moderate	Planning Department, Planning Board, Inspections Department, City Council, Public Works, County Environmental Health Department	Local, State	Low	5+ Years	In Progress	This ordinance is not in place but is still a priority for the city. Funds are needed to hire the appropriate firm/engineer to draft the ordinance. Lack of funding currently but is still a priority of administration to address. This action will be updated as needed or during the next HMP update process.
Dunn	Prevention	Ensure proper stormwater best management practices are implemented for repetitive loss property, and for area	Flood	Moderate	City Council, Planning Department, Public Works Department	Local funding, grants	Low	5+ Years	To Be Continued	Stormwater's best practices are reviewed annually. Best management practices are in place for stormwater in the vicinity of the repetitive loss property, but the area will need to continue to be monitored

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		in its vicinity if development occurs								and evaluated. This action will be updated as needed or during the next HMP update process.
Dunn	Property Protection	Seek funding to retrofit or acquire repetitive loss of property.	Flood	Moderate	Planning Department, Planning Board, Inspections Department, City Council	Local, State, Federal	Medium	5+ Years	In Progress	No measurable progress to lack of funding. This action will be implemented as funding is identified, and the action will be updated as needed or during the next HMP update process.
Dunn	Property Protection	Provide backup power for critical facilities.	All Hazards	High	City Council, Planning Department, Public Works Department	Local, State, Federal	Medium	5+ Years	To Be Continued	Critical facilities that need backup power will be provided by generators as funding becomes available. This action will be updated as needed or during the next HMP update process.
Dunn	Public Education and Awareness	Create a brochure to increase public awareness of the benefits of being more conscientious in mitigation activities that minimize loss of property/property damage from all hazards.	All Hazards	Moderate	Administration, City Council	Local, Grant Money	Low	5+ Years	In Progress	The Communication Coordinator was hired in 2020 and will be creating a brochure to increase public awareness of the benefits of mitigation activities. This action will be implemented as needed and will be updated as needed or during the next HMP update process.

Table 8-9: Town of Erwin Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Erwin	Emergency Services	Renew and update disaster response/readiness plan.	All Hazards	Moderate	Erwin Board of Commissioners, Fire & Emergency Services Director	Local	Low	1-2 Years	In Progress	The Town of Erwin works closely with our neighbors and Harnett County Emergency Management. The town updates its response/readiness plan on an annual basis and continues to review and update annually. This action will be updated as needed or during the next HMP update process.
Erwin	Emergency Services	Build a new Police Department	All Hazards	Moderate	Administration, Planning, Police, Town Council	Debt, grants, savings	High	5+ Years	New	Still in the early stages. We need to build a new Police Department. The new building will be better equipped to help our Police operate. It will be better equipped (back-up power/kitchen) to help us respond to hazards. We will be able to have more staff on site to respond to a hazard.
Erwin	Natural Resource Protection	Continue to manage development within any floodplain.	Hurricane & Tropical Storm, Severe Weather, Dam Failure, Flood	Moderate	Planning	Budget	Medium	5+ Years	New	We hired a full-time Town Planner to manage the growth that we are starting to see. In the past, the Town Manager has served as the Town Planner. Floodplain development is monitored continuously, and this action will be updated as needed or during the next HMP update

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										process.
Erwin	Prevention	Encourage activities that will make structures less susceptible to damage during natural hazard events through improving the Erwin code of ordinances and creation of a storm-water management plan.	All Hazards	Moderate	Town of Erwin Planning Department and Planning Board	Local, Grant	Low	0-1 Years	In Progress	Currently under contract with TRC to prepare a stormwater management plan for the entire town and create a capital improvement plan to improve our existing system. This will be updated as needed.
Erwin	Prevention	Meet quarterly with other local governments to discuss new ideas that will help Erwin provide safe and responsible growth patterns for the future.	All Hazards	Moderate	Erwin Planning Department	Local	Low	5+ years	To Be Continued	The Town of Erwin has hired a full-time Town Planner to assist with managing the growth. The Manager and Town Planner meet with surrounding local governments often and regularly. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Erwin	Prevention	Encourage growth only in areas suitable for development and preserve open space in environmentally sensitive areas through enforcement of a Comprehensive Land Use Plan.	Flood	Moderate	Town of Erwin Planning Board	Local	Low	5+ Years	To Be Continued	Updated Land Use Plan in 2023, currently implementing updates to our Flood Damage Prevention Ordinance. The town will continue to review and update the plan going forward, so this action will remain in the plan.
Erwin	Prevention	Collect data on repetitive stormwater incidents to create a GIS layer for the town.	Flood, Hurricane, Thunderstorm	Moderate	Planning and Zoning	Local Budget	Low	1-2 Years	In Progress	Working on a Stormwater management plan. The consultants collected survey data/pictures from our residents and have taken pictures of every ditch/stormwater structure in Town. Will collect data as needed and will update the action as needed or during the next HMP update process.
Erwin	Prevention	Continue being a member of the National Flood Insurance Program. Review all zoning permit applications to ensure compliance with the Town's Flood Damage Prevention	Flood	High	Planning and Zoning; Town Engineer	Local Budget	Low	5+ Years	To Be Continued	The Town will continue to be in the National Flood Insurance Program (NFIP). We are currently working on updates to our Flood Damage Prevention Ordinance. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		Ordinance.								
Erwin	Prevention	Create a Storm Water Management Plan for the Town of Erwin. Use the plan to create a Capital Improvement Plan to improve our stormwater system	Flood	High	Administration /Planning/Town Council	Funded by a grant from the State of NC	High	5+ Years	New	The Plan should be finalized on FY 26, and the new Capital Improvement Plan should be finalized in FY 26. We have hired the firm TRC to assist with this plan. We have collected survey data/pictures to help with the plan. TRC is hard at work on this plan. This action will be updated as needed or during the next HMP review process.
Erwin	Prevention	Update/Create/ Implement New Plans	Severe weather	Moderate	Administration /Planning	Budget	Medium	5+ Years	New	With the more frequent severe weather we have been experiencing, we need to stay on top of our Land Development Plans and protect our natural resources. Implement small area plans, update our Town Code, and other plans as needed.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Erwin	Property Protection	Provide backup power to critical facilities.	All Hazards	High	Emergency Services Director,	Public/private partnership, grants	High	2-5 Years	In Progress	We replaced a generator last year that provides power to our Police Department. It is more efficient and dependable compared to the previous one used in this building. We are considering building a new Police Station and/or Public Works. Any new building will have a generator. This action will be implemented as new projects are identified, or funding becomes available. This action will be updated as needed or during the next HMP update process.
Erwin	Public Education and Awareness	Improve education and outreach to the community regarding flood hazards and flood mitigation through dissemination of mitigation pamphlets in the Town Hall.	Flood	High	Chief Building Inspector	Local	Low	5+ years	To Be Continued	We have reached out to the public to include them in the stormwater management plan. We have hired someone to serve as our Town Planner on a full-time basis. Harnett County still handles building inspections. Our Town Planner does a great job of educating citizens about flood zones, etc. This action will be implemented where possible and when funding is available, and the action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Erwin	Public Education and Awareness	Maintain a system for identifying the Town's special needs citizens.	All Hazards	Moderate	Police Department	Local	Low	5+ Years	To Be Continued	According to Police Chief, a program was started "are you ok program." Town has record of where our special needs citizens live. Town will continue to investigate upping the participation in the "are you ok" program. This will be addressed as needed and will be updated as needed or during the next HMP update process.
Erwin	Public Education and Awareness	Provide education materials on preparedness/mitigation measures on www.erwin-nc.org to include ReadyNC.org and www.dhs.gov/ready.	All Hazards	Moderate	Planning and Zoning	Local Budget	Low	2-5 Years	In Progress	The Town will be implementing a brand-new website in the next 1-2 years. We need to have some updates implemented by 2027. This action will be updated as needed or during the next HMP update process.
Erwin	Public Education and Awareness	Create a brochure to increase public awareness of the benefits of being more conscientious of mitigation activities that minimize loss of property/property damage.	All Hazards	Moderate	Administration, City Council	Local, Grant Money	Low	5+ Years	To Be Continued	We hired a full-time Town Planner to help address some of these issues. This action will be implemented as funding or opportunities become available. This action will be updated as needed or during the next HMP review process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Erwin	Structural Project	Implement East Erwin Drainage Project with design and permitting in FY2014.	Flood, Hurricane, Tornado, Thunderstorm	High	Town Engineer and Public Works	Local Operating Budget, Federal/State Grants	High	5+ Years	To Be Continued	We completed the first phase of the East Erwin Drainage Project in FY 2020 as described in the 2020 update. We have applied for several grant opportunities to help with Phase 2/Phase 3 of the East Erwin Drainage project. We have scored high on several submittals but have not received funding. Phases 2 and 3 are much bigger projects compared to the culverts we improved in Phase 1. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Erwin	Structural Project	Implement South 13th Street Drainage Project, proposed for completion in FY2016.	Flood, Hurricane, Tornado, Thunderstorm	High	Town Engineer and Public Works	Local Operating Budget, Federal/State Grants	Low	2-5 Years	Deferred	This project never happened. This project would have to be handled by NCDOT and not the Town of Erwin. The drainage issues need to be addressed. Hopefully, this issue will be addressed in our Storm Water MGT Plan that should be finalized by May 2026. This action will be implemented where possible and when funding becomes available. This action will be updated as needed or during the next HMP

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										update process.
Erwin	Structural Project	As part of stormwater management plan, conduct regular schedule of ditch maintenance.	Flood, Hurricane, Tornado, Thunderstorm	High	Town Engineer and Public Works	Local Operating Budget, Federal/State Grants	Low	1-2 Years	In Progress	The Town has hired the engineering firm TRC to help us develop a Stormwater management Plan for the entire Town. They will assist with a Capital Improvement Plan to help us address issues that need to be fixed. The plan should be finalized by May 2026. There is current political support for this project. This action will be updated as needed or during the next HMP update process.
Erwin	Structural Project	Phase 2 East Erwin Drainage Project Design	Hurricane & Tropical Storm, Severe Weather, Flood	High	Administration, Public Works, Engineering, Town Council	Savings	High	5+ Years	New	We need political support to use some of our savings to complete the design of Phase 2 of the East Erwin Drainage project. We have found that it is hard to get a grant for a structural design that you might not be able to fund. Looking for potential grant opportunities. This action will be implemented when funding becomes available. This action will be updated as needed or during the next HMP update process.

Table 8-10: **Town of Lillington Mitigation Action Plan**

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Lillington	Emergency Services	To protect life and property through continuing efforts to improve emergency response, mitigation, and preparation.	All Hazards	Moderate	Town Manager, Local Fire Chiefs	Local	Low	5+ Years	To Be Continued	The town is fully committed to emergency response and preparation activities and has been well prepared for major events in the past. In the future, the town will continue to put a strong emphasis on these activities and ensure it is ready for the next disaster event. This action is implemented as needed and will be updated as needed or during the next HMP update process.
Lillington	Natural Resource Protection	Rewrite Zoning Ordinance to protect natural areas along the Cape Fear River and to determine the correct riparian buffer to preserve open space and limit development.	Flood	High	Town Manager	Local	Low		Complete	The Zoning Ordinance has been re-written to protect natural areas along the Cape Fear River and to preserve open space and limit development. This ordinance is in place, so this action is complete and is a capability.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Lillington	Prevention	To include in our rewrite of our Zoning Ordinance and Subdivision Ordinance sound planning practices that allow only responsible growth in floodplain areas. Note: All new buildings are inspected by Harnett County. The Town will coordinate with the County to make sure that all applicable building codes are followed with regard to hurricane or high wind standards.	Flood, Hurricane, High Wind	High	Town Board of Commissioners, Town Manager	Local	Low		Complete	The Town has their own inspections department and no longer work with Harnett County for building inspections.
Lillington	Prevention	The Town will aim to have floodplain data and other useful tools available online to aid responsible growth.	Flood	High	Town Manager	Local	Low	5+ Years	In Progress	The town has developed a number of tools that have been displayed online, and which can help citizens better understand responsible growth strategies. Tools and information are updated annually online. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Lillington	Public Education and Awareness	Send out newsletter to inform the community of disasters and mitigation for all hazards.	All Hazards	Moderate	Town Manager	Local	Low	5+ Years	To Be Continued	The town sends out an annual newsletter to let property owners know when hurricane season has begun and ends. The town also puts out a lot of information on the strategies that property owners can take to protect their property from all natural disasters. This action will be updated as needed or during the next HMP update process.
Lillington	Structural Project	Retrofit all Town owned buildings to safeguard against all natural disasters and distribute information to the community on how to retrofit privately owned structures.	All Hazards	Low	Town Manager and Director of Public Works	Local	Low	5+ Years	In Progress	The town has retrofitted many public buildings, but it will need to continue to work to meet the goal of retrofitting all buildings, especially as new techniques are developed to make structures more resilient. The town will additionally work to improve its outreach to homeowners to help them better understand the benefits of retrofitting and the best strategies for doing so. This action will be reevaluated as needed or during the next HMP update process.

Table 8-11: Johnston County Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Johnston County	Emergency Services	The Johnston County Continuity of Operations Plan (COOP) will be upgraded.	All Hazards	Moderate	Emergency Services Director	NCEM grant	Medium	2-5 Years	To Be Continued	COOP update was completed in 2020. The COOP is currently under review for additional updates, and the plan will be updated annually.
Johnston County	Emergency Services	Establish a site for supporting an NC Office of Emergency Medical Services (NCOEMS) Medical Support Shelter. (CapRac).	All Hazards	High	Emergency Services Department	In house staff	High	5+ Years	Complete	Johnston County Emergency Services, CapRac, and NCEM have worked with C3 churches to utilize their facility as a Special Medical Needs Shelter. This action is complete.
Johnston County	Natural Resource Protection	Replace Sluice Gate	Flood, Hazardous Materials Incident	High	DOT Emergency Services	DOT	High	1-3 Years	New	Working to replace sluice gate between terminals and the Neuse to help prevent contamination in the event of a disaster. Will be updated and evaluated as needed.
Johnston County	Prevention	Johnston County will apply to reduce their NFIP-CRS (Community Rating System) score.	Flood, Hurricane, Thunderstorm	Moderate	Emergency Services Coordinator, Environmental Protection Administrator	In house staff	Low	5+ Years	To Be Continued	Johnston County Planning Department continues to work on floodplain management programs that will facilitate reducing the CRS score. Will continue to evaluate opportunities to reduce the CRS score, as necessary.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Johnston County	Prevention	Conduct a county dam safety inventory. People downstream of hazardous dams would be notified. Owners would be notified of ways to reduce the risk of their dams.	Dam Failure	Low	Public Utilities Director	In house staff	Medium	5+ Years	Deferred	Not sufficient funding or resources to complete at this time. Will be reevaluated as needed or during the next plan update.
Johnston County	Prevention	Develop a Johnston County Burning Ordinance.	Wildfire	Low	Fire Marshal	In house staff	Low	5+ Years	In Progress	The Fire Marshal Division continues to seek a Fire Protection Ordinance for the county.
Johnston County	Property Protection	Relocation of 4 server boxes located in the basement of the Johnston County Courthouse and/or increase from one to multiple servers at the Johnston County Health Department to increase redundancy.	Flood, Hurricane, Thunderstorm	High	Technology Services Director	Grants, General Fund budget	Low		Complete	Relocated server boxes.
Johnston County	Property Protection	Replace generator at Pine Level wastewater pump station.	All Hazards	High	Public Utilities Director	General Fund Budget	Medium		Complete	

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Johnston County	Property Protection	Provide auxiliary heating and cooling capability and generator connections to shelter sites at North Johnston Middle School, West Johnston High School, and First Baptist Church Smithfield.	All Hazards	Moderate	Emergency Services Director, Johnston County School System	Public/private partnership, industry donations, lease units, assistance groups (i.e., Red Cross)	High		Complete	
Johnston County	Property Protection	Provide backup power to critical facilities.	All Hazards	High	Emergency Services Director,	Public/private partnership, grants	High	2-5 Years	To Be Continued	Transfer switches and generator power have been added to multiple locations and additional assessments have been completed for future enhancements. Opportunities for backup power for critical facilities will be evaluated as needed.
Johnston County	Property Protection	Develop software to connect Building Inspections, Public Utilities, Environmental Health, Emergency Services and Planning and Zoning for property related permitting.	Hurricane & Tropical Storm, Severe Weather, Tornado, Flood	High	Inspections	Budget & Grants	High	1-2 Years	New	

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Johnston County	Property Protection	Technology Redundancy: Implement and enhance technological redundancy strategies to ensure that in the event of severe weather or natural hazards new technological capabilities will reduce vulnerability and downtime. This includes projects including, but not limited to, alternative communication networks, resilient technology solutions, and infrastructure resilience improvements.	Severe Weather, Tornado, Terror Threat, All Hazards	High	Johnston County Technology Services	Budget	High	5+ Years	New	New methods of technological capability redundancy and potential projects are currently being researched for development. This action will be reevaluated as needed.
Johnston County	Public Education and Awareness	On an annual basis, the FEMA repetitive loss property list will be obtained from NCEM. At that time, letters will be sent to the owners of the repetitive loss structures to notify them of their status and to offer information on programs that could help.	Flood, Hurricane, Thunderstorm	Moderate	GIS Application Analyst, Emergency Services Coordinator	In house staff	Low	5+ Years	To Be Continued	The county continues to update its repetitive loss list and will continue to attempt to notify property owners to institute mitigation. This will be completed annually.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Johnston County	Public Education and Awareness	Update and maintain educational information and links on the County websites for the public to access in order to stay informed regarding all natural hazards.	All Hazards	Low	Emergency Services Department	In house staff	Medium	5+ Years	To Be Continued	Developed EM Alerts page for community information. Continuous updates to social media and websites to improve communication will be evaluated. The County website will be updated as needed and new information will be included regularly.
Johnston County	Public Education and Awareness	Develop and print a brochure outlining wind proofing methods above and beyond Code. This will be offered in the Inspections Department receptionist area.	Hurricane, Thunderstorm, Tornado	Low	Steven Finn (Planning and Inspections Director)	In house staff	Low		Deleted	The current building code requires a 120-mph wind-resistant rating, so adequate wind proofing requirements are already required in new construction.
Johnston County	Structural Project	Improve the County water system to provide hydrant coverage to 85 percent of County Fire Districts.	Fire	High	Emergency Services Director	In house staff	High	5+ Years	In Progress	Improving hydrant coverage to a goal of 85 percent; currently at 50%. This will be reevaluated periodically until the goals of 85% are reached.
Johnston County	Structural Project	Complete rehabilitation work on three gravity sewer outfalls to reduce system infiltration.	Flood, Hurricane, Thunderstorm	High	Public Utilities Director	General Fund Budget	High		Complete	

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Johnston County	Structural Project	Replace bridge No. 40 located on US 70 Business (Market St.) over Neuse River.	Flood	High	Emergency Services Director	In house staff	Low		Complete	This bridge was constructed in 2013.
Johnston County	Structural Projects	Replace capacity from central wastewater treatment facility and relocate at 210 WWTF and abandoned existing plant.	Flood	High	Public Utilities	Enterprise Fund & Grants	High	5+ Years	New	Plan to be completed on a phase-by-phase basis. Phase 1 is complete.
Johnston County	Prevention	Develop inundation modeling for each dam in the planning area that does not already have inundation data. Evaluate infrastructure, property, and people at risk of dam failure impacts to identify and implement projects that improve resiliency to dam failure impacts	Dam Failure	High	Chatham County Planning	Local, Federal, State	High	5+ Years	New	

Table 8-12: *Town of Archer Lodge Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Archer Lodge	Emergency Services	Work with Johnston County to upgrade the Continuity of Operations Plan (COOP).	All Hazards	Moderate	Emergency Services Director	NCEM grant	Low	5+ Years	To Be Continued	Continually working with county to meet goals and update the Continuity of Operations Plan. This action is implemented as needed and will be updated as needed or during the next HMP update process.
Archer Lodge	Property Protection	Provide backup power to critical facilities.	All Hazards	High	Public Works	Operating Budget, Federal/ State Grants	High	5+ Years	To Be Continued	This action has made no measurable progress due to a lack of funding. This action will be implemented as funding becomes available or as critical facilities are identified that need backup power. This action will be updated as needed or during the next HMP update process.
Archer Lodge	Property Protection	Flood damage prevention ordinance	Flood	High	Town Administration	Archer Lodge & work performed by Town Administration	Low	5+ Years	To Be Continued	Reviewed and updated regularly. 2009 flood prevention ordinance updated and re-adopted June 4, 2018, and the ordinance will be updated as needed. This action will be updated as needed or during the next HMP update process.
Archer Lodge	Public Education	Collaborate with Johnson County Emergency	All Hazards	Low	Town Administration	Archer Lodge & action item	Low	5+ Years	To Be Continued	Annual review is completed with applicable information on Johnston

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
	and Awareness	Management (EMS) by reviewing and suggesting applicable updates to available information on Johnston County's EMS Website for the public to access/stay informed on natural hazard risks and mitigation techniques				work performed by Town Administration				County's Emergency Management Website. This action will be updated as needed or during the next HMP update process.
Archer Lodge	Public Education and Awareness	Make available to the public any brochures/materials that may be available from the county, state, or federal level that outline homeowner mitigation techniques for all hazards.	All Hazards	Low	Town Administration	In house staff	Low	5+ Years	To Be Continued	Dissemination of information occurs regularly. Archer Lodge Website updated. Under local information tab on the website, link has been installed to go to Johnston County Emergency Management web page and added link to preparedness information. This action will be updated as needed or during the next HMP update process.
Archer Lodge	Structural Project	Work with the county to improve water systems to provide hydrant coverage to 85 percent of County Fire Districts.	Fire	High	Emergency Services Director	In house staff	Low	5+ Years	To Be Continued	Continually working with county to meet goals and improve water systems to provide hydrant coverage to 85% of county fire districts. This action will be updated as needed or during the next HMP update process.

Table 8-13: Town of Benson Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Benson	Emergency Services	Enter into agreement with Johnston County to use the current county hazard notification system.	All Hazards	Low	Administration	Local	Low	5+ Years	To Be Continued	Benson utilizes JoCoAlerts through Johnston County for emergency notifications through our interlocal agreement. This will be reviewed and updated as needed or during the next HMP update process.
Benson	Emergency Services	Maintain a list of residents with special needs.	All Hazards	High	Administration	Local	Low	5+ Years	To Be Continued	This information is kept in the utility software and maintained as needed. This action will be updated as needed or during the next HMP update process.
Benson	Emergency Services	Identify and attend additional hazardous material response training.	Hazardous Materials Incident	High	Fire Department	Local, State, and Federal Grants	Low	0-2 Years	New	Benson's district includes two major transportation corridors: I-40/I-95 and a CSX rail line. Both routes regularly carrier hazardous materials in transit across the State and Country. To ensure responders are equipped for these types of responses, we will include additional hazardous material response training throughout the year. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Benson	Prevention	Propose a stormwater drainage study.	Flood, Hurricane, Tornado, Thunderstorm	Moderate	Planning, Public Works	Local, Federal/State Grants	Medium	5+ Years	To Be Continued	Baseline model has been completed but needs to be updated every 5 years. This action will be updated every 5 years and will be updated as needed or during the next HMP update process.
Benson	Prevention	Maintain all utility rights-of-way by trimming trees around power lines and maintain right-of-way of water/sewer lines.	All Hazards	High	Electric Department, Public Works Department	Local	Low	5+ Years	To Be Continued	Tree trimming is maintained on an annual basis by Electric & Public Works Departments to ensure all utilities are accessible. This action will be updated as needed or during the next HMP update process.
Benson	Prevention	Maintain a list of contractors to assist towns in emergencies.	All Hazards	Moderate	Administration	Local	Low	5+ Years	To Be Continued	The Town reviews and updates emergency contracts annually and/or as needed to ensure continuation of operations during an emergency. This action will be updated as needed.
Benson	Property Protection	Conduct smoke testing and camera system of existing sewer lines.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating Budget, Federal or State Grants	High	5+ Years	To Be Continued	Storm water lines are smoke tested annually for compliance with the Town's MS4 permit to locate inflow and infiltration for remediation. This action will be updated as needed or during the next HMP update process and completed annually

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Benson	Property Protection	Conduct a comprehensive drainage study.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating Budget, Federal or State Grants	High	5+ Years	To Be Continued	Baseline model has been completed and will be updated every 5 years. This action will be updated as needed or during the next HMP review process.
Benson	Property Protection	Replace three existing pump stations.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating Budget, Federal or State Grants	High	2-5 Years	In Progress	Benson is working to obtain grant funding to update and/or decommission identified pump stations. Rehabilitation began at the I-40 pump station. This action will be implemented as funding becomes available or as new project opportunities are identified. This action will be updated as needed or during the next HMP update process.
Benson	Property Protection	On pump stations, raise all controls above Base Flood Elevation. Lift Station needs to be 2ft higher.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating Budget, Federal or State Grants	High	2-5 Years	In Progress	Benson is working to obtain grant funding to update pump stations, and this action will be implemented as funding becomes available or as new projects are identified. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Benson	Property Protection	Provide backup power to critical facilities.	All Hazards	High	Public Works	Operating Budget, Federal or State Grants	High	2-5 Years	In Progress	As critical facilities are updated, backup power is being installed. We are looking for additional funding for further installation and future projects will be implemented as funding becomes available. This action will be updated as needed or during the next HMP update process.
Benson	Public Education and Awareness	Maintain and update the Town of Benson website.	All Hazards	Low	Administration	Local	Low	5+ Years	To Be Continued	Public education is posted regularly throughout the year for topics including, but not limited to, stormwater management, fire safety, hazardous materials, and emergency preparation. This action will be implemented annually and updated as needed or during the next HMP update process.
Benson	Public Education and Awareness	Educate the public about all potential natural disasters.	All Hazards	High	Administration	Local	Low	5+ Years	To Be Continued	In addition to updating the Town website, we pushed the information to all the Town's social media. The Fire Department hosts annual fire prevention for daycare, schools, and other agencies in our district. This action is implemented annually and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Benson	Public Education and Awareness	Information regarding fire prevention and safe burning practices will be distributed to the public.	Wildfire	Moderate	Fire Department	Local	Low	5+ Years	To Be Continued	Fire departments continue to reach out to community organizations and schools regularly to keep the public well informed. This action will be updated as needed or during the next HMP update process.
Benson	Structural Project	Continued upgrades of sanitary sewer system.	Flood, Hurricane, Tornado, Thunderstorm	Moderate	Wastewater Treatment, Public Works	Operating Budget, Federal/State Grants	High	5+ years	To Be Continued	As funding becomes available, upgrades are being done to sanitary sewer infrastructure throughout the Town. This action will continue as funding becomes available or as new projects are identified, and this action will be updated as needed or during the next HMP update process.

Table 8-14: *Town of Clayton Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Clayton	Emergency Services	The Johnston County Continuity of Operations Plan (COOP) will be upgraded.	All Hazards	Moderate	Emergency Services Director	NCEM grant	Low	5+ Years	Deferred	This action is deferred due to limited resources and will be reevaluated during the next HMP update process.
Clayton	Emergency Services	Conduct Annual Emergency Operation Center (EOC) training.	All Hazards	Low	Fire Department	Town Budget	Low	0-1 Years	To Be Continued	All town leaders have been trained to the level of Incident Command System (ICS) 300 and 400. Town leadership has completed the Texas A&M EOC operations training course. Training will occur annually or as needed. This action will be updated as needed or during the next HMP update process
Clayton	Emergency Services	Develop a Fire-Wise Community Program.	Wildfire	Moderate	Fire Department	NC Forestry Service/ US Fire Administration (USFA)	Low	5+ Years	Deferred	Walden Woods subdivision became a Fire-wise Community. This action is deferred due to a lack of resources and will be reevaluated during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Clayton	Prevention	Town of Clayton public power tree trimming program.	Thunderstorm, Lightning, Severe Winter Storm, Hurricane, Tornado	High	Electric System Director	Town electric fund	Low	0-1 Years	To Be Continued	This is an annual program, and this action will be updated as needed or during the next HMP update process.
Clayton	Prevention	Conduct a community risk assessment.	Hazardous Materials	Moderate	Fire Department	Local	Low	0-1 Years	To Be Continued	The fire department is a registered agency with the Center for Public Safety Excellence (CPSE) seeking to further accreditation status. This action will be implemented when available or during the next HMP update process.
Clayton	Prevention	Develop a comprehensive plan.	All Hazards	High	Planning Department	Town Budget	Low		Complete	Implemented in 2021
Clayton	Property Protection	Auxiliary power for Town of Clayton sewer lift stations.	All Hazards	High	Public Works Director	Town water/sewer fund budget	Medium		Complete	All sewers lift stations are equipped with a generator or bypass pump, or the ability to have a portable generator and/or bypass pump hooked up. Those not equipped permanently mounted equipment are equipped with hookups for portable equipment.
Clayton	Property Protection	Town of Clayton public power electric system upgrade and	All Hazards	High	Electric System Director	Town electric fund	Low	5+ Years	To Be Continued	Continue to upgrade Oh Feeders to 477 conductor concepts. Added a 50 MVA substation, doubling power grid

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		relocation of overhead power lines. Convert 1\0 ACSR conductor to 477 AL conductor.								reliability. Planning Main Street conversion of Oh to Ug. Requiring all new subdivisions to implement unground installations. This action will be implemented when funding is available and will be updated as needed or during the next HMP update process.
Clayton	Property Protection	Provide backup power for critical facilities.	All Hazards	High	Fire Department	FEMA grant	High	5+ Years	To Be Continued	All critical facilities are equipped with full facility backup generators. New projects will be implemented as new opportunities are identified and as funding opportunities become available.
Clayton	Public Education and Awareness	Develop and print a brochure outlining wind proofing methods above and beyond Code. This will be offered in the Inspections Department receptionist area.	Hurricane, Thunderstorm, Tornado	Low	Steven Finn (Planning and Inspections Director)	In house staff	Low	0-1 years	In Progress	No measurable progress due to limited funds. This will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Clayton	Public Education and Awareness	Develop hazard mitigation materials for all hazards for print and/or use on websites/social media.	All Hazards	Moderate	Steven Finn (Planning and Inspections Director)	In house staff	Low	5+ Years	To Be Continued	No measurable progress due to limited funds. This will be updated as needed or during the next HMP update process.

Table 8-15: *Town of Four Oaks Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Four Oaks	Emergency Services	Maintain a system for identifying special needs of citizens in the town.	All Hazards	High	Police Department, Administration	Local	Low	1-2 Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding opportunities are identified and will be updated as needed or during the next HMP update process.
Four Oaks	Prevention	Maintain all utility rights-of-way by trimming trees around power lines and	All Hazards	High	Public Works/ Duke Energy	Local	Medium	5+ Years	In Progress	Will continue to work with Duke Energy in the effort to keep the power lines clear. This action will be updated as needed or during the next HMP update

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		maintaining water/sewer lines right-of-way of water/sewer lines.								process.
Four Oaks	Prevention	Maintain a list of contractors to assist towns with natural hazards.	All Hazards	Moderate	Administration	Local	Low	5+ Years	In Progress	The list of contractors is updated annually. This action will be reviewed as needed or during the next HMP update process.
Four Oaks	Prevention	Digitize copies of town ordinances, policies, and procedures.	All Hazards	High	Administration and Town Council	Local, Grants	Low	0-1 Years	In Progress	Working with engineering firms to get UDO in place and everything digitized. This action will be implemented as needed and will be updated as needed.
Four Oaks	Property Protection	Town of Four Oaks public power electric system upgrade and relocation of overhead power lines.	All Hazards	High	Public Works Duke Energy	Federal or state grant	Low	2-5 Years	In Progress	No measurable progress due to lack of funding. This action will be updated as needed or during the next HMP update process.
Four Oaks	Property Protection	Assess sewer lines due to infiltration issues. Need to address five to six manholes per year.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating budget, Federal or State grants	Medium	5+ Years	In Progress	Have begun to address manholes and infiltration issues. Will continue to monitor and address as needed. This action will be implemented as funding becomes available or as new project opportunities are identified.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Four Oaks	Property Protection	Clean street grates before heavy rains and large drain tiles to accommodate water.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating budget, Federal or State grants	Low	5+ Years	In Progress	Drain tiles and street grates cleaned out Sept 2025 in problem areas. Will continue to clean others. This will be completed as needed and this action will be updated as needed or during the next HMP update process.
Four Oaks	Property Protection	Install drainage pipe to relieve storm runoff and clean culvert areas.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating budget, Federal or State grants	Medium	1-2 Years	In Progress	Stormwater project will be completed in December 2026. This action will be updated as needed or as new project opportunities are identified.
Four Oaks	Property Protection	Provide backup power for critical facilities.	All Hazards	High	Public Works	Operating budget, Federal or State grants	High	2-5 Years	In Progress	Generators are at all lift stations. We will evaluate other critical facilities as needed to determine if acquiring other generators is necessary.
Four Oaks	Public Education and Awareness	Maintain town's website to include links to ReadyNC.org and FEMA-www.DHS.gov/ready.	All Hazards	Moderate	Administration	Local	Low	0-1 Years	In Progress	New website is up and running and we will get links uploaded as soon as possible. This action will be updated as needed or during the next HMP update process.
Four Oaks	Public Education and Awareness	Provide citizens with educational materials regarding the mitigation of all hazards through a variety of mediums.	All Hazards	Moderate	Administration	Operating budget, Federal or State grants	Medium	5+ Years	To Be Continued	New websites, Facebook, and mailers are used for educational purposes. This will be reevaluated periodically.

Table 8-16: *Town of Kenly Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Kenly	Prevention	Digitize copies of town ordinances, policies, and procedures.	All Hazards	High	Town Manager	Grants	Low	1-2 Years	In Progress	Currently digitizing town ordinances, policies, and procedures. Progress will continue and the town will seek to digitize all ordinances, plans, and policies to improve access. This will be reevaluated periodically to ensure that relevant policies, procedures, and ordinances are included online.
Kenly	Prevention	Develop a Town of Kenly burning ordinance.	Wildfire	Low	Town Manager, Fire Chief	Town Staff	Low	5+ Years	In Progress	No measurable progress due to lack of funding. Will be reevaluated, when possible, to determine the feasibility of implementing a burning ordinance to prevent wildfire and reduce wildfire risk.
Kenly	Prevention	Develop ordinance to penalize intentional or malicious damage to canal and drainage system.	Flood, Hurricane, Thunderstorm, Tornado	High	Town Manager, Town Council	Town Manager, Town Council	Low	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be re-evaluated annually to determine the feasibility of the action and to prioritize the protection of flood mitigation infrastructure.
Kenly	Prevention	Clean out and improve drainage pipe located on CSX Railroad right-of-way.	Flood, Hurricane, Thunderstorm, Tornado	High	Town Manager, CSX Officials	CSX Transportation	Low	5+ Years	In Progress	No measurable progress due to lack of funding, but the action remains in progress. The project will be reevaluated annually to determine if funding opportunities are available and

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										to assess the feasibility of the project.
Kenly	Prevention	Remove beaver dam and trap beavers on east side of town to improve drainage and prevent flooding of low-lying areas and streets.	Flood, Hurricane, Thunderstorm, Tornado	High	Town Manager	Local Budget, Grants	Low	0-1 Years	To Be Continued	Beavers are trapped and beaver dams are removed annually.
Kenly	Prevention	Conduct a study of drainage systems to look for ways to improve drainage in southwest part of Town.	Flood, Hurricane, Thunderstorm, Tornado	High	Town Manager, Engineering Firm	Local Budget	Low	5+ Years	In Progress	No measurable progress due to lack of funding. However, the opportunities to initiate the study will be reassessed annually or as needed to identify potential funding sources and to determine the feasibility of future drainage improvements.
Kenly	Prevention	Conduct smoke test and sewer system audit to study excess water that flows into sewer pipes from groundwater and storm water infiltration and inflow.	Flood, Hurricane, Thunderstorm, Tornado	High	Town Manager	Grants	Low	0-1 Years	Complete	Engineer has performed the work and audit is complete.
Kenly	Prevention	Create a process and infrastructure to backup documents and records on town computers.	All Hazards	High	Town Manager Town Staff	Local Budget	Low	5+ Years	In Progress	No measurable progress due to lack of funding. The Town staff will continue to re-evaluate implementation opportunities and funding opportunities annually to implement a secure document and records backup system.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Kenly	Property Protection	Provide backup power at critical facilities such as lift stations.	All Hazards	Moderate	Town Manager, Town Council	Grants	Medium	1-2 Years	In Progress	Three generators have been ordered for critical facilities, and the project is in progress. Will reevaluate as new critical facilities are identified that need a generator or backup power.
Kenly	Property Protection	Acquire or elevate flood prone properties.	Flood	Moderate	Town Manager, Town Council	Grants	High	5+ Years	In Progress	We're looking at acquiring critical facilities next to the wastewater treatment plant, but the project is still in the planning phase. Will continue to evaluate opportunities to acquire or elevate flood prone properties as needed and regularly based on funding availability, floodplain data, and community needs.
Kenly	Public Education and Awareness	On an annual basis, the FEMA repetitive loss property list will be obtained from NCEM. At that time, letters will be sent to the owners of the repetitive loss structures to notify them of their status and to offer information on programs that could help.	Flood, Hurricane, Thunderstorm	Moderate	GIS Analyst, Emergency Services Department	Local Budget	Low	5+ Years	In Progress	No measurable progress due to lack of funding. Will be reevaluated as necessary and if repetitive loss structures are identified.
Kenly	Public Education and	Conduct a dam/hog lagoon safety inventory. People downstream of	Dam Failure	Low	Public Utilities Director for	Local Budget	Low	5+ Years	In Progress	No measurable progress due to lack of funding. This will be reevaluated annually to determine the feasibility of

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
	Awareness	hazardous dams/hog lagoons would be notified. Owners would be notified of ways to reduce the risk of their dams/lagoons.			Johnston County					the project and prioritize the safety of the residents potentially at risk.
Kenly	Public Education and Awareness	Develop and print a brochure outlining wind proofing methods above and beyond Code. This will be offered in the Inspections Department receptionist area.	Hurricane, Thunderstorm, Tornado	Low	Johnston County Planning and Inspections	Local Budget	Low	5+ Years	In Progress	No measurable progress due to lack of funding. Will reevaluate developing a brochure about wind proofing methods that exceed code requirements annually and as required.
Kenly	Public Education and Awareness	Provide education materials on preparedness/mitigation measures for all-hazards and display at the Town Hall, Town Library, and Town Website.	All Hazards	Moderate	Town Staff	Local Budget	Low	0-1 Years	To be continued	Educational material has been updated in each of these places and will be updated as needed.
Kenly	Structural Project	Provide a secondary means to connect the Town of Kenly water system to the Princeton-Kenly Water District.	Drought	High	Town Manager, Johnston County Director of Public	Grants	Low	5+ Years	In Progress	No measurable progress due to lack of funding. Will be reevaluated annually or until funding is identified for the project.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
					Utilities					
Kenly	Structural Project	Improve drainage ditches and canal system in Town and other areas located in the extraterritorial jurisdiction (ETJ).	Flood, Hurricane, Thunderstorm, Tornado	High	Town of Kenly, Johnston County, Wilson County	Grants	Low	5+ Years	In Progress	No measurable progress due to lack of funding. Opportunities to improve drainage and the canal systems in town and areas in the ETJ will be reevaluated as needed and regularly to ensure that mitigation projects are prioritized and implemented as possible.
Kenly	Structural Project	Water/Sewer Main Project – Upgrade and loop water mains to improve water for domestic consumption and fire protection, upgrade sewer lines to prevent infiltration of storm water into sewer system.	Flood, Hurricane, Thunderstorm, Tornado	High	Town Manager	Community Development Block Grant (CDBG)	Low	5+ Years	In Progress	No measurable progress due to lack of funding. Will be reevaluated annually or until funding is identified for the project.
Kenly	Structural Project	Install water main valves to grid town system in a manner to eliminate the disruption of water to the entire town during failures in the system.	Drought, Fire, Extreme Heat	High	Town Manager	Local Budget	Low	5+ Years	In Progress	No measurable progress due to lack of funding. Will reevaluate the feasibility of installing water main valves to the grid town system annually and as necessary to prioritize and implement the project as resources are made available.

***Table 8-17**: Town of Micro Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Micro	Prevention	Adopt and maintain NFIP compliance.	Flood, Hurricane, Thunderstorm	High	Town Board	Local budget	Low	2-5 Years	To Be Continued	The town is a participating member of the NFIP and will continue participating. This action is maintained and will be updated annually.
Micro	Prevention	Improve drainage in Micro.	Flood, Hurricane, Thunderstorm	High	Town Board	Local budget, grants	Low	2-5 Years	In Progress	The town is working to improve drainage throughout the town in many ways, but there are still several projects that need to be completed to improve drainage further. This action will be addressed regularly and as drainage issues arise, drainage improvement projects.
Micro	Prevention	Develop a burning ordinance.	Wildfire	Low	Fire Marshall, Zoning Enforcement	In house staff	Low	2-5 Years	To Be Continued	Action will be reviewed every 2 years. The county has developed a burning ordinance that is in place.
Micro	Prevention	Create a process and infrastructure to backup documents, forms, and utility records on town computers.	All Hazards	High	Town Staff	Local Budget	Low	1-2 Years	In Progress	Currently, the town scans all documents and is in the process of scanning previous documents. This action will be maintained annually or as needed.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Micro	Property Protection	Provide a secondary means of power for wells and sewer lift stations through the installation of appropriate electrical connections and purchase of a 40 KW generator.	All Hazards	High	Town Board	Grants	Low	1-2 Years	In Progress	Town has a backup generator for sewer pump stations but not wells. This action will remain in progress until backup generators for the wells are funded or purchased.
Micro	Property Protection	Provide backup power for critical facilities.	All Hazards	High	Town Boards	Grants	High	2-5 Years	In Progress	No measurable progress due to lack of funding. Action will remain in progress until the project is funded, and the critical facilities have backup power sources. This action will remain in progress and will be reevaluated annually or as funding opportunities are identified.
Micro	Public Education and Awareness	On an annual basis, the FEMA repetitive loss property list will be obtained from NCEM. At that time, letters will be sent to the owners of the repetitive loss structures to notify them of their status and to offer	Flood, Hurricane, Thunderstorm	Moderate	GIS Application Analyst, Emergency Services Coordinator	In house staff	Low	5+ Years	To Be Continued	The town currently has an up-to-date repetitive loss list, and it will annually work to update that list and attempt to encourage property owners to take action to mitigate. This action will be maintained as needed or as repetitive loss structures are identified.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		information on programs that could help.								
Micro	Public Education and Awareness	Develop and print a brochure outlining wind proofing methods above and beyond Code. This will be offered in the Inspections Department receptionist area.	Hurricane, Thunderstorm, Tornado	Low	Steven Finn (Planning and Inspections Director)	In house staff	Low	5+ Years	Deferred	The town currently does not have an inspection department. Will look into developing a brochure about wind proofing when necessary or during the next plan update process.
Micro	Public Education and Awareness	Provide education materials on preparedness/mitigation measures for all hazards and display at the Town Hall, and Town Website.	All Hazards	Moderate	Town Staff	Local Budget	Low	2-5 Years	To Be Continued	No measurable progress due to lack of funding. Action will be reevaluated annually or as funding opportunities are identified.
Micro	Structural Project	An upsized culvert to be positioned on CSX Railroad right-of-way to handle storm water drainage from the new North Johnston Middle School.	Flood, Hurricane, Thunderstorm, Tornado	High	Town Board, CSX Railroad	CSX Railroad	Low	2-5 Years	In Progress	Project has started but no communication with CSX.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Micro	Structural Project	Provide a means to connect the Town of Micro water distribution system to the Johnston County water system on US Highway 301 near North Johnston High School.	Drought, Wildfire, Extreme Heat	High	Town Board, Johnston County	Grants	Low	2-5 Years	In Progress	No measurable progress due to lack of funding. This action will be re-evaluated if funding is identified and will be updated annually or as progress is made on implementation.

Table 8-18: *Town of Pine Level Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pine Level	Emergency Services	Increase the number of police officers within the Police Department.	Hurricane/ Tropical Storm, Severe Weather, and Terror Threat	High	Police Department	Local	High	1-5 Years	New	Action is currently in progress

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pine Level	Prevention	Adopt a flood ordinance that is more restrictive on construction within a 100-year flood zone.	Flood, Hurricane, Thunderstorm	High	Zoning Administrator, Board of Commissioners	In house staff	Low	5+ Years	To Be Continued	The town has adopted an ordinance that is more restrictive on construction within the 100- year flood zone. This ordinance will be enforced continuously, and This action will be updated as needed or during the next HMP update process.
Pine Level	Prevention	Incorporate inspection and management of hazardous trees into the Town's systematic inspection process of public facilities and utilities.	All Hazards	High	Zoning Administrator	Town	Low	2-5 Years	To Be Continued	The town has incorporated the evaluation of hazardous trees into its inspection process. This process is reviewed and updated annually.
Pine Level	Prevention	Review the Town's UDO for proposed amendments in reference to Stormwater and Erosion Control Management Plan requirements for new developments.	Hurricane/ Tropical Storm, Severe Weather, Flood	Low	Pine Level Board and Staff	Local	High	1-2 Years	New	Action is currently in progress

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pine Level	Property Protection	Develop a systematic inspection process of the Town's public facilities and utilities to prevent or minimize potential damage.	All Hazards	High	Director of Public Works	Town	Low	1-2 Years	To Be Continued	The town has developed a systematic inspection process for its public utilities, but this process will need to be carried out, reviewed, and updated on at least an annual basis. This action will be updated and implemented annually or as needed.
Pine Level	Property Protection	Improve drainage in Southern part of town based on Comprehensive drainage study	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating Budget, Federal/State Grants	Low	1-2 Years	To Be Continued	Action occurs annually and projects will be implemented as opportunities for funding become available. This action will be updated as needed or during the next HMP update process.
Pine Level	Property Protection	Provide backup power for critical facilities.	All Hazards	High	Public Works	Operating Budget, Federal/State Grants	High	2-5 Years	In Progress	This action will be implemented as critical facilities that need backup power are identified, as funding becomes available, or as needed. This action will be updated as needed or during the next HMP update process.
Pine Level	Public Education and Awareness	Increase public awareness of risk and mitigation measures for all hazards available through a series of informative news articles.	All Hazards	Low	Zoning Administrator, Town Clerk	Town	Low	1-2 Years	To Be Continued	In the past, the town has developed and published articles on risks and mitigation for its citizens, but the town is planning to continue this process by developing these articles at least annually or as needed.

Pine Level	Public Education and Awareness	On an annual basis, the FEMA repetitive loss property list will be obtained from NCEM. At that time, letters will be sent to the owners of the repetitive loss structures to notify them of their status and to offer information on programs that could help.	Flood, Hurricane, Thunderstorm	Moderate	GIS Application Analyst, Emergency Services Coordinator	In house staff	Low	1-2 Years	To Be Continued	The town will update its repetitive loss list annually and will continue to assist the property owners to institute mitigation actions annually or as needed. Action details will be updated as needed or during the next HMP update process.
Pine Level	Public Education and Awareness	Develop and print a brochure outlining wind proofing methods above and beyond Code. This will be offered in the Inspections Department receptionist area.	Hurricane, Thunderstorm, Tornado	Low	Steven Finn (Planning and Inspections Director)	In house staff	Low	1-2 Years	To Be Continued	The town will work to develop a brochure concerning wind proofing methods and will offer help from the Inspections Department. This action will be implemented as funding becomes available or as needed, and this action will be updated as needed or during the next HMP update process.
Pine Level	Structural Project	Upgrade lift station located on the East Side due to its location being at a low point in the flood plain.	Flood, Hurricane, Tornado, Thunderstorm	Moderate	Public Works	Federal/State Grants	Low	1-5 Years	Complete	

Table 8-19: *Town of Princeton Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Princeton	Emergency Services	Maintain a system at Town Hall for identifying towns' special needs citizens within the Princeton area.	All Hazards	High	Police Department, Administration	Local	Low	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Princeton	Emergency Services	Provide warning communications to citizens for all hazards.	All Hazards	High	Police Department, Administration	Grants	High	5+ Years	Complete	
Princeton	Prevention	Maintain Moccasin Creek and right away from erosion.	Flood, Hurricane, Tornado, Thunderstorm	Moderate	Public Works	Operating Budget	High	5+ Years	Complete	
Princeton	Prevention	Maintain right of way for water and sewer lines.	Hurricane, Tornado, Thunderstorm, Winter Storm	High	Public Works	Operating Budget	Low	5+ Years	Complete	
Princeton	Prevention	Maintain a list of contractors to assist towns in emergencies.	All Hazards	Moderate	Administration	Local	Low	5+ Years	Complete	
Princeton	Prevention	Maintain town ordinances, policies, and procedures for the Town of Princeton on	All Hazards	High	Administration	In-house staff, grants	Low	NA	Complete	

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		their website.								
Princeton	Property Protection	Conduct annual smoke testing of existing sewer lines. 10% of lines to be tested annually.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating Budget, Federal/State grants	Low	5+ Years	Complete	
Princeton	Property Protection	Install and maintain auxiliary power generators at all sewage lift stations.	All Hazards	High	Water and Sewer Commission, Mayor	Federal, State, Local	Medium	5+ Years	Complete	
Princeton	Property Protection	Install stationary 75kw generator for Town Hall.	All Hazards	High	Public Works	Federal/State grants	Medium	NA	Complete	
Princeton	Property Protection	Provide backup power at critical facilities.	All Hazards	High	Administration	Federal/State grants	High	5+ Years	Complete	
Princeton	Public Education and Awareness	Develop and print a brochure outlining wind proofing methods above and beyond Code. This will be offered in the Inspections Department receptionist area.	Hurricane, Thunderstorm, Tornado	Low	Steven Finn (Planning and Inspections Director)	Federal, State, Local	Low	5+ Years	Complete	

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Princeton	Public Education and Awareness	Educate public on all potential natural disasters by maintaining town's website to include links to ReadyNC.org and FEMA – www.dhs.gov/ready.	All Hazards	Moderate	Town Administration	Federal, State, Local, Operating Budget	Medium	5+ Years	To Be Continued	To be performed on a yearly basis.
Princeton	Structural Project	Upgrade existing manual bar screen with an automatic bar screen at the Wastewater Treatment Facility.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Federal/ State grants	High	5+ Years	In Progress	Estimated completion is June 2027. This action is in progress and will be updated as necessary or during the next HMP update process.
Princeton	Structural Project	Upgrade grit removal system at Wastewater Treatment Plan.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating budget, Federal/ State grants	High	5+ Years	In Progress	Estimated completion is June 2027. This action is in progress and will be updated as necessary or during the next HMP update process.

Table 8-20: *Town of Selma Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Selma	Emergency Services	Increase staff of the Fire Department to meet the National Fire Protection Association (NFPA) 1710.	All Hazards	High	Fire	Local, State	High	5+ Years	In Progress	Action is 80% complete. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Selma	Emergency Services	Develop the Fire Department Training room into an EOC by adding data and phone lines.	All Hazards	Moderate	Fire, Police	Local	Low	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Selma	Emergency Services	Develop a list of special needs citizens in need of assistance during a disaster.	All Hazards	High	Fire, Police	Local	Low	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Selma	Emergency Services	Develop a shelter plan for the Town.	All Hazards	High	Fire, Police	Local, State, Federal	Low	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Selma	Emergency Services	Develop and exercise the town's emergency plan annually with all departments.	All Hazards	High	Fire	Local	Low	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Selma	Emergency Services	Purchase a mobile Command Center.	All Hazards	Moderate	Police	Local, State, Federal	High	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available or opportunities for implementation are identified. The action will be updated as needed or during the next HMP update process.
Selma	Natural Resource Protection	Install emergency power back up to critical wells and lift stations.	All Hazards	High	Administration	Local	High	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available, or projects are identified. The action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Selma	Prevention	Update Town Development Code with latest hazard mitigation measures; revise floodplain and stormwater regulations.	All Hazards	High	Planning and Inspections	Local	Low	5+ Years	To Be Continued	Regulations are updated as necessary to incorporate latest NC Building Code Regulations. However, revisions to include hazard mitigation measures or optional enhancements to town development codes do not have any measurable progress due to lack of funding. This action will be implemented as necessary and will be updated during the next HMP update process or as needed.
Selma	Prevention	Incorporate latest NC Building Code regulations.	All Hazards	Moderate	Planning and Inspections, Administration	Local	Low	5+ Years	To Be Continued	Regulations are updated as necessary to incorporate latest NC Building Code Regulations. This action will be implemented as necessary and will be updated during the next HMP update process or as needed.
Selma	Prevention	Provide Cloud access for government software and data.	All	High	Administration	Local	Low		Complete	
Selma	Prevention	Develop a fuel back up plan.	All Hazards	High	Public works, Fire	Local	Low	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Selma	Prevention	Maintain a list of contractors to assist in town emergency recovery.	All Hazards	High	Public Works	Local	Low	NA	In Progress	This list of contractors Will be updated as necessary or as new assistance needs are identified for town emergency recovery. This action will be updated as needed or during the next HMP update process.
Selma	Prevention	Improve Storm water drainage.	All Hazards	High	Public Works	Local	High	5+ Years	In Progress	Applied for federal funding, completed a study, and pursuing what the budget will allow. This action will be implemented as funding allows or as new projects are identified. Action will be updated as needed or during the next HMP update process.
Selma	Prevention	Complete storm water GIS mapping project.	Flooding, Dams, Severe Weather, Hurricane	High	Public Works	Local, State, Federal	Medium	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Selma	Prevention	Complete sewer inspection to eliminate Inflow and infiltration.	Flooding	High	Public Works	Local,	High	1-2 Years	In Progress	Community Development Block Grant (CDBG) and State Revolving Fund (SRF) grant have been obtained to help fund the repair. This action will be implemented when plans are finalized and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Selma	Property Protection	Install emergency power back up to all critical facilities.	All Hazards	High	Administration	Local, State, Federal	High	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available, or projects are identified. The action will be updated as needed or during the next HMP update process.
Selma	Public Education and Awareness	Advertise and promote the availability of flood insurance to town residents and property owners by including such information in the Town's water billing at least once a year.	Flood	Moderate	Planning and Inspections, Administration	Local	Low	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Selma	Public Education and Awareness	Collect education materials on preparedness/mitigation measures for all hazards and display them at both the Town Hall and Town Library.	All Hazards	Moderate	Planning and Inspections, Administration	Local, State, Federal		5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Selma	Structural Project	Incorporate an EOC into the Town Hall.	Natural disaster	Moderate	Administration	Local	Medium	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available, or projects are identified. The

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										action will be updated as needed or during the next HMP update process.
Selma	Structural Project	Improve drainage ditches and canal system in areas outside of the incorporated area.	Flooding	High	Public works	Local	High	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented as funding becomes available, or projects are identified. The action will be updated as needed or during the next HMP update process.

Table 8-21: *Town of Smithfield Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Smithfield	Prevention	Complete storm water GIS mapping project, with elevations showing where deficiencies exist in the storm water system.	Flood, Hurricane, Thunderstorm	High	Director of Public Works	General fund budget	Medium	0-1 Years	In Progress	Data collection will be completed by the end of September 2025. This action will be updated as needed or during the next HMP update process
Smithfield	Prevention	The development of a Continuity of Operations Plan (COOP) for the Town of Smithfield.	All Hazards	High	Emergency Services Director, Town	Grant	Medium	2-5 Years	In Progress	The COOP is expected to be started in this fiscal year, and the goal is to have it completed by the fiscal year of 2028. This action will be updated as needed

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
					Manager					or during the next HMP update process.
Smithfield	Property Protection	Install generators at least two, possibly three, critical sewer lift stations within the Town of Smithfield.	All Hazards	High	Director of Public Works	Annual budget - utility fund	High	1-2 Years	In Progress	Currently designed but not yet in construction. Action is in progress and will be updated as necessary or during the next HMP update process.
Smithfield	Property Protection	Provide backup power to critical facilities.	All Hazards	High	Director of Public Works	Grants	High	5+ Years	To Be Continued	Opportunities for adding backup power will be evaluated as critical facilities without backup power are identified or as funding becomes available. This action will be updated as needed or during the next HMP Update Process.
Smithfield	Public Education and Awareness	On an annual basis, the FEMA repetitive loss property list will be obtained from NCEM. At that time, letters will be sent to the owners of the repetitive loss structures to notify them of their status and to offer information on programs that could help.	Flood, Hurricane, Thunderstorm	Moderate	GIS Application Analyst, Emergency Services Coordinator	In house staff	Low	5+ years	To Be Continued	Opportunities for purchasing repetitive loss properties will be identified as properties are identified. This action will be implemented as funding becomes available. Reviewed annually and updated, as necessary.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Smithfield	Public Education and Awareness	Develop and print a brochure outlining wind proofing methods above and beyond Code. This will be offered in the Inspections Department receptionist area.	Hurricane, Thunderstorm, Tornado	Low	Steven Finn (Planning and Inspections Director)	In house staff	Low		Deleted	We will defer to County inspections on this matter.
Smithfield	Public Education and Awareness	Update and maintain educational information and links on websites for the public to access in order to stay informed on all-natural hazard risks and mitigation techniques.	All Hazards	Low	Town Administration	In house staff	Low	5+ years	To Be Continued	The Town of Smithfield continues to link information on the website from the County and other partners with educational information. The website will be updated as needed and the action will be updated as needed or during the next HMP update process.
Smithfield	Structural Project	Complete the Spring Branch Wetlands Restoration Project in order to improve the quality of stormwater runoff before it enters the Neuse River.	Flood, Hurricane, Thunderstorm	Moderate	Public Works Director	Local Funding, Grants	High		Complete	Wetland facility was restored in 2019, and Spring Branch restoration was completed in 2022.
Smithfield	Structural Project	2nd St Bridge Replacement at Spring Branch	Hurricane & Tropical Storm, Severe Weather, Flood	High	Stormwater Management	Grant	High	2-5 Years	New	Design is complete and then we will put out for bid on construction. This project is expected to be implemented in 2027.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Smithfield	Structural Project	New pipe under CSX and I95	Hurricane & Tropical Storm, Severe Weather, Flood	High	Stormwater Management	Grant	High	5+ years	New	Currently in design phase. This action will be updated as needed or during the next HMP Process, but implementation is expected to be complete by 2030.

Table 8-22: *Town of Wilson's Mills Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Wilson's Mills	Emergency Services	Maintain a system for identifying special needs of citizens in the town.	All Hazards	High	Police Department, Administration	Local	Low	5+ Years	To Be Continued	Due to a lack of funding, there is no measurable progress. This action will be updated as needed or during the next HMP update process.
Wilson's Mills	Emergency Services	Establishment of additional Community Emergency Response Teams (CERT). This effort will address the regular training and support of the eleven teams currently operating within the County.	All Hazards	Moderate	Administration/ Police	Local	Low	5+ Years	To Be Continued	Still trying to work on this, but there is no measurable progress due to a lack of funding. This action will be implemented when funding becomes available or as needed. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Wilson's Mills	Emergency Services	Utilize the Town's Blackboard Connect system to notify Town residents and business owners regarding natural and man-made hazard events. Town residents should not rely on this system in taking preparedness measures. The first line of communication should come through a National Oceanic and Atmospheric Administration (NOAA) weather radio system.	All Hazards	Moderate	Administration	Local	Low	5+ Years	To Be Continued	Stopped using Blackboard Connect and now we are using social media platforms to reach our citizens. Communication and outreach are completed as needed and will be updated as needed or during the next HMP update process.
Wilson's Mills	Natural Resource Protection	When appropriate, continue accepting dedication of open space within all new major subdivisions, especially when environmentally sensitive areas are present.	Flood, Hurricane, Thunderstorm, Tornado	High	Planning	Local	Low	5+ Years	To Be Continued	Updated UDO requires more open space and tightens guidelines on environmentally sensitive areas. The UDO will be updated and maintained as needed, and this action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Wilson's Mills	Natural Resource Protection	Continue ensuring that new developments have adequate hydrants per the Town development ordinances.	Flood, Hurricane, Tornado, Thunderstorm	High	Planning	Local	Low	5+ Years	To Be Continued	Regulations that apply to new developments are enforced continually and as needed. This action will be updated as needed or during the next HMP update process.
Wilson's Mills	Prevention	Adopt NFIP.	Flood, Hurricane, Thunderstorm	High	Town staff	Local budget	Low		Complete	Done
Wilson's Mills	Prevention	Improve drainage in Wilson's Mills.	Flood, Hurricane, Thunderstorm	Moderate	Town staff	Grants, local budget	Low	1-2 Years	In Progress	Several projects completed; more projects planned. These projects will be implemented as funding becomes available
Wilson's Mills	Prevention	Maintain all utility rights-of-way by trimming trees around power lines and maintain right-of-way of water/sewer lines.	All Hazards	High	Public Works/ Duke Energy	Local	Low	5+ Years	To Be Continued	This is completed regularly. Action will be updated during the next HMP update process or as needed.
Wilson's Mills	Prevention	Maintain a list of contractors to assist the town in emergencies.	All Hazards	Moderate	Administration	Local	Low	0-1 Years	Complete	Public Works has compiled a list of reliable contractors.
Wilson's Mills	Prevention	Digitize copies of town ordinances, policies, and procedures.	All Hazards	High	Administration and Town Council	Local, Grants	Low	0-1 Years	Complete	This has been completed.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Wilson's Mills	Property Protection	Town will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the County & Town limits. The goal of this effort will be to provide pertinent agencies with better information regarding river water levels.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating Budget, Federal/State Grants	Low	5+ Years	To Be Continued	Trying to work with County on this. The action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Wilson's Mills	Property Protection	After the establishment of additional stream gauges as noted above, establish a working group including all individuals charged with floodplain and dam management within the County.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating Budget, Federal/State Grants	Low	5+ Years	To Be Continued	Trying to work with County on this, but there is no measurable progress due to a lack of funding. The action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Wilson's Mills	Property Protection	Install generators to sewer pumps.	All Hazards	High	Public Works	Operating Budget, Federal /State Grants	Low	5+ Years	Deferred	This is Johnston County's responsibility.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Wilson's Mills	Property Protection	Provide backup power to critical facilities.	All Hazards	High	Public Works	Operating Budget, Federal/State Grants	Medium	1-2 Years	In Progress	Getting generators for Town Hall and Police Department. This action may be implemented in the future as new projects are identified and as funding becomes available. This action will be updated as needed or during the next HMP update process.
Wilson's Mills	Public Education and Awareness	Develop and print a brochure outlining wind proofing methods above and beyond Code. This will be offered in the Inspections Department receptionist area.	Hurricane, Thunderstorm, Tornado	Low	Steven Finn (Planning and Inspections Director)	In house staff	Low	5+ Years	Deferred	This would be utilized by Johnston County Building Inspections. No measurable progress due to lack of funding. This action will be updated as needed or during the next HMP update process.
Wilson's Mills	Public Education and Awareness	Maintain town's website to include links to ReadyNC.org and FEMA – www. dhs.gov/ready.	All Hazards	Moderate	Administration	In house	Low	5+ Years	To Be Continued	No measurable progress due to lack of funding. This action will be updated as needed or during the next HMP update process.
Wilson's Mills	Public Education and Awareness	Conduct research activities aimed at educating business owners about how to address the issue of continuity of operations in the face of all natural and man-made disasters, since following a disaster,	All Hazards	Moderate	Planning	Local	Low	5+ Years	To Be Continued	No measurable progress due to lack of funding. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		the reopening of commercial operations is critical to recovery efforts.								
Wilson's Mills	Public Education and Awareness	Advertise and promote the availability of flood insurance to town residents and property owners by including such information on the Town website as well as through a Blackboard Connect message.	Flood, Hurricane, Thunderstorm	Moderate	Planning	Local	Low	5+ Years	To Be Continued	We give out information at Community Day as well as on the website. This action will be implemented as needed or when possible, and the action will be updated as needed or during the next HMP update process.
Wilson's Mills	Public Education and Awareness	Information regarding fire prevention and safe burning practices will be available from the Town Hall and published on the town website.	Wildfire	Moderate	Administration/ Planning	Local	Low	5+ Years	To Be Continued	Information is on websites and posted on social media. This action will be implemented as needed or when possible, and the action will be updated as needed or during the next HMP update process.
Wilson's Mills	Public Education and Awareness	Update and maintain educational information and links on websites for the public to access in order to stay informed on all-natural hazard risks and mitigation techniques.	All Hazards	Low	Town Administration	In house staff	Low	5+ Years	To Be Continued	We are trying to maintain current information on our website as well as on social media. This action will be implemented as needed or whenever possible, and the action will be updated as needed or during the next HMP update process.

Table 8-23: *Lee County Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Lee County	Emergency Services	Install public warning systems in critical public gathering areas.	All Hazards	Moderate	Lee County	Grant Funding	Medium	5+ Years	New	Lee County looks to address public warning in recreational areas though the installation of siren and voice notification systems. These systems will be capable of manual and automated alerting.
Lee County	Prevention	Develop a comprehensive open space/reuse plan to support floodplain acquisition initiatives and recreational opportunities by acquiring structures on the floodplain.	Flood	High	Community Development	Local	Low		Deleted	Not being pursued by community development now.
Lee County	Prevention	Evaluate clear cutting and building on the floodplain.	Flood	High	Forest Service, UDO	Local	Low	0-1 Years	To Be Continued	Work with NCFS to determine risk factors for clear cutting operations and how they affect the floodplain. This will be evaluated as funding allows and updated as needed or during the next HMP update process.
Lee County	Prevention	Evaluate flood damage potential of electric utility, water and sewer distribution systems.	Flood	High	Public Works, Utilities	Local	Low	1-2 Years	To Be Continued	Continue to work with utility partners to evaluate potential flood risks to their infrastructure. This action will be implemented as funding allows and updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Lee County	Prevention	Implement stronger building codes that recognize the importance of preparing new homes and businesses for wind events.	Thunderstorm, Flood, Winter Storm/Freeze, Hurricane, Severe Storm, Tornado	High	Community Development	Local	Low	1-2 Years	To Be Continued	Continue to work with Planning to create county/city ordinances for improved building resilience to damage. Stronger building codes will be developed when funding becomes available to support the implementation of actions. This action will be updated as needed or during the next HMP update process.
Lee County	Prevention	Increase jurisdiction classification in the NFIP Community Rating System.	Flood	High	Emergency Management, Community Development	Local	Low	2-5 Years	To Be Continued	Continue to work with Planning and Zoning throughout the City of Sanford and Lee County. This action will be implemented when funding becomes available to support increasing the community's classification. This action will be updated as needed or during the next HMP update process.
Lee County	Prevention	Obtain and maintain North Carolina Certified Floodplain Manager status.	Flood	High	Community Development	Local	Low		Deleted	In conversations with the state, there is no benefit to having a certified floodplain manager if not a CRS community. This will be evaluated as funding allows and updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Lee County	Prevention	Standardize procedures for handling certain post-damage permit processing procedures.	All Hazards	High	Community Development, Inspections	Local	Low	0-1 Years	To Be Continued	Continue to work with Community Development and Inspections on post-damage permit processing procedures and practices. This will be evaluated as funding allows and updated as needed or during the next HMP update process.
Lee County	Property Protection	Provide backup power for critical facilities.	All Hazards	High	Community Development	Local/Federal	High	5+ Years	To Be Continued	Still a work in progress, but funding is the biggest hurdle. Backup power will be provided for critical facilities as funding becomes available and as critical facilities that need backup power are identified. This will be updated as needed or during the next HMP update process.
Lee County	Property Protection	Work to improve individual homes and businesses in terms of their resistance to wind events.	Thunderstorm, Flood, Winter Storm/Freeze, Hurricane, Severe Storm, Tornado	High	Community Development	Local	Low		Deleted	Not being pursued by community development now.
Lee County	Public Education and Awareness	Develop and implement multi-year public awareness campaigns concerning hazard mitigation for all hazards.	All Hazards	High	Emergency Management	Local	Low	1-2 Years	To Be Continued	Continue to work with County and City partners to push awareness campaigns on social media and public events. This campaign will need to be re-evaluated and continually implemented to ensure the public is informed of up-to-date hazard information. Therefore, this action will remain in the plan and be

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										evaluated and reviewed annually.
Lee County	Prevention	Develop inundation modeling for each dam in the planning area that does not already have inundation data. Evaluate infrastructure, property, and people at risk of dam failure impacts to identify and implement projects that improve resiliency to dam failure impacts	Dam Failure	High	Chatham County Planning	Local, Federal, State	High	5+ Years	New	

Table 8-24: *Town of Broadway Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Broadway	Prevention	Incorporate digital floodplain and topographic data into automated permit database/system and Geographic Information System data layer inventory.	Flood	High	Community Development, GIS	Local, State	High	5+ Years	To Be Continued	Currently incorporating digital floodplain and topographic data into automated permit database. This action will occur continuously and will incorporate future digital floodplain and topographic data as needed into the permitting system. This action will be updated as needed

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										or during the next HMP update process.
Broadway	Prevention	Evaluate flood damage potential of electric utility, water and sewer distribution systems.	Flood	High	Public Works, Utilities	Local	High	5+ Years	To Be Continued	Evaluating potential flood damage on electric, utility, water, and sewer systems as issues are identified. This action will be updated as needed or during the next HMP update process.
Broadway	Prevention	Increase jurisdiction classification in the NFIP Community Rating System.	Flood	High	Emergency Management, Community Development	Local	High	5+ Years	To Be Continued	Currently working on increasing jurisdiction's classification in NFIP CRS and activities to increase the CRS classification will be implemented where possible and where funding allows.
Broadway	Prevention	Develop a comprehensive open space/reuse plan to support floodplain acquisition initiatives and recreational opportunities by acquiring structures on the floodplain.	Flood	High	Community Development	Local	Moderate	5+ Years	To Be Continued	Developing a comprehensive open space and re-use plan. This action will be implemented when funding is available and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Broadway	Prevention	Evaluate clear cutting and building on the floodplain.	Flood	High	Forest Service, UDO	Local	Moderate	5+ Years	To Be Continued	Evaluating clear cutting and building within floodplain. Development will be evaluated, and ordinances will be enforced as development activities occur in the floodplain to ensure compliance with the floodplain ordinance. This action will be updated as needed or during the next HMP update process.
Broadway	Prevention	Obtain and maintain North Carolina Certified Floodplain Manager status.	Flood	High	Community Development	Local	High	5+ Years	To Be Continued	Maintaining North Carolina CFM status
Broadway	Prevention	Standardize procedures for handling certain post-damage permit processing procedures.	All Hazards	High	Community Development, Inspections	Local	Moderate	5+ Years	To Be Continued	Currently working on standardizing procedures for handling post-damage permit processing. This action will be reviewed as needed or during the next HMP update process.
Broadway	Prevention	Implement stronger building codes that recognize the importance of preparing new homes and businesses for wind events.	All Hazards	High	Community Development	Local	High	5+ Years	To Be Continued	Implementing stronger building codes will occur as needed. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Broadway	Property Protection	Work to improve individual homes and businesses in terms of their resistance to wind events.	All Hazards	Moderate	Community Development	Local	High	5+ Years	To Be Continued	Working to improve homes and businesses. This action will be implemented as funding becomes available or during the next HMP update process.
Broadway	Property Protection	Provide backup power for critical facilities.	All Hazards	High	Administration	Local, State, Federal	High	5+ Years	To Be Continued	Generator installed at Town Hall and Police Department January 2025. WWTP and lift stations already have backup generators. This action will be implemented when funding becomes available or when new project opportunities are identified.
Broadway	Public Education and Awareness	Develop and implement multi-year public awareness campaigns concerning hazard mitigation.	All Hazards	High	Emergency Management	Local	High	5+ Years	To Be Continued	Developing and implementing a multi-year public awareness campaign. This public awareness campaign will be implemented as scheduled and will be updated as needed or during the next HMP update process.
Broadway	Public Education and Awareness	Provide citizens with educational materials regarding the mitigation of all hazards through a variety of mediums.	All Hazards	Moderate	Administration	Operating budget, Federal/ State grants	Medium	5+ Years	To Be Continued	Cape Fear Fire Department and Lee Emergency Management attend community events and provide education material. This will be reviewed and updated annually.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Broadway	Structural Project	Repair overflow/drain valve and piping issues with the existing dam. Address and soil issues related to drain piping.	Dam Failure	High	Town of Broadway	Grant Funding	Medium	5+ years	New	The Town of Broadway has retained a consultant to assist with assessment and applying for funding. The Town currently has an application submitted for Hazard Mitigation assistance. Cost estimated at 2.7 million in 2023.

Table 8-25: *City of Sanford Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Sanford	Prevention	Develop a comprehensive open space/reuse plan to support floodplain acquisition initiatives and recreational opportunities by acquiring structures on the floodplain.	Flood	High	Community Development	Local	Low		Deleted	Not being pursued by community development now.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Sanford	Prevention	Evaluate clear cutting and building on the floodplain.	Flood	High	Forest Service, UDO	Local	Low	0-1 Years	To Be Continued	Work with NCFS to determine risk factors for clear cutting operations and how they affect the floodplain. This will be evaluated as funding allows and updated as needed or during the next HMP update process.
Sanford	Prevention	Evaluate flood damage potential of electric utility, water and sewer distribution systems.	Flood	High	Public Works, Utilities	Local	Low	1-2 Years	To Be Continued	Continue to work with utility partners to evaluate potential flood risks to their infrastructure. This action will be implemented as funding allows and updated as needed or during the next HMP update process.
Sanford	Prevention	Implement stronger building codes that recognize the importance of preparing new homes and businesses for wind events.	Thunderstorm, Flood, Winter Storm/Freeze, Hurricane, Severe Storm, Tornado	High	Community Development	Local	Low	1-2 Years	To Be Continued	Continue to work with Planning to create county/city ordinances for improved building resilience to damage. Stronger building codes will be developed when funding becomes available to support the implementation of actions. This action will be updated as needed or during the next HMP update process.
Sanford	Prevention	Increase jurisdiction classification in the NFIP Community Rating System.	Flood	High	Emergency Management, Community Development	Local	Low	2-5 Years	To Be Continued	Continue to work with Planning and Zoning throughout the City of Sanford and Lee County. This action will be implemented when funding becomes available to support increasing the community's classification. This action

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										will be updated as needed or during the next HMP update process.
Sanford	Prevention	Obtain and maintain North Carolina Certified Floodplain Manager status.	Flood	High	Community Development	Local	Low	5+ Years	To Be Continued	Sanford has continually worked to maintain a certified floodplain manager on staff and will continue to do so going forward. This will be continually implemented, and this action will be updated as needed or during the next HMP update process.
Sanford	Prevention	Standardize procedures for handling certain post-damage permit processing procedures.	All Hazards	High	Community Development, Inspections	Local	Low	0-1 Years	To Be Continued	Continue to work with Community Development and Inspections on post-damage permit processing procedures and practices. This will be evaluated as funding allows and updated as needed or during the next HMP update process.
Sanford	Property Protection	Incorporate digital floodplain and topographic data into automated permit database/system and Geographic Information System data layer inventory.	Flood	High	Community Development, GIS	Local, State, Federal	Low	5+ Years	To Be Continued	Digital floodplain and topographic data have been incorporated into the automated permit system and GIS data layer. This action is completed but will be maintained regularly and as needed. This action will be updated as needed or during the next HMP update process but should be added to capabilities.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Sanford	Property Protection	Provide backup power for critical facilities.	All Hazards	High	City	Local, State, Federal	High	5+ Years	To Be Continued	This action will be implemented as critical facilities that need backup power are identified, as funding becomes available, or as needed. This action will be updated as needed or during the next HMP update process.
Sanford	Public Education and Awareness	Develop and implement multi-year public awareness campaigns concerning hazard mitigation for all hazards.	All Hazards	High	Emergency Management	Local	Low	1-2 Years	To Be Continued	Continue to work with County and City partners to push awareness campaigns on social media and public events. This campaign will need to be re-evaluated and continually implemented to ensure the public is informed of up-to-date hazard information. Therefore, this action will remain in the plan and be evaluated and reviewed annually.

Table 8-26: Moore County Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Moore County	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.	All Hazards	High	Moore County Public Safety Department	Local, NCEM	Medium, Staff Time		Complete	We created a dashboard of live data concerning disaster options for sharing situational awareness and common operating picture as a one stop shop. We also have a subscription to WEBEOC to share and collect information from partners.
Moore County	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system, and improve upon the accuracy and effectiveness of this system when feasible for all hazards	All Hazards	High	Moore County Public Safety Department	Local	Medium, Staff Time		Complete	We just updated our data in the Emergency Notification System platform from the 911 system data in the 1st quarter of 2025. We are also fully compliant with IPAWS.
Moore County	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department	HMGP	High		Complete	Three (3) flood gauges installed and operational inside Moore County.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Moore County	Prevention	Moore County, as well as all participating jurisdictions, will consider joining and/or maintaining the Community Rating System program. Note: The Village of Whispering Pines is already a participant in the Community Rating System program.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development	Local	Medium, Staff Time	1-2 Years	In Progress	No progress has been made to date. Planning and Inspections staff will work with the North Carolina Department of Public Safety (NCDPS) and FEMA to coordinate and begin the process of joining and maintaining the CRS. Implementation planned to be complete by 2027. This action will be updated annually or as progress is made.
Moore County	Prevention	Moore County, as well as all participating jurisdictions, will continue to require elevation certificates for all development within a Special Flood Hazard Area (SFHA). All elevation certificates will be submitted on an official FEMA Elevation Certificate Form.	Flood, Hurricane, Dam Failure	High	Moore County Office of Planning and Community Development	Local	Medium, Staff Time	5+ Years	To Be Continued	Moore County actively enforces elevation certificate requirements for development in the SFHA. This action is completed as needed and will be updated as needed or during the next HMP review cycle.
Moore County	Prevention	Identify, map, and appraise repetitive loss of properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Emergency Management, Planning	HMGP, Local	Medium	5+ Years	In Progress	Moore County has purchased approximately twenty (20) repetitive loss properties since Hurricane Matthew & Florence. NCEM is currently managing several more. This action will be reevaluated annually as new repetitive loss

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										properties are identified.
Moore County	Prevention	Continue to monitor areas identified as hot spots where roadways flood during heavy rain events. Plan out storm water management projects with construction estimates and be ready to build when grant funds become available.	Flood Hurricane	Moderate	Moore County	Local, State	Medium		Deleted	It just doesn't appear to be within our area of responsibility however we have mapped the identified areas. NCDOT appears to be doing a much better job of identifying and mitigating these issues. Dozens of pipes have been replaced with larger pipes.
Moore County	Prevention	After the establishment of additional stream gauges as noted above, Moore County Public Safety will convene a working group including all individuals charged with floodplain and dam management within the County. This working group will be charged with drafting a coordinated Dam Management Plan and Strategy.	Dam Failure, Flood	Moderate	Moore County Public Safety Department	Local	High, Local Staff Time	5+ Years	To Be Continued	No real work has been completed on this project. This action will be reevaluated annually or as progress is made on implementing the action.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Moore County	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.	Dam Failure	Low	Moore County Public Safety Department	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	Not as detailed or as functional as we envisioned that it would be. He has, however, mapped all of our High Hazard Dams to improve our overall situational awareness and common operating picture for our response agencies. We have also delivered two (2) Dam EAP tabletop exercises. All the Dam Safety EAPs that we have received are stored digitally and available to staff in the field. We continually look for opportunities to gather Dam owner/operator contact information. This action will be updated as needed or during the next HMP update process.
Moore County	Prevention	Moore County, as well as all participating jurisdictions, will continue to enforce the NC State Building Code.	All Hazards	High	Moore County Office of Planning and Community Development	Local, NCDEQ	High Staff Time	5+ Years	To Be Continued	Moore County actively enforces building code as required by law. This process is continuous, and this mitigation action will be updated as needed or during the next HMP review cycle.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Moore County	Prevention	The Moore County Planning and Inspections Department will continue to maintain and enforce the County's Flood Damage Prevention Ordinance. The County will continue to provide this service to all participating jurisdictions requesting service.	Flood	High	Moore County Office of Planning and Community Development	Local	High Staff Time	5+ Years	To Be Continued	Moore County is currently in the process of updating the Moore County Unified Development Ordinance. The current UDO is dated April 2021. Moore County continually enforces the county's Flood Damage Prevention Ordinance and other development ordinances. This action will be completed as needed and will be updated as needed or during the next HMP update process.
Moore County	Property Protection	Moore County will work with County residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/ floodproofing/ acquisition/ relocation of repetitive loss of properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Public Safety Department	Local, HMA	Medium	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence applications were secured. Will continue to work with residents of Moore County who seek to obtain HMA funding for elevation/floodproofing/acquisition/relocation of repetitive loss of properties.
Moore County	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency generators.	All Hazards	Moderate	Moore County,	HMGP, Local, State, Federal	High	5+ Years	In Progress	Multiple CIKF generators have been installed, and we have a mapped list of additional CIKF for future projects as funding becomes available. This action will be updated as new projects or funding sources are identified.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Moore County	Public Education and Awareness	Conduct outreach activities aimed at educating citizens towards emergency preparedness and hazard mitigation of all hazards and business owners about addressing the issue of continuity of operations in the face of natural and man-made disasters.	All Hazards	Moderate	Moore County	Local, Federal, State	Medium	5+ Years	To Be Continued	This action will be implemented as funding becomes available or as needed, and this action will be updated as needed or during the next HMP update process.
Moore County	Structural Project	Moore County will monitor all areas identified as local drainage “hot spots” within this plan and work towards drainage solutions were deemed feasible. Continue to identify and map areas where roadways flood during heavy rain events.	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development, Jurisdiction	Local	Low, Staff Time	5+ Years	To Be Continued	The county will continue to monitor hot spot areas for drainage issues and try to develop solutions where possible. However, as mentioned, drainage solutions are prevalent and may not all be able to be managed in the immediate future. This action will be reevaluated as annually or as drainage issues are identified.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Moore County	Prevention	Develop inundation modeling for each dam in the planning area that does not already have inundation data. Evaluate infrastructure, property, and people at risk of dam failure impacts to identify and implement projects that improve resiliency to dam failure impacts	Dam Failure	High	Chatham County Planning	Local, Federal, State	High	5+ Years	New	Lee County

Table 8-27: *Town of Aberdeen Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Emergency Services	Town of Aberdeen will continue to utilize the existing notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Town Administration	Local	Low	5+ Years	New	Conducted several outreach events to increase sign up.
Aberdeen	Property Protection	Purchase and install transfer switches on critical infrastructure/key facilities to allow for fast hook-up of emergency generators	All Hazards	Moderate	Town Maintenance Director	Local	High	5+ Years	New	TOA has installed several transfer switches and hookups. Have also purchased a mobile generator.
Aberdeen	Emergency Services	All participating jurisdictions shall subsidize the County's efforts to provide advance notification regarding natural and man-made hazard events. This effort should involve the use of first responders employed by each of the municipal jurisdictions.	All Hazards	High	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to lack of funding. This action will be reevaluated annually or as progress is made on implementing the action.
Aberdeen	Emergency Services	In the event of a substantial natural and/or man-made disaster situation, Moore County Public Safety will deliver a VIPER radio to the lead contact (as listed in the EOP) for each municipality.	All Hazards	High	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Emergency Services	Incorporate the Emergency Evacuation Limits of intermediate to high hazard dams onto maps in use in Town hall, Police, and Fire Departments. Notify all potentially affected property owners.	Dam Failure	Moderate	Town Planning Director	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Aberdeen	Emergency Services	Moore County and the jurisdiction will continue to utilize the County's existing emergency notification system as a secondary line of communication to all residents and business owners regarding natural and man-made hazard events.	All Hazards	Moderate	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Aberdeen	Emergency Services	Moore County Public Safety currently provides one pet-friendly shelter, which is located at Southern Middle School. The County will work to establish additional pet-friendly shelters to serve other portions of the County.	All Hazards	Low	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Emergency Services	Moore County Public Safety will continue to utilize the existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Aberdeen	Emergency Services	Moore County Public Safety will exercise the County's EOP once annually. All participating jurisdictions should attend and participate in this exercise.	All Hazards	High	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available or as needed. Action will be updated as needed or during the next HMP update process.
Aberdeen	Emergency Services	Moore County Public Safety will publish and disseminate evacuation information as soon as possible through media outlets defined in the County Emergency Operations Plan.	All Hazards	High	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available or as needed. Action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Emergency Services	Moore County Public Safety will work closely with the American Red Cross to ensure that adequate shelter facilities are available to address all hazards identified within this plan. This effort will involve securing an alternate power source for all shelter facilities. This will be achieved either through a memorandum of understanding with NCEM or acquisition. Additionally, the County will aim to install transfer switches at all shelter facilities. The County acknowledges that this effort will require grant assistance.	All Hazards	High	Moore County Public Safety Department	Local, Red Cross, NCEM	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available or as needed. Action will be updated as needed or during the next HMP update process.
Aberdeen	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.	All Hazards	High	Moore County Public Safety Department	Local, NCEM	Low	NA	Complete	We created a dashboard of live data concerning disaster options for sharing situational awareness and common operating picture as a one stop shop. We also have a subscription to WEBEOC to share and collect information from partners.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Emergency Services	Moore County Public Safety will work to improve upon the County's existing medically fragile population registry. This effort will require the cooperation and assistance of all participating jurisdictions.	All Hazards	High	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available or as needed. Action will be updated as needed or during the next HMP update process.
Aberdeen	Emergency Services	Moore County Public Safety will work with residents on the establishment of additional Community Emergency Response Teams (CERT). This effort will also address the training and support of the eleven teams currently operating within the County. The jurisdiction will rely on grant funding for the training and equipment expense associated with establishing new CERT units.	All Hazards	High	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available or as needed. Action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Emergency Services	The lead contact for all jurisdictions participating in this plan will acknowledge the importance of developing a strong functional understanding of the County EOP. Additionally, all participating jurisdictions shall provide support, as required, to implement the EOP.	All Hazards	High	Moore County Public Safety Department	Local	Low	5+ Years	To be continued	No measurable progress due to a lack of funding. This action will be completed as funding becomes available or as needed, and the action will be updated as needed or during the next HMP update process.
Aberdeen	Natural Resource Protection	Add ½ mile of greenway trail to serve as a buffer to Aberdeen Lake Park.	Flood	Moderate	Town Planning Director	Local	Low	5+ Years	To Be Continued	No measurable progress to lack of funding. This action will be implemented as funding is identified, and the action will be updated as needed or during the next HMP update process.
Aberdeen	Natural Resource Protection	Moore County will work closely with all local land preservation efforts and programs. These efforts will focus on land acquisition within portions of the jurisdiction that are vulnerable to natural hazards.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as needed or as funding becomes available. Action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Prevention	Continue to show improvement and maintain ISO audit ratings of building inspections and the fire department at the highest levels possible with available funding.	All Hazards	High	Town Planning Director	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Aberdeen	Prevention	Identify, map, and appraise repetitive loss of properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Emergency Management, Planning	HMGP, Local	Medium		New	Moore County has purchased approximately twenty (20) repetitive loss properties since Hurricane Matthew & Florence. NCEM is currently managing several more.
Aberdeen	Prevention	Identify, map, and appraise repetitive loss properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Emergency Management, Planning	HMGP, Local, State, Federal	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Aberdeen	Prevention	Implement at least one of the three stormwater BMPs identified through the Town's existing comprehensive stormwater mapping project.	Flood	High	Town Planning Director	Local, State, Federal	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Prevention	Incorporate dam maintenance into the CIP. This task should be coordinated with County efforts.	Dam Failure	High	Town Planning Director	Local, State, Federal	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Aberdeen	Prevention	Moore County Planning and Inspections, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerability, as well as mitigate future risk through informed planning efforts.	Dam Failure	Low	Moore County Public Safety Department	Local, NCDEQ	Low	5+ Years	To Be Continued	Not as detailed or as functional as we had envisioned it. We have, however, mapped all of our High Hazard Dams to improve our overall situational awareness and common operating picture for our response agencies. We have also delivered two (2) Dam EAP tabletop exercises. All the Dam Safety EAPs that we have received are stored digitally and available to staff in the field. Updated as needed and we continually look for opportunities to gather Dam owner/operator contact information.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction. The goal of this effort will be to provide the jurisdictions with better information regarding riverine water levels.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction	HMGP	Low	NA	Complete	Three (3) flood gauges installed and operational inside Moore County.
Aberdeen	Prevention	Moore County will consider the development of stormwater regulations aimed at reducing the downstream effects of future development.	Dam Failure	Low	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available or as needed. Action will be updated as needed or during the next HMP update process.
Aberdeen	Prevention	Promote floodplain mapping of the Ray's Mill Pond (Pee Dee Lake) and Creek system).	Flood	High	Town Planning Director	Local, State, Federal	Low	5+ Years	To be continued	No measurable progress due to a lack of funding. This action will be completed as funding becomes available or as needed, and the action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Prevention	Promote use of freeboard for construction of projects adjacent to floodplain boundaries.	Flood	High	Town Planning Director	Local	Low	5+ Years	To be continued	No measurable progress due to a lack of funding. This action will be completed as funding becomes available or as needed, and the action will be updated as needed or during the next HMP update process.
Aberdeen	Prevention	Revise Land Development Plan goals, objectives, and policies to address natural resource protection, hazard mitigation, and rail corridor protection.	All Hazards	High	Town Planning Director	Local, State, Federal	Low	5+ Years	To be continued	No measurable progress due to a lack of funding. This action will be completed as funding becomes available or as needed, and the action will be updated as needed or during the next HMP update process.
Aberdeen	Property Protection	Acquire or elevate flood prone properties.	Flood, Hurricane, Dam Failure	High	Town Planning Director	Local	Low	5+ Years	To Be Continued	This action will be implemented as flood prone properties are identified and as funding becomes available. This will be updated as needed or during the next HMP update process.
Aberdeen	Property Protection	Identify any sewer manholes within flood prone areas that require flood proofing.	Flood, Hurricane, Dam Failure	Moderate	Town Planning Director	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Property Protection	Investigate the feasibility and cost of floodproofing manholes within flood prone areas.	Flood, Hurricane, Dam Failure	Moderate	Town Planning Director	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Aberdeen	Property Protection	Moore County will work with residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/floodproofing/acquisition/ relocation of repetitive loss properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development	Local, HMA	Low	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence applications were secured. Will continue to work with residents of Moore County who seek to obtain HMA funding for elevation/floodproofing/acquisition/ relocation of repetitive loss of properties.
Aberdeen	Property Protection	Purchase and install generators on one of more water wells for small water systems (e.g., Foxfire Village); and/or purchase and install transfer switches to allow for fast hook-up of emergency generators, particularly for water wells.	All Hazards	High	Moore County Emergency Management, Public Utilities	HMGP	Low	5+ Years	To be continued	No measurable progress due to a lack of funding. This action will be completed as funding becomes available or as needed, and the action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Property Protection	Seek funding to relocate the repetitively flooded Rescue building located downstream of the Aberdeen Lake Dam.	Flood, Hurricane, Dam Failure	High	Town Planning Director	Local, Grants	Low	5+ Years	To be continued	No measurable progress due to a lack of funding. This action will be completed as funding becomes available or as needed, and the action will be updated as needed or during the next HMP update process.
Aberdeen	Public Education	Conduct outreach activities aimed at educating citizens towards emergency preparedness and hazard mitigation of all hazards and business owners about the addressing issue of continuity of operations in the face of natural and man-made disasters.	All Hazards	Moderate	Town Administration	Local	Medium	5+ Years	New	
Aberdeen	Public Education and Awareness	Ensure adequate notification of parties potentially affected by revisions to floodplain boundaries as a result of NCDOT road improvement projects.	Flood	Moderate	Town Planning Director	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Aberdeen	Public Education and Awareness	Identify and map areas of urbanized areas adjacent to rural lands that are at risk of wildfire. Conduct outreach efforts to rural landowners to enroll in State and Federal	Wildfire	Moderate	Emergency Management, Planning, Soil and Water Conservation District	WHIP/EQIP Grants, EMPG	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		land management programs to reduce wildfire risks.			Offices, Cooperative Extension					
Aberdeen	Public Education and Awareness	Improve mapping and communication to property owners regarding the downstream flooding potential hazards from a dam breach and floodplains. Obtain and catalog all dam emergency action plans and store at Public Safety Departments.	Flood, Hurricane	High	Moore County Emergency Management, NCDENR Dam Safety	HMGP, EMPG	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Aberdeen	Public Education and Awareness	Members of the planning team will report all implementation progress regarding the Mitigation Plan to their respective elected bodies through established standard reporting mechanisms.	All Hazards	High	Moore County Public Safety Department, Moore County Office of Planning and Community Development	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Aberdeen	Public Education and Awareness	Moore County Public Safety with the assistance of the MAC will develop a public service campaign focused on stressing the importance of maintaining a National Oceanic and Atmospheric Administration (NOAA) weather radio within all homes and businesses.	All Hazards	High	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available or as needed. Action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Public Education and Awareness	Moore County will conduct outreach activities aimed at educating business owners about addressing the issue of continuity of operations in the face of all natural and man-made disasters. Following a disaster, the reopening of commercial operations is critical to recovery efforts.	All Hazards	High	Moore County Public Safety Department	Local	Low		Complete	Completed in 2020 by county.
Aberdeen	Public Education and Awareness	Moore County will hold a minimum of two public outreach symposiums annually. The focus of these symposiums will be on providing residents and business owners with information relating to emergency preparedness, mitigation, and response for all hazards.	All Hazards	High	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding becomes available or as needed. Action will be updated as needed or during the next HMP update process.
Aberdeen	Public Education and Awareness	Moore County will work to establish the planning team as a function of the Local Emergency Planning Committee (LEPC). Under this scenario, the planning team will meet quarterly.	All Hazards	High	Moore County Public Safety Department	Local	Low	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as needed or as funding becomes available. Action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Public Education and Awareness	Provide in-house training for Public Works administrators to ensure compliance with public infrastructure installation with the Flood Damage Prevention Ordinance (FDPO).	Flood	Low	Town Planning Director	Local	Low	5+ Years	To be continued	No measurable progress due to a lack of funding. This action will be completed as funding becomes available or as needed, and the action will be updated as needed or during the next HMP update process.
Aberdeen	Public Education and Awareness	Provide in-house training for Public Works administrators to ensure compliance with public infrastructure installation with the FDPO.	Flood	Low	Town Planning Director	Local	Low	5+ Years	New	
Aberdeen	Public Education and Awareness	The planning team member representing each participating jurisdiction will ensure that mitigation issues and programs are addressed annually within the context of budget discussions. Programs and/or project identified through this plan, or quarterly MAC meetings, may require local contributions. In order to ensure that necessary funding is available, mitigation issues should be addressed by all participating jurisdictions as deemed necessary.	All Hazards	High	Moore County Public Safety Department, Moore County Office of Planning and Community Development	Local	Low	5+ Years	To be continued	No measurable progress due to a lack of funding. This action will be completed as funding becomes available or as needed, and the action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Aberdeen	Structural Project	Moore County will monitor all areas identified as local drainage “hot spots” within this plan and work towards drainage solutions, where deemed feasible. Continue to identify and map areas where roadways flood during heavy rain events.	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development	Local	Low	5+ Years	To Be Continued	The county will continue to monitor hot spot areas for drainage issues and try to develop solutions where possible. However, as mentioned, drainage solutions are prevalent and may not all be able to be managed in the immediate future. This action will be reevaluated as annually or as drainage issues are identified.

Table 8-28: Town of Cameron Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Cameron	Emergency Services	Moore County Public Safety will continue to utilize the existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department	Local	Moderate, Staff Time	5+ Years	To Be Continued	Switched to a new Emergency Notification System provider in FY 14 to improve citizen access to emergency information. Major work has been accomplished in terms of the website, Facebook, and twitter accounts regarding this issue. Build more templates to speed up notifications. Will continue to refine distribution of information and methods and maintain regularly.
Cameron	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.	All Hazards	High	Moore County Public Safety Department, Jurisdiction	Local, NCEM	Moderate, Staff Time	5+ Years	To Be Continued	Moore County Public Safety continually updates and improves its email group list of employees, partner agencies, emergency services providers, and municipalities. Look for ways to improve the point of contact database for each jurisdiction. Create short hard-hitting slide presentations for staff to use to educate residents and Boards as these would be helpful and used more often. Continue to refine distribution methods regularly. Use social media, mobile apps, school administrators and principals, and classrooms for teachers.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Cameron	Prevention	After the establishment of additional stream gauges as noted above, Moore County Public Safety will convene a working group including all individuals charged with floodplain and dam management within the County. This working group will be charged with drafting a coordinated Dam Management Plan and Strategy.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction	Local	Medium, Local Staff Time	5+ Years	To Be Continued	No measurable progress has been made because the flood gauges have not been installed by NCEM. This action will be updated as needed or during the next HMP update process.
Cameron	Prevention	Identify, map, and appraise repetitive loss of properties and be prepared to purchase when Hazard Mitigation Grant Program (HMGP) funding is available.	Flood, Hurricane	High	Emergency Management, Planning	HMGP	Medium	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence, properties were identified. This action will be implemented as repetitive loss properties are identified and as funding becomes available. This action will be updated as needed or during the next HMP update

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Cameron	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction	HMGP	High	5+ Years	To Be Continued	NCEM has agreed to place three (3) flood gauges in Moore County via a Hazard Mitigation Grant. The site visits have been completed, but the equipment has not been installed. The goal of this effort will be to provide the state and County with better information regarding riverine water levels. This will be updated as needed or during the next HMP update.
Cameron	Prevention	Moore County, as well as all participating jurisdictions, will consider joining and/or maintaining the Community Rating System program.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development, Jurisdiction	Local	Low, Staff Time	5+ Years	To Be Continued	No measurable progress has been made in the last 5 years. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update.
Cameron	Prevention	Moore County, as well as all participating jurisdictions, will continue to enforce the NC State Building Code.	All Hazards	High	Moore County Office of Planning and Community Development	Local, NCDEQ	High, Staff Time	5+ Years	To Be Continued	Enforcing the International Building Code with NC amendments continuously and as needed, as required by law. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Cameron	Prevention	Moore County, as well as all participating jurisdictions, will continue to require elevation certificates for all development within a Special Flood Hazard Area (SFHA). All elevation certificates will be submitted on an official FEMA Elevation Certificate Form.	Flood, Hurricane, Dam Failure	High	Moore County Office of Planning and Community Development, Jurisdiction	Local	Medium, Staff Time	5+ Years	To Be Continued	Floodplain ordinance requirements are enforced continuously and as needed, including elevation certificate requirements. This action will be updated as needed or during the next HMP update process.
Cameron	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.	Dam Failure	Low	Moore County Public Safety Department	Local, NCDEQ	Staff Time	5+ Years	To Be Continued	The US Army Civil Affairs group has worked on two projects over two consecutive years to map and gather emergency contact information for all the high hazards dams in Moore County. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Cameron	Prevention	The Moore County Planning and Inspections Department will continue to maintain and enforce the County's Flood Damage Prevention Ordinance. The County will continue to provide this service to all participating jurisdictions requesting service.	Flood	High	Moore County Office of Planning and Community Development	Local	High, Staff Time	5+ Years	To Be Continued	Continuous enforcement of the flood damage prevention provisions of the Flood Damage Prevention Ordinance as well as the new Flood Damage Prevention provisions of the Moore County Unified Development Ordinance (2/18/2014). These prevention measures are the most effective mitigation measures. This action will be updated as needed or during the next HMP update process.
Cameron	Property Protection	Moore County will work with County residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/floodproofing/acquisition/ relocation of repetitive loss of properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Public Safety Department	Local, HMA	Medium	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence applications were secured. This will be implemented as funding becomes available or as new repetitive loss properties are identified.
Cameron	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency generators.	All Hazards	Moderate	Moore County,	HMGP, Local	Medium	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as new critical infrastructure or facilities that need generators are identified or as funding becomes available. This will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Cameron	Public Education and Awareness	Conduct outreach activities aimed at educating citizens towards emergency preparedness, mitigation, and business owners about addressing the issue of continuity of operations in the face of natural and man-made disasters.	All Hazards	Moderate	Moore County, Town of Cameron	Local	Medium	5+ Years	To Be Continued	No measurable progress due to a lack of funding. This action will be implemented as funding allows, and the action will be updated as needed or during the next HMP update process.
Cameron	Structural Project	Moore County will monitor all areas identified as local drainage “hot spots” within this plan and work towards drainage solutions where deemed feasible. Continue to identify and map areas where roadways flood during heavy rain events. (Midland Rd. & US Hwy #1; May Street, Southern Pines). Plan out stormwater management projects with construction estimates and have “shovel-ready” to build when grant funds become available.	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development	Local	Medium, Staff Time	5+ Years	To Be Continued	The jurisdiction will continue to monitor hot spot areas for drainage issues and try to develop solutions where possible. However, as mentioned, drainage solutions are prevalent and may not all be able to be managed in the immediate future. This action is reviewed and updated annually.

Table 8-29: Town of Carthage Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Carthage	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system to improve the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department	Local	High, Staff Time	5+ Years	To Be Continued	Switched to a new Emergency Notification System provider in FY 14 to improve citizen access to emergency information. Major work has been accomplished in terms of the website, Facebook, and twitter accounts regarding this issue. Build more templates to speed up notifications. Continue to refine distribution of information and methods. This action is reviewed and updated annually.
Carthage	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.	All Hazards	High	Moore County Public Safety Department, Town of Carthage Town Manager	Local, NCEM	High, Staff Time	5+ Years	To Be Continued	Moore County Public Safety continually updates and improves its email group list of employees, partner agencies, emergency services providers, and municipalities. Look for ways to improve the point of contact database for each jurisdiction. Create short hard-hitting slide presentations for staff to use to educate residents and Boards as these would be helpful and used more often. Continue to refine distribution methods. Use social media, mobile apps, school administrators and principals and classrooms teachers. This action will be reviewed and updated annually.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Carthage	Prevention	After the establishment of additional stream gauges as noted above, Moore County Public Safety will convene a working group including all individuals charged with floodplain and dam management within the County. This working group will be charged with drafting a coordinated Dam Management Plan and Strategy.	Dam Failure, Flood	Moderate	Moore County Public Safety Department	Local	Medium	5+ Years	To Be Continued	No measurable progress has been made because the flood gauges have not been installed by NCEM. This action will be updated as needed or during the next HMP update process.
Carthage	Prevention	Identify, map, and appraise repetitive loss of properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Emergency Management, Planning	HMGP	Medium	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence, properties were identified. This action will be implemented as repetitive loss properties are identified and as funding becomes available. This action will be updated as needed or during the next HMP update.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Carthage	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction	HMGP	High	5+ Years	To Be Continued	NCEM has agreed to place three (3) flood gauges in Moore County via a Hazard Mitigation Grant. The site visits have been completed, but the equipment has not been installed. The goal of this effort will be to provide the state and County with better information regarding riverine water levels. This action will be updated as needed or during the next HMP update.
Carthage	Prevention	Moore County, as well as all participating jurisdictions, will consider joining and/or maintaining the Community Rating System program.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development	Local	Medium, Staff Time	5+ Years	To Be Continued	No measurable progress has been made in the last 5 years. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update.
Carthage	Prevention	Moore County, as well as all participating jurisdictions, will continue to enforce the NC State Building Code.	All Hazards	High	Moore County Office of Planning and Community Development	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	Actively enforcing the International Building Code with NC amendments, as required by law. This action will be updated as needed or during the next HMP update.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Carthage	Prevention	Moore County, as well as all participating jurisdictions, will continue to require elevation certificates for all development within a Special Flood Hazard Area (SFHA). All elevation certificates will be submitted on an official FEMA Elevation Certificate Form.	Flood, Hurricane, Dam Failure	High	Moore County Office of Planning and Community Development	Local	Medium, Staff Time	5+ Years	To Be Continued	Floodplain ordinance requirements are enforced continuously and as needed, including elevation certificate requirements. This action will be updated as needed or during the next HMP update process.
Carthage	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.	Dam Failure	Low	Moore County Public Safety Department	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	The US Army Civil Affairs group has worked on two projects over two consecutive years to map and gather emergency contact information for all the high hazards dams in Moore County. This will be worked on as funding is available and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Carthage	Prevention	The Moore County Planning and Inspections Department will continue to maintain and enforce the County's Flood Damage Prevention Ordinance. The County will continue to provide this service for all participating jurisdictions requesting service.	Flood	High	Moore County Office of Planning and Community Development	Local	Medium, Staff Time	5+ Years	To Be Continued	Continuous enforcement of the flood damage prevention provisions of the Flood Damage Prevention Ordinance as well as the new Flood Damage Prevention provisions of the Moore County Unified Development Ordinance (2/18/2014). These prevention measures are the most effective mitigation measures. This action will be updated as needed or during the next HMP update process.
Carthage	Property Protection	Moore County will work with County residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/floodproofing/acquisition/ relocation of repetitive loss of properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Public Safety Department	Local, HMA	Moderate	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence, properties were identified. This action will be implemented as repetitive loss properties are identified and as funding becomes available. This action will be updated as needed or during the next HMP update.
Carthage	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency	All Hazards	Moderate	Moore County, Town of Carthage Town Manager	HMGP, Local	Medium	5+ Years	To Be Continued	No measurable progress due to lack of funding. More generators will be purchased and installed as funding becomes available and as critical facilities and infrastructure are identified that need generators. This action will be updated as needed or during the next

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		generators.								HMP update.
Carthage	Public Education and Awareness	Conduct outreach activities aimed at educating citizens towards emergency preparedness, mitigation, and business owners about addressing the issue of continuity of operations in the face of natural and man-made disasters.	All Hazards	Moderate	Moore County, Town of Carthage Town Manager	Local	Medium	5+ Years	To Be Continued	No measurable progress due to lack of funding. This will be implemented as funding becomes available, and this action will be updated as needed or during the next HMP update.
Carthage	Public Education and Awareness	Continue to monitor areas identified as hot spots where roadways flood during heavy rain events. Plan out storm water management projects with construction estimates and be ready to build when grant funds become available.	Flood Hurricane	Moderate	Moore County, Town of Carthage	Local	Medium	5+ Years	To Be Continued	No measurable progress due to lack of funding. This will be implemented as funding becomes available and as new projects are identified for stormwater improvements. This action will be updated as needed or during the next HMP update.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Carthage	Structural Project	Moore County will monitor all areas identified as local drainage "hot spots" within this plan and work towards drainage solutions that are deemed feasible. Continue to identify and map areas where roadways flood during heavy rain events.	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development	Local, HMGP, Emergency Management Performance Grant (EMPG)	High, Staff Time	5+ Years	To Be Continued	No measurable progress due to lack of funding. This will be implemented as funding becomes available and as new projects are identified for stormwater improvements. This action will be updated as needed or during the next HMP update.

Table 8-30: *Foxfire Village Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Foxfire Village	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by	All Hazards	High	Moore County Public Safety Department Foxfire Village Mayor	Local, NCEM	Medium, Staff Time	5+ Years	In Progress	Moore County Public Safety continually updates and improves its email group list of employees, partner agencies, emergency services providers, and municipalities. Look for ways to improve the point of contact database for each jurisdiction.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		NCEM to municipal staff members and elected officials.								
Foxfire Village	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department; Foxfire Village Mayor	Local	Medium, Staff Time	5+ years	To Be Continued	Will continue to utilize the county's emergency notification system and will assist the county to improve access to emergency information.
Foxfire Village	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction	HMGP	High	5+ Years	In Progress	NCEM has placed three (3) flood gauges in Moore County via a Hazard Mitigation Grant. The goal of this effort will be to provide the state and County with better information regarding riverine water levels. Will continue to work with NCEM and address future projects as needed.
Foxfire Village	Prevention	Moore County, as well as all participating jurisdictions, will consider joining and/or maintaining the Community Rating System program.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development	Local	Medium, Staff Time	5+ Years	In Progress	No measurable progress has been made in the last 5 years. Will reevaluate annually.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Foxfire Village	Prevention	Moore County, as well as all participating jurisdictions, will continue to require elevation certificates for all development within a Special Flood Hazard Area (SFHA). All elevation certificates will be submitted on an official FEMA Elevation Certificate Form.	Flood, Hurricane, Dam Failure	High	Moore County Office of Planning and Community Development	Local	Medium, Staff Time	5+ Years	To Be Continued	Elevation certificates will continue to be performed as needed in the SFHA.
Foxfire Village	Prevention	Identify, map, and appraise repetitive loss of properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Emergency Management, Planning, Jurisdiction	HMGP	Medium	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence, properties were identified. This action will be implemented as repetitive loss properties are identified and as funding becomes available. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Foxfire Village	Prevention	After the establishment of additional stream gauges as noted above, Moore County Public Safety will convene a working group including all individuals charged with floodplain and dam management within the County. This working group will be charged with drafting a coordinated Dam Management Plan and Strategy.	Dam Failure, Flood	Moderate	Moore County Public Safety Department	Local	High, Staff Time	5+ Years	In Progress	No measurable progress has been made because the flood gauges have not been installed by NCEM. This action will be updated as needed or during the next HMP update process.
Foxfire Village	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed	Dam Failure	Low	Moore County Public Safety Department	Local, NCDEQ	High, Staff Time	5+ Years	To Be Continued	The US Army Civil Affairs group has worked on two projects over two consecutive years to map and gather emergency contact information for all the high hazards dams in Moore County. Will continue to work to address vulnerabilities and will reevaluate as needed.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		planning efforts.								
Foxfire Village	Prevention	Moore County, as well as all participating jurisdictions, will continue to enforce the NC State Building Code.	All Hazards	High	Moore County Office of Planning and Community Development	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	Actively enforcing the International Building Code with NC amendments. Required by law. Will continue to enforce building codes as needed.
Foxfire Village	Prevention	The Moore County Planning and Inspections Department will continue to maintain and enforce the County's Flood Damage Prevention Ordinance. The County will continue to provide this service to all participating jurisdictions requesting service.	Flood	High	Moore County Office of Planning and Community Development	Local	Medium, Staff Time	5+ Years	To Be Continued	Continuous enforcement of the flood damage prevention provisions of the Flood Damage Prevention Ordinance as well as the new Flood Damage Prevention provisions of the Moore County Unified Development Ordinance (2/18/2014) is maintained. These prevention measures are the most effective mitigation measures. FEMA RQ.
Foxfire Village	Property Protection	Moore County will work with County residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/floodproofing/acquisition/ relocation of repetitive loss of properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Public Safety Department	Local, HMA	Medium	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence applications were identified. Will continue to work with the County and assist residents to apply for HMA funding for elevation, acquisition, or relocation of repetitive loss properties.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Foxfire Village	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency generators.	All Hazards	Moderate	Moore County, Foxfire Village	HMGP, Local	Medium	5+ Years	In Progress	No measurable progress due to lack of funding.
Foxfire Village	Public Education and Awareness	Conduct outreach activities aimed at educating citizens towards emergency preparedness, mitigation, and business owners about addressing the issue of continuity of operations in the face of natural and man-made disasters.	All Hazards	Moderate	Moore County, Foxfire Village	Local	Medium	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be updated as needed or during the next HMP update process.
Foxfire Village	Public Education and Awareness	Continue to monitor areas identified as hot spots where roadways flood during heavy rain events. Plan out storm water management projects with construction estimates and be ready to build when grant funds	Flood Hurricane	Moderate	Moore County, Foxfire Village	Local	Medium	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		become available.								
Foxfire Village	Structural Project	Moore County will monitor all areas identified as local drainage “hot spots” within this plan and work towards drainage solutions were deemed feasible. Continue to identify and map areas where roadways flood during heavy rain events.	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development	Local	Medium, Staff Time	5+ Years	To Be Continued	The jurisdiction will continue to monitor hot spot areas for drainage issues and try to develop solutions where possible. However, as mentioned, drainage solutions are prevalent and may not all be able to be managed in the immediate future. Will be reevaluated as needed as drainage issues are identified.

Table 8-31: Town of Pinebluff Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinebluff	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system and improve the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department, Town of Pinebluff Mayor	Local	Medium, Staff Time	5+ Years	To Be Continued	Switched to a new Emergency Notification System provider in FY 14 to improve citizen access to emergency information. Major work has been accomplished in terms of the website, Facebook, and twitter accounts regarding this issue. Will continue to work with the County to utilize the emergency notification system and improve the effectiveness of the system where feasible. This action will be updated as needed or during the next HMP update process. This action will be implemented as needed or whenever the opportunity arises.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinebluff	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials. The Town of Pinebluff will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events and how citizens can prepare before events.	All Hazards	High	Town of Pinebluff & Fire/Rescue Department of the Town	Local	Low	5+ Years	New	Moore County and Pinebluff maintain a partnership to disseminate natural, and man-made hazard events. This action is implemented as opportunities arise and will be updated as needed or during the next HMP update process.
Pinebluff	Emergency Services	Use of Code Red for emergency public notifications. Work to improve accuracy, public sign up to the system and effectiveness when used.	All Hazards	High	Town of Pinebluff & Fire/Rescue Department of the Town	Local	Low	5+ Years	New	Established in 2023.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinebluff	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction, Town of Pinebluff, Mayor	HMGP	High		Complete	Three (3) flood gauges installed and operational inside Moore County.
Pinebluff	Prevention	Moore County, as well as all participating jurisdictions, will consider joining and/or maintaining the Community Rating System program. Note: The Village of Whispering Pines is already a participant in the Community Rating System program.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development , Town of Pinebluff, Mayor	Local	Medium, Staff Time	1-2 Years	In Progress	No progress has been made to date. Planning and Inspections staff will work with NCDPS and FEMA to coordinate and begin the process of joining and maintaining the CRS. Implementation planned to be complete by 2027. This action will be updated as progress is made or during the
Pinebluff	Prevention	Moore County, as well as all participating jurisdictions, will continue to require elevation certificates for all development within a Special Flood Hazard Area (SFHA). All elevation certificates will be submitted on an official FEMA Elevation Certificate	Flood, Hurricane, Dam Failure	High	Moore County Office of Planning and Community Development , Town of Pinebluff, Mayor	Local	Medium, Staff Time	5+ Years	To Be Continued	Elevation certificates and requirements for development in the SFHA are enforced continually and as required by law. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		Form.								
Pinebluff	Prevention	Identify, map, and appraise repetitive loss of properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Moore County Emergency Management, Planning, Town of Pinebluff, Mayor	HMGP	Medium, Staff Time	5+ Years	To Be Continued	Moore County has purchased approximately twenty (20) repetitive loss properties since Hurricane Matthew & Florence. NCEM is currently managing several more. This action will be reevaluated annually or as new repetitive loss properties are identified.
Pinebluff	Prevention	After the establishment of additional stream gauges as noted above, Moore County Public Safety will convene a working group including all individuals charged with floodplain and dam management within the County. This working group will be charged with drafting a coordinated Dam Management Plan and Strategy.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Town of Pinebluff, Mayor	Local	Medium, Staff Time	5+ Years	To Be Continued	No measurable progress has been made on this project. This action will be reevaluated when progress is made to implement the project or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinebluff	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.	Dam Failure, Flood	Low	Moore County Public Safety Department, Town of Pinebluff, Mayor	Local, NCDEQ	Medium, Staff Time	NA	Complete	Not as detailed or as functional as we envisioned that it would be. He has, however, mapped all our High Hazard Dams to improve our overall situational awareness and common operating picture for our response agencies. We have also delivered two (2) Dam EAP tabletop exercises. All the Dam Safety EAPs that we have received are stored digitally and available to staff in the field. We continually look for opportunities to gather Dam owner/operator contact information.
Pinebluff	Prevention	Moore County, as well as all participating jurisdictions, will continue to enforce the NC State Building Code.	All Hazards	High	Moore County Office of Planning and Community Development, Town of Pinebluff, Mayor	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	Building codes are enforced continually and as required by law. This action will be updated as needed or

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinebluff	Prevention	The Moore County Planning and Inspections Department will continue to maintain and enforce the County's Flood Damage Prevention Ordinance. The County will continue to provide this service to all participating jurisdictions requesting service.	Flood	High	Moore County Office of Planning and Community Development, Town of Pinebluff, Mayor	Local	Medium, Staff Time	5+ Years	To Be Continued	Moore County is currently in the process of updating the Moore County Unified Development Ordinance. The current UDO is dated April 2021. The Flood Damage Prevention Ordinance is enforced continually and as needed, and the mitigation action will be updated as needed or during the next HMP update process.
Pinebluff	Prevention	In conjunction with Moore County, we will continue to enforce the NC State Building Code	All Hazards	High	Town of Pinebluff - Building Code Official(s)	Local	High	5+ Years	New	In progress.
Pinebluff	Property Protection	Moore County will work with County residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/ floodproofing/ acquisition/ relocation of repetitive loss of properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Public Safety Department, Town of Pinebluff, Mayor	Local, HMA	Medium, Staff Time	5+ Years	To Be Continued	Submitted applications during Hurricane Matthew and Hurricane Florence for hazard mitigation projects. This action will be implemented as qualified repetitive loss properties are identified for HMA assistance. Action will be updated during the next HMP update process or as needed.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinebluff	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency generators.	All Hazards	Moderate	Moore County,	HMGP, Local	Medium	5+ Years	In Progress	Multiple CIKF generators have been installed, and we have a mapped list of additional CIKF for future projects as funding becomes available. This action will be implemented as funding becomes available, and the action will be updated as needed or during the next HMP update process.
Pinebluff	Public Education	Provide Public Education and outreach for awareness for hazard awareness for all hazards relevant to our area.	All Hazards	High	Town of Pinebluff & Fire/Rescue Department of the Town	Local	Low	5+ Years	New	In progress.
Pinebluff	Public Education and Awareness	Conduct outreach activities aimed at educating citizens towards emergency preparedness, mitigation, and business owners about addressing the issue of continuity of operations in the face of natural and man-made disasters.	All Hazards	Moderate	Moore County, Town of Pinebluff, Mayor	Local	Medium	5+ Years	In Progress	No measurable progress has been made due to a lack of funding. This action will be reevaluated during the next HMP update process or as needed if implementation efforts begin or funding becomes available.
Pinebluff	Public Education and Awareness	Continue to monitor areas identified as hot spots where roadways flood during heavy rain events. Plan out storm water management projects with construction estimates	Flood Hurricane	Moderate	Moore County, Town of Pinebluff, Mayor	Local	Medium		Deleted	It just doesn't appear to be within our area of responsibility however we have mapped the identified areas. NCDOT appears to do a much better job of identifying and mitigating these issues. Dozens of pipes have been replaced

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		and be ready to build when grant funds become available.								with larger pipes.
Pinebluff	Structural Project	Moore County will monitor all areas identified as local drainage “hot spots” within this plan and work towards drainage solutions were deemed feasible. Continue to identify and map areas where roadways flood during heavy rain events.	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development, Town of Pinebluff, Mayor	Local	Medium, Staff Time	5+ Years	To Be Continued	The jurisdiction will continue to monitor hot spot areas for drainage issues and try to develop solutions where possible. However, as mentioned, drainage solutions are prevalent and may not all be able to be managed in the immediate future. This action will be updated as needed or during the next HMP update process. This action will be implemented as projects are identified, and funding becomes available to support the project.

Table 8-32: *Village of Pinehurst Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinehurst	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.	All Hazards	High	Moore County Public Safety Department, Jurisdiction (Village Manager)	Local, NCEM	Medium, Staff Time		Complete	Pinehurst shares the ability to use a GIS dashboard of live data concerning disaster options for sharing situational awareness and common operating pictures as a one stop shop. We also have a subscription to WEBEOC to share and collect information from local municipalities and Moore County.
Pinehurst	Emergency Services	Moore County Public Safety will continue to utilize the existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible for all hazards.	All Hazards	High	Moore County Public Safety Department, Jurisdiction (Village Manager)	Local	Medium, Staff Time		Complete	Working with Moore County Pinehurst has an Emergency Notification System platform from the 911 system data in the 1st quarter of 2025. We are also fully compliant with IPAWS.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinehurst	Emergency Services	Village of Pinehurst will continue to utilize the existing notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Administration	Local	Low	5+ Years	New	In progress.
Pinehurst	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction (Village Manager)	HMGP	High		Complete	Three (3) flood gauges installed and operational inside Moore County that Pinehurst can also see the information Moore County collects.
Pinehurst	Prevention	Moore County, as well as all participating jurisdictions, will consider joining and/or maintaining the Community Rating System program.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development, Jurisdiction (Village Manager)	Local	Medium, Staff Time	1-2 Years	In Progress	No progress has been made to date. Planning and Inspections staff will work with NCDPS and FEMA to coordinate and begin the process of joining and maintaining the CRS. Implementation planned to be complete by 2027. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinehurst	Prevention	Moore County, as well as all participating jurisdictions, will continue to require elevation certificates for all development within a Special Flood Hazard Area (SFHA). All elevation certificates will be submitted on an official FEMA Elevation Certificate Form.	Flood, Hurricane, Dam Failure	High	Moore County Office of Planning and Community Development, Jurisdiction (Village Manager)	Local	Medium, Staff Time	5+ Years	To Be Continued	Regulations for development in the SFHA are enforced continuously and elevation certificates are required as needed. The action will be updated as needed or during the next HMP update process.
Pinehurst	Prevention	Identify, map, and appraise repetitive loss of properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Emergency Management, Planning, Jurisdiction (Village Manager)	HMGP	Medium, Staff Time	5+ Years	In Progress	Moore County has purchased approximately twenty (20) repetitive loss properties since Hurricane Matthew & Florence. NCEM is currently managing several more. This action will continue to be implemented as eligible repetitive loss properties are identified and when funding becomes available. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinehurst	Prevention	After the establishment of additional stream gauges as noted above, Moore County Public Safety will convene a working group including all individuals charged with floodplain and dam management within the County. This working group will be charged with drafting a coordinated Dam Management Plan and Strategy.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction (Village Manager)	Local	Medium, Local Staff Time	5+ Years	To Be Continued	No real work has been completed on this project and there is no measurable progress to report. This action will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Pinehurst	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.	Dam Failure,	Low	Moore County Public Safety Department, Jurisdiction (Village Manager)	Local, NCDEQ	Medium, Staff Time		Complete	Pinehurst working alongside Moore County has our High Hazard Dams noted to improve our overall situational awareness and common operating picture for our response agencies. We have also delivered two (2) Dam EAP tabletop exercises. All the Dam Safety EAPs that we have received are stored digitally and available to staff in the field. We continually look for opportunities to gather Dam owner/operator contact information.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinehurst	Prevention	Moore County, as well as all participating jurisdictions, will continue to enforce the NC State Building Code.	All Hazards	High	Moore County Office of Planning and Community Development, Jurisdiction (Village Manager)	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	Building code enforcement is continuous and is implemented as needed. This action will be updated as needed or during the next HMP update process.
Pinehurst	Prevention	The Moore County Planning and Inspections Department will continue to maintain and enforce the County's Flood Damage Prevention Ordinance. The County will continue to provide this service to all participating jurisdictions requesting service.	Flood	High	Moore County Office of Planning and Community Development, Jurisdiction (Village Manager)	Local	Medium, Staff Time	5+ Years	To Be Continued	The Village of Pinehurst maintains our own Development Ordinances and is updated as directed by Council for state requirements. Flood Damage Prevention Ordinances and development ordinances are enforced continuously.
Pinehurst	Property Protection	Moore County will work with County residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/floodproofing/acquisition/ relocation of repetitive loss of properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Public Safety Department, Jurisdiction (Village Manager)	Local, HMA	Medium, Staff Time	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence applications were identified. This action will continue to be implemented as eligible repetitive loss properties are identified and when funding becomes available. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinehurst	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency generators.	All Hazards	Moderate	Moore County, Town of Pinebluff Village Manager	HMGP, Local	Medium	5+ Years	In Progress	Multiple CIKF generators have been installed, and we have a mapped list of additional CIKF for future projects as funding becomes available. This action will be updated/implemented as new projects are identified or as funding becomes available.
Pinehurst	Public Education	Conduct outreach activities aimed at educating citizens towards emergency preparedness and hazard mitigation of all hazards and business owners about the addressing issue of continuity of operations in the face of natural and man-made disasters.	All Hazards	Moderate	Administration	Local	Medium	5+ Years	New	Action will be updated as needed or during the next HMP update process.
Pinehurst	Public Education	Provide In-house training for Public Works and other administrators to ensure compliance with public infrastructure installation with the FDPO.	Flood	Low	Planning and Zoning	Local	Low	5+ Years	New	This will be implemented as needed to ensure continued compliance with public infrastructure. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Pinehurst	Public Education and Awareness	Conduct outreach activities aimed at educating citizens towards emergency preparedness, mitigation, and business owners about addressing the issue of continuity of operations in the face of natural and man-made disasters.	All Hazards	Moderate	Moore County, Town of Pinebluff Village Manager	Local	Medium	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be updated as needed or during the next HMP update process.
Pinehurst	Public Education and Awareness	Continue monitor areas identified as hot spots where roadways flood during heavy rain events. Plan out storm water management projects with construction estimates and have ready to build when grant funds become available.	Flood Hurricane	Moderate	Moore County, Town of Pinebluff Village Manager	Local	Medium		Deleted	The Village of Pinehurst has several projects identified to help with storm water runoff and mapped the identified areas. NCDOT appears to be doing a much better job of identifying and mitigating these issues. Dozens of pipes have been replaced with larger pipes.
Pinehurst	Structural Project	Moore County will monitor all areas identified as local drainage “hot spots” within this plan and work towards drainage solutions were deemed feasible. Continue to identify and map areas where roadways flood	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development, Jurisdiction (Village Manager)	Local	Medium, Staff Time	5+ Years	To Be Continued	The jurisdiction will continue to monitor hot spot areas for drainage issues and try to develop solutions where possible. However, as mentioned, drainage solutions are prevalent and may not all be able to be managed in the immediate future. This action will be implemented as projects and funding are identified. This action will be

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		during heavy rain events.								updated as needed or during the next HMP review process.

Table 8-33: *Town of Robbins Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Robbins	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.	All Hazards	High	Moore County Public Safety Department, Jurisdiction (Town Manager)	Local, NCEM	Medium, Staff Time		Complete	Moore County Public Safety continually updates and improves its email group list of employees, partner agencies, emergency services providers, and municipalities. Look for ways to improve the point of contact database for each jurisdiction. Create short hard-hitting slide presentations for staff to use to educate residents and Boards as these would be helpful and used more often. Continue to refine distribution methods. Use social media, mobile apps, school administrators and principals, and classrooms teachers. This action will be implemented as needed and this action will be updated as needed or during the next HMP review process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Robbins	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department, Jurisdiction (Town Manager)	Local	Medium, Staff Time		Complete	Updated internal CODE RED Notification System activated for Robbins Region in FY 2022.
Robbins	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction (Town Manager)	HMGP	High	0-1 Years	In Progress	NCEM has agreed to place three (3) flood gauges in Moore County via a Hazard Mitigation Grant. The site visits have been completed, but the equipment has not been installed. The goal of this effort will be to provide the state and County with better information regarding riverine water levels. This action will be implemented when NCEM plans to install the gauges, and the action will be updated as needed or during the next HMP update process.
Robbins	Prevention	Moore County, as well as all participating jurisdictions, will consider joining and/or maintaining the Community Rating System program.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development, Jurisdiction (Town Manager)	Local	Medium, Staff Time	5+ Years	In Progress	No measurable progress has been made in the last 5 years due to a lack of funding. This action will be implemented as funding becomes available or as needed, and the action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Robbins	Prevention	Moore County, as well as all participating jurisdictions, will continue to require elevation certificates for all development within a Special Flood Hazard Area (SFHA). All elevation certificates will be submitted on an official FEMA Elevation Certificate Form.	Flood, Hurricane, Dam Failure	High	Moore County Office of Planning and Community Development, Jurisdiction (Town Manager)	Local	Medium, Staff Time	5+ Years	To Be Continued	Regulations for development in the SFHA are enforced continuously and elevation certificates are required as needed. The action will be updated as needed or during the next HMP update process.
Robbins	Prevention	Identify, map, and appraise repetitive loss of properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Emergency Management, Planning, Jurisdiction (Town Manager)	HMGP	Medium, Staff Time	5+ Years	To Be Continued	Properties have been identified, and floodplain mitigation planning is in progress. This action will be implemented as repetitive loss properties are identified, and funding becomes available. This will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Robbins	Prevention	After the establishment of additional stream gauges as noted above, Moore County Public Safety will convene a working group including all individuals charged with floodplain and dam management within the County. This working group will be charged with drafting a coordinated Dam Management Plan and Strategy.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction (Town Manager)	Local	Medium, Local Staff Time	5+ Years	In Progress	No measurable progress has been made because the flood gauges have not been installed by NCEM. This action will be updated as needed or during the next HMP update process.
Robbins	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.	Dam Failure	Low	Moore County Public Safety Department, Jurisdiction (Town Manager)	Local, NCDEQ	Medium		Complete	Dam was reinspected in 2022 and rated “fair” condition.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Robbins	Prevention	Moore County, as well as all participating jurisdictions, will continue to enforce the NC State Building Code.	All Hazards	High	Moore County Office of Planning and Community Development, Jurisdiction (Town Manager)	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	Interlocal agreement in place with Moore County who serves as town Building Inspectors. Enforcement of the building code occurs continually or as needed, and this action will be updated as needed or during the next HMP update process.
Robbins	Prevention	The Moore County Planning and Inspections Department will continue to maintain and enforce the County's Flood Damage Prevention Ordinance. The County will continue to provide this service to all participating jurisdictions requesting service.	Flood	High	Moore County Office of Planning and Community Development, Jurisdiction (Town Manager)	Local	Medium, Staff Time	5+ Years	To Be Continued	Flood Damage Prevention Ordinances and development regulations are enforced continuously and as needed. The action will be updated as needed or during the next HMP update process.
Robbins	Property Protection	Moore County will work with County residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/floodproofing/acquisition/ relocation of repetitive loss of properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Public Safety Department, Jurisdiction (Town Manager)	Local, HMA	Medium, Staff Time	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence some applications were identified. This action will be implemented as qualified repetitive loss properties are identified, funding becomes available, or as needed. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Robbins	Property Protection	Purchase and install generators on one of more water wells for small water systems (e.g., Foxfire Village); and/or purchase and install transfer switches to allow for fast hook-up of emergency generators, particularly for water wells.	All Hazards	High	Moore County Emergency Management, Public Utilities, Jurisdiction (Town Manager)	HMGP	High		Complete	Generators purchased for critical infrastructure.
Robbins	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency generators.	All Hazards	Moderate	Moore County, Town of Robbins Manager	HMGP, Local	High		Complete	Generators purchased for critical infrastructure.
Robbins	Public Education and Awareness	Conduct outreach activities aimed at educating citizens towards emergency preparedness, mitigation, and business owners about addressing the issue of continuity of operations in the face of all natural and man-made disasters.	All Hazards	Moderate	Moore County, Town of Robbins Manager	Local, State, Federal	High	5+ Years	To Be Continued	No measurable progress to report due to a lack of funding. This action will be implemented as opportunities for outreach activities are identified or funding becomes available. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Robbins	Structural Project	Moore County will monitor all areas identified as local drainage "hot spots" within this plan and work towards drainage solutions that are deemed feasible. Continue to identify and map areas where roadways flood during heavy rain events.	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development, Jurisdiction (Town Manager)	Local	Medium, Staff Time	5+ Years	To Be Continued	The jurisdiction will continue to monitor hot spot areas for drainage issues and try to develop solutions where possible. However, as mentioned, drainage solutions are prevalent and may not all be able to be managed in the immediate future. Monitoring for new projects is continuous, and this action will be implemented as projects are identified or as funding becomes available.

Table 8-34: *Town of Southern Pines Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Southern Pines	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by	All Hazards	High	Moore County Public Safety Department, Town of Southern Pines Town Manager	Local, NCEM	Medium, Staff Time	5+ Years	To Be Continued	We have partnered with Moore County and utilize some of their data and we share information with Town staff and elected officials. This will continue to be implemented as needed and will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		NCEM to municipal staff members and elected officials.								
Southern Pines	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department, Town of Southern Pines Town Manager	Local	Medium, Staff Time		Complete	The Town of Southern Pines routinely utilizes Code Red to disseminate information to the public. We also use Zencity Software to stay abreast of Citizen concerns, and we routinely communicate thorough our social media pages to the public.
Southern Pines	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Town of Southern Pines Town Manager	HMGP	High		Complete	Partnered with the state to place a Flood Gauge in Reservoir Park.
Southern Pines	Prevention	Moore County, as well as all participating jurisdictions, will consider joining and/or maintaining the Community Rating System program.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development, Town of Southern Pines Town Manager	Local	Medium, Staff Time	1-2 Years	In Progress	No measurable progress has been made to date. Planning and Inspections staff will work with NCDPS and FEMA to coordinate and begin the process of joining and maintaining the CRS. Implementation is planned to be completed by 2027. This action will be updated as needed or during the next

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										HMP process.
Southern Pines	Prevention	Moore County, as well as all participating jurisdictions, will continue to require elevation certificates for all development within a Special Flood Hazard Area (SFHA). All elevation certificates will be submitted on an official FEMA Elevation Certificate Form.	Flood, Hurricane, Dam Failure	High	Moore County Office of Planning and Community Development, Town of Southern Pines Town Manager	Local	Medium, Staff Time	5+ Years	To Be Continued	This action is enforced continually and as needed. This action will be updated as needed or during the next HMP process.
Southern Pines	Prevention	Identify, map, and appraise repetitive loss of properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Emergency Management, Planning, Town of Southern Pines Town Manager	HMGP	Medium, Staff Time	5+ Years	In Progress	Moore County has purchased approximately twenty (20) repetitive loss properties since Hurricane Matthew & Florence. NCEM is currently managing several more. This action will continue to be implemented as eligible repetitive loss properties are identified, and funding becomes available. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Southern Pines	Prevention	Continue to monitor areas identified as hot spots where roadways flood during heavy rain events. Plan out storm water management projects with construction estimates and be ready to build when grant funds become available.	Flood Hurricane	Moderate	Moore County, Town of Southern Pines Town Manager	Local	Medium	5+ years	In Progress	The Town of Southern Pines works with both DOT and Moore County EM as necessary to identify areas of flooding and run-off. We have developed a handout that we provide for property owners who have questions about their responsibility and the town's responsibility, which is given as needed and available to property owners. This action will be updated as needed or during the next HMP update process.
Southern Pines	Prevention	After the establishment of additional stream gauges as noted above, Moore County Public Safety will convene a working group including all individuals charged with floodplain and dam management within the County. This working group will be charged with drafting a coordinated Dam Management Plan and Strategy.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Town of Southern Pines Town Manager	Local	Medium, Staff Time	2-5 Years	To Be Continued	This has not started yet. This action will be implemented when possible or as needed and the action status will be updated as needed or during the next HMP update process.
Southern Pines	Prevention	Moore County, with the assistance of all participating jurisdictions,	Dam Failure	Low	Moore County Public Safety Department, Town of	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	The Town of Southern Pines has participated with Moore County EM in mapping all our High Hazard Dams to

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.			Southern Pines Town Manager					improve our overall situational awareness and common operating picture for our response agencies. We have also delivered two (2) Dam EAP tabletop exercises. All the Dam Safety EAPs that we have received are stored digitally and available to staff in the field. We continually look for opportunities to gather Dam owner/operator contact information. This action will be updated as needed or during the next HMP update process.
Southern Pines	Prevention	Moore County, as well as all participating jurisdictions, will continue to enforce the NC State Building Code.	All Hazards	High	Moore County Office of Planning and Community Development, Town of Southern Pines Town Manager	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	Building code will be enforced continuously and as needed. This action will be updated as needed or during the next HMP process.
Southern Pines	Prevention	The Moore County Planning and Inspections Department will continue to maintain and enforce the County's Flood Damage Prevention Ordinance. The County will continue to provide this service for all participating	Flood	High	Moore County Office of Planning and Community Development, Town of Southern Pines Town Manager	Local	Medium, Staff Time	5+ Years	To Be Continued	Moore County is currently in the process of updating the Moore County Unified Development Ordinance. The current UDO is dated April 2021. The Town of Southern Pines has a UDO in place starting in 2019 which is routinely updated. This UDO will be maintained regularly, and this action will be

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		jurisdictions requesting service.								updated as needed or during the next HMP update process.
Southern Pines	Property Protection	Moore County will work with County residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/floodproofing/acquisition/ relocation of repetitive loss of properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Public Safety Department, Town of Southern Pines Town Manager	Local, HMA	Medium, Staff Time	5+ Years	To Be Continued	Projects will continue to be identified as repetitive loss properties are identified, and funding becomes available. This action will be updated as needed or during the next HMP update process.
Southern Pines	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency generators.	All Hazards	Moderate	Moore County, Town of Southern Pines Town Manager	HMGP, Local	Medium, Staff Time	5+ Years	To Be Continued	Multiple CIKF generators have been installed, and we have a mapped list of additional CIKF for future projects as funding becomes available. The Town of Southern Pines has installed quick connect Switches at all our critical water and Sewer Facilities that don't have generator. We have also installed generators in all the key town buildings. Future projects will be implemented as opportunities for funding are identified and this action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Southern Pines	Public Education and Awareness	Conduct outreach activities aimed at educating citizens towards emergency preparedness, mitigation, and business owners about addressing the issue of continuity of operations in the face of all natural and man-made disasters.	All Hazards	Moderate	Moore County, Town of Southern Pines Town Manager	Local	Medium	5+ years	To Be Continued	Continuously implemented. This action will be completed as needed and will be updated as needed or during the next HMP update process.
Southern Pines	Structural Project	Moore County will monitor all areas identified as local drainage “hot spots” within this plan and work towards drainage solutions were deemed feasible. Continue to identify and map areas where roadways flood during heavy rain events.	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development, Town of Southern Pines Town Manager	Local	Medium, Staff Time	5+ Years	In Progress	The Town of Southern Pines is currently working to identify these areas. This action will be implemented as new drainage issues are identified and as funding becomes available. This will be updated during the next HMP update process or as needed.

Table 8-35: Town of Taylortown Mitigation Action Plan

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Taylortown	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department, Jurisdiction (Town Clerk)	Local	High, Staff Time	5+ Years	To Be Continued	Switched to a new Emergency Notification System provider in FY 14 to improve citizen access to emergency information. Major work has been accomplished in terms of the website, Facebook, and twitter accounts regarding this issue. Build more templates to speed up notifications. Continue to refine distribution of information and methods as needed. This action will be updated and reviewed annually.
Taylortown	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.	All Hazards	High	Moore County Public Safety Department, Jurisdiction (Town Clerk)	Local, NCEM	High, Staff Time	5+ Years	To Be Continued	Moore County Public Safety continually updates and improves its email group list of employees, partner agencies, emergency services providers, and municipalities. Look for ways to improve the point of contact database for each jurisdiction. Create short hard-hitting slide presentations for staff to use to educate residents and Boards as these would be helpful and used more often. Continue to refine distribution methods. Use social media, mobile apps, school administrators and principals and classrooms teachers. This action will be maintained regularly and will be

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										updated as needed or during the next HMP update process.
Taylortown	Prevention	After the establishment of additional stream gauges as noted above, Moore County Public Safety will convene a working group including all individuals charged with floodplain and dam management within the County. This working group will be charged with drafting a coordinated Dam Management Plan and Strategy.	Dam Failure	Moderate	Moore County Public Safety Department, Jurisdiction (Town Clerk)	Local	High	5+ Years	To Be Continued	No measurable progress has been made because the flood gauges have not been installed by NCEM. This action will be updated as needed or during the next HMP update process.
Taylortown	Prevention	Identify, map, and appraise repetitive loss of properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Emergency Management, Planning, Jurisdiction (Town Clerk)	HMGP	Medium	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence, properties were identified. This action will be implemented as repetitive loss properties are identified and as funding becomes available. This action will be updated as needed or during the next HMP update

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Taylortown	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure	Moderate	Moore County Public Safety Department, Jurisdiction, Jurisdiction (Town Clerk)	HMGP	High	5+ Years	To Be Continued	NCEM has agreed to place three (3) flood gauges in Moore County via a Hazard Mitigation Grant. The site visits have been completed, but the equipment has not been installed. The goal of this effort will be to provide the state and County with better information regarding riverine water levels. This action will be updated as needed or during the next HMP update process.
Taylortown	Prevention	Moore County, as well as all participating jurisdictions, will consider joining and/or maintaining the Community Rating System program.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development, Jurisdiction (Town Clerk)	Local	Medium, Staff Time	5+ Years	To Be Continued	No measurable progress has been made due to a lack of funding. This action will be reevaluated during the next HMP update process or as needed if implementation efforts begin or funding becomes available.
Taylortown	Prevention	Moore County, as well as all participating jurisdictions, will continue to enforce the NC State Building Code.	All Hazards	High	Moore County Office of Planning and Community Development, Jurisdiction (Town Clerk)	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	Actively enforcing the International Building Code with NC amendments, as required by law. This action will be updated as needed or during the next HMP update.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Taylortown	Prevention	Moore County, as well as all participating jurisdictions, will continue to require elevation certificates for all development within a Special Flood Hazard Area (SFHA). All elevation certificates will be submitted on an official FEMA Elevation Certificate Form.	Flood, Hurricane, Dam Failure	High	Moore County Office of Planning and Community Development, Jurisdiction (Town Clerk)	Local	Medium, Staff Time	5+ Years	To Be Continued	Development regulations, including floodplain regulations, are enforced continuously and as needed. This action will be updated as needed or during the next HMP update.
Taylortown	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.	Dam Failure	Low	Moore County Public Safety Department, Jurisdiction (Town Clerk)	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	The US Army Civil Affairs group has worked on two projects over two consecutive years to map and gather emergency contact information for all the high hazards dams in Moore County. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Taylortown	Prevention	The Moore County Planning and Inspections Department will continue to maintain and enforce the County's Flood Damage Prevention Ordinance. The County will continue to provide this service to all participating jurisdictions requesting service.	Flood	High	Moore County Office of Planning and Community Development, Jurisdiction (Town Clerk)	Local	Medium, Staff Time	5+ Years	To Be Continued	Continuous enforcement of the flood damage prevention provisions of the Flood Damage Prevention Ordinance as well as the new Flood Damage Prevention provisions of the Moore County Unified Development Ordinance (2/18/2014). These prevention measures are the most effective mitigation measures. This action will be updated as needed or during the next HMP update process.
Taylortown	Property Protection	Moore County will work with County residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/floodproofing/acquisition/ relocation of repetitive loss of properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Public Safety Department; Jurisdiction (Town Clerk)	Local, HMA	Medium	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence applications were identified. This action will be implemented as funding becomes available or as new repetitive loss properties are identified. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Taylortown	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency generators.	All Hazards	Moderate	Moore County, Jurisdiction (Town Clerk)	HMGP, Local	Medium	5+ Years	To Be Continued	No measurable progress due to lack of funding. This action will be implemented as funding becomes available and new critical infrastructure or facilities are identified that need generators. This action will be updated as needed or during the next HMP update process.
Taylortown	Public Education and Awareness	Conduct outreach activities aimed at educating citizens towards emergency preparedness, mitigation, and business owners about addressing the issue of continuity of operations in the face of natural and man-made disasters.	All Hazards	Moderate	Moore County, Jurisdiction (Town Clerk)	Local	Medium	5+ Years	To Be Continued	No measurable progress due to lack of funding. This action will be implemented as funding becomes available or as needed. This action will be updated as needed or during the next HMP update process.
Taylortown	Public Education and Awareness	Continue to monitor areas identified as hot spots where roadways flood during heavy rain events. Plan out storm water management projects with construction estimates and be ready to build when grant funds become available.	Flood Hurricane	Moderate	Moore County, Jurisdiction (Town Clerk)	Local	Medium	5+ Years	To Be Continued	No measurable progress due to lack of funding. This action will be implemented as funding becomes available or as needed. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Taylortown	Structural Project	Moore County will monitor all areas identified as local drainage “hot spots” within this plan and work towards drainage solutions were deemed feasible. Continue to identify and map areas where roadways flood during heavy rain events.	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development, Jurisdiction (Town Clerk)	Local	Medium, Staff Time	5+ Years	To Be Continued	The jurisdiction will continue to monitor hot spot areas for drainage issues and try to develop solutions where possible. However, as mentioned, drainage solutions are prevalent and may not all be able to be managed in the immediate future. This action will be implemented as funding becomes available and as new drainage issues are identified. This action will be updated as needed or during the next HMP update process.

Table 8-36: *Town of Vass Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Vass	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system and improve the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department, Town of Vass Town Clerk	Local	High, Staff Time	5+ Years	To Be Continued	Switched to a new Emergency Notification System provider in FY 14 to improve citizen access to emergency information. Major work has been accomplished in terms of the website, Facebook, and twitter accounts regarding this issue. Build more templates to speed up notifications. Continue to refine distribution of information and methods. This action will be updated as needed or during the next HMP update process.
Vass	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.	All Hazards	High	Moore County Public Safety Department, Town of Vass Town Clerk	Local, NCEM	High, Staff Time	5+ Years	To Be Continued	Moore County Public Safety continually updates and improves its email group list of employees, partner agencies, emergency services providers, and municipalities. Look for ways to improve the point of contact database for each jurisdiction. Create short hard-hitting slide presentations for staff to use to educate residents and Boards as these would be helpful and used more often. Continue to refine distribution methods. Use social media, mobile apps, school administrators and principals, and classrooms teachers. This action will be updated as needed or

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										during the next HMP update process.
Vass	Prevention	After the establishment of additional stream gauges as noted above, Moore County Public Safety will convene a working group including all individuals charged with floodplain and dam management within the County. This working group will be charged with drafting a coordinated Dam Management Plan and Strategy.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Town of Vass Town Clerk	Local	Medium, Staff Time	5+ Years	To Be Continued	No measurable progress has been made because the flood gauges have not been installed by NCEM. This action will be updated as needed or during the next HMP update process.
Vass	Prevention	Identify, map, and appraise repetitive loss properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Emergency Management, Town Planning Department, Town of Vass Town Clerk	HMGP	Medium	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence applications were identified. This action will be implemented as funding becomes available or as new repetitive loss properties are identified. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Vass	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Town of Vass Town Clerk	HMGP	High	5+ Years	To Be Continued	NCEM has agreed to place three (3) flood gauges in Moore County via a Hazard Mitigation Grant. The site visits have been completed, but the equipment has not been installed. The goal of the effort will be to provide the state and county with better information regarding riverine water levels. This action will be implemented as funding allows and will be updated as needed or during the next HMP update process.
Vass	Prevention	Moore County, as well as all participating jurisdictions, will consider joining and/or maintaining the Community Rating System program.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development, Town of Vass Town Clerk	Local	Low, Staff Time	5+ Years	To Be Continued	No measurable progress has been made due to a lack of funding and will be implemented as funding is available. This action will be reevaluated during the next HMP update process.
Vass	Prevention	Moore County, as well as all participating jurisdictions, will continue to enforce the NC State Building Code.	All Hazards	High	Moore County Office of Planning and Community Development, Town of Vass Town Clerk	Local, NCDEQ	High, Staff Time	5+ Years	To Be Continued	Actively enforcing the International Building Code with NC amendments, as required by law. This action will be updated as needed or during the next HMP update.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Vass	Prevention	Moore County, as well as all participating jurisdictions, will continue to require elevation certificates for all development within a Special Flood Hazard Area (SFHA). All elevation certificates will be submitted on an official FEMA Elevation Certificate Form.	Flood, Hurricane, Dam Failure	High	Moore County Office of Planning and Community Development, Town of Vass Town Clerk	Local	Medium, Staff Time	5+ Years	To Be Continued	Flood Damage Prevention Ordinances and development regulations are enforced continuously and as needed. The action will be updated as needed or during the next HMP update process.
Vass	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.	Dam Failure	Low	Moore County Public Safety Department, Town of Vass Town Clerk	Local, NCDEQ	Low, Staff Time	5+ years	To Be Continued	The US Army Civil Affairs group has worked on two projects over two consecutive years to map and gather emergency contact information for all the high hazards dams in Moore County. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Vass	Prevention	The Moore County Planning and Inspections Department will continue to maintain and enforce the County's Flood Damage Prevention Ordinance. The County will continue to provide this service to all participating jurisdictions requesting service.	Flood	High	Moore County Office of Planning and Community Development, Town of Vass Town Clerk	Local	High, Staff Time	5+ Years	To Be Continued	Continuous enforcement of the flood damage prevention provisions of the Flood Damage Prevention Ordinance as well as the new Flood Damage Prevention provisions of the Moore County Unified Development Ordinance (2/18/2014). These prevention measures are the most effective mitigation measures. Flood Damage Prevention Ordinances and development regulations are enforced continuously and as needed. The action will be updated as needed or during the next HMP update process.
Vass	Property Protection	Moore County will work with County residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/floodproofing/acquisition/ relocation of repetitive loss properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Public Safety Department, Town of Vass Town Clerk	Local, HMA	Medium	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence applications were identified. This action will be implemented as funding becomes available or as new repetitive loss properties are identified. This action will be updated as needed or during the next HMP Update Process
Vass	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency generators.	All Hazards	Moderate	Moore County, Town of Vass Town Clerk	HMGP, Local	High	5+ Years	To Be Continued	No measurable progress due to lack of funding. This action will be implemented as funding becomes available and new critical infrastructure or facilities are identified that need generators. This

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
										action will be updated as needed or during the next HMP update process.
Vass	Public Education and Awareness	Conduct outreach activities aimed at educating citizens towards emergency preparedness, mitigation, and business owners about addressing the issue of continuity of operations in the face of natural and man-made disasters.	All Hazards	Moderate	Moore County, Town of Vass Town Clerk	Local, State, Federal	Medium, Staff Time	5+ Years	To Be Continued	No measurable progress due to lack of funding. This will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Vass	Public Education and Awareness	Continue to monitor areas identified as hot spots where roadways flood during heavy rain events. Plan out storm water management projects with construction estimates and be ready to build when grant funds become available.	Flood Hurricane	Moderate	Town of Vass Town Clerk	Local, State, Federal	Medium, Staff Time		To Be Continued	No measurable progress due to lack of funding. This will be implemented as funding becomes available and will be updated as needed or during the next HMP update process.
Vass	Structural Project	Moore County will monitor all areas identified as local drainage “hot spots” within this plan and work towards drainage solutions were deemed feasible. Continue to identify and map areas where roadways flood during heavy	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development, Town of Vass Town Clerk	Local	Medium, Staff Time		To Be Continued	The jurisdiction will continue to monitor hot spot areas for drainage issues and try to develop solutions where possible. However, as mentioned, drainage solutions are prevalent and may not all be able to be managed in the immediate future. This action will be implemented as funding becomes available, and

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		rain events.								drainage issues are identified. This action will be updated as needed or during the next HMP update process.

Table 8-37: *Village of Whispering Pines Mitigation Action Plan*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Whispering Pines	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.	All Hazards	High	Moore County Public Safety Department; Moore County, Village of Whispering Pines Mayor	Local, NCEM	Medium, Staff Time		Complete	Moore County Public Safety created a dashboard of live data concerning disaster options for sharing situational awareness and common operating picture as a one stop shop. We also have a subscription to WEBEOC to share and collect information from partners.
Whispering Pines	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department; Moore County, Village of Whispering Pines Mayor	Local, State, Federal	Medium, Staff Time		Complete	Moore County Public Safety just updated or data in the Emergency Notification System platform from the 911 system data in the 1st quarter of 2025. We are also fully compliant with IPAWS. The Village completed a transition from CodeRed to CivicReady (Mass Communication System) last year.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Whispering Pines	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Village of Whispering Pines Mayor	HMGP	High	0-1 Years	In Progress	Moore County installed three (3) flood gauges in the County. One (1) of the flood gauges is located within the Village. The Village is installing a lake level monitoring system for five (5) lakes. This will be implemented as funding is available, and this action will be updated as needed or during the next HMP update process.
Whispering Pines	Prevention	Moore County, as well as all participating jurisdictions, will consider joining and/or maintaining the Community Rating System program.	Flood, Hurricane, Dam Failure	Low	Moore County Office of Planning and Community Development, Village of Whispering Pines Mayor	Local	Medium, Staff Time	5+ Years	To Be Continued	Village participates in the Community Rating System. This action will be maintained as needed and updated as needed during the next HMP update process.
Whispering Pines	Prevention	Moore County, as well as all participating jurisdictions, will continue to require elevation certificates for all development within a Special Flood Hazard Area (SFHA). All elevation certificates will be submitted on an official FEMA Elevation Certificate Form.	Flood, Hurricane, Dam Failure	High	Moore County Office of Planning and Community Development, Village of Whispering Pines Mayor	Local	Medium, Staff Time	5+ Years	To Be Continued	Enforcement of flood ordinance is continuous and is implemented as needed. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Whispering Pines	Prevention	Identify, map, and appraise repetitive loss properties and be prepared to purchase when HMPG funding is available.	Flood, Hurricane	High	Emergency Management, Planning, Village of Whispering Pines Mayor	HMGP	Medium, Staff Time	5+ Years	In Progress	Moore County has purchased approximately twenty (20) repetitive loss properties since Hurricane Matthew & Florence. NCEM is currently managing several more. This action will be implemented as new repetitive loss properties are identified, and funding becomes available.
Whispering Pines	Prevention	Continue to monitor areas identified as hot spots where roadways flood during heavy rain events. Plan out storm water management projects with construction estimates and have ready to build when grant funds become available.	Flood Hurricane	Moderate	Moore County, Village of Whispering Pines Mayor	Local	High	2-5 Years	In Progress	Moore County has identified areas of concern; however, have deferred to NCDOT for identification and mitigation. The Village has identified several hotspots for roadway flooding. The Village funded a study to identify options to address one specific area. The Village is reviewing the most cost-effective option with an estimated cost of $1.5M. This project will be implemented as funding becomes available, and this action will be updated as needed or during the next HMP update process.
Whispering Pines	Prevention	Initiate and implement a comprehensive flood risk mitigation strategy in collaboration with Woodlake		Moderate	Moore County Public Safety Department, Village of Whispering	Local		5+ Years	In Progress	Moore County has initiated discussions with the Power of Attorney for Woodlake to work on the reduction of repetitive loss to

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
		POA, focused on reducing repetitive property loss through infrastructure assessment, emergency planning, and interagency coordination. Key actions include securing Disaster Mitigation funding, developing GIS mapping of water bodies over 25 acres, establishing dam management and emergency response protocols, and installing flood gauges in partnership with NCEM to enable real-time monitoring and data-driven decision-making.			Pines Mayor					properties in the County. The County has worked directly with the National Weather Service to seek funding. The County continues to seek Disaster Mitigation funding, create a GIS layer naming bodies of water >25 acres and define emergency contact for the dam operations, create templates for downstream emergency notification process, hire experts to review stream flows, dam lock capacities, dam emergency action plans, blocking of primary roads by flooding affecting fire and EMS. Establish working groups and establish dam management groups and develop a plan to mitigate specific hazards. No measurable progress has been made because the flood gauges have not been installed by NCEM.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Whispering Pines	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.	Dam Failure	Low	Moore County Public Safety Department, Village of Whispering Pines Mayor	Local, NCDEQ	Medium, Staff Time	0-1 Years	In Progress	The Village maintains Emergency Action Plans (EAP) for five (5) dams classified as intermediate or high hazard. The EAPs are updated annually and approved by the NC Dam Safety Office. Five (5) other low hazard or non-rated dams are inspected regularly by Village staff and the Village Engineer. Improvements to Spring Valley Dam (high hazard) are in progress with an expected completion date of Spring 2026. The replacement of Thagard Dam (high hazard) is currently in the design & engineering phase with an estimated construction start date in 2027. The Village applied to FEMA via NC Dam Safety for funding from the High Hazard Potential Dam Program for the Thagard Dam Replacement engineering in March 2024; however, no award has been made. This action will be updated as needed.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Whispering Pines	Prevention	Moore County, as well as all participating jurisdictions, will continue to enforce the NC State Building Code.	All Hazards	High	Moore County Office of Planning and Community Development, Village of Whispering Pines Mayor	Local, NCDEQ	Medium, Staff Time	5+ Years	To Be Continued	The Village has an interlocal agreement with Moore County to enforce the NC State Building Code within the Village. Enforcement of building code is continuous and is implemented as needed. This action will be updated as needed or during the next HMP update process.
Whispering Pines	Prevention	The Moore County Planning and Inspections Department will continue to maintain and enforce the County's Flood Damage Prevention Ordinance. The County will continue to provide this service to all participating jurisdictions requesting service.	Flood	High	Moore County Office of Planning and Community Development, Village of Whispering Pines Mayor	Local	Medium, Staff Time	5+ Years	To Be Continued	The Village Ordinance references the Moore County Unified Development Ordinance. The flood damage prevention ordinance is continuously enforced. This action will be updated as needed or during the next HMP update process.
Whispering Pines	Property Protection	Moore County will work with County residents on the application for Hazard Mitigation Assistance funding (HMA) for the elevation/floodproofing/acquisition/ relocation of repetitive loss properties.	Flood, Hurricane, Dam Failure	Moderate	Moore County Public Safety Department, Village of Whispering Pines Mayor	Local, HMA	Medium, Staff Time	5+ Years	To Be Continued	During Hurricane Matthew and Hurricane Florence applications were identified. The action will be implemented as new repetitive loss properties are identified and as funding becomes available. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Whispering Pines	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency generators.	All Hazards	Moderate	Moore County, Village of Whispering Pines Mayor	HMGP, Local	Medium	0-1 Years	In Progress	Moore County has installed multiple CIKF generators and has mapped additional CIKF for future projects as funding becomes available. The Village is replacing an existing generator with a new generator in October 2025 to support its fire & police stations. Future projects will be considered and implemented as new opportunities for funding and opportunities for backup power are identified. This action will be updated as needed or during the next HMP update process.
Whispering Pines	Public Education and Awareness	Conduct outreach activities aimed at educating citizens towards emergency preparedness, mitigation, and business owners about addressing the issue of continuity of operations in the face of all natural and man-made disasters.	All Hazards	Moderate	Moore County, Village of Whispering Pines Mayor	Local	Medium	5+ Years	In Progress	No measurable progress due to lack of funding. This action will be implemented when funding opportunities become available and as needed. This action will be updated as needed or during the next HMP update process.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Whispering Pines	Structural Project	Moore County will monitor all areas identified as local drainage "hot spots" within this plan and work towards drainage solutions were deemed feasible. The County acknowledges that not all drainage issues may be rectified; however, this plan establishes an inventory of drainage issues/concerns.	Flood, Hurricane, Dam Failure	Moderate	Moore County Office of Planning and Community Development	Local	Medium, Staff Time	5+ Years	To Be Continued	The county and jurisdiction will continue to monitor hot spot areas for drainage issues and try to develop solutions where possible. However, as mentioned, drainage solutions are prevalent and may not all be able to be managed in the immediate future. This action will be implemented as funding becomes available and new projects are identified. This action will be updated as needed or during the next HMP update process.

SECTION 9: PLAN MAINTENANCE

This section discusses how the Cape Fear Region Mitigation Strategy and Mitigation Action Plan will be implemented and how the Plan will be evaluated and enhanced over time. This section also discusses how the public will continue to be involved in a sustained hazard mitigation planning process. It consists of the following four subsections:

9.1 Monitoring and Evaluating the Previous Plan
9.2 Implementation and Integration
9.3 Monitoring, Evaluation, Update and Enhancement
9.4 Continued Public Involvement

9.1 Monitoring and Evaluating the Previous Plan

Since the previous plan was adopted, each county has worked to ensure that mitigation was integrated into local activities and that the mitigation plan was appropriately implemented. Each county ultimately succeeded in implementing the monitoring and evaluation processes outlined in the previous plan. Each county's specific process is outlined below, including an explanation of how the monitoring and evaluation process was carried out and any changes identified by the county or its jurisdictions that would be useful to implement during the next update.

9.1.1 Chatham County

Chatham County included an annual review process and progress report on the plan. This review process has been carried out by the County Planner and Emergency Operations Director every year since the previous plan was approved. During this annual review process, the Planner and Emergency Operations Director developed a progress report on the plan and presented it to the Planning Committee for review. The plan was also open to public comments during this timeframe.

Moreover, the County Manager and the County Board of Commissioners each received an annual presentation on the implementation status of the plan, which included a review of the plan's mitigation actions and progress towards completing them.

Although there were some minor updates to the plan during the interim update period, few major updates were identified during these annual reviews, and the Planning Committee generally agreed that the plan was on course and that the monitoring and evaluation process itself was sufficient to ensure its implementation.

9.1.2 Harnett County

The Planning and Emergency Management Departments oversee Harnett County's Hazard Mitigation Plan in collaboration with the Planning Committee. The Committee prepares status reports, incorporates revisions, and, as necessary, reassesses mitigation goals and objectives to reflect evolving community needs and vulnerabilities. They also evaluate the plan's effectiveness in reducing risk and ensuring that mitigation strategies are implemented in alignment with county priorities.

To date, only minor interim updates have been required, demonstrating that the existing monitoring and evaluation framework effectively supports its successful implementation

9.1.3 Johnston County

Johnston County included an annual evaluation process to determine whether the mitigation actions are on schedule and whether the plan's goals remain relevant. This annual review process was carried out by the Johnston County Emergency Services Department and each participating jurisdiction's designated Executive Officer.

Each jurisdiction's Executive Officer was responsible for reviewing the risk assessment portion of the plan to determine if any information needed to be updated or modified. Following these tasks, the Executive Officer will advise the Emergency Services Department of any changes, and the Department of Emergency Services will incorporate them into future updates.

9.1.4 Lee County

Lee County included an annual plan evaluation process, primarily conducted by the Sanford/Lee County Community Development Department. Every year since the plan was approved, the Community Development department has asked each municipality to submit a progress report so the county could ensure the actions were implemented at a desirable pace.

Although there were some minor updates to the plan during the interim update period, a few major updates were identified during these yearly meetings, and the update team generally agreed that the plan was on course and that the monitoring and evaluation process itself was sufficient to ensure its implementation.

9.1.5 Moore County

Moore County included an annual evaluation and update process. To track progress and update the mitigation strategies identified in the plan, the county revisited it quarterly. The County Emergency Services Director initiated this review and consulted with the Planning Committee. Monitoring and updating took place through a formal review by the Planning Committee twice annually since the plan was approved. Changes were made to accommodate projects that failed or were no longer considered feasible. Priorities identified as potential mitigation strategies were also reviewed at this time to assess their feasibility for future implementation.

The plan was updated with written updates and submissions as the Planning Committee deemed appropriate and necessary, and approved by the Moore County Board of Commissioners. In keeping with the adopted process, a public involvement process to receive public comment on Plan maintenance and updating was held once annually.

Although there were some minor updates to the plan during the interim update period, few major updates were identified during these annual evaluations, and the Planning Committee generally agreed that the plan was on course and that the monitoring and evaluation process itself was sufficient to ensure implementation of the Plan.

9.2 Implementation and Integration

Each agency, department, or other partner participating in the Cape Fear Regional Hazard Mitigation Plan is responsible for implementing the specific mitigation actions prescribed in the

Mitigation Action Plan. Every proposed action listed in the Mitigation Action Plan is assigned to a specific “lead” agency or department to assign responsibility and accountability and increase the likelihood of subsequent implementation.

In addition to assigning a local lead department or agency, an implementation timeline or a specific implementation date has been set to assess whether actions are being implemented in a timely fashion. The counties in the Cape Fear Region will seek external funding to implement mitigation projects in both pre- and post-disaster environments. When applicable, potential funding sources have been identified for proposed actions listed in the Mitigation Action Plan.

The participating jurisdictions will integrate this Plan into relevant city and county government decision-making processes or mechanisms, where feasible. This includes integrating the Plan's requirements into other local planning documents, processes, or mechanisms, such as comprehensive or capital improvement plans, when appropriate. The members of the Cape Fear Regional Hazard Mitigation Planning Committee (CFRHMPT) will remain charged with ensuring that the goals and mitigation actions of new and updated local planning documents for their agencies or departments are consistent, or do not conflict with, the goals and actions of the Plan, and will not contribute to increased hazard vulnerability in the Cape Fear Region.

Since the previous Plan was adopted, each county and participating jurisdiction has worked to integrate the Plan into other planning mechanisms where applicable/feasible. Examples of how this integration has occurred have been documented in the Implementation Status discussion for each mitigation action in Section 9. Specific examples of how integration has occurred include:

- Integrating the mitigation plan into reviews and updates of floodplain management ordinances;
- Integrating the mitigation plan into reviews and updates of the County's emergency operations plans;
- Integrating the mitigation plan into review and updates of building codes; and
- Integrating the mitigation plan into the capital improvements plan through the identification of mitigation actions that require local funding

Opportunities to further integrate the requirements of this Plan into other local planning mechanisms will continue to be identified through future meetings of the Regional Hazard Mitigation Planning Committee, individual county meetings, and the annual review process described herein. Although it is recognized that there are many potential benefits to integrating components of this Plan into other local planning mechanisms, the Planning Committee considers the development and maintenance of this stand-alone Regional Hazard Mitigation Plan to be the most effective and appropriate method for implementing local hazard mitigation actions at this time.

9.3 Monitoring, Evaluation, Update and Enhancement

Periodic revisions and updates of the Plan are required to ensure its goals remain current, accounting for potential changes in hazard vulnerability and mitigation priorities. In addition, updates may be necessary to ensure the Plan is fully compliant with applicable federal and state

regulations. Periodic evaluation of the Plan will also ensure that specific mitigation actions are reviewed and carried out in accordance with the Mitigation Action Plan.

***Table 9-1**: Plan Maintenance Schedule*

Plan Maintenance Step	When	How	Who
Monitoring	Annual	Get status updates on mitigation actions, compile progress reports, and identify mid-course corrections	Emergency Management Directors
Evaluating	Annual or after a disaster event	Use a standard form to review how the plan has been carried out so far and record lessons learned (Appendix J)	Emergency Management Directors and/or Lead Jurisdiction's Planning Department Manager
Updating	Every 5 years, or after a disaster event	Review the plan and update it as necessary; this may mean hiring a contractor to perform a more in-depth update process	Emergency Management Directors and/or Lead Jurisdiction's Planning Department Manager

When deemed necessary, the Planning Committee shall meet in March of each year to evaluate progress and, where needed, revise the activities outlined in the Plan. The Planning Committee's findings and recommendations shall be documented in a report to be shared with interested City, Town, and County Council members. The Planning Committee will also meet following any disaster events to warrant a reexamination of the mitigation actions being implemented or proposed for future implementation. This will ensure that the Plan is continuously updated to reflect changing conditions and needs within the Cape Fear Region. The Johnston County Emergency Management Coordinator will be responsible for reconvening the Regional Hazard Mitigation Planning Committee for these reviews and subsequent reports.

9.3.1 Five-Year Plan Review and Update

The Plan will be thoroughly reviewed by the Regional Hazard Mitigation Planning Committee every five years to determine whether there have been any significant changes in the Cape Fear Region that may, in turn, necessitate updates in the types of mitigation actions proposed. New developments in identified hazard areas, increased exposure to hazards, changes in the capability to address hazards, and changes to federal or state legislation are examples of factors that may affect the necessary content of the Plan.

The Plan review provides Cape Fear County officials with an opportunity to evaluate successful actions and explore documenting potential losses avoided through the implementation of specific mitigation measures. The Plan review also provides the opportunity to address mitigation actions that may not have been successfully implemented as assigned. The Moore

County Emergency Management Coordinator will be responsible for reconvening the Regional Hazard Mitigation Planning Committee and conducting the five-year review and update.

During the five-year plan review and update process, the following questions will be considered as criteria for assessing the effectiveness and appropriateness of the Plan:

- Do the goals address current and expected conditions?
- Has the nature or magnitude of risks changed?
- Are the current resources appropriate for implementing the Plan?
- Are there implementation problems, such as technical, political, legal, or coordination issues with other agencies?
- Have the outcomes occurred as expected?
- Did County departments participate in the plan implementation process as assigned?

Following the five-year review and update, any necessary updates will be summarized and implemented in accordance with the reporting procedures and plan amendment process outlined herein. Upon completion of the review and update/amendment process, the Cape Fear Regional Hazard Mitigation Plan will be submitted to the State Hazard Mitigation Officer at the North Carolina Emergency Management (NCEM) for final review and approval in coordination with the Federal Emergency Management Agency (FEMA).

Because the plan update process can take several months to complete and may require Federal funding, it is recommended that the five-year review begin at the start of the third year after the plan was last approved. This will allow participants in the Regional Hazard Mitigation Plan to organize to seek Federal funding, if necessary, and to complete the required plan update documentation before the plan expires at the end of the fifth year.

9.3.2 Disaster Declaration

Following the declaration of the disaster, the Regional Hazard Mitigation 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 Johnston County Emergency Management Coordinator to reconvene the Regional Hazard Mitigation Planning Committee and ensure the appropriate stakeholders are invited to participate in the plan revision and update process following declared disaster events.

9.3.3 Reporting Procedures

The Regional Hazard Mitigation Planning Committee will summarize the results of the five-year review and update in a report that will include an evaluation of the Plan's effectiveness and any required or recommended changes or amendments. The report will also include an evaluation of implementation progress for each proposed mitigation action, identifying reasons for delays or obstacles to completion and recommended strategies to overcome them.

9.3.4 Plan Amendment Process

Upon the initiation of the amendment process, representatives from the Cape Fear counties will forward information on the proposed change(s) to all interested parties, including, but not limited to, all directly affected County departments, residents, and businesses. Information will also be forwarded to the North Carolina Emergency Management. This information will be disseminated

to seek input on the proposed amendment(s) for no less than a 45-day review and comment period.

At the end of the 45-day review and comment period, the proposed amendment(s) and all comments will be forwarded to the Regional Hazard Mitigation Planning Committee for final consideration. The Planning Committee will review the proposed amendment, along with comments from other parties, and, if acceptable, submit a recommendation for the approval and adoption of changes to the Plan.

In determining whether to recommend approval or denial of a Plan amendment request, the following factors will be considered by the Regional Hazard Mitigation Planning Committee:

- There are errors, inaccuracies, or omissions made in the identification of issues or needs in the Plan.
- New issues or needs have been identified that are not adequately addressed in the Plan.
- There has been a change in information, data, or assumptions from those on which the Plan is based.

Upon receiving the Regional Hazard Mitigation Planning Committee's recommendation, the participating jurisdictions will hold a public hearing, if necessary. The governing bodies of each participating jurisdiction will review the recommendations from the Regional Hazard Mitigation Planning Committee (including the factors listed above) and any oral or written comments received at the public hearing. Following that review, the governing bodies will take one of the following actions:

- Adopt the proposed amendments as presented;
- Adopt the proposed amendments with modifications;
- Refer the amendments request back to the Planning Committee for further revision; or
- Defer the amendment request back to the Planning Committee for further consideration and/or additional hearings.

9.4 Continued Public Involvement

Public participation is an integral component of the mitigation planning process and will remain essential as this Plan evolves. As described above, significant changes or amendments to the Plan shall require a public hearing before any adoption of the Plan.

Other efforts to involve the public in the maintenance, evaluation, and update process will be made, as necessary. These efforts may include:

- Advertising meetings of the Regional Hazard Mitigation Planning Committee in local newspapers, public bulletin boards, and/or County office buildings
- Designating willing and voluntary citizens and private sector representatives as official members of the Regional Hazard Mitigation Planning Committee
- Utilizing local media to update the public on any maintenance and/or periodic review activities taking place
- Utilizing social media
- Utilizing the websites of participating jurisdictions to advertise any maintenance and/or periodic review activities taking place

ACS – American Community Survey

ASDSO – Association of State Dam Officials

ATSDR – Agency for Toxic Substances and Disease Registry

BCEGS – Building Code Effectiveness Grading Schedule

BFE – Base Flood Elevation

BP – Burn Probability

CAD – Cold-Air Damming

CDBG – Community Development Block Grant

CDC – Centers for Disease Control and Prevention

CERT – Emergency Response Teams

CFM – Certified Floodplain Manager

CFR – Code of Federal Regulations

CFRHMPT – Cape Fear Regional Hazard Mitigation Planning Committee

CIKR – Critical Infrastructure and Key Resources

CIP – Capital Improvement Plan

CLMOR – Conditional Letter of Map Revision

CLUP – Comprehensive Land Use Plan

COOP – Continuity of Operations Plan

CPSE – Center for Public Safety Excellence

CRS – Community Rating System

DFIRM – Digital Flood Insurance Rate Map

DHS – Department of Homeland Security

DMA – Disaster Mitigation Act

EAL – Expected Annual Loss

EAP – Emergency Action Plan

ECCS – Emergency Core Cooling System

EMPG – Emergency Management Performance Grant

EMS – Emergency Medical Service

EOC – Emergency Operation Center

EPCRA – Emergency Planning and Community Right to Know Act

ERFIS – Emergency Response Facility Information System

ETJ – Extraterritorial Jurisdiction

FDPO – Flood Damage Prevention Ordinance

FEMA – Federal Emergency Management Agency

FIL – Fire Intensity Level

FIMAN – Flood Inundation Mapping and Alert Network

FIRM – Flood Insurance Rate Map

FIS – Fire Intensity Scale

FMA – Flood Mitigation Assistance

FRIS – Flood Risk Information System

FSIM – Fire Simulation System

FY – Fiscal Year

GEM – Global Earthquake Model

GIS – Geographic Information Systems

HAZMAT – Hazardous Materials

HHPD – High Hazard Potential Dam

HMA – Hazard Mitigation Assistance

HMGP – Hazard Mitigation Grant Program

HMP – Hazard Mitigation Plan

HMPC – Hazard Mitigation Planning Committee

HRI – Heat Related Illness

ICS – Incident Command System

INES – International Nuclear and Radiological Event Scale (INES)

IRWIN – Integrated Reporting of Wildland Fire Information

ISO – Insurance Services Office

LEPC – Local Emergency Planning Committee

LOMR – Letter of Map Revision

MAP – Mitigation Action Plan

MCB – Main Control Board

MMI – Modified Mercalli intensity

MPH – Miles Per Hour

NC – North Carolina

NCCSR – North Carolina Climate Science Report

NCDC – National Climate Data Center

NCDEQ – North Carolina Department of Environmental Quality

NCDOT – North Carolina Department of Transportation

NCDPS – North Carolina Department of Public Safety

NCEI – National Center for Environmental Information

NCEM – North Carolina Division of Emergency Management

NCOEMS – North Carolina Office of Emergency Medical Services

NDMC – Nebraska-Lincoln National Drought Mitigation Center

NFIP – National Flood Insurance Program

NFPA – National Fire Protection Association

NIFC – National Interagency Fire Center

NLDN – National Lightning Detection Network

NOAA – National Oceanic and Atmospheric Administration

NRC – Nuclear Regulatory Commission

NRDC – Natural Resource Defense Council

NRI – National Risk Index

NWS – National Weather Service

PDSI – Palmer Drought Severity Index

PGA – Peak Ground Acceleration

PHMSA – Pipeline and Hazardous Materials Safety Administration

PIO – Public Information Office/Officer

PRT – Pressurized Relief Tank

RCP – Reactor Coolant Pump

RCS – Reactor Coolant System

RDU – Raleigh-Durham International Airport

RFC – Repetitive Loss Claim

RFPE – Regulatory Flood Protection Elevation

SD – Substantial Damage

SFHA – Special Flood Hazard Area

SI – Substantial Improvement

SMS – Short Message Service

SPC – Storm Prediction Center

SPDS – Safety Parameter Display System

SRF – State Revolving Fund

SRL – Severe Repetitive Loss

SVI – Social Vulnerability Index

SWRAP – Southern Wildfire Risk Assessment Portal

TRI – Toxic Release Inventory

U.S. – United States

UDO – Unified Development Ordinance

USACE – United States Army Corps of Engineers

USD – United States Dollars

USDA – United States Department of Agriculture

USDM – United States National Drought Monitor

USFA – United States Fire Administration

USGS – United States Geological Survey

WMD – Weapons of Mass Destruction

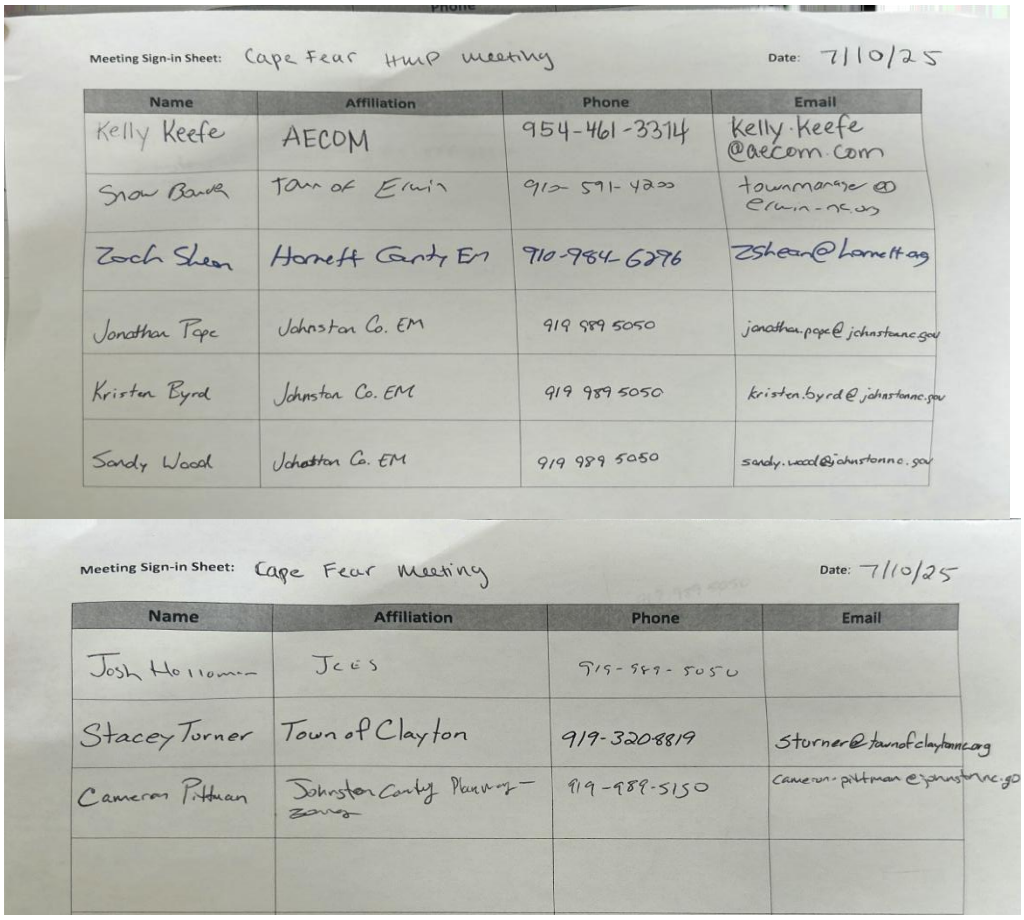
WPO – Watershed Protection Ordinance

WR&A – Work Request and Authorization

WUI – Wildland Urban Interface

Table B-1: *Attendees of Hybrid Kickoff Meeting on July 10, 2025*

Name	Organization or Affiliation	Title	Role
Mckenzie Houston	AECOM	Resilience Planner	Organizer
Peyton Campbell	AECOM	Resilience Planner	Organizer
Ashley Ervin	AECOM	Resilience Planner	Organizer
Bryan Phillips	Moore County Public Safety	Public Safety Director	Attendee
Scot Brooks	Moore County Public Safety	Deputy Director	Attendee
Calla Godwin	Town of Benson	--	Attendee
Jay Sikes	Harnett County	Planning Manager	Attendee
Johnston County EOC	--	--	Attendee
Lisa Kivett	Foxfire Village	--	Attendee
Steve Garrett	North Carolina Emergency Management	NFIP Coordinator	Attendee
Michael Martin	Town of Cary	Deputy Fire Chief	Attendee
Matt Britt	Lee County	Emergency Management Director	Attendee
Kymberly Kudla	FEMA	--	Attendee
Clint Mack	Moore County	Town of Robbins	Attendee
Emma Harris	Harnett County	Planner I	Attendee
John Royal	Chatham County	Emergency Management Coordinator	Attendee
Barbara Hollerand	Town of Coats	Town Manager	Attendee
Taylortown	--	--	Attendee
Bryan Chadwick	Town of Archer Lodge	Town Administrator	Attendee
Chandra Farmer	Johnston County	Director of Utilities	Attendee
Jason Kress	Town of Archer Lodge	--	Attendee
Matt Arnold	--	--	Attendee
Brent Fisher	North Carolina Emergency Management	--	Attendee
Colby Sawyer	PBO Comms/EM	--	Attendee
Mikayla Sinclair	Town of Taylortown	Town Clerk	Attendee



Meeting Sign-in Sheet: Cape Fear HMP Meeting Date: 7/10/25

Name	Affiliation	Phone	Email
Kelly Keefe	AECOM	954-461-3314	kelly.keefe@aecom.com
Snow Bowden	Town of Erwin	910-591-4800	townmanager@erwin-nc.org
Zach Shean	Harnett County EM	910-984-6296	zshean@harnett.org
Jonathan Pope	Johnston Co. EM	919 989 5050	jonathan.pope@johnstonnc.gov
Kristen Byrd	Johnston Co. EM	919 989 5050	kristen.byrd@johnstonnc.gov
Sandy Wood	Johnston Co. EM	919 989 5050	sandy.wood@johnstonnc.gov

Meeting Sign-in Sheet: Cape Fear Meeting Date: 7/10/25

Name	Affiliation	Phone	Email
Josh Hollowell	JCES	919-989-5050	
Stacey Turner	Town of Clayton	919-3208819	sturner@townofclaytonnc.org
Cameron Pittman	Johnston County Planning Zoning	919-989-5150	cameron.pittman@johnstonnc.gov

***Figure B-1**: Cape Fear Hybrid Kickoff Meeting in-person Sign-in Sheet from July 10, 2025.*

***Table B-2**: HMPC Virtual Meeting Sign Ins from August 14, 2025*

Name	Organization	Title	Role
Mckenzie Houston	AECOM	Resilience Planner	Organizer
Glenn Boles	Whispering Pines	Fire/Rescue, Assistant Chief	Attendee
Lisa Kivett	Foxfire Village	Village Administrator	Attendee
Peyton Campbell	AECOM	Resilience Planner	Organizer
Mark Schell	North Carolina Emergency Management	Area 7 Coordinator	Attendee
Brannan Barbee	Town of Selma	Assistant Fire Chief	Attendee
Luke Gaines	Town of Benson		Attendee
Snow Bowden	Town of Erwin	Town Manager	Attendee
Bryan Phillips	Moore County	Public Safety Director	Attendee
Kimberly Pickett	Town of Smithfield	Assistant Town Manager	Attendee
Ryan L. Dawson	Harnett County	Assistant Emergency Management Coordinator	Attendee
Matt Britt	Lee County	Emergency Management Director	Attendee
Ashley Ervin	AECOM	Resilience Planner	Organizer

Name	Organization	Title	Role
Clint Mack	Town of Robbins	Manager	Attendee
Zach Shean	Harnett County	Emergency Coordinator	Attendee
Steve Garrett	North Carolina Emergency Management	State NFIP Coordinator	Attendee
Linda Christopher	Village of Whispering Pines	Interim Manager	Attendee
Chandra Farmer	Johnston County	Director of Utilities	Attendee
John Mello	North Carolina Emergency Management	Hazard Mitigation Planner	Attendee
Bryan Chadwick	Archer Lodge	Town Administration	Attendee
Carl Baker	North Carolina Emergency Management	Mitigation Plans Manager	Attendee
Sandy Wood	Johnston County	Emergency Division Chief	Attendee
Jonathan Pope	Johnston County	Assistant Emergency Management Coordinator	Attendee
Kristen Byrd	Johnston County	Assistant Emergency Management Coordinator	Attendee
Michael Martin	Town of Cary	Deputy Fire Chief	Attendee
Michael King	Town of Princeton	Town Administrator	Attendee
Reagan Parsons	Town of Southern Pines	--	Attendee
John Royal	Chatham County	Emergency Management Coordinator	Attendee
Jason Kress	Archer Lodge	Town Planner	Attendee
Kelly Keefe	AECOM	Lead Planner	Organizer
Sharon Evans	Town of Pine Level	Interim Town Administrator	Attendee
Ashley Willoughby	Town of Pine Level	Town Clerk	Attendee
Tony Sears	Town of Kenly	Fire Chief	Attendee
Stacey Turner	Town of Clayton	Deputy Fire Chief	Attendee
Byron McAllister	--	--	Attendee
Wendy Oldham	Town of Wilson's Mills	Planning Director	Attendee
Benjamin Watkins	North Carolina Emergency Management	Area 8 Coordinator	Attendee
Jonathan Richardson	Town of Pinebluff	Fire Chief & Assistant Town Administrator	Attendee
Jeremiah Johnson	Town of Aberdeen	Deputy Chief	Attendee
Kim P Batten	Town of Archer Lodge	Assistant Town Administrator	Attendee
Rhonda Lee	Four Oaks	Town Clerk	Attendee
Colby Sawyer	Town of Pittsboro	Director of Communications and Emergency Management	Attendee
Justin Hilliard	Lee County	Emergency Services Coordinator	Attendee
Alicia Adams	Town of Lillington	Administrative Services Director	Attendee
Ryan Parker	--	--	Attendee
Alexis Carter	Town of Selma	Town Manager	Attendee
Calla Godwin	Town of Benson	Assistant Town Manager	Attendee

Name	Organization	Title	Role
Anthony Byrd	Town of Benson	Assistant Fire Chief	Attendee

***Table B-3**: HMPC Virtual Meeting Sign-In Sheet from September 18, 2025*

Name	Organization	Title	Role
Mckenzie Houston	Resilience Planner	AECOM	Organizer
Sterling Strickland	Town of Selma	--	Attendee
Carol Lucas	Town of Benson	Assistant Town Manager	Attendee
Calla Godwin	Town of Benson	Assistant Town Manager	Attendee
Kimberly Pickett	Town of Smithfield	Assistant Town Manager	Attendee
Michael King	Town of Princeton	Town Administrator	Attendee
Jonathan Richardson	Town of Pinebluff	Fire Chief/Assistant Town Administrator	Attendee
Snow Bowden	Town of Erwin	Manager	Attendee
Brent Fisher	North Carolina Emergency Management	--	Attendee
Scot Brooks	Moore County	Deputy Director of Public Safety	Attendee
Rich Lambdin	Village of Whispering Pines	Fire Rescue Chief	Attendee
Derrick Clouston	Village of Pinehurst	Fire Chief	Attendee
Mike Reitz	Chatham County	Emergency Communications/Emergency Management	Attendee
Barbara Hollerand	Town of Coats	Town Manager	Attendee
Timothy Garner	Town of Siler City	--	Attendee
John Royal	Chatham County	--	Attendee
John Mello	North Carolina Emergency Management	Mitigation Planner	Attendee
Matt Britt	Lee County	Emergency Management Director	Attendee
Tony Sears	Town of Kenly	Interim Town Manager	Attendee
Stacey Turner	Town of Clayton	Deputy Fire Chief	Attendee
Johnathan Hensley	Town of Goldston	Mayor	Attendee
Benjamin Watkins	North Carolina Emergency Management	Area 8 Coordinator	Attendee
Hannah Thompson-Welch	--	Wildfire Mitigation Specialist	Attendee
Emma Harris	Harnett County	eharris@harnett.org	Attendee
Wendy Oldham	Wilson's Mills	Planning Director	Attendee
Kelly Keefe	Resilience Planner	AECOM	Organizer
Alexis Carter	Town of Selma	Town Manager	Attendee

Name	Organization	Title	Role
Peyton Campbell	Resilience Planner	AECOM	Organizer
Kelsey Peterson	Resilience Planner	AECOM	Organizer
Ashley Willoughby	Town of Pine Level	Town Clerk	Attendee
Ashley Ervin	Resilience Planner	AECOM	Organizer
Bryan Phillips	Moore County	Director of Public Safety	Attendee
Jason Kress	Archer Lodge	Planner	Attendee
Derek McLean	Town of Angier	Manager	Attendee
Kimberly Moffett	Town of Micro	Interim Town Clerk	Attendee
Alicia L. Adams	Town of Lillington	Administrative Director	Attendee
Clint Mack Robbins	Town of Robbins	Town Manager	Attendee
Zach Shean	Harnett County	Emergency Management Coordinator	Attendee
Ryan L. Dawson	Harnett County	Assistant Emergency Management Coordinator	Attendee
Linda Christopher	Village of Whispering Pines	Zoning Administrator	Attendee
Christy Thomas	Town of Micro	Finance Officer	Attendee
Town Of Southern Pines	Town of Southern Pines	--	Attendee
Clint Mack	Town of Robbins	Town Manager	Attendee
Zach Shean	Emergency Management Coordinator	--	Attendee
Wendy Butner	Town of Cameron		Attendee
Tim Garner	Town of Siler City	Senior Planner	Attendee
Snow Bowden	Town of Erwin	Town Manager	Attendee
Ryan Parker	Johnston County	Director	Attendee
Sandy Wood	Johnston County	Emergency Management Coordinator	Attendee
Jonathan Pope	Johnston County	--	Attendee
Kirsten Byrd	Johnston County	--	Attendee
Brenda Allen	Johnston County	Emergency Management Assistant	Attendee

Table B- 4: *Meeting sign in sheet from Cape Fear Draft Review and Public Meeting on October 9, 2025*

Name	Organization	Title	Role
Mckenzie Houston	AECOM	Resilience Planner	Organizer
Peyton Campbell	AECOM	Resilience Planner	Organizer
Kelsey Peterson	AECOM	Resilience Planner	Organizer
Kelly Keefe	AECOM	Lead Planner	Organizer
Justin Hilliard	Lee County	Emergency Services Coordinator	Attendee

Name	Organization	Title	Role
Clint Mack	Town of Robbins		Attendee
Derrick Clouston	Pinehurst		Attendee
Wendy Oldham	Town of Wilson's Mills	Planning Director	Attendee
Snow Bowden	Town of Erwin	Town Manager	Attendee
John Mello	North Carolina Emergency Management	Hazard Mitigation Planner	Attendee
Stacey Turner	Town of Clayton	Deputy Fire Chief	Attendee
John Royal	Chatham County		Attendee
Matt Britt	Lee County	Director	Attendee
Steve Garrett	North Carolina Emergency Management	State NFIP Coordinator	Attendee
Tony Sears	Town of Kenly		Attendee
Jonathan Richardson	Town of Pinebluff	Fire Chief/Assistant Town Administrator	Attendee
Zach Shean	Harnett County	Emergency Management Coordinator	Attendee
Alicia L. Adams	Town of Lillington	Administrative Services Director	Attendee
Rhonda Lee	Four Oaks	Town Clerk	Attendee
Scot Brooks	Moore County	Deputy Director of Public Safety	Attendee
Emma Harris	Harnett County	Planner I	Attendee
Barbara Hollerand	Town of Coats	Town Manager	Attendee
Linda Christopher	Village of Whispering Pines		Attendee
Johnston County EM			Attendee
Benjamin Watkins	North Carolina Emergency Management		Attendee
Brent Fisher	North Carolina Emergency Management		Attendee
Jason Kress	Archer Lodge		Attendee
Timothy Garner	Siler City		Attendee
Jay Sikes	Harnett County		Attendee
Bryan Phillips	Moore County		Attendee

Name	Organization	Title	Role
Sandy Wood	Johnston County	Emergency Management Coordinator	Attendee
Jonathan Pope	Johnston County	Assistant Emergency Management Coordinator	Attendee
Kristen Byrd	Johnston County	Assistant Emergency Management Coordinator	Attendee
Brenda Allen	Johnston County	Emergency Management Assistant	Attendee



***Figure B-**2: Advertisement of the Public Survey in Autryville*



Figure B- 3: Moore County Public Meeting Invitation and Notification for October 2, 2025 ***Figure B-****4: Moore County Public Meeting Invitation and Notification for October 2, 2025*

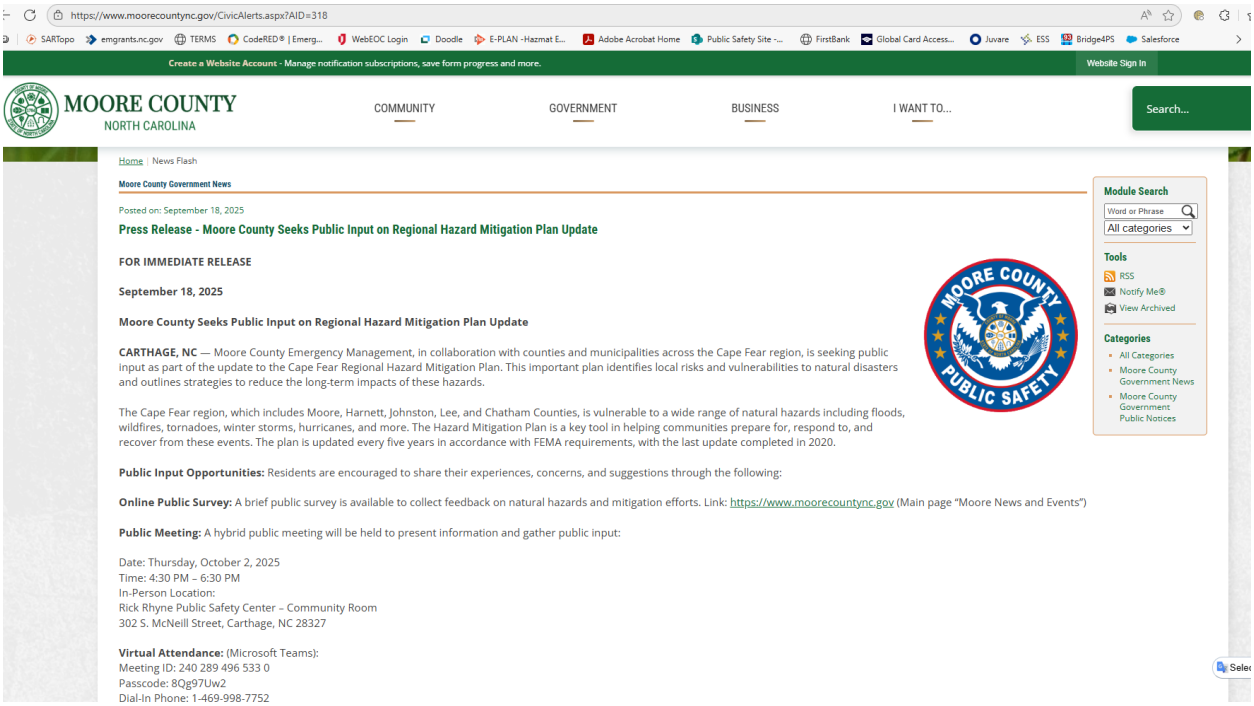


Figure B- 5: Moore County Invitation to Public Meeting held on October 2, 2025 on the County Webpage ***Figure B-****6: Moore County Invitation to Public Meeting held on October 2, 2025, on the County Webpage*

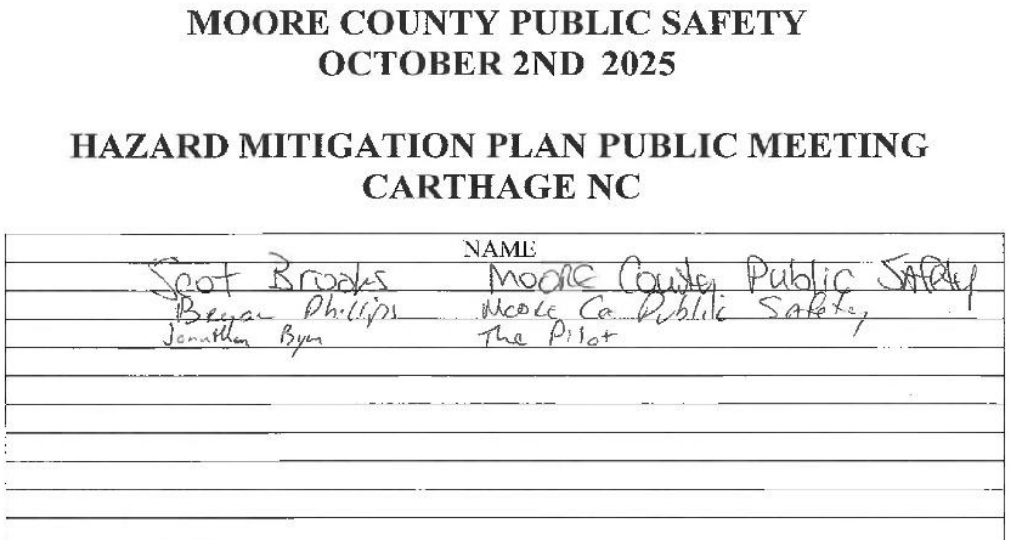


Figure B-7*: Moore County Public Meeting Sign-in Sheet from October 2, 2025*

D. Bryan Phillips
Director

D. Scot Brooks, CEM, CCEMTP
Deputy Director - Emergency Management

E. Grant Hunsucker, MPA, NC-FIT
EMS Chief

Moore County
Department of Public Safety

J. Michael Barbee
Logistics/Education Chief

Matt Dawkins, AAS, CFI
Deputy Fire Marshal

Nick Stamatopoulos
Assistant FM/EM Planner

Rebekah Pate
E-911 Major

FOR IMMEDIATE RELEASE

September 18, 2025

Moore County Seeks Public Input on Regional Hazard Mitigation Plan Update

CARTHAGE, NC — Moore County Emergency Management, in collaboration with counties and municipalities across the Cape Fear region, is seeking public input as part of the update to the Cape Fear Regional Hazard Mitigation Plan. This important plan identifies local risks and vulnerabilities to natural disasters and outlines strategies to reduce the long-term impacts of these hazards.

The Cape Fear region, which includes Moore, Harnett, Johnston, Lee, and Chatham Counties, is vulnerable to a wide range of natural hazards including floods, wildfires, tornadoes, winter storms, hurricanes, and more. The Hazard Mitigation Plan is a key tool in helping communities prepare for, respond to, and recover from these events. The plan is updated every five years in accordance with FEMA requirements, with the last update completed in 2020.

Public Input Opportunities: Residents are encouraged to share their experiences, concerns, and suggestions through the following:

Online Public Survey: A brief public survey is available to collect feedback on natural hazards and mitigation efforts. Link: https://www.moorecountync.gov (Main page "Moore News and Events")

Public Meeting: A hybrid public meeting will be held to present information and gather public input:
Date: Thursday, October 2, 2025
Time: 4:30 PM – 6:30 PM
In-Person Location:
Rick Rhyne Public Safety Center Community Room
302 S. McNeill Street, Carthage, NC 28327

Virtual Attendance: (Microsoft Teams):
Meeting ID: 240 289 496 533 0
Passcode: 8Qg97Uw2
Dial-In Phone: 1-469-998-7752
Phone Conference ID: 969 951 485#

The feedback gathered will help shape the updated Cape Fear Regional Hazard Mitigation Plan, which plays a critical role in guiding future investments, policies, and actions related to disaster resilience and preparedness.

For more information about the plan or how to get involved, please contact: Scot Brooks Emergency Management Coordinator at (910) 947-6317 or sbrooks@moorecountync.gov

###

302 S. McNeill Street
Carthage, NC 28327

P.O. Box 905
Carthage, NC 28327
www.moorecountync.gov

Phone: 910-947-6317
Fax: 910-947-6378

***Figure B-8:** Moore County Public Meeting Notification Letter for the October 2, 2025, issued on September 18, 2025*

https://www.thepilot.com/news/hazard-mitigation-meeting-planned-for-cape-fear-region/article_6a06faoe-dddc-4973-b80f-adb47c7194e6.html

FEATURED

Hazard Mitigation Meeting Planned For Cape Fear Region

Staff Report
Sep 18, 2025



Flooding on Morrison Bridge Road in Vass following Tropical Storm Chantal.
Ted Fitzgerald / The Pilot

An update for the Cape Fear Regional Hazard Mitigation Plan is planned for this year, but the plan needs public input to share experiences and concerns about the region.

Moore County Emergency Management, along with counties and municipalities across the Cape Fear region has scheduled a meeting on Oct. 2 from 4:30 to 6:30 p.m. in the Rick Rhyne Public Safety Center community room in Carthage.

This plan identifies local risks and vulnerabilities to natural disasters and outlines strategies to reduce the long-term impacts of these hazards. The Cape Fear region includes Moore, Harnett, Johnston, Lee, and Chatham counties, and is vulnerable to a wide range of natural hazards including floods, wildfires, tornadoes, winter storms, hurricanes and more.

"The Hazard Mitigation Plan is a key tool in helping communities prepare for, respond to, and recover from these events. The plan is updated every five years in accordance with FEMA requirements, with the last update completed in 2020," a press release from the county Department of Public Safety reads.

A public survey is available to collect feedback on natural hazards and mitigation efforts at https://www.surveymonkey.com/r/CapeFear2025.

This is a hybrid public meeting, and there are two ways for the public to join in virtually.

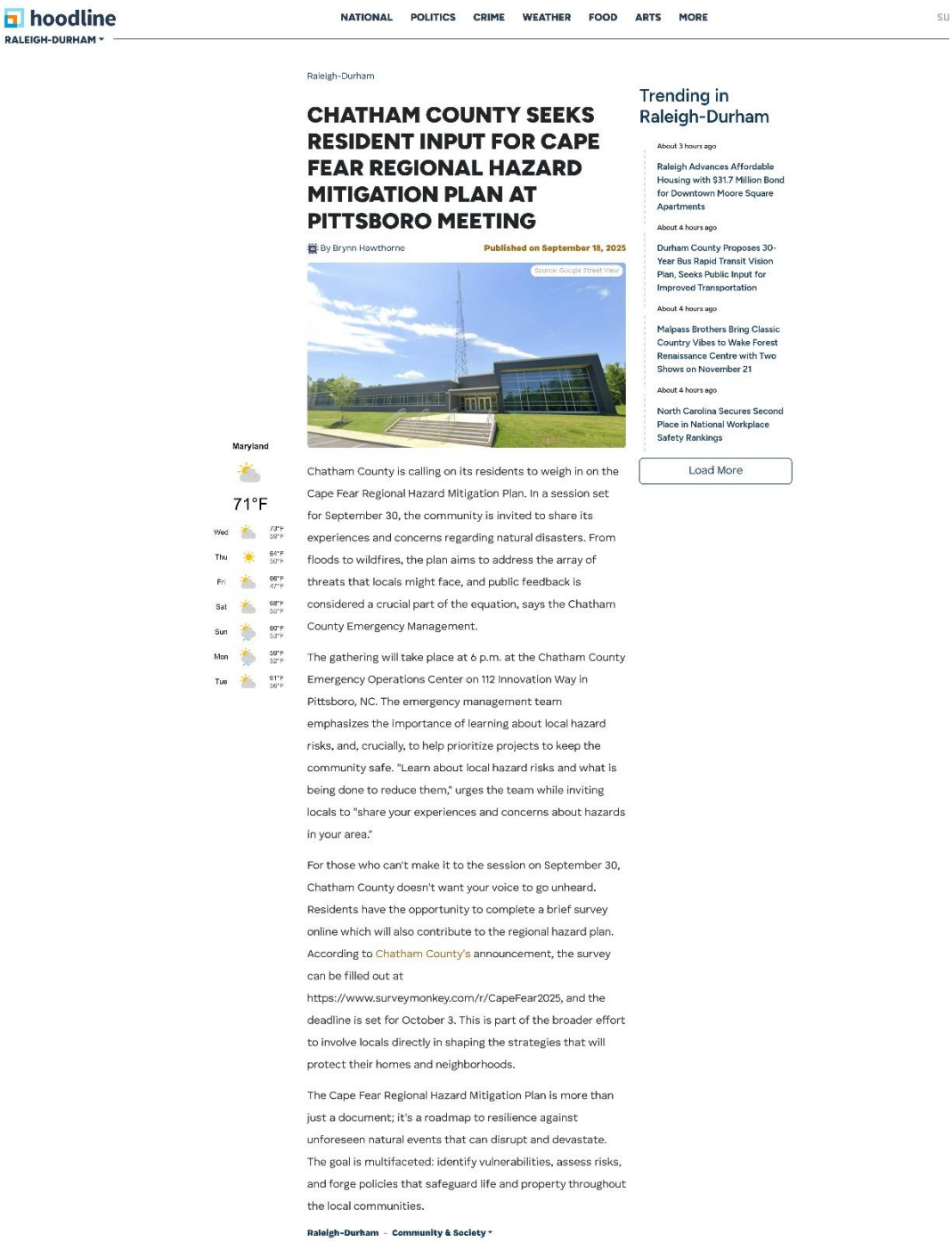
A Microsoft Teams call is set up with a Meeting ID: 240 289 496 533 0, and a passcode: 8Qg97Uw2.

To dial-in by phone, 1-469-998-7752, and the phone conference ID is 969 951 485#.

The feedback gathered will help shape the updated mitigation plan, which plays a critical role in guiding future investments, policies, and actions related to disaster resilience and preparedness.

For more information about the plan or how to get involved, contact: Scot Brooks, the county's emergency management coordinator at 910-947-6317 or sbrooks@moorecountync.gov.

***Figure B-9**: Advertisement of Hazard Mitigation Meeting and Update Process from the Pilot*[1]



hoodline
RALEIGH-DURHAM

NATIONAL POLITICS CRIME WEATHER FOOD ARTS MORE SU

Raleigh-Durham

CHATHAM COUNTY SEEKS RESIDENT INPUT FOR CAPE FEAR REGIONAL HAZARD MITIGATION PLAN AT PITTSBORO MEETING

By Brynn Hawthorne **Published on September 18, 2025**

Source: Google Street View

Chatham County is calling on its residents to weigh in on the Cape Fear Regional Hazard Mitigation Plan. In a session set for September 30, the community is invited to share its experiences and concerns regarding natural disasters. From floods to wildfires, the plan aims to address the array of threats that locals might face, and public feedback is considered a crucial part of the equation, says the Chatham County Emergency Management.

The gathering will take place at 6 p.m. at the Chatham County Emergency Operations Center on 112 Innovation Way in Pittsboro, NC. The emergency management team emphasizes the importance of learning about local hazard risks, and, crucially, to help prioritize projects to keep the community safe. "Learn about local hazard risks and what is being done to reduce them," urges the team while inviting locals to "share your experiences and concerns about hazards in your area."

For those who can't make it to the session on September 30, Chatham County doesn't want your voice to go unheard. Residents have the opportunity to complete a brief survey online which will also contribute to the regional hazard plan. According to Chatham County's announcement, the survey can be filled out at https://www.surveymonkey.com/r/CapeFear2025, and the deadline is set for October 3. This is part of the broader effort to involve locals directly in shaping the strategies that will protect their homes and neighborhoods.

The Cape Fear Regional Hazard Mitigation Plan is more than just a document; it's a roadmap to resilience against unforeseen natural events that can disrupt and devastate. The goal is multifaceted: identify vulnerabilities, assess risks, and forge policies that safeguard life and property throughout the local communities.

Raleigh-Durham - Community & Society

Trending in Raleigh-Durham

About 3 hours ago
Raleigh Advances Affordable Housing with $31.7 Million Bond for Downtown Moore Square Apartments

About 4 hours ago
Durham County Proposes 30-Year Bus Rapid Transit Vision Plan, Seeks Public Input for Improved Transportation

About 4 hours ago
Malpass Brothers Bring Classic Country Vibes to Wake Forest Renaissance Centre with Two Shows on November 21

About 4 hours ago
North Carolina Secures Second Place in National Workplace Safety Rankings

Load More

Maryland
71°F
Wed 73°F 59°F
Thu 64°F 50°F
Fri 66°F 47°F
Sat 68°F 50°F
Sun 60°F 53°F
Mon 59°F 52°F
Tue 61°F 56°F

***Figure B-**10: Invitation for October 2, 2025, Meeting in Moore County*[2]

[1] Report, S. (2025, September 18). Hazard mitigation meeting planned for Cape Fear region. The Pilot Newspaper. https://www.thepilot.com/news/hazard-mitigation-meeting-planned-for-cape-fear-region/article_6a06fa0c-dddc-4973-b80f-adb47c7194e6.html

[2] Hawthorne, B. (2025, September 18). *Chatham County seeks resident input for Cape Fear Regional hazard Mitigation Plan at Pittsboro Meeting*. Hoodline. https://hoodline.com/2025/09/chatham-county-seeks-resident-input-for-cape-fear-regional-hazard-mitigation-plan-at-pittsboro-meeting/

NEWS RELEASE

Contact/Media Inquiries:
Hailey Hall
Communications Manager/Clerk to the Board
P.O. Box 1968, Sanford, NC 27331
(919) 718-4605, ext. 5521

FOR IMMEDIATE RELEASE

LEE COUNTY SEEKS PUBLIC INPUT ON REGIONAL HAZARD MITIGATION PLAN

LEE COUNTY, NC – September 16, 2025 – Lee County is working alongside community partners to update the Regional Hazard Mitigation Plan and calls on the public to help shape the County's disaster preparedness efforts.

This critical plan identifies and assesses the County's risk for natural disasters and outlines strategies to reduce or manage those risks.

Residents are encouraged to participate in the Hazard Mitigation Plan Survey to share their insights and help shape the county's disaster preparedness efforts. The survey is open through September 30, 2025 and available online at https://leecountync.gov/departments/emergency_management/hazard_mitigation_plan.php.

Additionally, residents are invited to attend a public meeting on September 24, 2025 where Emergency Management staff will be available to explain the planning process, answer questions, and discuss potential natural hazard risks in Lee County. Join staff from 5:00-7:00 p.m. in the Auditorium of the Ernest and Ruby McSwain Extension Education and Agriculture Center, located at 2420 Tramway Road, Sanford.

Any questions related to the Hazard Mitigation Plan, survey, and public meeting may be directed to Lee County Emergency Management Director Matthew Britt at 919-718-4670 or mbritt@leecountync.gov.

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P.O. Box 1968 - Sanford, North Carolina 27331 | (919) 718-4605 | LeeCountyNC.gov | @LeeCountyNC

*Figure B- 11: Lee County News Release from September 16, 2025 Seeking Input on the Regional Hazard Mitigation Plan Update****Figure B-****12: Lee County News Release from September 16, 2025, Seeking Input on the Regional Hazard Mitigation Plan Update*



***Figure B- 13**: Lee County Cape Fear HMP Survey Advertisement on the Lee County Website*

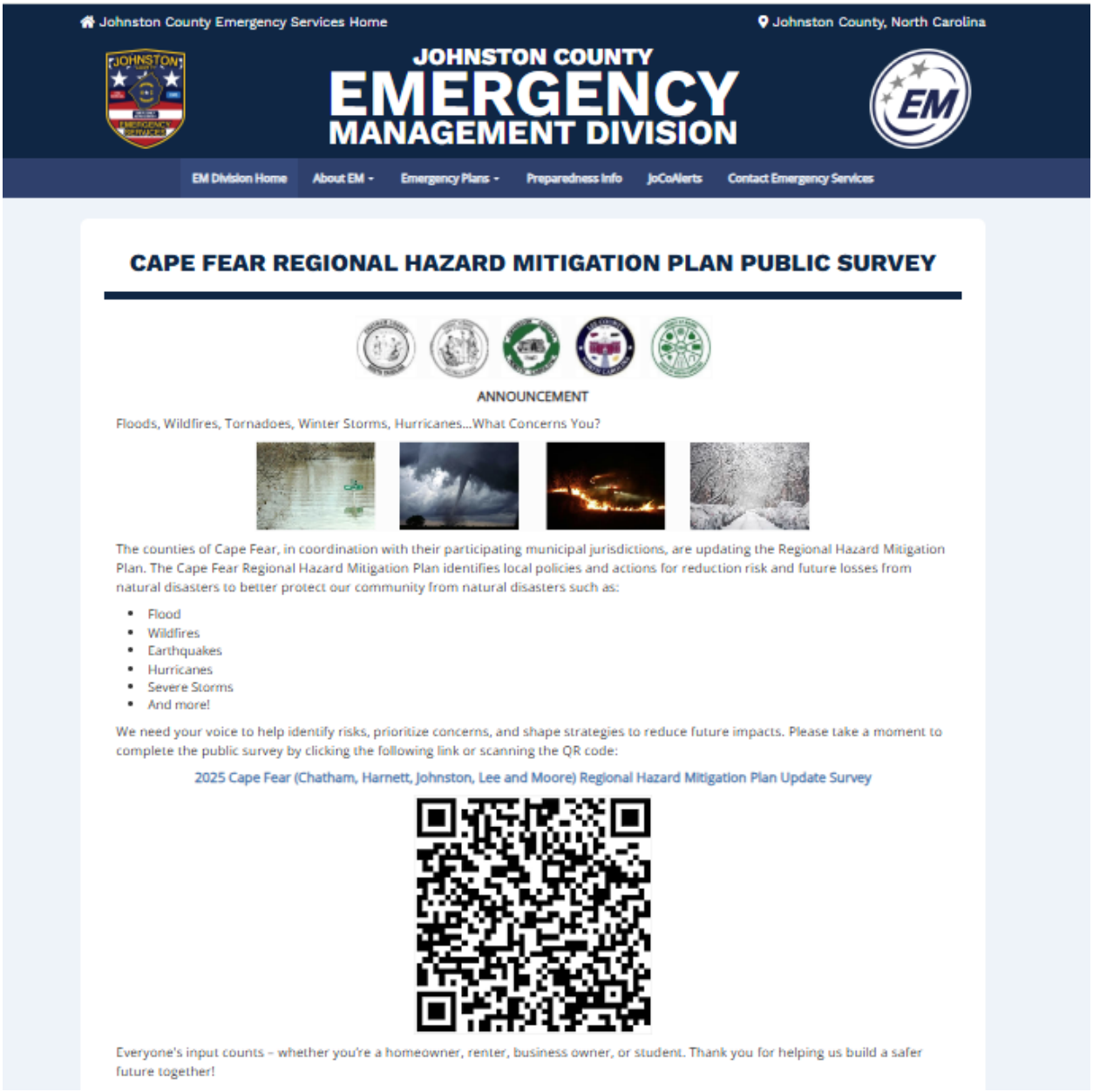


Figure B-*14: Johnston County Announcement about the HMP update survey on the Johnston County Website*



*Figure B- 15: Johnston County advertisement of HMP update draft input form and draft plan seeking input from residents of the planning area***Figure B-***16: Johnston County advertisement of HMP update draft input form and draft plan seeking input from residents of the planning area*

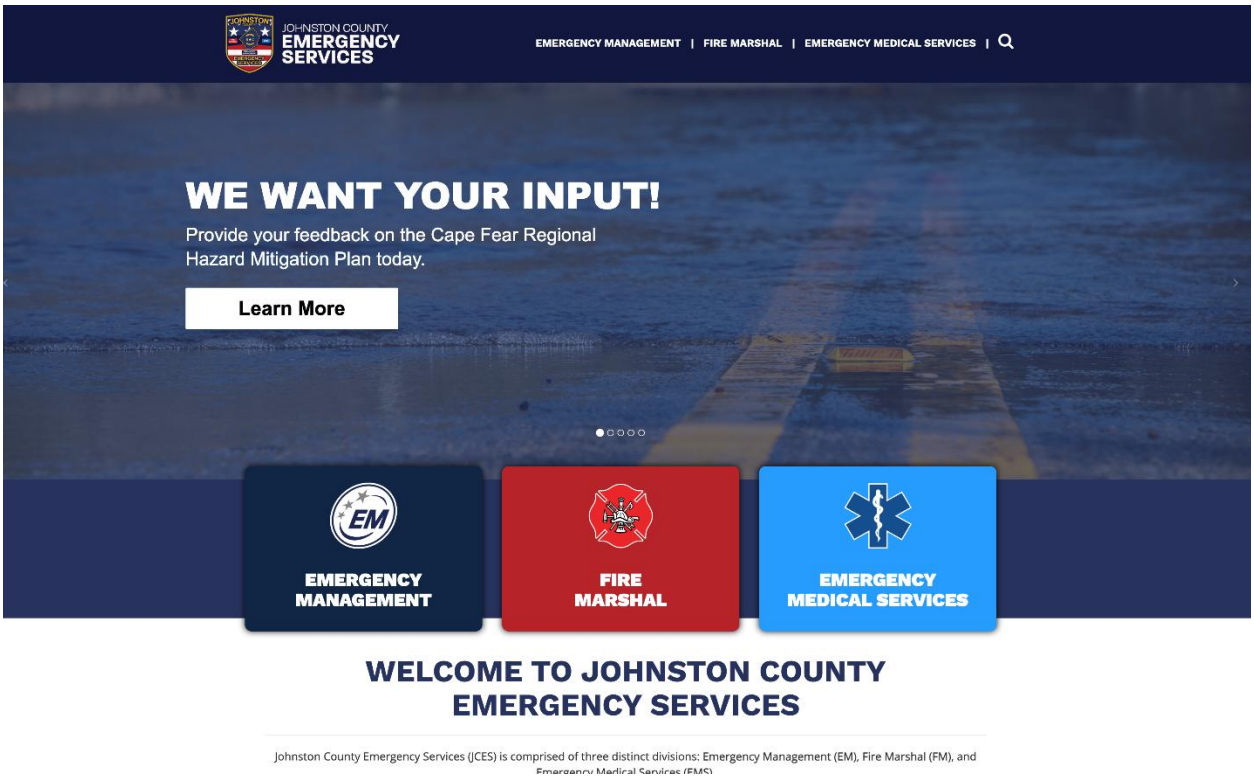


*Figure B- 17: Johnston County Emergency Services Website Advertisement of the HMP update input form and draft plan seeking input from residents of the planning area***Figure B-***18: Johnston County Emergency Services Website Advertisement of the HMP update input form and draft plan seeking input from residents of the planning area*

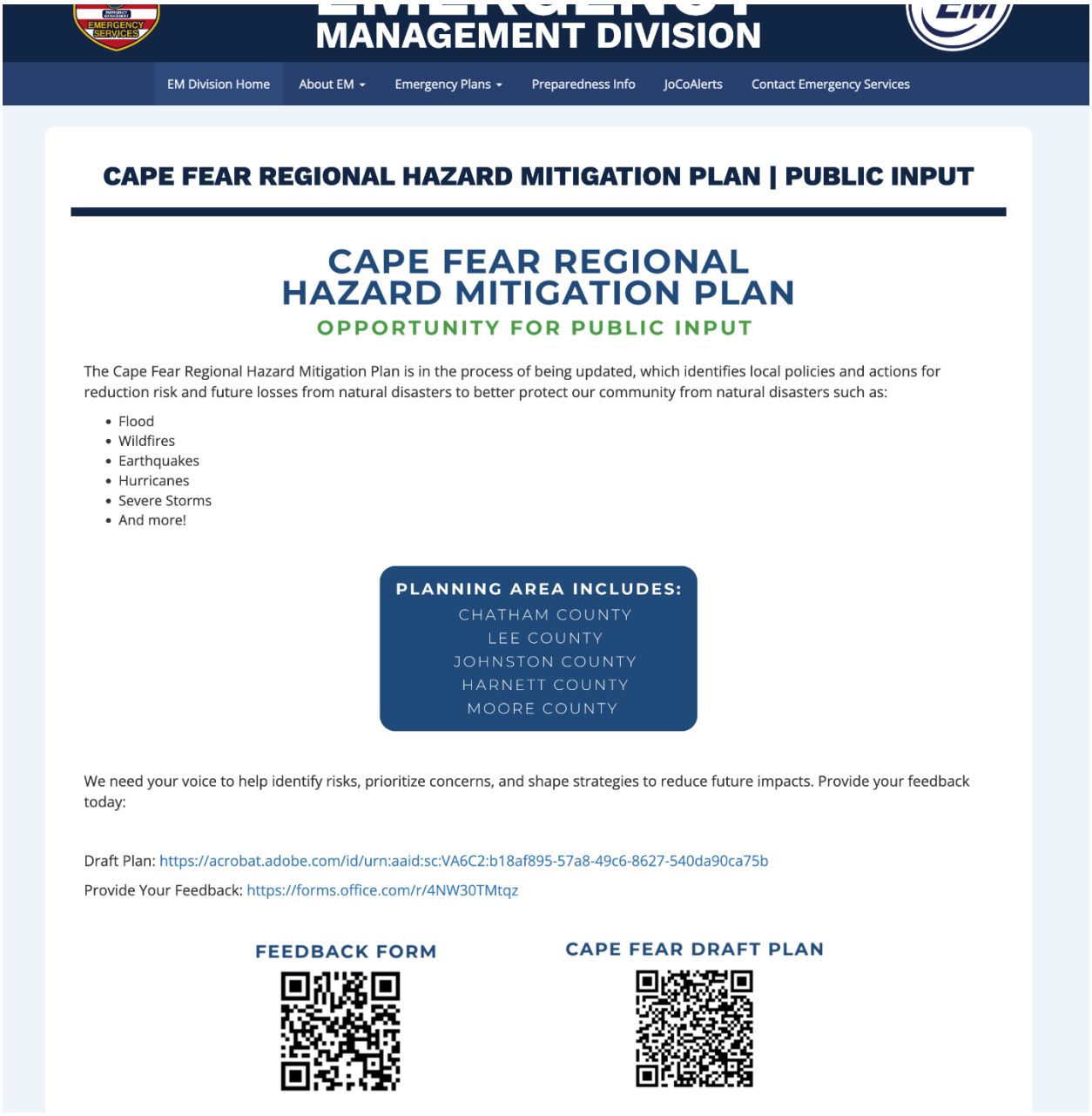
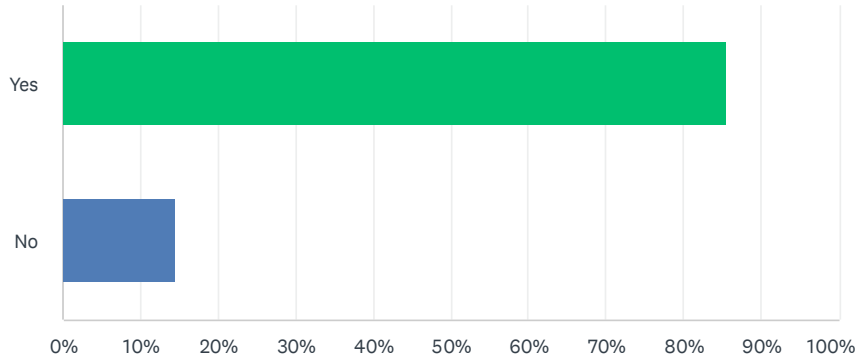


*Figure B- 19: Johnston County Distributing Feedback Form and Cape Fear HMP draft to residents of the planning area on the Johnston County website****Figure B-****20: Johnston County Distributing Feedback Form and Cape Fear HMP draft to residents of the planning area on the Johnston County website*

Q1 Have you ever experienced or been impacted by a natural disaster?

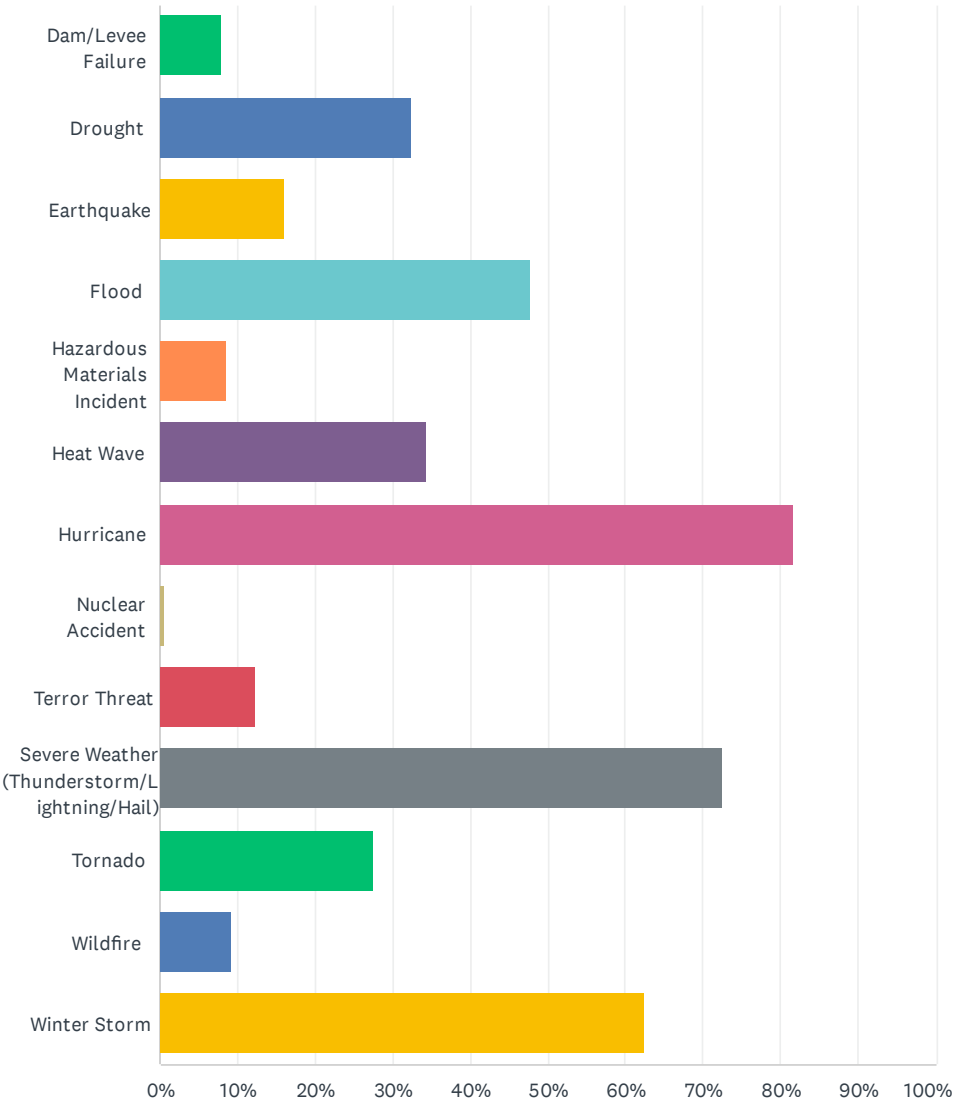
Answered: 187 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	85.56%	160
No	14.44%	27
TOTAL		187

Q2 If yes, Which of these natural hazards have you experienced or been impacted by? (Check all that apply.)

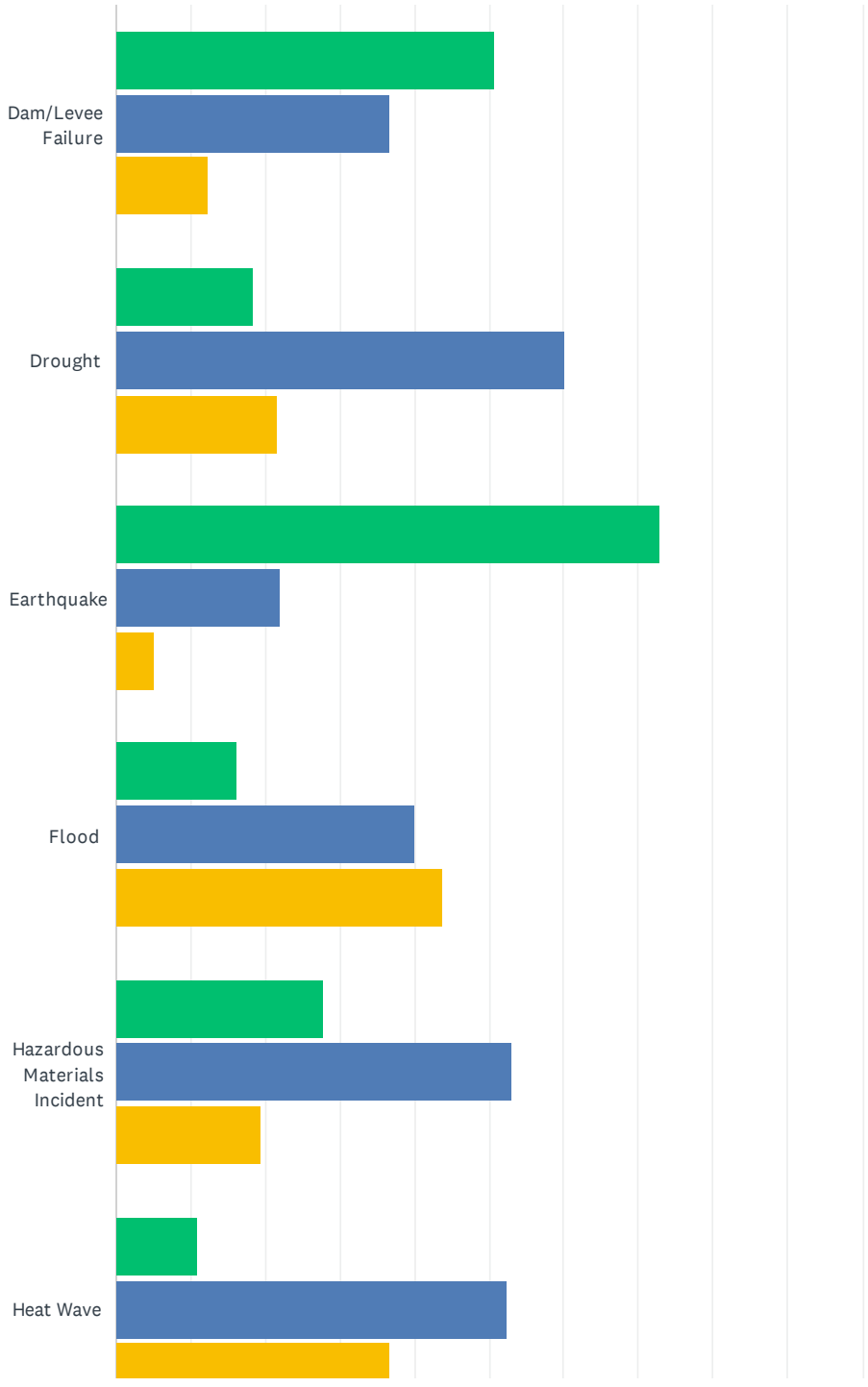
Answered: 163 Skipped: 24

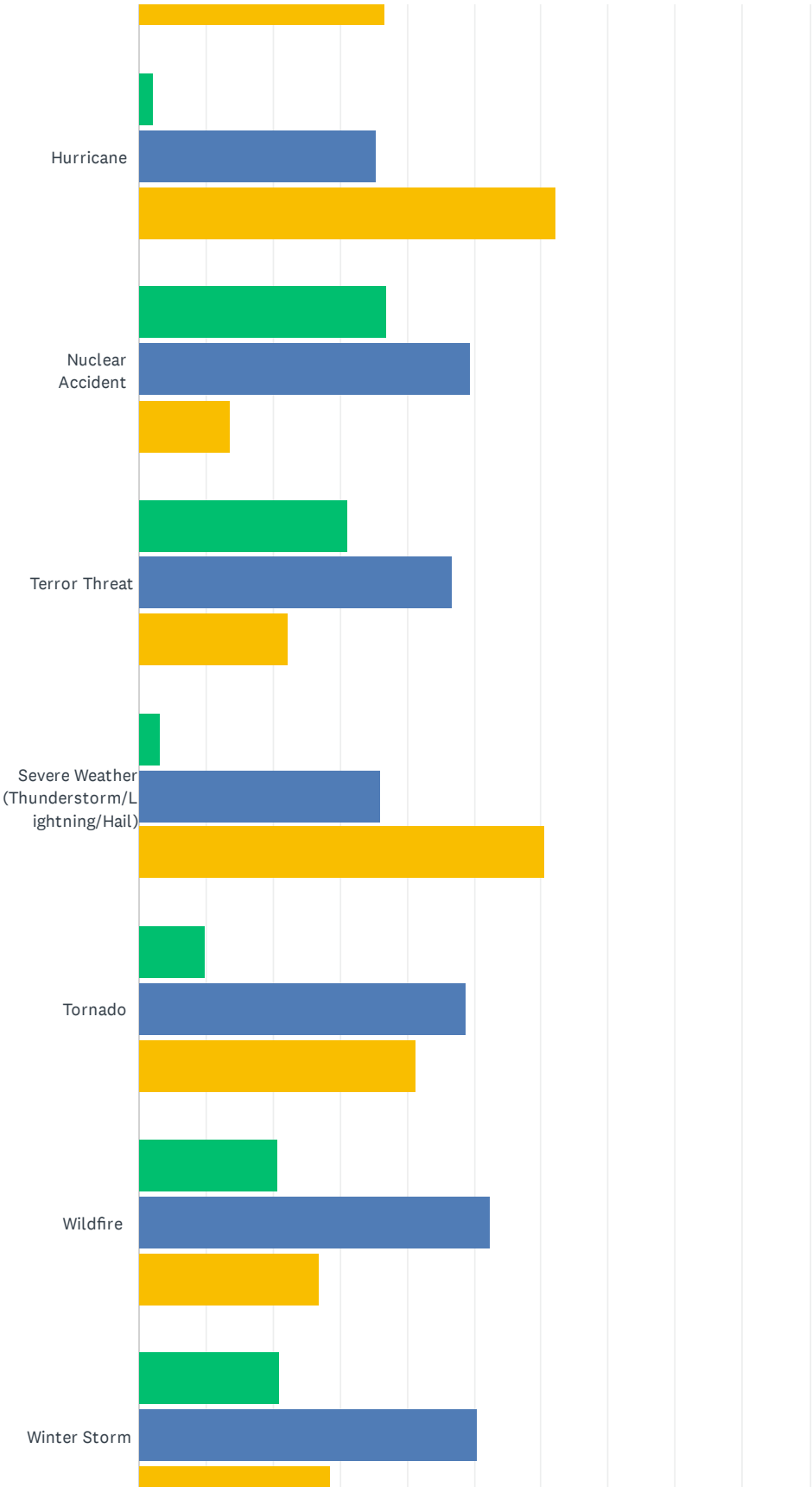


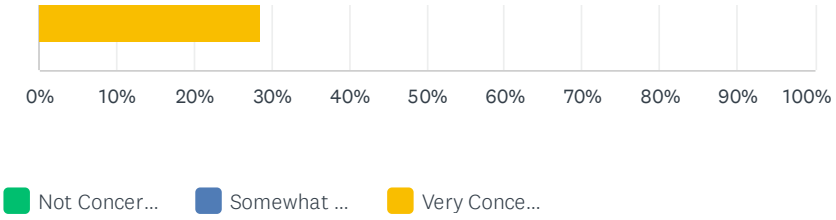
ANSWER CHOICES	RESPONSES	
Dam/Levee Failure	7.98%	13
Drought	32.52%	53
Earthquake	15.95%	26
Flood	47.85%	78
Hazardous Materials Incident	8.59%	14
Heat Wave	34.36%	56
Hurricane	81.60%	133
Nuclear Accident	0.61%	1
Terror Threat	12.27%	20
Severe Weather (Thunderstorm/Lightning/Hail)	72.39%	118
Tornado	27.61%	45
Wildfire	9.20%	15
Winter Storm	62.58%	102
Total Respondents: 163		

Q3 How concerned are you about the possibility of your community being impacted by each of these natural hazards? (Check the corresponding circle for each natural hazard.)

Answered: 187 Skipped: 0



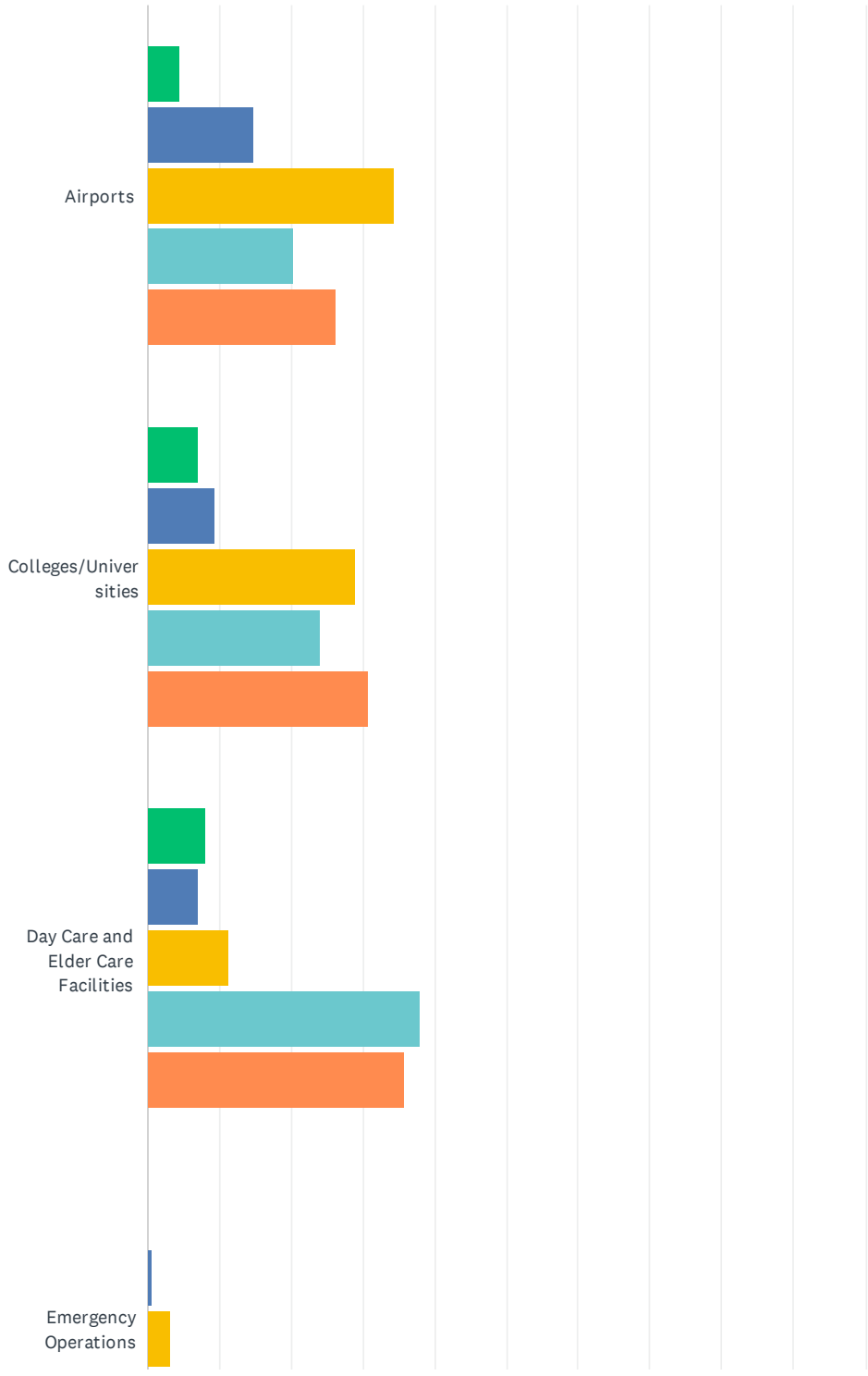

Hurricane
Nuclear Accident
Terror Threat
Severe Weather (Thunderstorm/Lightning/Hail)
Tornado
Wildfire
Winter Storm



	NOT CONCERNED	SOMEWHAT CONCERNED	VERY CONCERNED	TOTAL	WEIGHTED AVERAGE
Dam/Levee Failure	50.85% 90	36.72% 65	12.43% 22	177	1.62
Drought	18.23% 33	60.22% 109	21.55% 39	181	2.03
Earthquake	72.88% 129	22.03% 39	5.08% 9	177	1.32
Flood	16.22% 30	40.00% 74	43.78% 81	185	2.28
Hazardous Materials Incident	27.62% 50	53.04% 96	19.34% 35	181	1.92
Heat Wave	10.81% 20	52.43% 97	36.76% 68	185	2.26
Hurricane	2.15% 4	35.48% 66	62.37% 116	186	2.60
Nuclear Accident	36.81% 67	49.45% 90	13.74% 25	182	1.77
Terror Threat	31.11% 56	46.67% 84	22.22% 40	180	1.91
Severe Weather (Thunderstorm/Lightning/Hail)	3.28% 6	36.07% 66	60.66% 111	183	2.57
Tornado	9.78% 18	48.91% 90	41.30% 76	184	2.32
Wildfire	20.77% 38	52.46% 96	26.78% 49	183	2.06
Winter Storm	20.88% 38	50.55% 92	28.57% 52	182	2.08

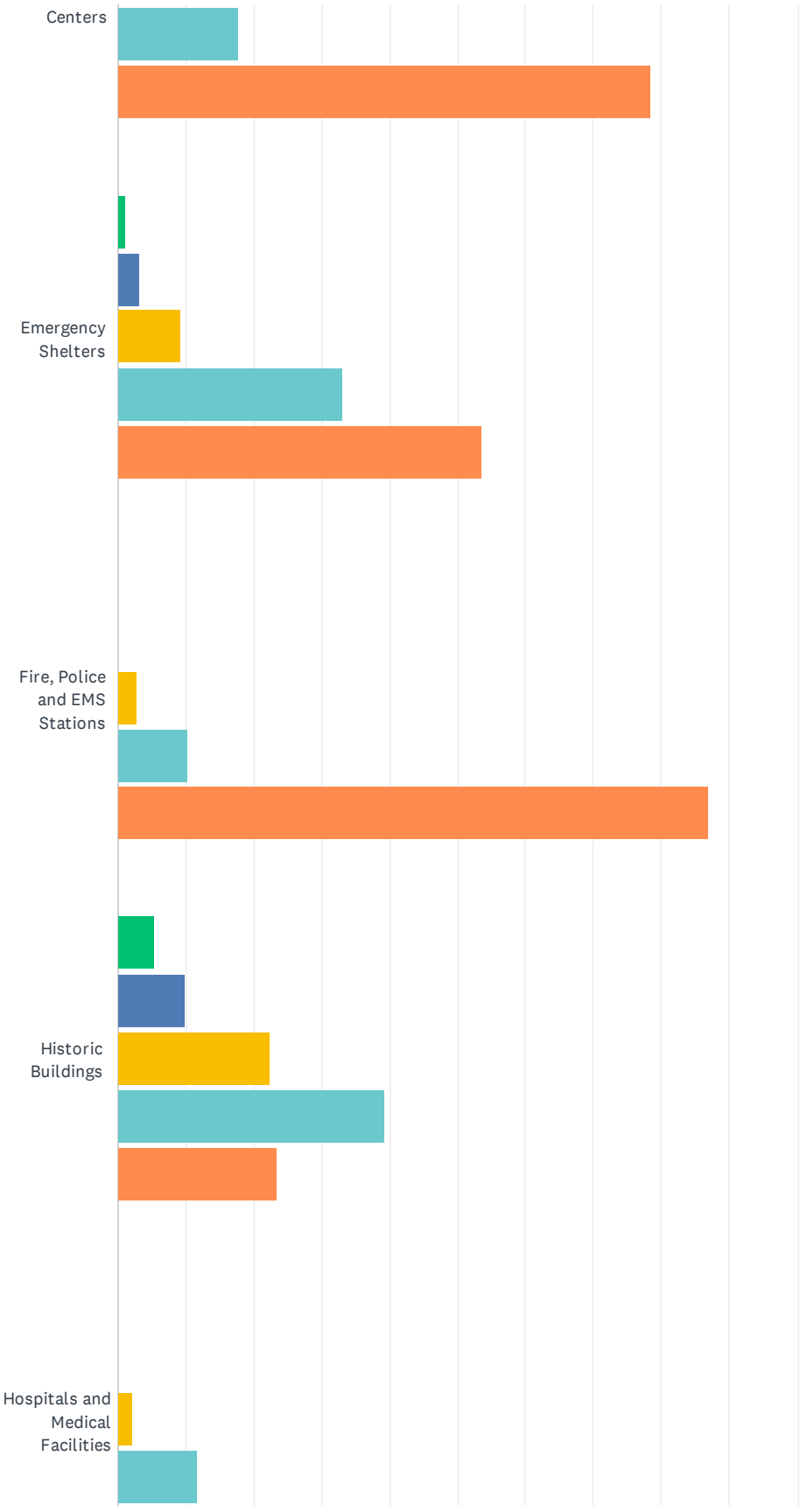
Q4 How important is each of the following specific community assets to you? (Check the appropriate circle for each asset.)

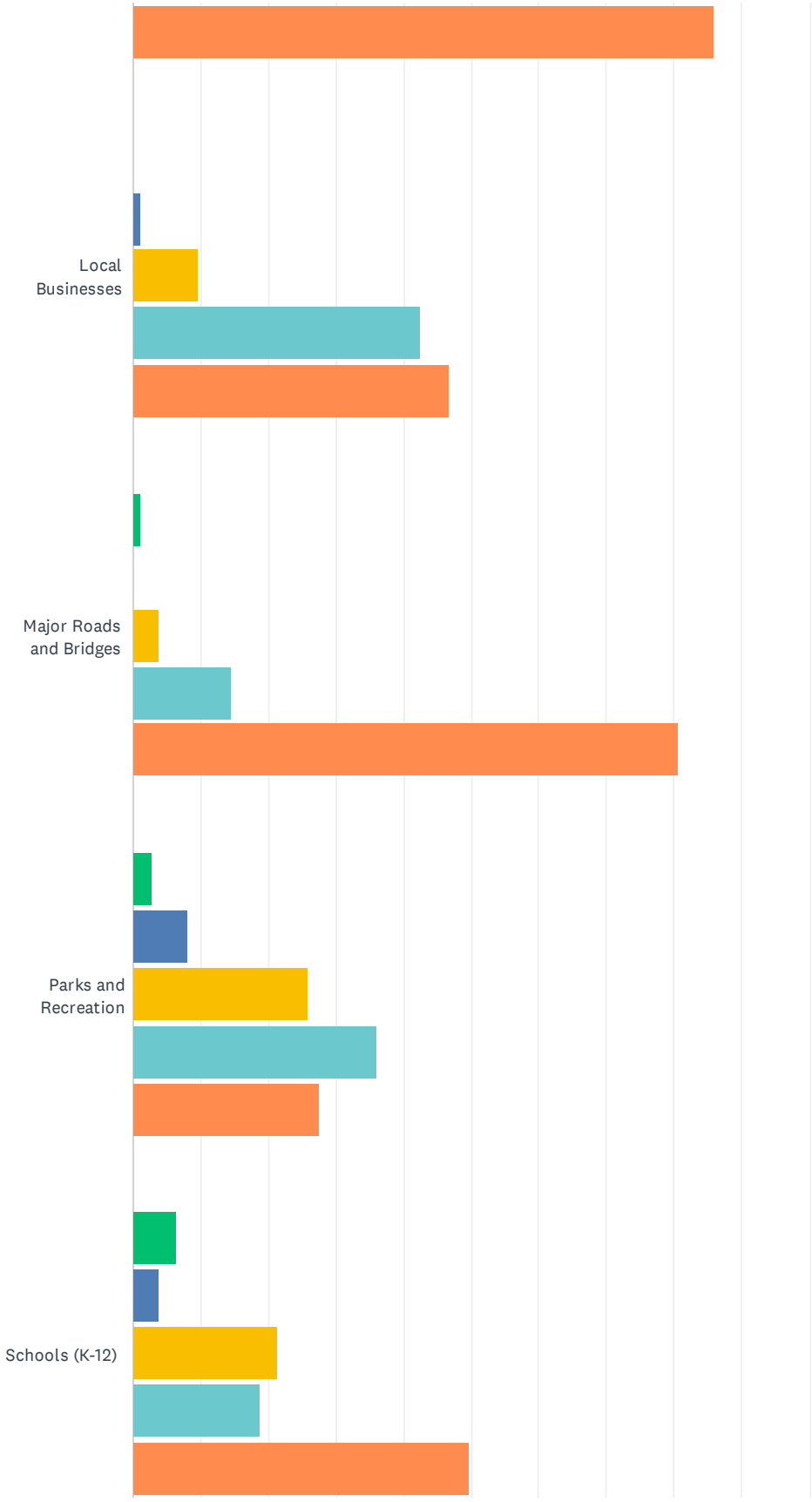
Answered: 187 Skipped: 0

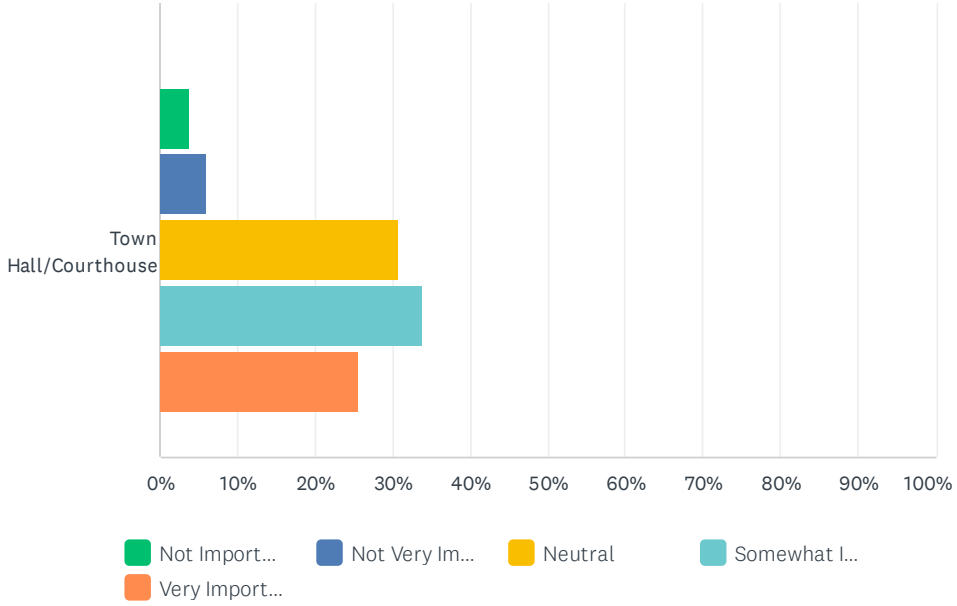


2025 Cape Fear (Chatham, Harnett, Johnston, Lee and Moore) Regional Hazard Mitigation Plan Update

SurveyMonkey



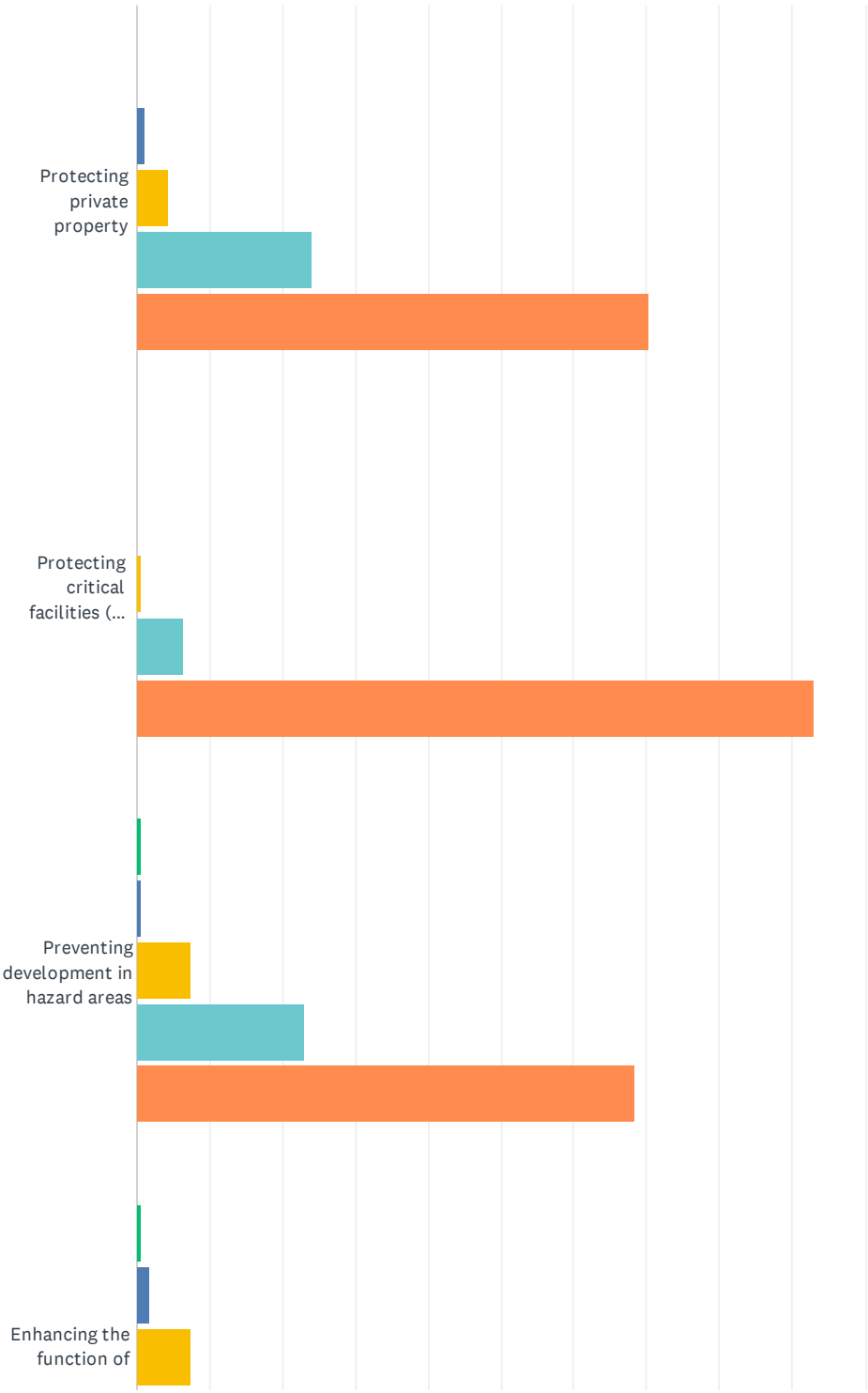

Local Businesses
Major Roads and Bridges
Parks and Recreation
Schools (K-12)

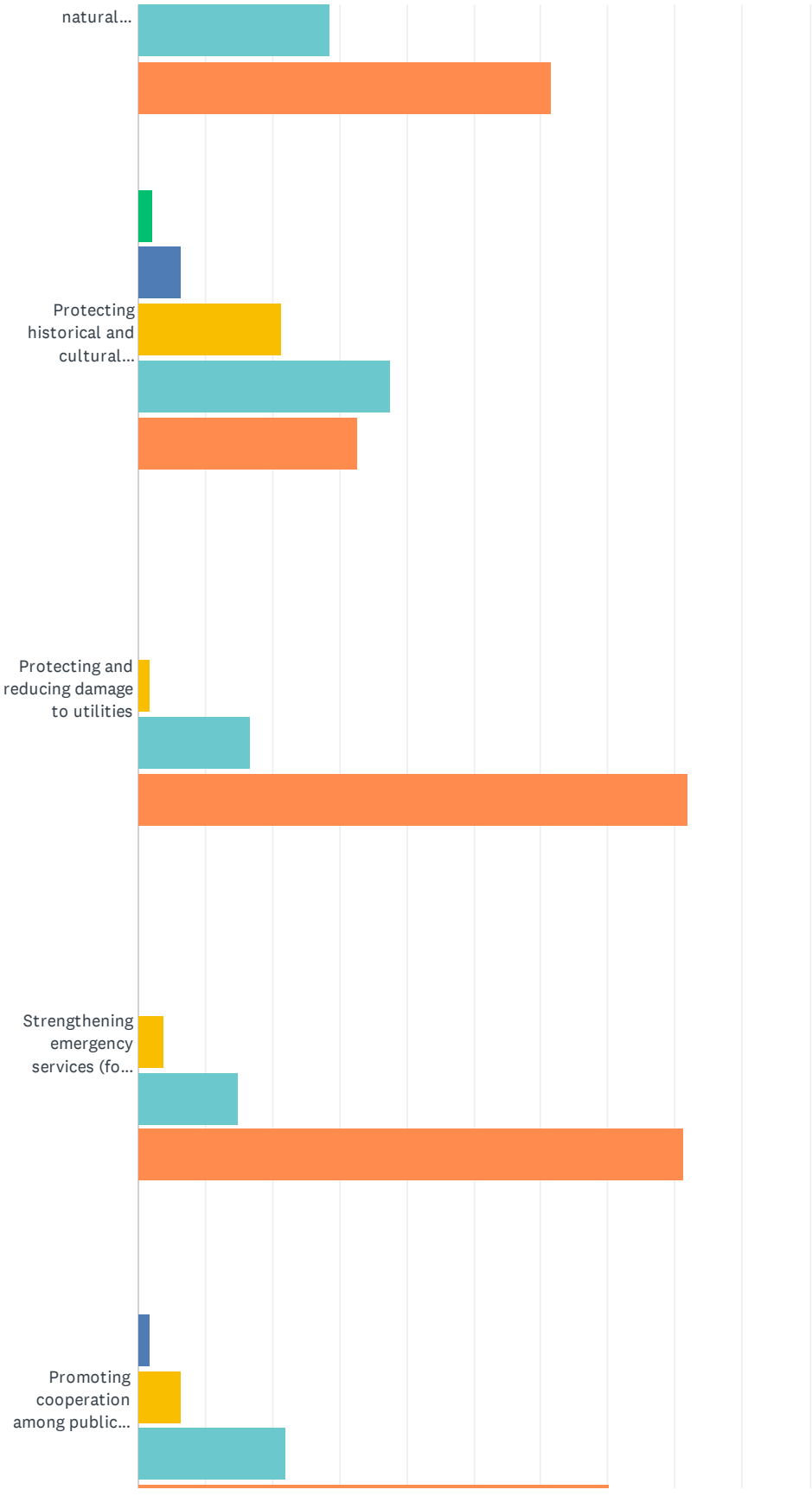


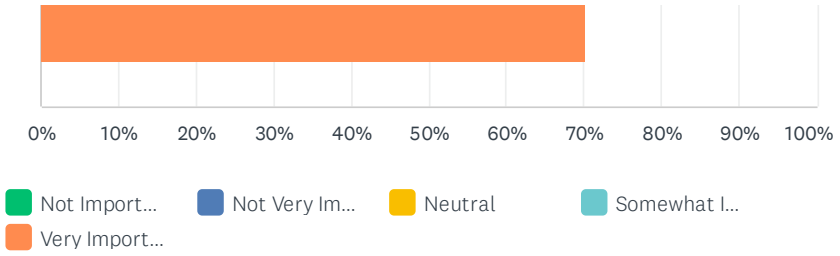
	NOT IMPORTANT	NOT VERY IMPORTANT	NEUTRAL	SOMEWHAT IMPORTANT	VERY IMPORTANT	TOTAL	WEIGHTED AVERAGE
Airports	4.37% 8	14.75% 27	34.43% 63	20.22% 37	26.23% 48	183	3.49
Colleges/Universities	7.10% 13	9.29% 17	28.96% 53	24.04% 44	30.60% 56	183	3.62
Day Care and Elder Care Facilities	8.02% 15	6.95% 13	11.23% 21	37.97% 71	35.83% 67	187	3.87
Emergency Operations Centers	0.00% 0	0.54% 1	3.23% 6	17.74% 33	78.49% 146	186	4.74
Emergency Shelters	1.07% 2	3.21% 6	9.09% 17	33.16% 62	53.48% 100	187	4.35
Fire, Police and EMS Stations	0.00% 0	0.00% 0	2.69% 5	10.22% 19	87.10% 162	186	4.84
Historic Buildings	5.43% 10	9.78% 18	22.28% 41	39.13% 72	23.37% 43	184	3.65
Hospitals and Medical Facilities	0.00% 0	0.00% 0	2.15% 4	11.83% 22	86.02% 160	186	4.84
Local Businesses	0.00% 0	1.08% 2	9.68% 18	42.47% 79	46.77% 87	186	4.35
Major Roads and Bridges	1.08% 2	0.00% 0	3.76% 7	14.52% 27	80.65% 150	186	4.74
Parks and Recreation	2.69% 5	8.06% 15	25.81% 48	36.02% 67	27.42% 51	186	3.77
Schools (K-12)	6.42% 12	3.74% 7	21.39% 40	18.72% 35	49.73% 93	187	4.02
Town Hall/Courthouse	3.83% 7	6.01% 11	30.60% 56	33.88% 62	25.68% 47	183	3.72

Q5 Please tell us how important each statement is to you by checking the appropriate circle for each.

Answered: 187 Skipped: 0



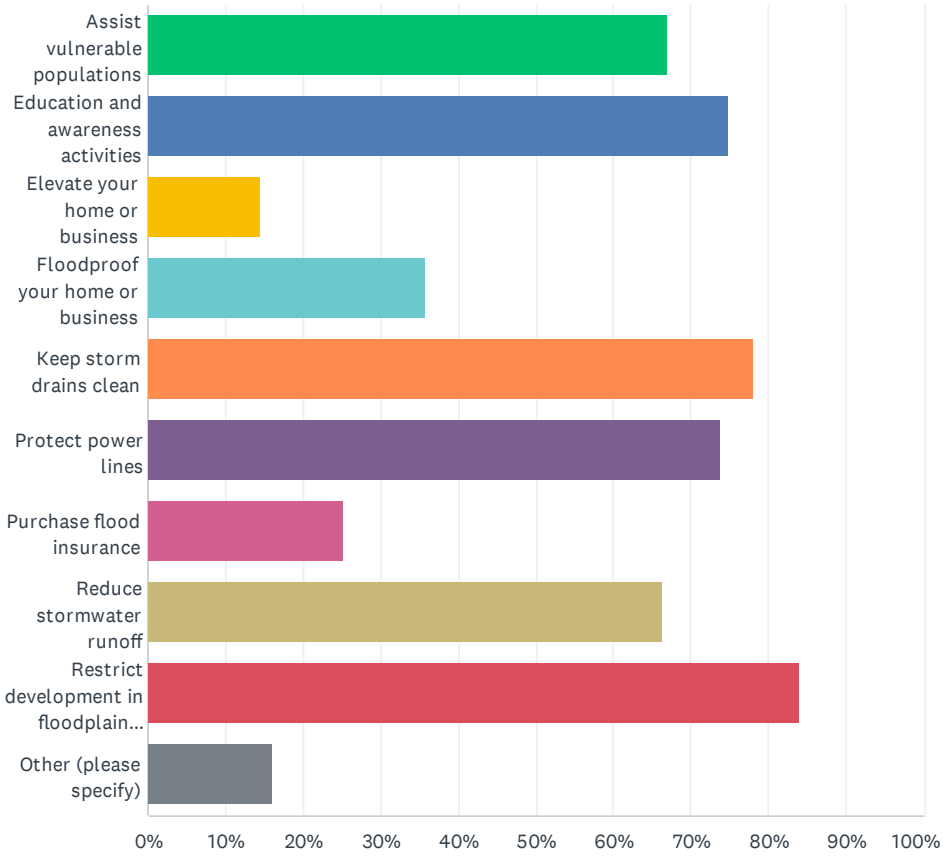

natural...
Protecting historical and cultural...
Protecting and reducing damage to utilities
Strengthening emergency services (fo...
Promoting cooperation among public...



	NOT IMPORTANT	NOT VERY IMPORTANT	NEUTRAL	SOMEWHAT IMPORTANT	VERY IMPORTANT	TOTAL	WEIGHTED AVERAGE
Protecting private property	0.00% 0	1.08% 2	4.30% 8	24.19% 45	70.43% 131	186	4.64
Protecting critical facilities (for example, hospitals, police stations, fire stations, etc.)	0.00% 0	0.00% 0	0.53% 1	6.42% 12	93.05% 174	187	4.93
Preventing development in hazard areas	0.53% 1	0.53% 1	7.49% 14	22.99% 43	68.45% 128	187	4.58
Enhancing the function of natural features (for example, streams, wetlands, etc.)	0.54% 1	1.62% 3	7.57% 14	28.65% 53	61.62% 114	185	4.49
Protecting historical and cultural landmarks	2.14% 4	6.42% 12	21.39% 40	37.43% 70	32.62% 61	187	3.92
Protecting and reducing damage to utilities	0.00% 0	0.00% 0	1.60% 3	16.58% 31	81.82% 153	187	4.80
Strengthening emergency services (for example, police, fire, ambulance)	0.00% 0	0.00% 0	3.74% 7	14.97% 28	81.28% 152	187	4.78
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	0.00% 0	1.60% 3	6.42% 12	21.93% 41	70.05% 131	187	4.60

Q6 What actions can you and your local government take to minimize the risk of future natural hazard damages and enhance resilience in your neighborhood?

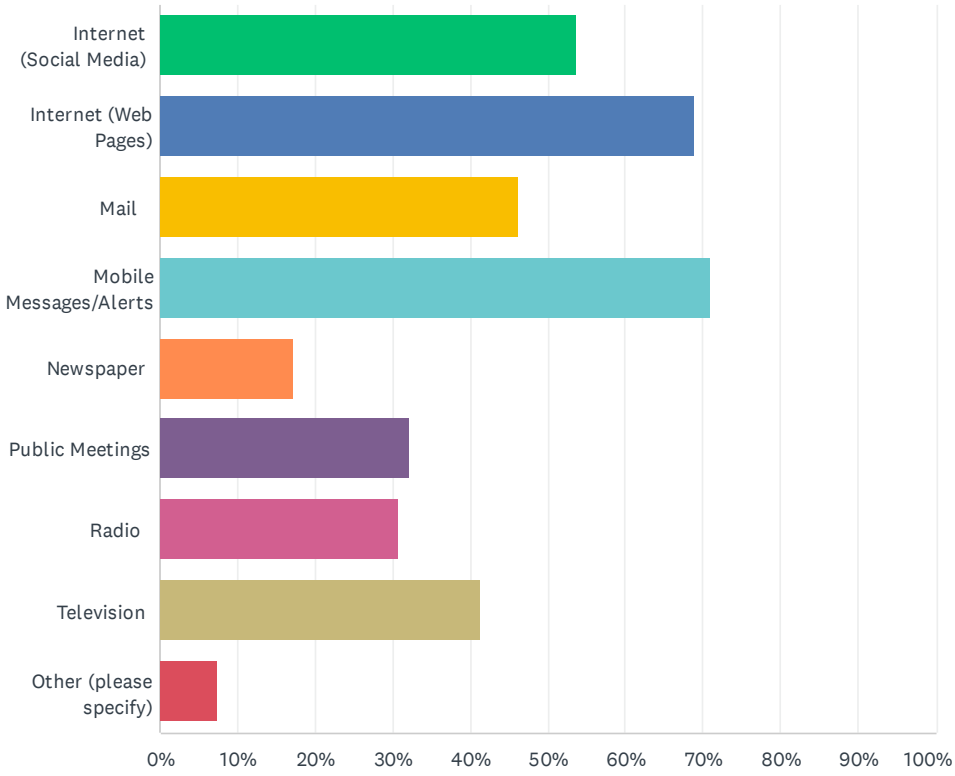
Answered: 187 Skipped: 0



ANSWER CHOICES	RESPONSES	
Assist vulnerable populations	66.84%	125
Education and awareness activities	74.87%	140
Elevate your home or business	14.44%	27
Floodproof your home or business	35.83%	67
Keep storm drains clean	78.07%	146
Protect power lines	73.80%	138
Purchase flood insurance	25.13%	47
Reduce stormwater runoff	66.31%	124
Restrict development in floodplain areas	83.96%	157
Other (please specify)	16.04%	30
Total Respondents: 187		

Q7 What are the most effective ways for you to receive information about how to make your home and neighborhood more resistant to natural hazards?

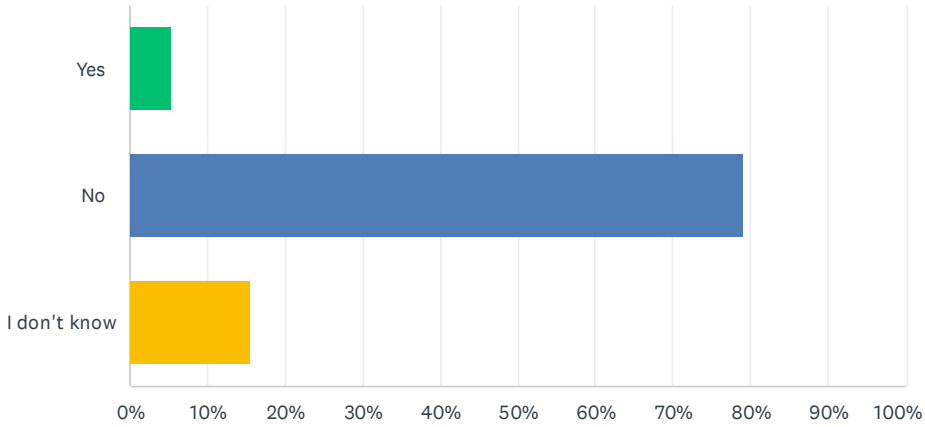
Answered: 186 Skipped: 1



ANSWER CHOICES	RESPONSES	
Internet (Social Media)	53.76%	100
Internet (Web Pages)	68.82%	128
Mail	46.24%	86
Mobile Messages/Alerts	70.97%	132
Newspaper	17.20%	32
Public Meetings	32.26%	60
Radio	30.65%	57
Television	41.40%	77
Other (please specify)	7.53%	14
Total Respondents: 186		

Q8 Is your home located in a floodplain?

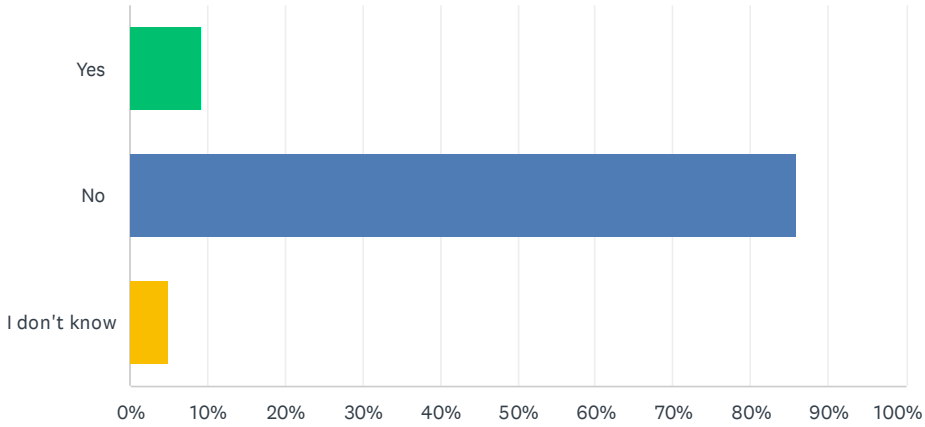
Answered: 186 Skipped: 1



ANSWER CHOICES	RESPONSES	
Yes	5.38%	10
No	79.03%	147
I don't know	15.59%	29
TOTAL		186

Q9 Do you have flood insurance?

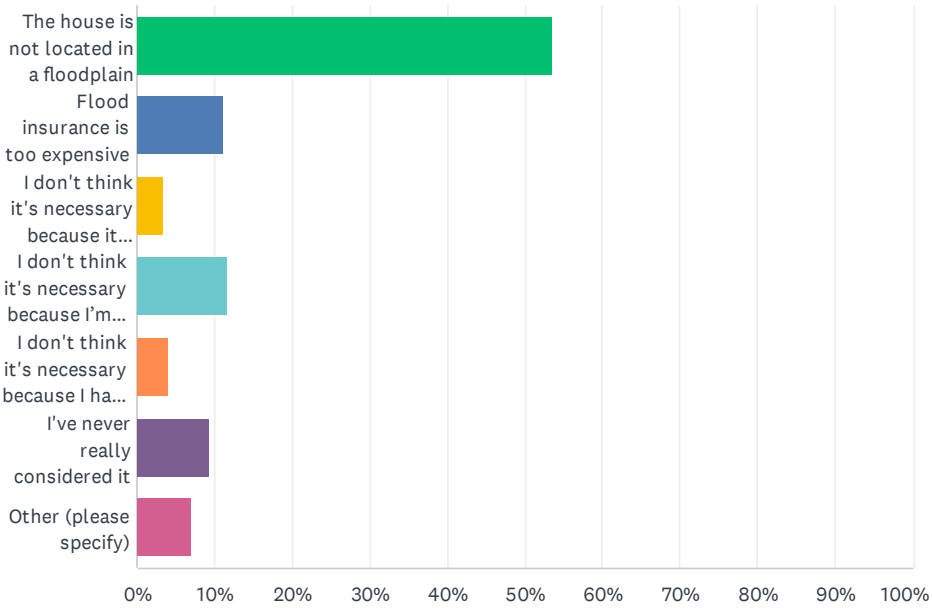
Answered: 184 Skipped: 3



ANSWER CHOICES	RESPONSES	
Yes	9.24%	17
No	85.87%	158
I don't know	4.89%	9
TOTAL		184

Q10 If “No,” why not?

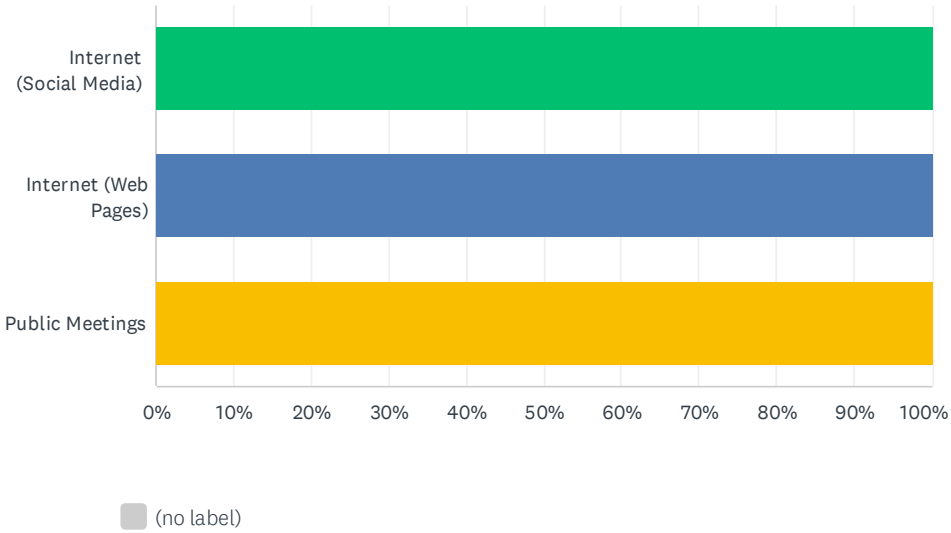
Answered: 172 Skipped: 15



ANSWER CHOICES	RESPONSES	
The house is not located in a floodplain	53.49%	92
Flood insurance is too expensive	11.05%	19
I don't think it's necessary because it never floods	3.49%	6
I don't think it's necessary because I’m elevated or otherwise protected	11.63%	20
I don't think it's necessary because I have homeowners insurance	4.07%	7
I've never really considered it	9.30%	16
Other (please specify)	6.98%	12
TOTAL		172

Q11 What methods of communication do you prefer for receiving updates and information about the plan?

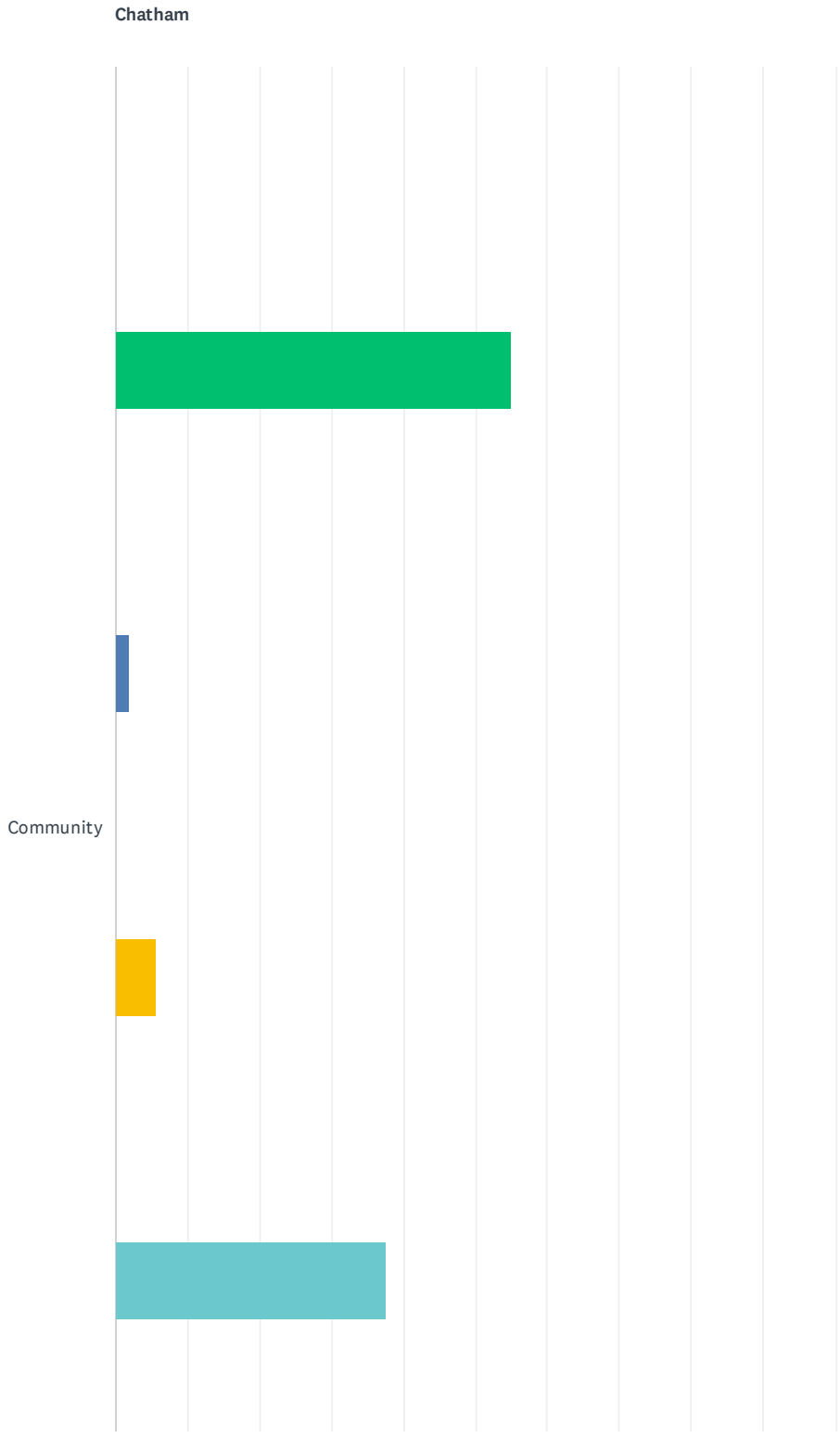
Answered: 175 Skipped: 12

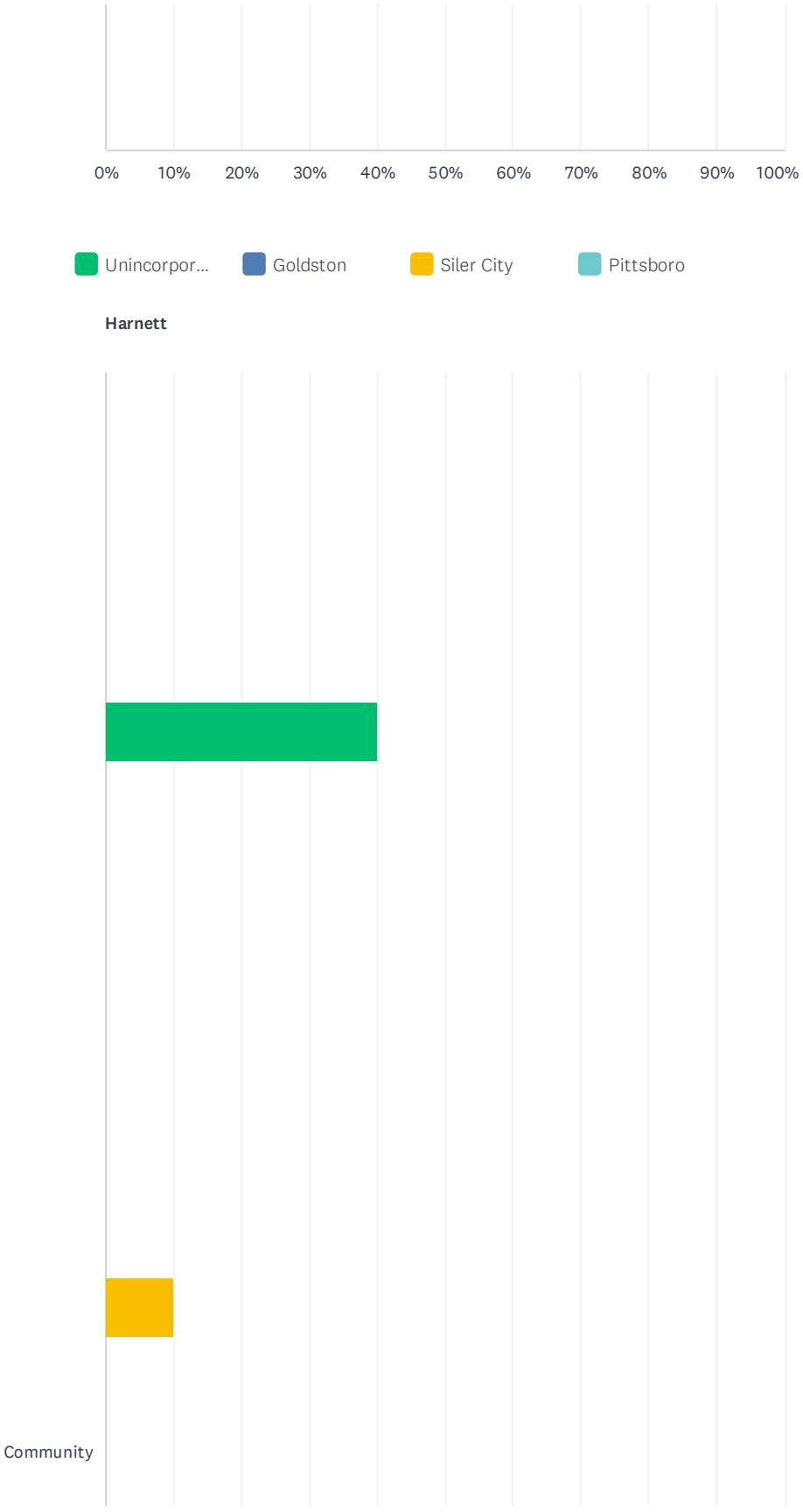


	(NO LABEL)	TOTAL
Internet (Social Media)	100.00% 97	97
Internet (Web Pages)	100.00% 126	126
Public Meetings	100.00% 70	70

Q12 In which community do you live?

Answered: 162 Skipped: 25

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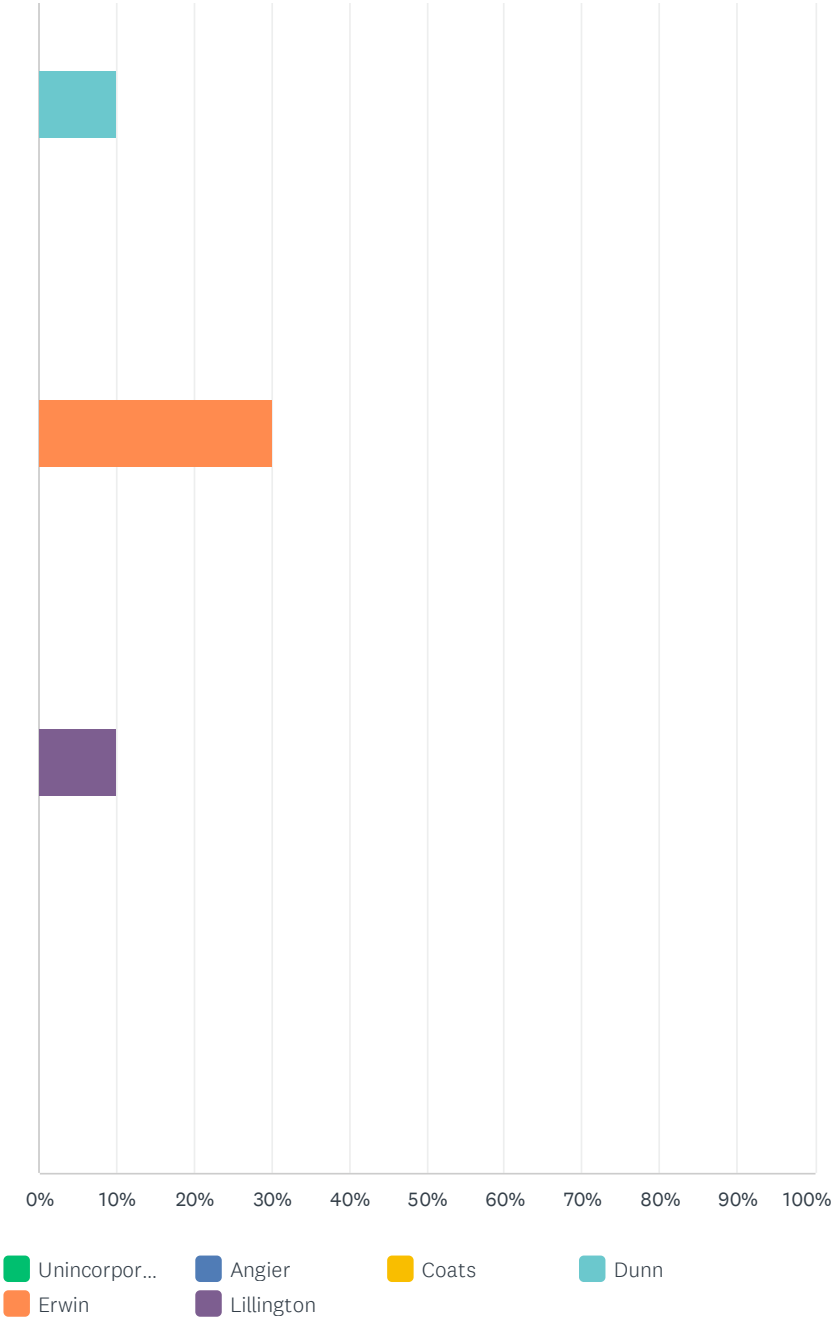
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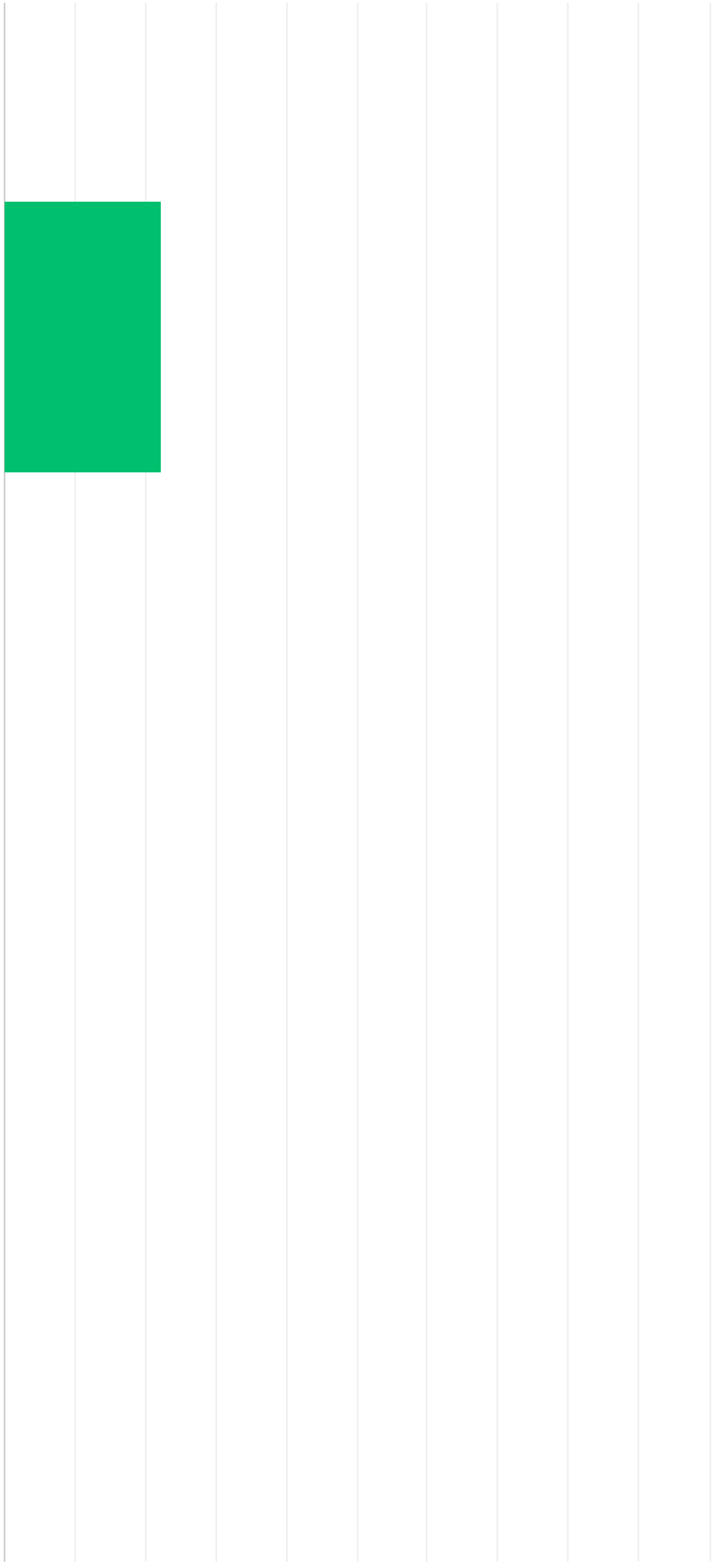

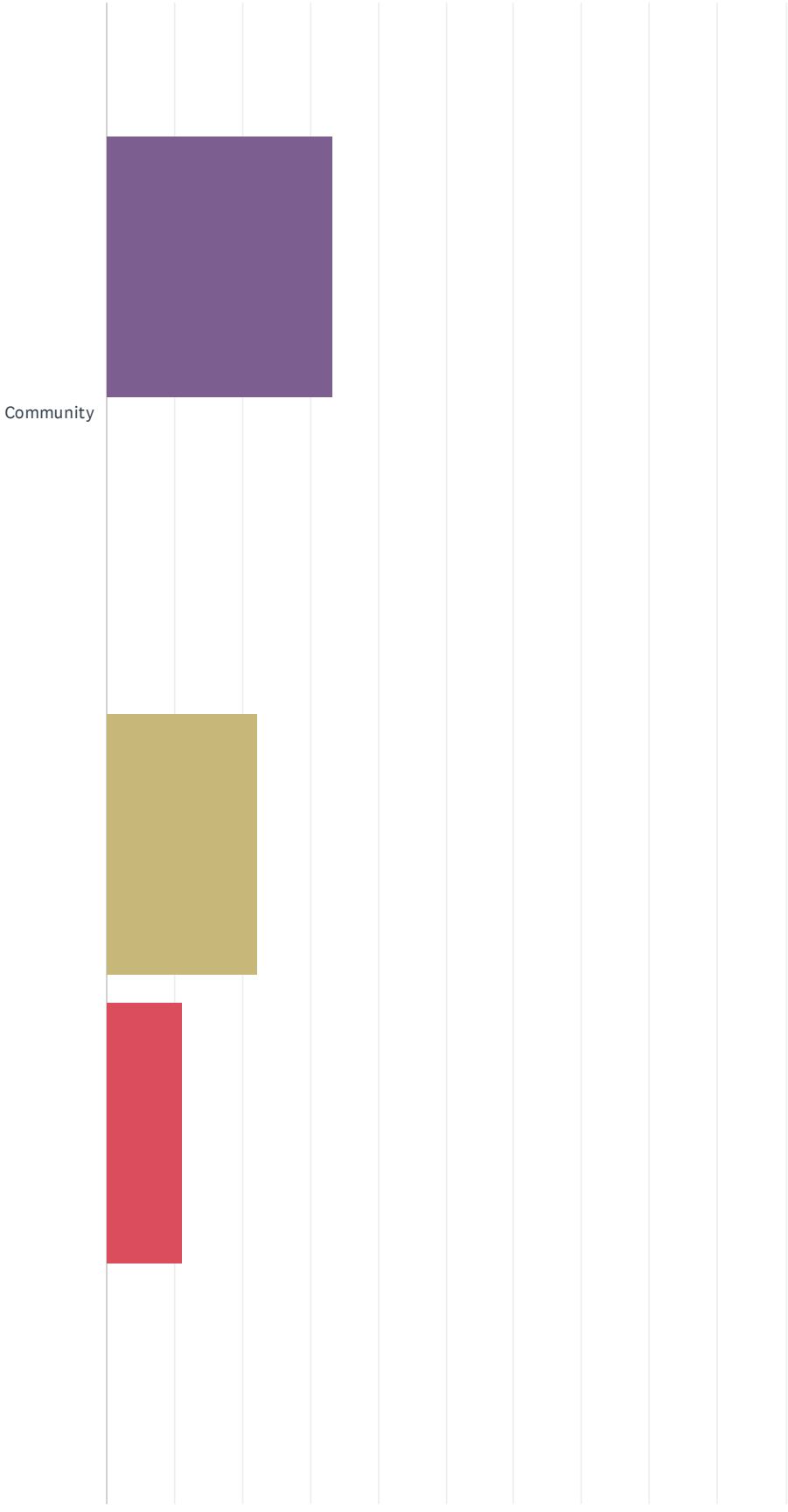
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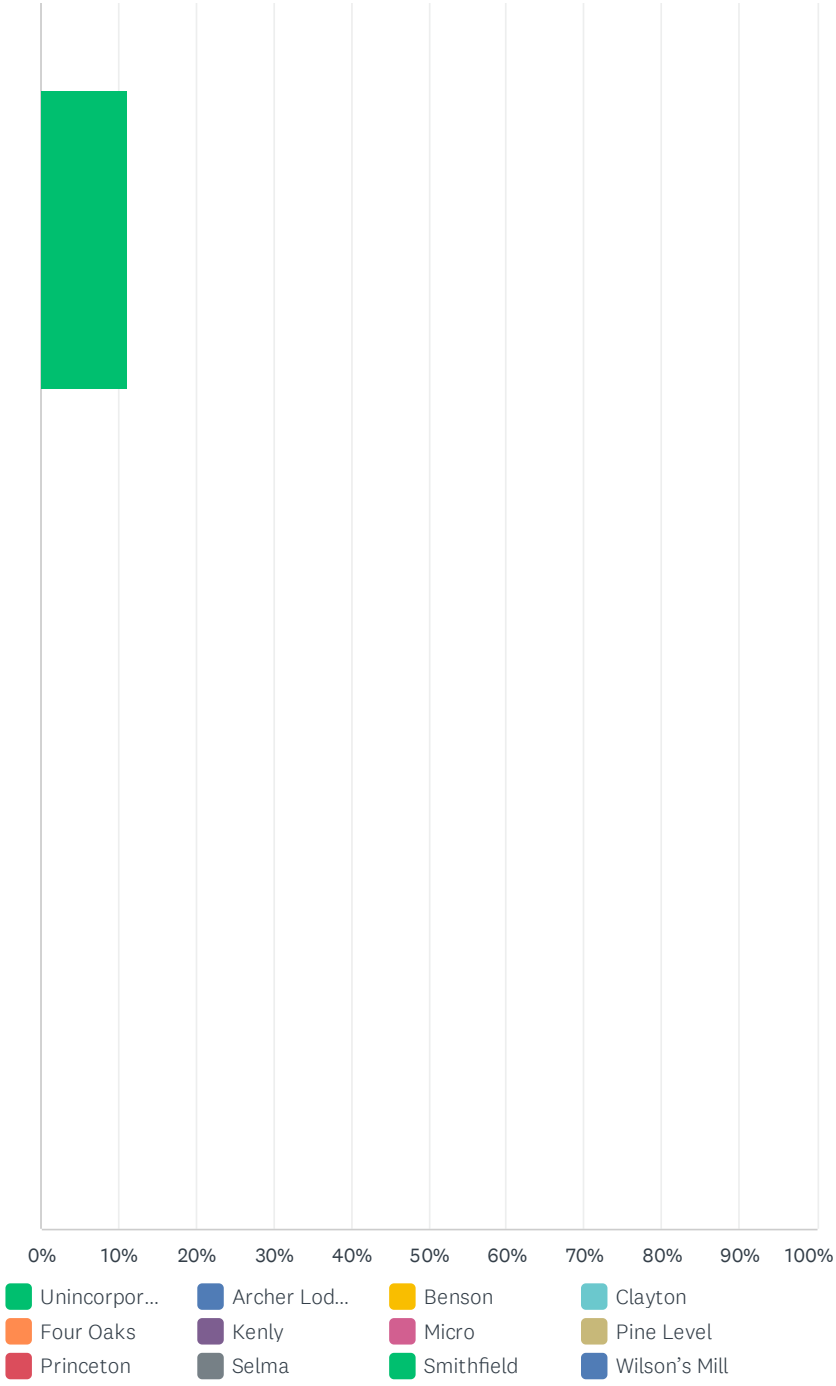
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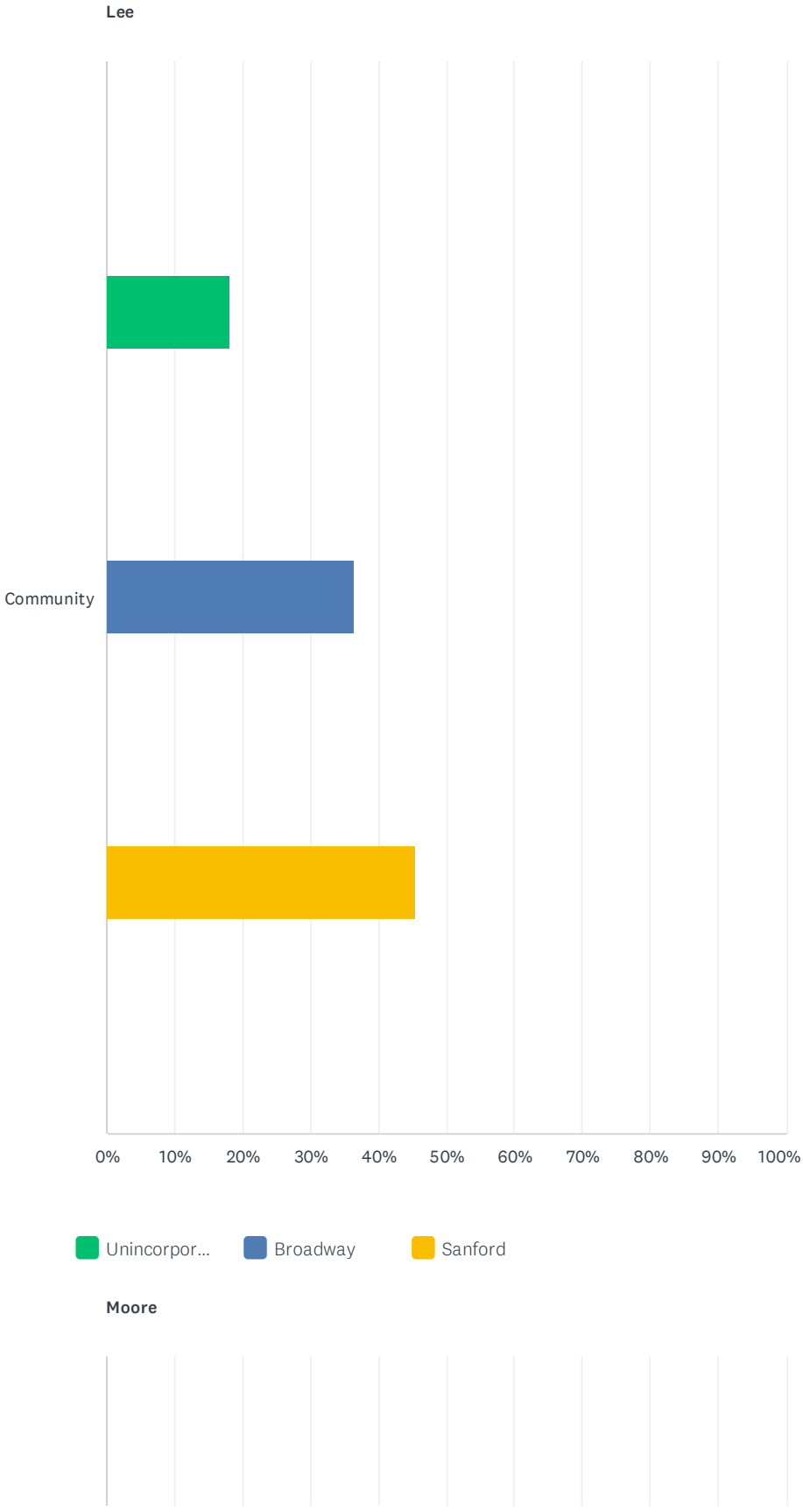
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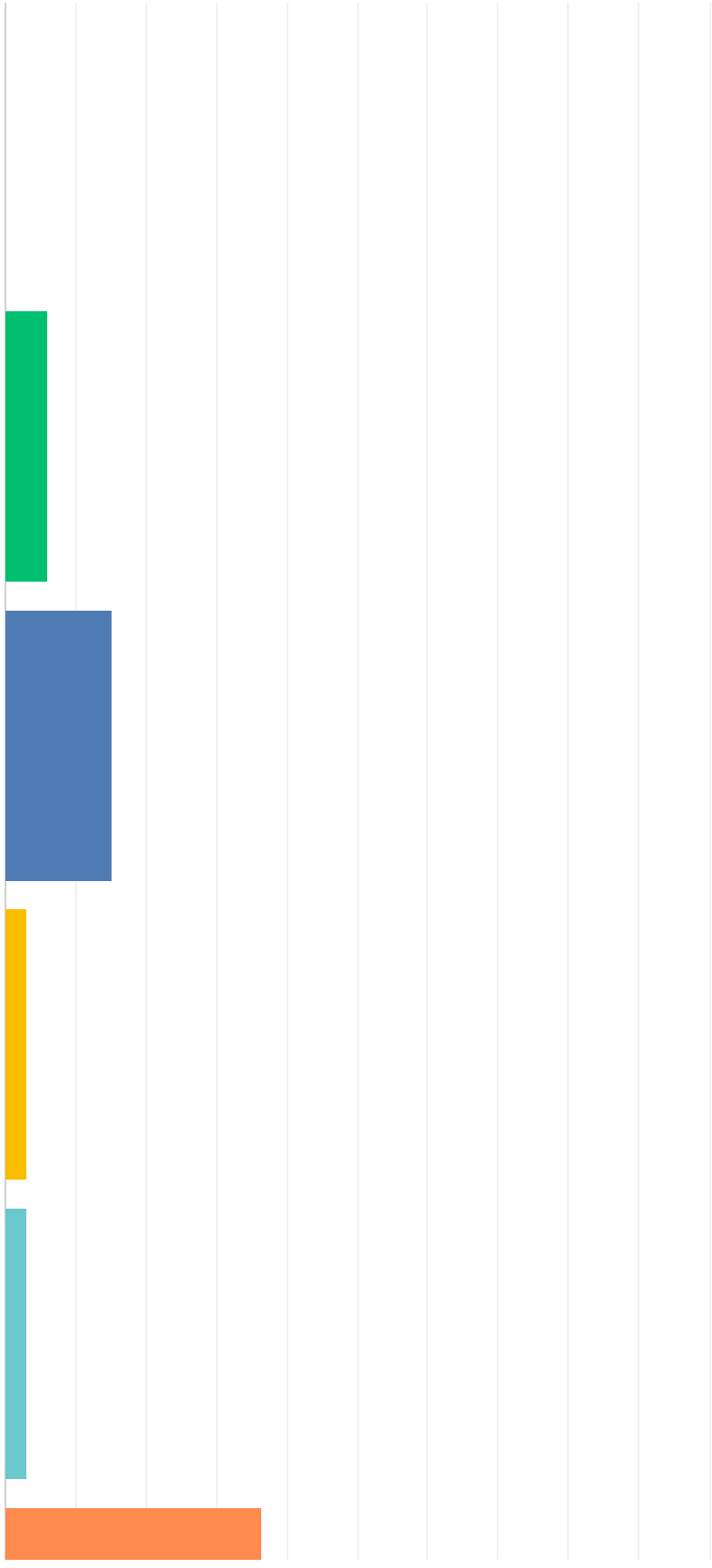
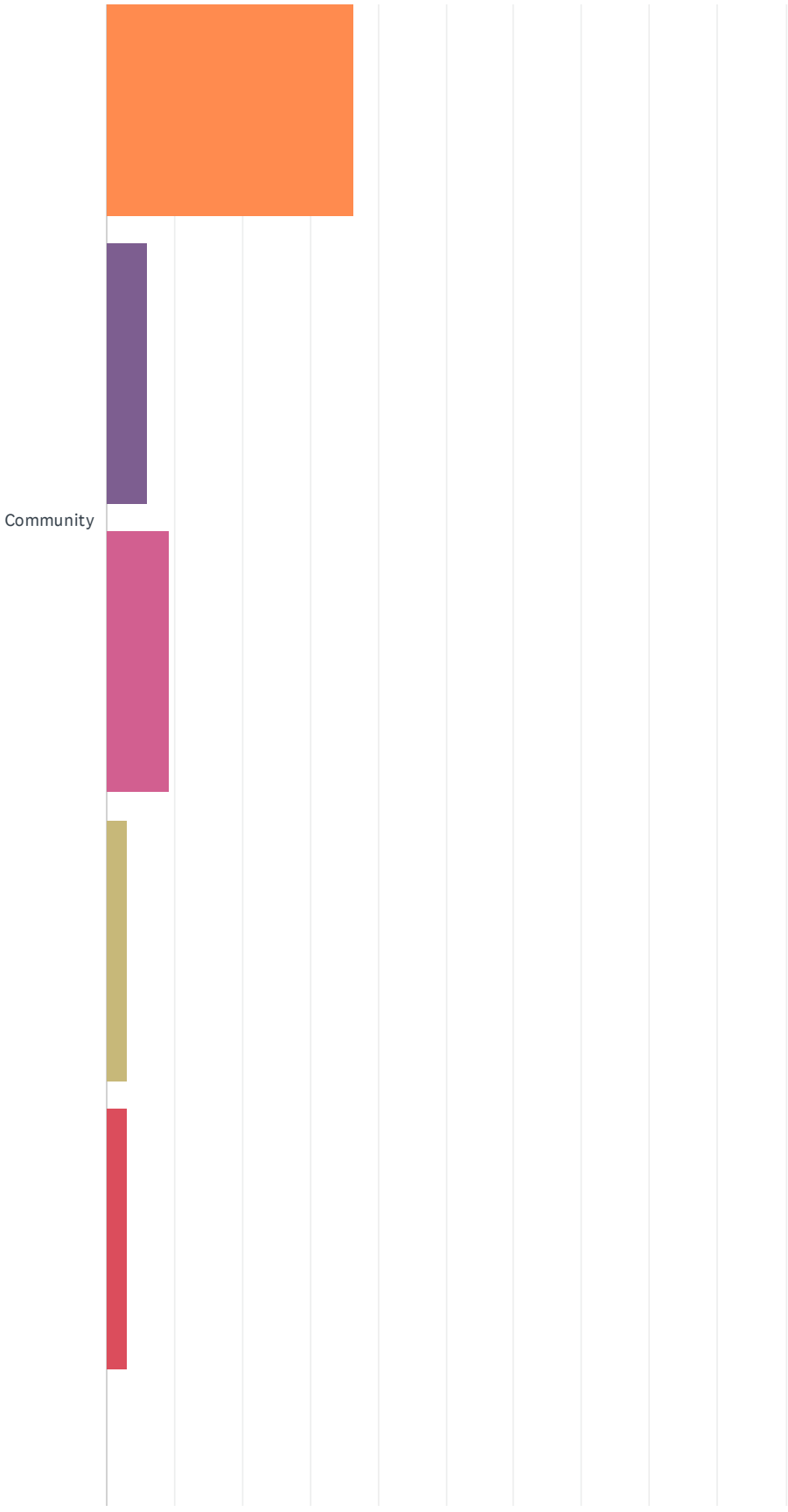
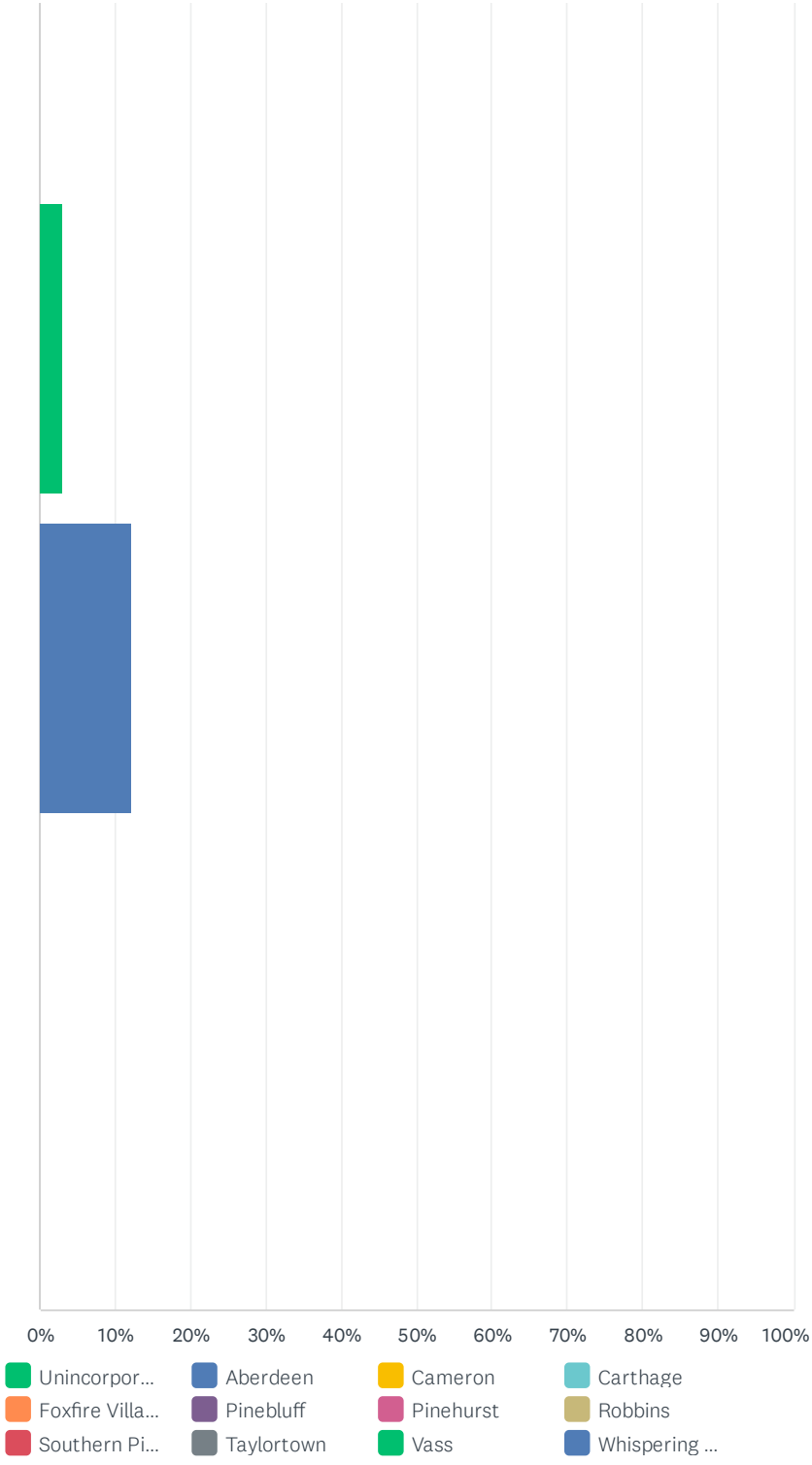


2025 Cape Fear (Chatham, Harnett, Johnston, Lee and Moore) Regional Hazard Mitigation Plan Update

SurveyMonkey





Chatham					
	UNINCORPORATED	GOLDSTON	SILER CITY	PITTSBORO	TOTAL
Community	55.05% 60	1.83% 2	5.50% 6	37.61% 41	 109

Harnett

	UNINCORPORATED	ANGIER	COATS	DUNN	ERWIN	LILLINGTON	TOTAL
Community	40.00% 4	0.00% 0	10.00% 1	10.00% 1	30.00% 3	10.00% 1	10

Johnston

	UNINCORPORATED	ARCHER LODGE	BENSON	CLAYTON	FOUR OAKS	KENLY	MICRO	PINE LEVEL	PRINCETON
Community	22.22% 2	0.00% 0	0.00% 0	0.00% 0	0.00% 0	33.33% 3	0.00% 0	22.22% 2	11.11% 1

Lee

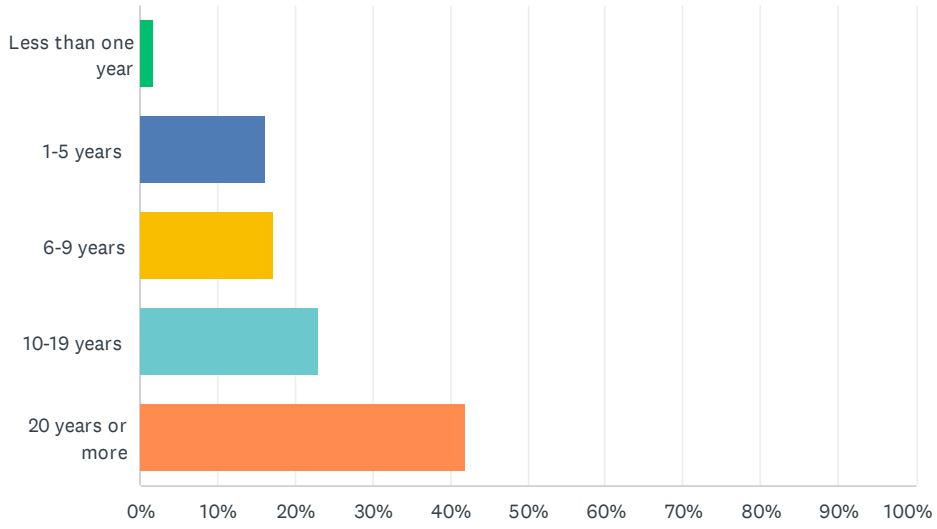
	UNINCORPORATED	BROADWAY	SANFORD	TOTAL
Community	18.18% 2	36.36% 4	45.45% 5	11

Moore

	UNINCORPORATED	ABERDEEN	CAMERON	CARTHAGE	FOXFIRE VILLAGE	PINEBLUFF	PINEHURST	ROBB
Community	6.06% 2	15.15% 5	3.03% 1	3.03% 1	36.36% 12	6.06% 2	9.09% 3	3.(

Q13 How long have you lived in the Cape Fear region (Chatham, Harnett, Lee, Johnston and Moore?

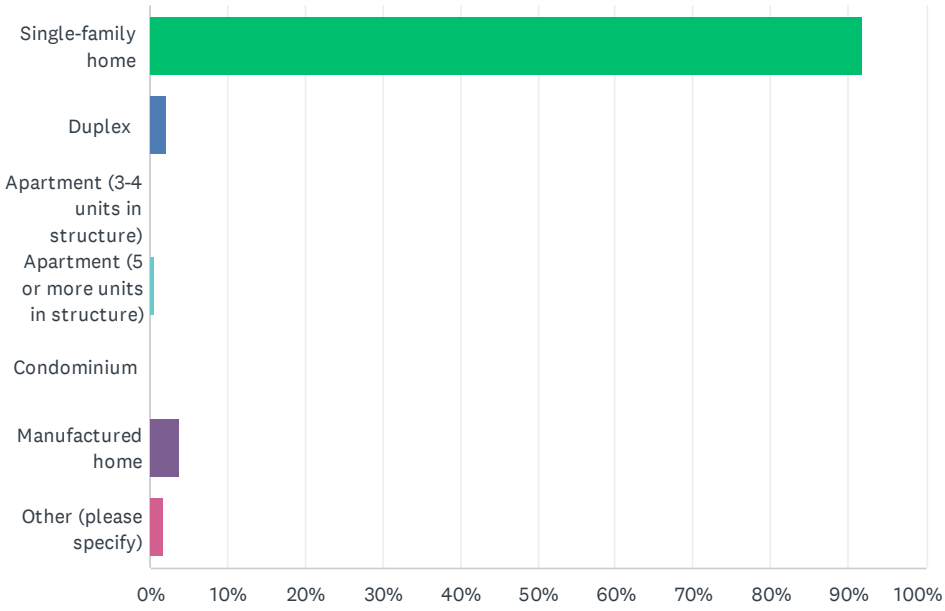
Answered: 186 Skipped: 1



ANSWER CHOICES	RESPONSES	
Less than one year	1.61%	3
1-5 years	16.13%	30
6-9 years	17.20%	32
10-19 years	23.12%	43
20 years or more	41.94%	78
TOTAL		186

Q14 What type of building do you live in?

Answered: 185 Skipped: 2



ANSWER CHOICES	RESPONSES	
Single-family home	91.89%	170
Duplex	2.16%	4
Apartment (3-4 units in structure)	0.00%	0
Apartment (5 or more units in structure)	0.54%	1
Condominium	0.00%	0
Manufactured home	3.78%	7
Other (please specify)	1.62%	3
TOTAL		185

Q15 Additional Comments

Answered: 49 Skipped: 138

Appendix D: Critical Facilities

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Sage Academy	Alternative Education	501 Martin L King Jr Blvd	Siler City	Chatham	27344	X
Bennett Volunteer Fire Department	Ambulance And Fire Service Combined	55 East Raleigh Street	Bennett	Chatham	27208	X
North Chatham Volunteer Fire Department Station 3	Ambulance And Fire Service Combined	3816 Manns Chapel Road	Chapel Hill	Chatham	27516	X
North Chatham Volunteer Fire Department Station 2	Ambulance And Fire Service Combined	1442 Farrington Point Road	Chapel Hill	Chatham	27517	X
Moncure Volunteer Fire Department	Ambulance And Fire Service Combined	2389 Old United States Highway 1	Moncure	Chatham	27559	X
North Chatham Volunteer Fire Department Station 1	Ambulance And Fire Service Combined	45 Morris Road	Pittsboro	Chatham	27312	X
North Chatham Volunteer Fire Department Station 4	Ambulance And Fire Service Combined	4055 Chicken Bridge Road	Pittsboro	Chatham	27312	X
First Health Emergency Medical Services And Regional Transport Of Chatham	Ambulance Services, Air Or Ground	964 East Street	Pittsboro	Chatham	27312	X
Liselotte Care Home	Family Care	3004 Silk Hope Gum Springs Rd.	Pittsboro	Chatham	27312	X
North Chatham Volunteer Fire Department, Inc.	Fire Station	10214 Us 64 East	Apex	Chatham	27523	X
North Chatham Volunteer Fire Department, Inc.	Fire Station	2352 Hollands Chapel Road	Apex	Chatham	27523	X
Bennett Fire Department, Inc.	Fire Station	20191 Hwy 902	Bear Creek	Chatham	27207	X
Bennett Fire Department, Inc.	Fire Station	55 East Raleigh St.	Bennett	Chatham	27208	X
Bonlee Fire Department, Inc.	Fire Station	185 Bonlee Bennett Rd	Bonlee	Chatham	27213	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
North Chatham Volunteer Fire Department, Inc.	Fire Station	1442 Farrington Point Road	Chapel Hill	Chatham	27517	X
North Chatham Volunteer Fire Department, Inc.	Fire Station	3816 Manns Chapel Road	Chapel Hill	Chatham	27516	X
Goldston Rural Fire Department	Fire Station	468 South Church St	Goldston	Chatham	27252	X
Moncure Volunteer Fire Department, Inc.	Fire Station	2389 Old Us Hwy 1	Moncure	Chatham	27559	X
Moncure Volunteer Fire Department, Inc.	Fire Station	1321 Nc 42 Hwy	Moncure	Chatham	27559	X
North Chatham Volunteer Fire Department, Inc.	Fire Station	45 Morris Road	Pittsboro	Chatham	27312	X
North Chatham Volunteer Fire Department, Inc.	Fire Station	4055 Chicken Bridge Road	Pittsboro	Chatham	27312	X
North Chatham Volunteer Fire Department, Inc.	Fire Station	258 Seaforth Road	Pittsboro	Chatham	27312	X
Pittsboro Volunteer Fire And Rescue Department Inc.	Fire Station	150 Sanford Rd.	Pittsboro	Chatham	27312	X
Pittsboro Volunteer Fire And Rescue Department Inc.	Fire Station	4170 Old Graham Road	Pittsboro	Chatham	27312	X
Pittsboro Volunteer Fire And Rescue Department Inc.	Fire Station	60 Walter Bright Rd	Sanford	Chatham	27330	X
Siler City Fire Department	Fire Station	310 North Chatam Ave	Siler City	Chatham	27344	X
Silk Hope Volunteer Fire Department, Inc.	Fire Station	8110 Silk Hope - Gum Springs Rd.	Siler City	Chatham	27344	X
Silk Hope Volunteer Fire Department, Inc.	Fire Station	5226 Silk Hope - Liberty Rd.	Siler City	Chatham	27344	X
Keston Care	Home Care	11312 Us 15-501	Chapel Hill	Chatham	27517	X
Liberty Home Care	Home Care	11312 Us 15-501 N	Chapel Hill	Chatham	27517	X
Liberty Nursing Services	Home Care	11312 Us 15-501 North	Chapel Hill	Chatham	27517	X
First Choice Home Care, Inc.	Home Care	114 West Raleigh Street	Siler City	Chatham	27344	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Sister 2 Sister Solution Inc.	Home Care	1002 12th Street	Siler City	Chatham	27344	X
Unc Home Health	Home Care	401 East Third Street	Siler City	Chatham	27344	X
Summerfield Assisted Living	Home For The Aged	P O Box 4094	Burlington	Chatham	27215	X
Hillforest Rest Home	Home For The Aged	P O Box 98	Gaston	Chatham	27832	X
Cambridge Hills Of Pittsboro	Home For The Aged	Po Box 1209	Pittsboro	Chatham	27312	X
Pittsboro Christian Village	Home For The Aged	1825 East Street	Pittsboro	Chatham	27312	X
Careview Rest Home	Home For The Aged	2701 Moon Lindley Road	Snow Camp	Chatham	27349	X
Hill Forest Rest Home	Homes For The Elderly Without Nursing Care	9141 United States Highway 421 South	Bear Creek	Chatham	27207	X
Carolina Meadows - The Fairways	Homes For The Elderly Without Nursing Care	700 Carolina Meadows	Chapel Hill	Chatham	27517	X
Pittsboro Christian Village Inc	Homes For The Elderly Without Nursing Care	1825 East Street	Pittsboro	Chatham	27312	X
Cambridge Hills Assisted Living	Homes For The Elderly Without Nursing Care	140 Brookstone Lane	Pittsboro	Chatham	27312	X
Coventry House Of Siler City	Homes For The Elderly Without Nursing Care	260 Village Lake Road	Siler City	Chatham	27344	X
Careview Rest Home	Homes For The Elderly Without Nursing Care	2701 Moon Lindley Road	Snow Camp	Chatham	27349	X
Unc Hospice	Hospice	P O Box 1077	Pittsboro	Chatham	27312	X
Chatham Hospital, Inc.	Hospital	P O Box 649	Siler City	Chatham	27344	X
Horton Home	Mental Health Homes	200 Caley Wilson Road	Apex	Chatham	27502	X
Community Housing Of Chatham	Mental Health Homes	Po Box 5031	Chapel Hill	Chatham	27514	X
Hope Meadow	Mental Health Homes	P.O. Box 5220	Chapel Hill	Chatham	0	X
Baldwin Home	Mental Health Homes	316 Nash- Baldwin Rd.	Pittsboro	Chatham	27312	X
Chatham Counseling Center	Mental Health Homes	40 Camp Drive	Pittsboro	Chatham	27312	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
CIlc (Carolina Living & Learning Center)	Mental Health Homes	325 Russet Run	Pittsboro	Chatham	27312	X
Club Insight	Mental Health Homes	815 Sanford Road	Pittsboro	Chatham	27312	X
Horton's Assessment Agency	Mental Health Homes	P.O. Box 1423	Pittsboro	Chatham	27312	X
Three Springs Of North Carolina	Mental Health Homes	P.O. Box 1370	Pittsboro	Chatham	27312	X
Chatham County Group Home #1	Mental Health Homes	217 East Beaver Street	Siler City	Chatham	27344	X
Chatham County Group Home #2	Mental Health Homes	217 East Beaver Street	Siler City	Chatham	27344	X
Chatham County Group Home #3	Mental Health Homes	217 East Beaver Street	Siler City	Chatham	27344	X
East Cardinal Street Facility-Siler City	Mental Health Homes	1105 E. Cardinal Street	Siler City	Chatham	27344	X
Griffin House	Mental Health Homes	Po Box 207	Siler City	Chatham	27344	X
Nooe House A	Mental Health Homes	217 East Beaver Street	Siler City	Chatham	27344	X
Nooe House B	Mental Health Homes	217 East Beaver Street	Siler City	Chatham	27344	X
Perkins Place	Mental Health Homes	217 East Beaver Street	Siler City	Chatham	27344	X
Services For Alcohol And Substance Abuse (Sasa)	Mental Health Homes	514 East Third Street Suite A	Siler City	Chatham	27344	X
Winfred West	Mental Health Homes	217 East Beaver Street	Siler City	Chatham	27344	X
Carolina Meadows Health Center	Nursing Home Facilit	500 Carolina Meadows	Chapel Hill	Chatham	0	X
The Laurels Of Chatham	Nursing Home Facilit	72 Chatham Business Park	Pittsboro	Chatham	0	X
Sunbridge Care & Rehabilitation For Siler City	Nursing Home Facilit	900 West Dolphin Street	Siler City	Chatham	0	X
Carolina Meadows Health Center	Nursing Homes	100 Whippoorwill Lane	Chapel Hill	Chatham	27517	X
The Arbor At Galloway Ridge	Nursing Homes	3000 Galloway Ridge Road	Pittsboro	Chatham	27312	X
The Arbor Health Care Center	Nursing Homes	300 Clynelish Close	Pittsboro	Chatham	27312	X
The Laurels Of Chatham	Nursing Homes	72 Chatham Business Drive	Pittsboro	Chatham	27312	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Siler City Care And Rehabilitation Center	Nursing Homes	900 West Dolphin Street	Siler City	Chatham	27344	X
Chatham Central High	Regular School	14950 Nc Hwy 902 W	Bear Creek	Chatham	27207	X
Bennett Elementary	Regular School	61 Randolph Street	Bennett	Chatham	27208	X
Bonlee Elementary	Regular School	153 Bonlee School Road	Bonlee	Chatham	27213	X
North Chatham Elementary	Regular School	3380 Lystra Road	Chapel Hill	Chatham	27517	X
Woods Charter	Regular School	160 Woodland Grove La.	Chapel Hill	Chatham	27516	X
Margaret B. Pollard Middle	Regular School	185 Granite Mill Blvd.	Chapel Hill	Chatham	27516	X
J S Waters Elementary	Regular School	55 J S Waters School Road	Goldston	Chatham	27252	X
Moncure Elementary	Regular School	600 Moncure School Road	Moncure	Chatham	27559	X
Horton Middle	Regular School	79 Horton Road	Pittsboro	Chatham	27312	X
Northwood High	Regular School	310 Northwood High School Rd	Pittsboro	Chatham	27312	X
Perry W Harrison Elementary	Regular School	2655 Hamlet Chapel Road	Pittsboro	Chatham	27312	X
Pittsboro Elementary	Regular School	375 Pittsboro School Road	Pittsboro	Chatham	27312	X
Chatham Middle	Regular School	2025 South 2nd Avenue Ext	Siler City	Chatham	27344	X
Silk Hope Elementary	Regular School	7945 Silk Hope/Gum Springs R	Siler City	Chatham	27344	X
Jordan Matthews High	Regular School	910 East Cardinal Street	Siler City	Chatham	27344	X
Siler City Elementary	Regular School	671 Ellington Road	Siler City	Chatham	27344	X
Chatham Charter	Regular School	2200 Hamp Stone Road	Siler City	Chatham	27344	X
Virginia Cross Elementary	Regular School	234 Cross School Road	Siler City	Chatham	27344	X
Goldston Area Rescue Squad	Rescue Services, Medical	171 Coral Avenue	Goldston	Chatham	27252	X
East Chatham Rescue Squad	Rescue Services, Medical	40 Rectory Street	Pittsboro	Chatham	27312	0.2 PCT ANNUAL CHANCE FLOOD HAZARD

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Chatham County Rescue Squad	Rescue Services, Medical	201 South Second Avenue	Siler City	Chatham	27344	X
Chatham County Emergency Management		297 West St	Pittsboro	Chatham	27312	X
Star Academy	Alternative Education	900 11th Street	Lillington	Harnett	27546	X
Boone Trail Emergency Services Station 2	Ambulance And Fire Service Combined	12104 United States Highway 421 North	Broadway	Harnett	27505	X
Dunn Emergency Services Incorporated	Ambulance And Fire Service Combined	101 West Cumberland Street	Dunn	Harnett	28334	X
Northwest Harnett Volunteer Fire Department Incorporated	Ambulance And Fire Service Combined	6015 Christian Light Road	Fuquay Varina	Harnett	27526	X
Boone Trail Emergency Services Station 1	Ambulance And Fire Service Combined	7016 United States Highway 421 North	Lillington	Harnett	27546	X
Benhaven Emergency Services Station 2	Ambulance And Fire Service Combined	4023 State Highway 87 South	Olivia	Harnett	28368	X
Benhaven Emergency Services Station 1	Ambulance And Fire Service Combined	722 Barbecue Church Road	Sanford	Harnett	27332	X
Anderson Creek Emergency Services	Ambulance And Fire Service Combined	2980 Ray Road	Spring Lake	Harnett	28390	X
Harnett County Emergency Medical Services Transport And 911 Ambulance - Angier Station	Ambulance Services, Air Or Ground	309 North Broad Street East	Angier	Harnett	27501	X
Harnett County Emergency Medical Services Quick Response Vehicle - Flatbranch Station	Ambulance Services, Air Or Ground	2014 Elliot Bridge Road	Bunnlevel	Harnett	28323	X
Harnett County Emergency Medical Services Quick Response Vehicle - Spout Spring Station	Ambulance Services, Air Or Ground	4400 Buffalo Lake Road	Cameron	Harnett	28326	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Dunn Emergency Services Incorporated - Erwin Quick Response Vehicle	Ambulance Services, Air Or Ground	200 South 13th Street	Erwin	Harnett	28339	X
Harnett County Emergency Medical Services Transport Ambulance - Northwest Harnett	Ambulance Services, Air Or Ground	6015 Christian Light Road	Fuquay Varina	Harnett	27526	X
Harnett County Emergency Medical Services Transport And 911 Ambulance - Flatwoods	Ambulance Services, Air Or Ground	3076 United States Highway 401 South	Lillington	Harnett	27546	X
Harnett County Emergency Medical Services Transport Ambulance And Quick Response Vehicle - Buies Creek Station	Ambulance Services, Air Or Ground	5843 United States Highway 421 South	Lillington	Harnett	27546	X
Primrose Villa Retirement Home	Family Care	P O Box 1091	Angier	Harnett	27501	X
Buies Creek Rural Fire And Rescue	Fire And Rescue Service	112 Marshbanks Street	Buies Creek	Harnett	27506	X
Coats Grove Fire And Rescue Department	Fire And Rescue Service	91 North Mckinley Street	Coats	Harnett	27521	X
Erwin Fire And Rescue Department	Fire And Rescue Service	200 South 13th Street	Erwin	Harnett	28339	X
Angier & Black River Fire Department, Inc.	Fire Station	309 North Broad St. East	Angier	Harnett	27501	X
Boone Trail Emergency Services, Inc.	Fire Station	12140 Us 421 N	Broadway	Harnett	27505	X
Flat Branch Volunteer Fire Department, Inc.	Fire Station	2098 Elliot Bridge	Bunnlevel	Harnett	28323	X
Summerville Bunnlevel Fire & Rescue, Inc.	Fire Station	6825 Us 401 South	Bunnlevel	Harnett	28323	X
Spout Springs Emergency Services, Inc.	Fire Station	4400 Buffalo Lake Rd	Cameron	Harnett	28326	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Spout Springs Emergency Services, Inc.	Fire Station	20054 Nc 24/27	Cameron	Harnett	28326	X
Coats-Grove Fire & Rescue, Inc.	Fire Station	91 North Mckinley	Coats	Harnett	27521	X
Dunn Emergency Services, Inc.	Fire Station	101 W. Cumberland St.	Dunn	Harnett	28334	X
Dunn Emergency Services, Inc.	Fire Station	110 E Harnett St.	Dunn	Harnett	28334	X
Erwin Fire Department And Rescue Squad, Inc.	Fire Station	200 South 13th St	Erwin	Harnett	28339	X
Northwest Harnett Volunteer Fire Department, Inc.	Fire Station	6015 Christian Light Rd	Fuquay Varina	Harnett	27526	X
Northwest Harnett Volunteer Fire Department, Inc.	Fire Station	3120 Cokesbury Road	Fuquay Varina	Harnett	27526	X
Northwest Harnett Volunteer Fire Department, Inc.	Fire Station	8300 Us 401 N.	Fuquay Varina	Harnett	27526	X
Boone Trail Emergency Services, Inc.	Fire Station	7016 Us 421 N	Lillington	Harnett	27546	X
Buies Creek Rural Fire Department, Incorporated	Fire Station	112 Marshbanks St	Lillington	Harnett	27546	X
Lillington Fire Department	Fire Station	823 South Main	Lillington	Harnett	27546	X
Lillington Fire Department	Fire Station	3130 Us 401 South	Lillington	Harnett	27546	X
Summerville Bunnlevel Fire & Rescue, Inc.	Fire Station	111 East Harnett St	Lillington	Harnett	27546	X
Lillington Fire Department #3 *(Set to open March 2026)*	Fire Station	2841 NC 210 N	Lillington	Harnett	27546	--
Benhaven Emergency Services, Inc.	Fire Station	4023 Nc Hwy 87	Sanford	Harnett	27332	X
Benhaven Emergency Services, Inc.	Fire Station	722 Barbecue Church Rd	Sanford	Harnett	27332	X
Anderson Creek Emergency Services, Inc.	Fire Station	6400 Overhill Road	Spring Lake	Harnett	28390	X
Basic Home Health Care, Llc	Home Care	P.O. Box 2155	Dunn	Harnett	28335	X
Family Medical Supply, Inc.	Home Care	P. O. Box 1121	Dunn	Harnett	28334	X
Liberty Home Care	Home Care	105 Hunt Valley Drive	Dunn	Harnett	28334	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Pelham Home Health	Home Care	P.O. Box 9754	Fayettevil le	Harnett	28311	X
Affinity Health Services, Inc.	Home Care	P. O. Box 2503	Lillington	Harnett	27546	0.2 PCT ANNUA L CHANC E FLOOD HAZAR D
Annie's Nursing Service	Home Care	1406 South Main Street	Lillington	Harnett	27546	X
Mcphail's Home Healthcare	Home Care	P. O. Box 609	Lillington	Harnett	28311	X
Interim Healthcare	Home Care	P. O. Box 2249	Whiteville	Harnett	0	X
Oak Hill Living Center	Home For The Aged	P O Box 759	Angier	Harnett	27501	X
Primrose Villa Retirement Home Ii	Home For The Aged	P O Box 1091	Angier	Harnett	27501	X
Primrose Villa Retirement Iii	Home For The Aged	P O Box 1091	Angier	Harnett	27501	X
Primrose Villa Retirement Iv	Home For The Aged	P O Box 1091	Angier	Harnett	27501	X
Stage Coach Manor	Home For The Aged	Po Box 877	Angier	Harnett	27501	X
Core Family Care Center	Home For The Aged	P O Box 923	Dunn	Harnett	28335	X
Core Family Care Center #2	Home For The Aged	P O Box 923	Dunn	Harnett	28335	X
Senior Citizens Village	Home For The Aged	P O Box 247	Dunn	Harnett	28335	X
Unprecedented Care	Home For The Aged	157 Stewart Road	Dunn	Harnett	28334	X
Senter's Rest Home	Home For The Aged	P. O. Box 670	Fuquay-Varina	Harnett	27526	X
Brookfield Retirement Center	Home For The Aged	2041 Nc 210 North	Lillington	Harnett	27546	X
Pinecrest Gardens Of Lillington	Home For The Aged	P.O. Box 1934	Lillington	Harnett	27546	X
Stage Coach Manor	Homes For The Elderly Without Nursing Care	6828 Old Stage Road North	Angier	Harnett	27501	X
Primrose Villa Incorporated Ii	Homes For The Elderly Without Nursing Care	431 Junny Road	Angier	Harnett	27501	X
Primrose Villa Incorporated Iii	Homes For The Elderly Without Nursing Care	431 Junny Road	Angier	Harnett	27501	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Primrose Villa Incorporated Iv	Homes For The Elderly Without Nursing Care	431 Junny Road	Angier	Harnett	27501	X
Oak Hill Living Center	Homes For The Elderly Without Nursing Care	9767 North Carolina Highway 210 North	Angier	Harnett	27501	X
Unprecedented Care	Homes For The Elderly Without Nursing Care	157 Stewart Road	Dunn	Harnett	28334	X
Autumn Wind Assisted Living Of Roseboro Incorporated	Homes For The Elderly Without Nursing Care	570 Lane Road	Dunn	Harnett	28334	X
Core Family Care Incorporated	Homes For The Elderly Without Nursing Care	217 Jonesboro Road	Dunn	Harnett	28334	X
Johnson Better Care Facility Incorporated	Homes For The Elderly Without Nursing Care	3485 United States Highway 301 North	Dunn	Harnett	28334	X
Senior Citizens Village	Homes For The Elderly Without Nursing Care	504 Canal Drive	Dunn	Harnett	28334	X
Senter's Rest Home	Homes For The Elderly Without Nursing Care	40 Rawls Club Road	Fuquay Varina	Harnett	27526	X
Brookfield Retirement Center	Homes For The Elderly Without Nursing Care	2041 Nc 210 North	Lillington	Harnett	27546	X
Pinecrest Gardens	Homes For The Elderly Without Nursing Care	1984 Old United States Highway 421	Lillington	Harnett	27546	X
Hospice Of Harnett County, Inc.	Hospice	P O Box 373	Erwin	Harnett	28339	X
Community Home Care And Hospice	Hospice	5301 Morganton Road	Fayettevill e	Harnett	28314	X
Betsy Johnson Regional Hospital	Hospital	P O Dwr 1706	Dunn	Harnett	28335	X
Good Hope Hospital, Inc.	Adult Psychiatric Facility for Behavioral Health Recovery	410 Denim Drive	Erwin	Harnett	28339	X
Cmi Angier Group Home	Mental Health Homes	P.O. Box 1300	Angier	Harnett	27501	X
The Dwi Center	Mental Health Homes	728 North Raleigh Street	Angier	Harnett	27501	X
Elm Street	Mental Health Homes	501-C South Wall Street	Benson	Harnett	27504	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Rha Health Services, Inc./Jackson Street Group Home	Mental Health Homes	503 South Wall Street	Benson	Harnett	27504	X
Elmore-Blackey Fellowship Home	Mental Health Homes	Po Box 463	Dunn	Harnett	28335	X
Massey Home	Mental Health Homes	519 E. Townsend Street	Dunn	Harnett	28334	X
Erwin #2 Group Home	Mental Health Homes	202 West B Street	Erwin	Harnett	28339	X
Erwin Avenue Home	Mental Health Homes	100 Erwin Avenue	Erwin	Harnett	28339	X
Duncan Street Residential	Mental Health Homes	5608 Denham Court	Fayettevil le	Harnett	28304	X
Mckay's Place	Mental Health Homes	Po Box 2813	Fayettevil le	Harnett	28302	X
Orchard Crest Home	Mental Health Homes	Po Box 2813	Fayettevil le	Harnett	28302	X
Sierra's Residential Services, Inc.	Mental Health Homes	Po Box 665	Lillington	Harnett	27546	X
Britthaven Of Harnett	Nursing Home Facilit	Po Box 1597	Dunn	Harnett	28335	X
Ihs Of Dunn	Nursing Home Facilit	711 Susan Tart Road	Dunn	Harnett	0	X
Parrish Nursing Center, Inc.	Nursing Home Facilit	201 North Ellis Avenue	Dunn	Harnett	0	X
Britthaven Of Harnett	Nursing Homes	604 Lucas Road	Dunn	Harnett	28334	X
Dunn Rehabilition And Nursing Center	Nursing Homes	711 Susan Tart Road	Dunn	Harnett	28334	X
Magnolia Living Center	Nursing Homes	201 North Ellis Avenue	Dunn	Harnett	28334	X
Universal Health Care Lillington	Nursing Homes	1995 Cornelius Harnett Boulevard	Lillington	Harnett	27546	X
Angier Elementary	Regular School	130 E Mciver St	Angier	Harnett	27501	X
North Harnett Primary	Regular School	282 N Harnett School Rd	Angier	Harnett	27501	X
Harnett Central Middle	Regular School	2529 Harnett Central Rd	Angier	Harnett	27501	X
Harnett Central High	Regular School	2911 Harnett Central Rd	Angier	Harnett	27501	X
Buies Creek Elementary	Regular School	340 Main Street	Buies Creek	Harnett	27506	X
Anderson Creek Primary	Regular School	914 Anderson Creek Sch Rd	Bunnlevel	Harnett	28323	X
South Harnett Elementary	Regular School	8335 Nc 210 South	Bunnlevel	Harnett	28323	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Johnsonville Elementary	Regular School	18495 Nc Hwy 27 West	Cameron	Harnett	28326	X
Coats Elementary	Regular School	585 Brick Mill Road	Coats	Harnett	27521	X
Harnett Primary	Regular School	800 W Harnett St	Dunn	Harnett	28334	X
Wayne Avenue Elem	Regular School	910 W Harnett St	Dunn	Harnett	28334	AE
Dunn Middle	Regular School	1301 Meadowlark Road	Dunn	Harnett	28334	X
Coatserwin Middle	Regular School	2833 Nc Hwy 55e	Dunn	Harnett	28334	X
Triton High	Regular School	215 Maynard Lake Road	Erwin	Harnett	28339	X
Erwin Elementary	Regular School	301 S 10th St	Erwin	Harnett	28339	X
Lafayette Elementary	Regular School	108 Lafayette Sch Rd	Kipling	Harnett	27543	X
Boone Trail Elementary	Regular School	1425 Adcock Road	Lillington	Harnett	27546	X
Western Harnett High	Regular School	10637 Nc Hwy 27 West	Lillington	Harnett	27546	X
Western Harnett Middle	Regular School	11135 Nc Hwy 27 West	Lillington	Harnett	27546	X
Lillingtonshawtown Elementary	Regular School	855 Old Us 421	Lillington	Harnett	27546	X
Benhaven Elementary	Regular School	2815 Olivia Road	Olivia	Harnett	28368	X
Highland Elementary	Regular School	1915 Buffalo Lake Road	Sanford	Harnett	27330	X
Overhills Middle	Regular School	2711 Ray Road	Spring Lake	Harnett	28390	X
Overhills High	Regular School	2495 Ray Road	Spring Lake	Harnett	28390	X
Overhills Elementary	Regular School	2626 Ray Rd	Spring Lake	Harnett	28390	X
Harnett County Emergency Management		108 E Front St	Lillington	Harnett	27546	X
South Campus Community High	Alternative Education	521 Martin Luther King Jr Dr	Smithfield	Johnston	27577	X
South Campus Community Middle	Alternative Education	425 S Collier Street	Smithfield	Johnston	27577	X
50-210 Community Fire Department Incorporated	Ambulance And Fire Service Combined	50 Greenleaf Road	Angier	Johnston	27501	X
Princeton Volunteer Fire Department	Ambulance And Fire Service Combined	501 Doctor Donnie H Jones Junior Road	Princeton	Johnston	27569	X
Johnston County Emergency Medical Services Station 1	Ambulance Services, Air Or Ground	300 North Lee Street	Benson	Johnston	27504	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Four Oaks Emergency Medical Services	Ambulance Services, Air Or Ground	105 East Wellons Street	Four Oaks	Johnston	27524	X
Johnston County Emergency Medical Services - Kenly	Ambulance Services, Air Or Ground	206 West 2nd Street	Kenly	Johnston	27542	X
Johnston County Emergency Medical Services - Micro	Ambulance Services, Air Or Ground	104 West Main Street	Micro	Johnston	27555	X
Johnston County Emergency Medical Services Station 2	Ambulance Services, Air Or Ground	3838 Meadowbrook Road	Newton Grove	Johnston	28366	X
Johnston Ambulance Service	Ambulance Services, Air Or Ground	1200 United States Highway 70 West	Smithfield	Johnston	27577	X
Smithfield Emergency Medical Services	Ambulance Services, Air Or Ground	109 South 4th Street	Smithfield	Johnston	27577	X
Clayton Emergency Medical Services Station 2	Ambulance Services, Air Or Ground	5734 Lake Wendell Road	Zebulon	Johnston	27597	X
Hester Family Care Home	Family Care	160 Haven Lane	Princeton	Johnston	27569	X
Front Street Family Care Home	Family Care	P.O. Box 25752	Raleigh	Johnston	27611	X
Hilltop Manor	Family Care	4969 Buffalo Road	Selma	Johnston	27576	X
Johnston County Group Home #1	Family Care	P. O. Box 1768	Smithfield	Johnston	27577	X
Princeton Fire And Rescue	Fire And Rescue Service	501 Doctor Donnie H Jones Junior Road	Princeton	Johnston	27569	X
50 - 210 Community Fire Department, Inc.	Fire Station	50 Greenfield Rd	Angier	Johnston	27501	X
50 - 210 Community Fire Department, Inc.	Fire Station	13954 Nc Hwy 50 N	Angier	Johnston	27501	X
Benson Fire Department	Fire Station	313 South Elm St.	Benson	Johnston	27504	X
Elevation Fire Department, Incorporated	Fire Station	1825 Federal Rd	Benson	Johnston	27504	X
Meadow Volunteer Fire Department, Inc.	Fire Station	7409 Nc Highway 50 South	Benson	Johnston	27504	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
West Johnston Fire Department, Incorporated	Fire Station	5503 Old Fairground Road	Benson	Johnston	27504	X
Clayton Fire Department	Fire Station	325 W Horne St	Clayton	Johnston	27520	X
Clayton Fire Department	Fire Station	800 Nc Hwy 42 E	Clayton	Johnston	27520	X
Cleveland Fire Department, Incorporated	Fire Station	9039 Cleveland Rd	Clayton	Johnston	27520	X
North Side Fire & Rescue, Inc.	Fire Station	6483 Covered Bridge Rd	Clayton	Johnston	27527	X
Wilson's Mills Fire And Rescue Department, Incorporated	Fire Station	145 Fire Department Rd	Clayton	Johnston	27527	X
Wilson's Mills Fire And Rescue Department, Incorporated	Fire Station	1988 Gordon Rd	Clayton	Johnston	27520	X
Bentonville Volunteer Fire Department, Inc.	Fire Station	3167 Harper House Rd	Four Oaks	Johnston	27524	X
Blackman's Crossroads Volunteer Fire Department, Inc.	Fire Station	5813 Nc 96 S	Four Oaks	Johnston	27524	X
Four Oaks Volunteer Fire Department, Inc.	Fire Station	100 Keen St	Four Oaks	Johnston	27524	X
Four Oaks Volunteer Fire Department, Inc.	Fire Station	825 Lassiter Road	Four Oaks	Johnston	27524	X
Strickland Cross Roads Fire Department, Incorporated	Fire Station	2706 Strickland Crossroad Rd	Four Oaks	Johnston	27524	X
Cleveland Fire Department, Incorporated	Fire Station	13279 Cleveland Rd	Garner	Johnston	27529	X
Cleveland Fire Department, Incorporated	Fire Station	5180 Cornwallis Rd	Garner	Johnston	27529	X
Bethany Rural Fire Department Of Johnston County, Inc.	Fire Station	8525 Old Beulah Rd	Kenly	Johnston	27542	X
Kenly Volunteer Fire Department, Incorporated	Fire Station	101 W 1st St	Kenly	Johnston	27542	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Micro Volunteer Fire Department, Inc.	Fire Station	321 U S Hwy 301 S	Micro	Johnston	27555	X
Antioch Fire Department, Incorporated	Fire Station	106668 Nc Highway 42	Middlesex	Johnston	27557	X
Antioch Fire Department, Incorporated	Fire Station	8604 Hwy 39 N	Middlesex	Johnston	27557	X
Pine Level Volunteer Fire Department Inc.	Fire Station	110 West Main St.	Pine Level	Johnston	27568	X
Princeton Volunteer Fire Department, Incorporated	Fire Station	501 Dr. Donnie H. Jones Blvd	Princeton	Johnston	27569	X
Princeton Volunteer Fire Department, Incorporated	Fire Station	4910 Rains Crossroads Rd	Princeton	Johnston	27569	X
North Side Fire & Rescue, Inc.	Fire Station	2375 Thanksgiving Fire Rd	Selma	Johnston	27576	X
Selma Fire Department	Fire Station	201 N Webb St.	Selma	Johnston	27576	X
Brogden Rural Fire Department, Inc.	Fire Station	7236 Brogden Road	Smithfield	Johnston	27577	X
Smithfield Fire Department	Fire Station	111 S Fourth St	Smithfield	Johnston	27577	X
Smithfield Fire Department	Fire Station	1200 West Market St	Smithfield	Johnston	27577	X
Wilson's Mills Fire And Rescue Department, Incorporated	Fire Station	2550 Cleveland Rd	Smithfield	Johnston	27577	X
50 - 210 Community Fire Department, Inc.	Fire Station	3715 Jackson King Rd	Willow Spring	Johnston	27592	X
Corinth-Holder Volunteer Fire Department, Inc.	Fire Station	5734 Lake Wendell Rd	Zebulon	Johnston	27597	X
Corinth-Holder Volunteer Fire Department, Inc.	Fire Station	11432 Nc Hwy 39 N	Zebulon	Johnston	27597	X
Personal Home Care Specialists, Inc.	Home Care	P.O. Box 1292	Benson	Johnston	27504	X
Care Focus	Home Care	Po Box 1785	Burlington	Johnston	27216	X
Home Health And Hospice Care, Inc.	Home Care	2402 Wayne Memorial Drive	Goldsboro	Johnston	27534	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Alpha-Omega Health, Inc.	Home Care	6036 Six Forks Road	Raleigh	Johnston	27609	X
Affinity Health Services, Inc.	Home Care	P. O. Box 1404	Smithfield	Johnston	27577	X
Community-Based Learning Alternatives Center, Inc.	Home Care	P.O. Box 1629	Smithfield	Johnston	27577	X
Community-Based Learning Alternatives Center, Inc.	Home Care	P.O. Box 1629	Smithfield	Johnston	27577	X
Continuum Home Care Of Smithfield	Home Care	P. O. Box 2390	Smithfield	Johnston	27577	X
Helping Hands Home Care, Inc.	Home Care	P. O. Box 1634	Smithfield	Johnston	27577	X
Johnston County Council On Aging, Inc.	Home Care	P. O. Box 2235	Smithfield	Johnston	27577	X
Johnston Memorial Home Care And Hospice	Home Care	P O Box 1376	Smithfield	Johnston	27577	X
Action Health Staffing	Home Care	P. O. Box 158	Wilson	Johnston	27894	X
Mclamb's Rest Home	Home For The Aged	998 Five Points Road	Benson	Johnston	27504	X
Mclamb's Rest Home #2	Home For The Aged	998 Five Points Road	Benson	Johnston	27504	X
Oasis #1	Home For The Aged	Po Box 636	Benson	Johnston	27504	X
Oasis #2	Home For The Aged	P O Box 636	Benson	Johnston	27504	X
Oasis #3	Home For The Aged	P O Box 636	Benson	Johnston	27504	X
Oasis #4	Home For The Aged	P.O. Box 636	Benson	Johnston	27504	X
Oasis #5	Home For The Aged	P.O. Box 636	Benson	Johnston	27504	X
Oasis #6	Home For The Aged	P.O. Box 636	Benson	Johnston	27504	X
Azalea Village	Home For The Aged	P. O. Box 627	Clayton	Johnston	27520	X
The Oasis Of Four Oaks	Home For The Aged	P O Box 759	Four Oaks	Johnston	27524	X
Progressive Care	Home For The Aged	160 Haven Lane	Princeton	Johnston	27569	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Autumn Acres Of Johnston County, Inc.	Home For The Aged	474 Jerry Road	Selma	Johnston	27576	X
Autumn Care Of Johnston County, Inc.	Home For The Aged	474 Jerry Road	Selma	Johnston	27576	X
Autumn Home Care Of Johnston County, Inc.	Home For The Aged	474 Jerry Road	Selma	Johnston	27576	X
Autumn Wind Of Smithfield, Inc.	Home For The Aged	4302 Nc 210	Smithfield	Johnston	27577	X
Carolina House Of Smithfield	Home For The Aged	830 Berkshire Road	Smithfield	Johnston	27577	0.2 PCT ANNUAL CHANCE FLOOD HAZARD
Christian Care Of Smithfield #1	Home For The Aged	P O Box 269	Smithfield	Johnston	27577	0.2 PCT ANNUAL CHANCE FLOOD HAZARD
Christian Care Of Smithfield #Ii	Home For The Aged	P O Box 269	Smithfield	Johnston	27577	0.2 PCT ANNUAL CHANCE FLOOD HAZARD
Classic Care Homes	Home For The Aged	101 Annie Parker Circle	Smithfield	Johnston	27577	X
Classic Care Homes 103	Home For The Aged	101 Annie Parker Circle	Smithfield	Johnston	27577	X
Classic Care Homes 105	Home For The Aged	101 Annie Parker Circle	Smithfield	Johnston	27577	X
Meadowview Assisted Living Center	Home For The Aged	Po Box 2500	Smithfield	Johnston	27577	X
Mclamb's Rest Home 2	Homes For The Elderly Without Nursing Care	998 Five Points Road	Benson	Johnston	27504	X
Mclamb's Rest Home	Homes For The Elderly Without Nursing Care	998 Five Points Road	Benson	Johnston	27504	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Cardinal Care Assisted Living Village Limited Liability Company 1	Homes For The Elderly Without Nursing Care	606 East Morris Avenue	Benson	Johnston	27504	X
Cardinal Care Assisted Living Village Limited Liability Company 2	Homes For The Elderly Without Nursing Care	606 East Morris Avenue	Benson	Johnston	27504	X
Cardinal Care Assisted Living Village Limited Liability Company 3	Homes For The Elderly Without Nursing Care	606 East Morris Avenue	Benson	Johnston	27504	X
Cardinal Care Assisted Living Village Limited Liability Company 4	Homes For The Elderly Without Nursing Care	606 East Morris Avenue	Benson	Johnston	27504	X
Cardinal Care Assisted Living Village Limited Liability Company 5	Homes For The Elderly Without Nursing Care	606 East Morris Avenue	Benson	Johnston	27504	X
Cardinal Care Assisted Living Village Limited Liability Company 6	Homes For The Elderly Without Nursing Care	606 East Morris Avenue	Benson	Johnston	27504	X
Clayton House	Homes For The Elderly Without Nursing Care	145 Dairy Road	Clayton	Johnston	27520	X
Four Oaks Assisted Living	Homes For The Elderly Without Nursing Care	565 Boyette Rd	Four Oaks	Johnston	27524	X
Progressive Care	Homes For The Elderly Without Nursing Care	160 Haven Lane	Princeton	Johnston	27569	X
Autumn Home Care Of Johnston County Inc Iii	Homes For The Elderly Without Nursing Care	474 Jerry Road	Selma	Johnston	27576	X
Autumn Home Care Of Johnston County Inc Ii	Homes For The Elderly Without Nursing Care	474 Jerry Road	Selma	Johnston	27576	X
Autumn Home Care Of Johnston County Inc I	Homes For The Elderly Without Nursing Care	474 Jerry Road	Selma	Johnston	27576	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Classic Care Homes 105	Homes For The Elderly Without Nursing Care	101 Annie Parker Circle	Smithfield	Johnston	27577	X
Classic Care Homes	Homes For The Elderly Without Nursing Care	101 Annie Parker Circle	Smithfield	Johnston	27577	X
Carolina House Of Smithfield	Homes For The Elderly Without Nursing Care	830 Berkshire Road	Smithfield	Johnston	27577	X
Autumn Wind Assisted Living	Homes For The Elderly Without Nursing Care	4302 Nc Highway 210	Smithfield	Johnston	27577	X
Meadowview Assisted Living Center	Homes For The Elderly Without Nursing Care	250 Nc Highway 210	Smithfield	Johnston	27577	X
Smithfield House East	Homes For The Elderly Without Nursing Care	303 Hospital Road	Smithfield	Johnston	27577	AE
Smithfield House West	Homes For The Elderly Without Nursing Care	303 Hospital Road	Smithfield	Johnston	27577	AE
Classic Care Homes 103	Homes For The Elderly Without Nursing Care	101 Annie Parker Circle	Smithfield	Johnston	27577	X
Community Home Care & Hospice	Hospice	5301 Morganton Road	Fayettevil le	Johnsto n	28314	X
Johnston Memorial Hospital	Hospital	P O Box 1376	Smithfiel d	Johnsto n	27577	X
Annie W. Bynum Therapeutic Home	Mental Health Homes	5848 Meadowbrook Road	Benson	Johnsto n	27504	X
Benson Vocational Center	Mental Health Homes	501-C South Wall Street	Benson	Johnsto n	27504	X
Canterbury Road Home	Mental Health Homes	503 S. Wall Street	Benson	Johnsto n	27504	X
Country Manor Group Home	Mental Health Homes	503 South Wall Street	Benson	Johnsto n	27504	X
Johnston Counseling Services	Mental Health Homes	102g North Market Street	Benson	Johnsto n	27504	X
Altman Therapeutic Home	Mental Health Homes	214 Dogwood Ave.	Clayton	Johnsto n	27520	X
Bridge	Mental Health Homes	2318 Huntsbridge	Clayton	Johnsto n	27520	X
Godwin Family Care	Mental Health Homes	471 Clark Pond Road	Clayton	Johnsto n	27576	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Kathy A. Brooks And Jamie L. Kehoe	Mental Health Homes	209 Plantation Road	Clayton	Johnston	27520	X
Mary And Gaddius Barnes	Mental Health Homes	1850 Barbour Mill Road	Clayton	Johnston	27520	X
Rose Of Sharon Group Home	Mental Health Homes	161 Kentucky Derby Dr.	Clayton	Johnston	27520	X
Sanders Home	Mental Health Homes	677 Slate Top Road	Clayton	Johnston	27520	X
Serenity House	Mental Health Homes	120 Lake Point Drive	Clayton	Johnston	27520	X
Serenity Place	Mental Health Homes	120 Lake Point Drive	Clayton	Johnston	27520	X
H&S Group Care, Inc.	Mental Health Homes	621 Pearl Street	Fayetteville	Johnston	28303	X
Brooks Home For Boys	Mental Health Homes	4351 Main Street Suite 207	Harrisburg	Johnston	28075	X
Cora's Home For Girls	Mental Health Homes	4351 Main Street Suite 207	Harrisburg	Johnston	28075	X
E.R. Davis Home	Mental Health Homes	4351 Main Street Ste. 207	Harrisburg	Johnston	28075	X
Walnut Group Home	Mental Health Homes	4351 Main Street Suite 207	Harrisburg	Johnston	28075	X
Cornerstone Residential Services	Mental Health Homes	301 Darden Street	Kenly	Johnston	27542	X
Green Home	Mental Health Homes	55 Old Stancil Road	Kenly	Johnston	27542	X
Hammersley Therapeutic Foster Home	Mental Health Homes	2375 Beulahtown Road	Kenly	Johnston	27542	X
Hinnant Therapeutic Home	Mental Health Homes	6676 Nc 222 West	Kenly	Johnston	27542	X
Ida's Place Of Caring	Mental Health Homes	P O Box 1107	Kenly	Johnston	27542	X
Mapp Home	Mental Health Homes	3120 Nc 222 West	Kenly	Johnston	27542	X
Taylor Home	Mental Health Homes	7144 Hinnant Edgerton Road	Kenly	Johnston	27542	X
Barbara's Whitley Group Home	Mental Health Homes	182 Whitley Road	Middlesex	Johnston	28557	X
Jd Bagley Therapeutic Home	Mental Health Homes	204 Falcon Run	Middlesex	Johnston	27557	X
Barbara Dunn	Mental Health Homes	10 Sunnybrook Road	Raleigh	Johnston	27610	X
Brogden Home	Mental Health Homes	6036 Six Forks Road	Raleigh	Johnston	27609	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Royal Home	Mental Health Homes	7406-I Chapel Hill Road	Raleigh	Johnston	27607	X
The Lighthouse	Mental Health Homes	Po Box 24914	Raleigh	Johnston	27611	AE
Ward Home	Mental Health Homes	6036 Six Forks Road	Raleigh	Johnston	27609	X
Voca-Greenwood Group Home	Mental Health Homes	301 South Church Steet Ste. 280	Rocky Mount	Johnston	27804	X
Voca-Laurelwood	Mental Health Homes	301 South Church Street Ste. 280	Rocky Mount	Johnston	27804	X
Brown Therapeutic Home	Mental Health Homes	895 Garner Rd.	Selma	Johnston	27576	X
Day By Day Treatment Center	Mental Health Homes	1101 River Road	Selma	Johnston	27576	X
Lane Home	Mental Health Homes	P.O. Box 1065	Selma	Johnston	27576	X
Matt And Diana Ruppert Therapeutic Home	Mental Health Homes	15 Ormand Lane	Selma	Johnston	27576	X
Shirley I. Fasion Therapeutic Home	Mental Health Homes	180 Thorne Rd.	Selma	Johnston	27576	X
Speller Therapeutic Home	Mental Health Homes	103 Shady Grove Court	Selma	Johnston	27576	AE
Stancil Care Home	Mental Health Homes	195 Montgomery Heights Road	Selma	Johnston	27576	X
Stancil's Therapeutic Home	Mental Health Homes	703 S. Pollock St.	Selma	Johnston	27576	X
Wall's Therapeutic Home	Mental Health Homes	52 Brown Wall Rd.	Selma	Johnston	27576	X
Community Based Learning Alternatives Center, Inc.	Mental Health Homes	1300 West Market Street	Smithfield	Johnston	27577	X
Exodus House	Mental Health Homes	P.O. Box 1078	Smithfield	Johnston	27577	X
Heath Avenue Home	Mental Health Homes	105 East Heath Avenue	Smithfield	Johnston	27577	0.2 PCT ANNUAL CHANCE FLOOD HAZARD
Jenkins Therapeutic Home	Mental Health Homes	14776 Old Sander Road	Smithfield	Johnston	27577	X
Jirah House	Mental Health Homes	P.O. Box 1078	Smithfield	Johnston	27577	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Johnston Counseling Services	Mental Health Homes	200 Fareway Drive, Suite One	Smithfield	Johnston	27577	X
Johnston Counseling Services/Reap	Mental Health Homes	200 Fareway Drive Suite 1	Smithfield	Johnston	27577	X
Johnston County Area Mental Health Center	Mental Health Homes	Po Box 411	Smithfield	Johnston	27577	X
Johnston County Group Home #2 Smithfield	Mental Health Homes	Po Box 1768	Smithfield	Johnston	27577	X
Johnston County Group Home #3	Mental Health Homes	Po Box 1768	Smithfield	Johnston	27577	X
Johnston County Respite Care Home	Mental Health Homes	3310 Nc 210 Hwy.	Smithfield	Johnston	27577	X
Meeting Street Substance Abuse Services	Mental Health Homes	P.O. Box 15	Smithfield	Johnston	27577	X
Rainbow House	Mental Health Homes	P.O. Box 1078	Smithfield	Johnston	27577	X
Unity House	Mental Health Homes	Po Box 411	Smithfield	Johnston	27577	X
Kenly House	Mental Health Homes	433 South Meeting Street	Statesville	Johnston	28677	X
Tender Love Independent Home Care	Mental Health Homes	Po Box 328	Zebulon	Johnston	27597	X
Liberty Commons Nsg. And Rehab. Ctr. Of Johnston Ct	Nursing Home Facilit	2315 Highway 242 North	Benson	Johnston	0	X
Brian Center Health & Retirement/Clayton	Nursing Home Facilit	204 Dairy Road	Clayton	Johnston	0	X
Britthaven Of Smithfield	Nursing Home Facilit	515 Barbour Road	Smithfield	Johnston	0	X
Smithfield Manor, Inc.	Nursing Home Facilit	902 Berkshire Road	Smithfield	Johnston	0	X
Liberty Commons Nursing And Rehabilitation Center Of Johnston County	Nursing Homes	2315 Nc Highway 242 North	Benson	Johnston	27504	X
Brian Center Health And Retirement - Clayton	Nursing Homes	204 Dairy Road	Clayton	Johnston	27520	X
Smithfield Manor	Nursing Homes	902 Berkshire Road	Smithfield	Johnston	27577	X
Britthaven Of Smithfield	Nursing Homes	515 Barbour Road	Smithfield	Johnston	27577	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Tarheel Medical Staffing	Nursing Pool	1853 Progressive Church Road	Princeton	Johnston	27569	X
Mcgee's Crossroads Elem	Regular School	10330 Hwy 50 North	Angier	Johnston	27501	X
Meadow School	Regular School	7507 Nc Hwy 50 S	Benson	Johnston	27504	X
Benson Elementary	Regular School	2040 Hwy 50 N	Benson	Johnston	27504	X
Benson Middle	Regular School	1600 N Wall Street	Benson	Johnston	27504	X
Mcgee's Crossroads Middle	Regular School	13353 Nc Highway 210	Benson	Johnston	27504	X
West Johnston High	Regular School	5935 Raleigh Road	Benson	Johnston	27504	X
East Clayton Elementary	Regular School	2075 Nc Highway 42 East	Clayton	Johnston	27527	X
Clayton High	Regular School	600 S Fayetteville St	Clayton	Johnston	27520	X
West Clayton Elementary	Regular School	1012 S Lombard St	Clayton	Johnston	27520	X
Cleveland Elementary	Regular School	10225 Cleveland Rd	Clayton	Johnston	27520	X
Cooper Elementary	Regular School	849 North Mial St	Clayton	Johnston	27520	X
Clayton Middle	Regular School	490 Guy Rd	Clayton	Johnston	27520	X
Riverwood Elementary	Regular School	108 Athletic Club Blvd	Clayton	Johnston	27527	X
Riverwood Middle	Regular School	204 Athletic Club Blvd	Clayton	Johnston	27527	X
River Dell Elementary	Regular School	12100 Buffalo Road	Clayton	Johnston	27527	X
Powhatan Elementary	Regular School	3145 Vinson Rd	Clayton	Johnston	27520	X
Cleveland High	Regular School	1892 Polenta Rd	Clayton	Johnston	27520	X
Four Oaks Elementary	Regular School	180 Hatcher St	Four Oaks	Johnston	27524	X
South Johnston High	Regular School	10381 Us Hwy 301 S	Four Oaks	Johnston	27524	X
Four Oaks Middle	Regular School	1475 Boyette Road	Four Oaks	Johnston	27524	X
Cleveland Middle	Regular School	2323 Cornwallis Road	Garner	Johnston	27529	X
Polenta Elementary	Regular School	105 Josephine Road	Garner	Johnston	27529	X
West View Elementary	Regular School	11755 Cleveland Road	Garner	Johnston	27529	X
North Johnston High	Regular School	5915 Us Hwy 301 N	Kenly	Johnston	27542	X
Glendalekenly Elementary	Regular School	2001 Bay Valley Rd	Kenly	Johnston	27542	X
North Johnston Middle	Regular School	301 E Main St	Micro	Johnston	27555	X
Micropine Level Elementary	Regular School	304 Blanche Street	Pine Level	Johnston	27568	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Princeton High	Regular School	101 Dr Donnie H Jones Jr Bvd	Princeton	Johnston	27569	X
Princeton Elementary	Regular School	650 Holt's Pond Rd	Princeton	Johnston	27569	X
Selma Middle School	Regular School	1533 Hwy 301 N	Selma	Johnston	27576	X
Selma Elementary	Regular School	311 W Richardson St	Selma	Johnston	27576	X
Smithfieldselma High	Regular School	700 Booker Dairy Rd	Smithfield	Johnston	27577	X
Smithfield Middle	Regular School	1455 Buffalo Rd	Smithfield	Johnston	27577	X
West Smithfield Elementary	Regular School	2665 Galilee Road	Smithfield	Johnston	27577	X
South Smithfield Elementary	Regular School	201 W Sanders St	Smithfield	Johnston	27577	X
Johnston Co Middle College	Regular School	245 College Rd	Smithfield	Johnston	27577	X
Neuse Charter School	Regular School	909 Booker Dairy Rd	Smithfield	Johnston	27577	X
Johnston Co Early College Academy	Regular School	235 College Rd	Smithfield	Johnston	27520	X
Archer Lodge Middle	Regular School	762 Wendell Rd	Wendell	Johnston	27591	X
Corinth Holders High	Regular School	6875 Applewhite Rd	Wendell	Johnston	27591	X
Dixon Road Elementary	Regular School	835 Dixon Road	Willow Springs	Johnston	27592	X
Wilson's Mills Elementary	Regular School	4654 Wilson's Mills Rd	Wilson's Mills	Johnston	27593	X
Corinthholders Elementary	Regular School	3976 Nc 231	Zebulon	Johnston	27597	X
Clayton Emergency Medical Services / Clayton Area Rescue	Rescue Services, Medical	317 South Robertson Street	Clayton	Johnston	27520	X
Selma Rescue Squad	Rescue Services, Medical	201 North Webb Street	Selma	Johnston	27576	X
Johnston County Emergency Management		210 Bridge St	Smithfield	Johnston	27577	X
Bragg Street Academy	Alternative Education	504 Bragg Street	Sanford	Lee	27330	X
Warren Williams Elementary Alternative	Alternative Education	901 Lawrence St	Sanford	Lee	27330	X
Cape Fear Rural Fire Department Incorporated	Ambulance And Fire Service Combined	100 Johnson Street	Broadway	Lee	27505	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Sanford Fire Department Station 2	Ambulance And Fire Service Combined	2220 Woodland Avenue	Sanford	Lee	27330	X
Deep River Rural Fire Department Incorporated	Ambulance And Fire Service Combined	5107 Deep River Road	Sanford	Lee	27330	X
Tramway Rural Fire Department Incorporated	Ambulance And Fire Service Combined	5900 Mcdaniel Drive	Sanford	Lee	27332	X
Sanford Fire Department Station 3	Ambulance And Fire Service Combined	900 Cool Springs Road	Sanford	Lee	27330	X
Carolina Trace Volunteer Fire Department Incorporated	Ambulance And Fire Service Combined	37 Indian Trail	Sanford	Lee	27332	X
Sanford Fire Department - Central Station	Ambulance And Fire Service Combined	512 Hawkins Avenue	Sanford	Lee	27330	X
Central Carolina Advanced Life Support	Ambulance Services, Air Or Ground	1218 Central Drive	Sanford	Lee	27330	X
Central Carolina Hosp Cardiac Rehabilitation Progra	Cardiac Rehabilitati	1135 Carthage St	Sanford	Lee	27330	AE
Floyd L Knight Children Center	Exceptional Children	607 W Mcintosh St	Sanford	Lee	27330	X
Keller's Family Care Home	Family Care	P. O. Box 640	Sanford	Lee	27331	X
L & J Family Care Home	Family Care	P.O. Box 2152	Sanford	Lee	27330	X
Mary's Family Care Home	Family Care	308 Mciver Street	Sanford	Lee	27330	X
Lemon Springs Volunteer Fire Department	Fire Station	Greenwood Road And Lemon Springs Road	Lemon Springs	Lee	28355	X
Lemon Springs Volunteer Fire Department	Fire Station	Pine Forrest And Us 1	Lemon Springs	Lee	28355	X
Cape Fear Rural Fire Department, Inc.	Fire Station	100 Johnson St.	Sanford	Lee	27330	X
Cape Fear Rural Fire Department, Inc.	Fire Station	5713 Buckhorn Rd	Sanford	Lee	27330	X
Carolina Trace Volunteer Fire Department, Inc.	Fire Station	37-A Indian Trail	Sanford	Lee	27332	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Deep River Rural Fire Department, Inc.	Fire Station	5107 Deep River Rd.	Sanford	Lee	27330	X
Deep River Rural Fire Department, Inc.	Fire Station	3316 Lower Moncure Rd	Sanford	Lee	27330	X
Northview Fire Department, Inc.	Fire Station	104 Perkinson Rd.	Sanford	Lee	27330	X
Northview Fire Department, Inc.	Fire Station	804 Cumnock Road	Sanford	Lee	27330	X
Pocket Volunteer Fire Department	Fire Station	60 Pickard Road	Sanford	Lee	27330	X
Pocket Volunteer Fire Department	Fire Station	478 Blackstone Rd	Sanford	Lee	27330	X
Sanford Fire Department	Fire Station	512 Hawkins Ave	Sanford	Lee	27330	X
Sanford Fire Department	Fire Station	2220 Woodland Ave	Sanford	Lee	27330	X
Sanford Fire Department	Fire Station	900 Cool Springs Rd	Sanford	Lee	27330	X
Tramway Rural Fire Department, Incorporated	Fire Station	5900 Mcdaniel Dr.	Sanford	Lee	27332	X
Community Home Care & Hospice	Home Care	5301 Morganton Road	Fayettevil le	Lee	28314	X
Firsthealth Home Care	Home Care	181a Westgate Drive, Suite A	Pinehurst	Lee	27376	X
First Choice Home Care	Home Care	502 Carthage Street	Sanford	Lee	27330	X
Liberty Home Care	Home Care	1005 Carthage Street	Sanford	Lee	27330	X
Parkview In-Home Aide Services, Inc.	Home Care	P. O. Box 4057	Sanford	Lee	0	X
Quality Home Healthcare, Inc.	Home Care	106 Park Avenue	Sanford	Lee	27330	X
Total Life Care, Inc.	Home Care	Po Box 3106	Sanford	Lee	27331	X
Ashewood Estates Retirement Center	Home For The Aged	1115 Carthage Street	Sanford	Lee	27330	X
Gentle Care Residential Facility	Home For The Aged	Po Box 4911	Sanford	Lee	28331	X
Oakhaven Home	Home For The Aged	P. O. Box 640	Sanford	Lee	27331	X
Oakhaven Ii	Home For The Aged	P. O. Box 640	Sanford	Lee	0	X
Parkview Retirement Center, Inc.	Home For The Aged	P O Box 4057	Sanford	Lee	0	0.2 PCT ANNUAL CHANCE FLOOD

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
						HAZARD
Victorian	Home For The Aged	1107 Carthage St.	Sanford	Lee	27350	X
Ashewood Estates Retirement Center	Homes For The Elderly Without Nursing Care	1115 Carthage Street	Sanford	Lee	27330	X
Parkview Retirement Village	Homes For The Elderly Without Nursing Care	1801 Wicker Street	Sanford	Lee	27330	X
Victorian Manor	Homes For The Elderly Without Nursing Care	1107 Carthage Street	Sanford	Lee	27330	X
Keller's Oakhaven Rest Home	Homes For The Elderly Without Nursing Care	700 Westover Drive	Sanford	Lee	27330	X
Keller's Oakhaven Rest Home Ii	Homes For The Elderly Without Nursing Care	700 Westover Drive	Sanford	Lee	27330	X
Central Carolina Hospital	Hospital	1135 Carthage St	Sanford	Lee	27330	X
Hickory Ii Group Home	Mental Health Homes	2420 Reliance Avenue	Apex	Lee	27502	X
Voca-Sixth Street Group Home	Mental Health Homes	2420 Reliance Ave.	Apex	Lee	27502	X
Broadway	Mental Health Homes	503 South Wall Street	Benson	Lee	27504	X
Clearwater	Mental Health Homes	501-C South Wall Street	Benson	Lee	27504	X
Skill Creations Of Sanford	Mental Health Homes	P.O. Box 1664	Goldsboro	Lee	0	X
Pri Counseling Services (Of Sanford)	Mental Health Homes	Po Box 747	Lillington	Lee	27546	0.2 PCT ANNUAL CHANCE FLOOD HAZARD
Janice James Home	Mental Health Homes	3125 Poplarwood Court-Ste. 300	Raleigh	Lee	27604	X
John Rey Irt	Mental Health Homes	P.O. Box 37399	Raleigh	Lee	27627	X
Brookhaven Group Home	Mental Health Homes	108 Seawell St.	Sanford	Lee	27332	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Carbonton Road Facility-Sanford	Mental Health Homes	130 Carbonton Road	Sanford	Lee	27330	X
Center For Independent Living	Mental Health Homes	209 Cole Street	Sanford	Lee	27330	X
Harbour Clinic	Mental Health Homes	138 S. Steele Street, 2nd Floor	Sanford	Lee	27330	X
Hooker Home	Mental Health Homes	4218 Carbonton Rd.	Sanford	Lee	27330	X
Lee County Group Home Ii	Mental Health Homes	P O Box 1373	Sanford	Lee	27330	X
Lee County Group Home, Inc. # I	Mental Health Homes	Po Box 1373	Sanford	Lee	27330	X
Lee County Resource Center	Mental Health Homes	P.O. Box 57	Sanford	Lee	27330	X
Pine Ridge Group Home	Mental Health Homes	739 Arthur Maddox Road	Sanford	Lee	27330	X
Swann Therapeutic Home	Mental Health Homes	704 Villa Circle	Sanford	Lee	27330	X
T.L.C. Home, Inc.	Mental Health Homes	1775 Hawkins Avenue	Sanford	Lee	27330	X
Terry Wicker	Mental Health Homes	1523 Maine Circle	Sanford	Lee	27330	X
Ucp Lee County Group Home	Mental Health Homes	4334 Lee Avenue	Sanford	Lee	27330	X
Woodrow Scoggins Residential Treatment Center	Mental Health Homes	P. O. Box 3753	Sanford	Lee	27330	X
Convalescent Center Of Lee County, Inc.	Nursing Home Facilit	714 Westover Drive	Sanford	Lee	0	X
Convalescent Center Of Sanford, Inc.	Nursing Home Facilit	2702 Farrell Road	Sanford	Lee	27330	X
Lee County Nursing And Rehabilitation Center	Nursing Homes	714 Westover Drive	Sanford	Lee	27330	X
Liberty Commons Nursing And Rehabilitation Center Of Lee County	Nursing Homes	310 Commerce Drive	Sanford	Lee	27332	X
Sanford Health And Rehabilitation Company	Nursing Homes	2702 Farrell Road	Sanford	Lee	27330	X
Mega Force Staffing	Nursing Pool	P. O. Box 53449	Fayettevil le	Lee	28305	X
Broadway Elementary	Regular School	307 S Main St	Broadway	Lee	27505	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
J R Ingram Jr Elementary	Regular School	3309 Wicker St	Sanford	Lee	27330	X
West Lee Middle	Regular School	3301 Wicker St	Sanford	Lee	27330	X
Greenwood Elementary	Regular School	1127 Greenwood Rd	Sanford	Lee	27330	X
Benjamin T Bullock Elem	Regular School	1410 Mcneill Road	Sanford	Lee	27330	X
Deep River Elementary	Regular School	4000 Deep River Rd	Sanford	Lee	27330	X
East Lee Middle	Regular School	1337 Broadway Rd	Sanford	Lee	27330	X
Lee County High	Regular School	1708 Nash Street	Sanford	Lee	27330	X
J Glenn Edwards Elementary	Regular School	3115 Cemetery Rd	Sanford	Lee	27332	X
Tramway Elementary	Regular School	360 Center Church Road	Sanford	Lee	27330	X
Lee Early College	Regular School	1105 Kelly Drive	Sanford	Lee	27330	X
Southern Lee High School	Regular School	2301 Tramway Road	Sanford	Lee	27332	X
Sanlee Middle School	Regular School	2309 Tramway Rd	Sanford	Lee	27332	X
Lee County Emergency Management		225 E Weatherspoon St	Sanford	Lee	27331	AE
Pinckney Academy	Alternative Education	160 Pinckney Road	Carthage	Moore	28327	X
Circle V Fire Department Incorporated Station 2	Ambulance And Fire Service Combined	205 Murdock C Road	Cameron	Moore	28326	X
Cameron Rural Fire Department Incorporated	Ambulance And Fire Service Combined	170 Red Hill Road	Cameron	Moore	28326	X
Carthage Volunteer Fire Department	Ambulance And Fire Service Combined	4396 United States Highway 501	Carthage	Moore	28327	X
Eagle Springs Volunteer Fire Department Incorporated	Ambulance And Fire Service Combined	1932 State Highway 211	Eagle Springs	Moore	27242	X
Pinebluff Fire Department	Ambulance And Fire Service Combined	110 North Pecan Street	Pinebluff	Moore	28373	X
Robbins Fire Department	Ambulance And Fire Service Combined	151 Southeast Broad Street	Robbins	Moore	27325	X
Crains Creek Volunteer Fire	Ambulance And Fire Service Combined	4525 Lobelia Road	Vass	Moore	28394	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Department Incorporated						
Circle V Fire Department Incorporated Station 1 - Headquarters	Ambulance And Fire Service Combined	131 South Alma Street	Vass	Moore	28394	X
Seven Lakes Volunteer Fire Department Incorporated	Ambulance And Fire Service Combined	718 Seven Lakes Drive	West End	Moore	27376	X
Whispering Pines Fire Department	Ambulance And Fire Service Combined	16 Hardee Lane	Whisperin g Pines	Moore	28327	X
Moore County Emergency Medical Services Base 6	Ambulance Services, Air Or Ground	800 Holly Street	Aberdeen	Moore	28315	X
Moore County Emergency Medical Services Base 2	Ambulance Services, Air Or Ground	781 Grady Road	Cameron	Moore	28326	X
Moore County Emergency Medical Services Base 5	Ambulance Services, Air Or Ground	7865 State Highway 22	Carthage	Moore	28327	X
Moore County Emergency Medical Services Base 4	Ambulance Services, Air Or Ground	300 Mccaskill Road	Pinehurst	Moore	28374	X
Moore County Emergency Medical Services Base 1	Ambulance Services, Air Or Ground	1594 North Moore Road	Robbins	Moore	27325	X
Moore County Emergency Medical Services Base 7	Ambulance Services, Air Or Ground	500 West Pennsylvania Avenue	Southern Pines	Moore	28387	X
Moore County Emergency Medical Services Base 8	Ambulance Services, Air Or Ground	211 Main Street	Vass	Moore	28394	X
Moore County Emergency Medical Services Base 3	Ambulance Services, Air Or Ground	714 Seven Lakes Drive	West End	Moore	27376	X
Seven Lakes Emergency Medical Services	Ambulance Services, Air Or Ground	714 Seven Lakes Drive	West End	Moore	27376	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Healthsouth Surgery Center Of Southern Pines	Ambulatory Surgery	2170 Midland Rd.	Southern Pines	Moore	28388	X
Cardinal Cottage	Family Care	155 Blake Boulevard	Pinehurst	Moore	28374	X
Savannah Family Care	Family Care	128 North Carlisle Street	Southern Pines	Moore	28387	X
Mckeithen Family Care Home	Family Care	P O Box 163	Vass	Moore	28394	X
Aberdeen Fire And Rescue Department	Fire And Rescue Service	800 Holly Street	Aberdeen	Moore	28315	X
Highfalls Fire And Rescue	Fire And Rescue Service	1281 State Highway 22	Highfalls	Moore	27259	X
Southern Pines Fire And Rescue	Fire And Rescue Service	500 West Pennsylvania Avenue	Southern Pines	Moore	28387	X
West End Fire And Rescue	Fire And Rescue Service	4203 State Highway 73	West End	Moore	27376	X
Aberdeen Fire Department	Fire Station	800 Holly St.	Aberdeen	Moore	28315	X
Aberdeen Fire Department	Fire Station	10861 Nc 211 Hwy Est	Aberdeen	Moore	28315	X
Cypress Pointe Fire And Rescue	Fire Station	170 Red Hill Rd	Cameron	Moore	28326	X
Cypress Pointe Fire And Rescue	Fire Station	205 Murdock C Rd	Cameron	Moore	28326	X
Carthage Fire Department	Fire Station	4396 Hwy 15-501	Carthage	Moore	28327	X
Highfalls Fire And Rescue, Incorporated	Fire Station	2024 Glendon Carthage Road	Carthage	Moore	28327	X
Southern Pines Fire & Rescue Department	Fire Station	7850 Nc Hwy 22	Carthage	Moore	28327	X
Eagle Springs Volunteer Fire Department, Inc.	Fire Station	1932 Nc Hwy 211	Eagle Springs	Moore	27242	X
West End Fire And Rescue, Inc.	Fire Station	5 Town Hall Drive	Jackson Springs	Moore	27281	X
Pinebluff Fire Department	Fire Station	580 South Walnut	Pinebluff	Moore	28373	X
Village Of Pinehurst Fire Department, Inc.	Fire Station	405 Magnolia Road	Pinehurst	Moore	28374	X
Village Of Pinehurst Fire Department, Inc.	Fire Station	15 Parker Ln	Pinehurst	Moore	28374	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Highfalls Fire And Rescue, Incorporated	Fire Station	170 North Moore Road	Robbins	Moore	27325	X
Robbins Fire Department	Fire Station	301 Sw Branson Circle	Robbins	Moore	27325	X
Westmoore Volunteer Fire Protective Association, Inc.	Fire Station	1211 Dover Church Road	Seagrove	Moore	27341	X
Southern Pines Fire & Rescue Department	Fire Station	500 West Pennsylvania Ave	Southern Pines	Moore	28387	X
Crains Creek Volunteer Fire Department, Inc.	Fire Station	4525 Lobelia Rd	Vass	Moore	28354	X
Cypress Pointe Fire And Rescue	Fire Station	131 Alma St	Vass	Moore	28394	X
Cypress Pointe Fire And Rescue	Fire Station	295 Youngs Road	Vass	Moore	28394	X
Eastwood Volunteer Fire Department, Inc.	Fire Station	980 Hwy 73	West End	Moore	27376	X
Seven Lakes Fire, Rescue, And Ems	Fire Station	718 Seven Lakes Drive	West End	Moore	27376	X
West End Fire And Rescue, Inc.	Fire Station	4203 Nc 73	West End	Moore	27376	X
Whispering Pines Fire Rescue Department	Fire Station	16 Hardee Lane	Whisperin g Pines	Moore	28327	X
American Health Services	Home Care	750 N. Sandhills Blvd.	Aberdeen	Moore	28315	X
Specialized Services & Personnel, Inc.	Home Care	P. O. Box 1356	Aberdeen	Moore	28315	X
Moore County Department Of Aging	Home Care	P O Box 487	Carthage	Moore	28327	X
Healthkeeperz	Home Care	Po Box 1030	Pembrok e	Moore	28372	X
Firsthealth Hospice & Palliative Care	Home Care	5 Aviemore Drive	Pinehurst	Moore	28374	X
Liberty Home Care	Home Care	80 Memorial Drive	Pinehurst	Moore	28374	X
Quail Haven Village	Home Care	155 Blake Blvd.	Pinehurst	Moore	28374	X
Community Residential Services, Inc.	Home Care	P. O. Box 1322	Southern Pines	Moore	28387	X
Miles Family Care	Home Care	165 Wright Road	Vass	Moore	28394	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Tara Plantation Of Carthage	Home For The Aged	820 South Mcneill Street	Carthage	Moore	28327	X
The Regency On Morganton	Home For The Aged	Jmd Management, Llc	Cumming	Moore	30041	X
Southern Pines Manor	Home For The Aged	Po Box 1721	Fayettevil le	Moore	0	X
Alterra Clare Bridge Of Southern Pines	Home For The Aged	115 Brucewood Road	Southern Pines	Moore	28387	X
Alterra Sterling House Of Southern Pines	Home For The Aged	101 Brucewood Road	Southern Pines	Moore	28387	X
Magnolia Gardens	Home For The Aged	594 Murray Hill Road	Southern Pines	Moore	28387	X
Heritage Care Of Seven Lakes	Home For The Aged	P O Box 558	West End	Moore	27376	X
Tara Plantation Of Carthage	Homes For The Elderly Without Nursing Care	820 Mcneill Street	Carthage	Moore	28327	X
Carolina House Of Pinehurst	Homes For The Elderly Without Nursing Care	17 Regional Drive	Pinehurst	Moore	28374	X
Fox Hollow Senior Living Community	Homes For The Elderly Without Nursing Care	190 Fox Hollow Court	Pinehurst	Moore	28374	X
Southern Pines Manor	Homes For The Elderly Without Nursing Care	605 N Bennett Street	Southern Pines	Moore	28387	X
Magnolia Gardens	Homes For The Elderly Without Nursing Care	594 Murray Hill Road	Southern Pines	Moore	28387	X
The Coventry At Saint Joseph Of The Pines	Homes For The Elderly Without Nursing Care	105 Gossman Road	Southern Pines	Moore	28387	X
Elmcroft Of Southern Pines	Homes For The Elderly Without Nursing Care	101 Brucewood Road	Southern Pines	Moore	28387	X
Seven Lakes Assisted Living	Homes For The Elderly Without Nursing Care	292 Macdougall Drive	West End	Moore	27376	X
Firsthealth Moore Reg. Hosp. And Pinehurst Treatmen	Hospital	P O Box 3000	Pinehurst	Moore	28374	X
Alan Circle	Mental Health Homes	Po Box 1356	Aberdeen	Moore	28315	X
Bethesda Link	Mental Health Homes	204 N. Pine Street	Aberdeen	Moore	28315	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Bethesda Link Adolescent Program/Bivens Building	Mental Health Homes	204 N. Pine St.	Aberdeen	Moore	28315	X
Bethesda, Inc.	Mental Health Homes	204 N. Pine Street	Aberdeen	Moore	28315	X
Brooks Therapeutic Home	Mental Health Homes	212 Elm Street	Aberdeen	Moore	28315	X
Heather Trail	Mental Health Homes	P.O. Box 1356	Aberdeen	Moore	28315	X
Longleaf	Mental Health Homes	P.O. Box 1356	Aberdeen	Moore	28315	X
Murray Hill	Mental Health Homes	Po Box 1356	Aberdeen	Moore	28387	X
Oakwood Residential	Mental Health Homes	101 Central Drive	Aberdeen	Moore	28315	X
Murray	Mental Health Homes	444 Fall Creek Road	Bennett	Moore	27208	X
Cook Therapeutic Home	Mental Health Homes	200 Spruell Road	Carthage	Moore	28327	X
Helen Johnson	Mental Health Homes	P.O. Box 1831	Carthage	Moore	28327	X
Moore County Day Reporting Center	Mental Health Homes	Po Box 839	Carthage	Moore	28327	X
Cardinal Clinic Llc	Mental Health Homes	4155 Ferncreek Dr., Ste. 201	Fayettevil le	Moore	28314	X
Covington Therapeutic Home	Mental Health Homes	4155 Ferncreek Drive	Fayettevil le	Moore	28314	X
Crest Road Group Home	Mental Health Homes	201 Moore Street	Fayettevil le	Moore	28301	X
Moore County Home For Autistic Adults	Mental Health Homes	201 Moore Street	Fayettevil le	Moore	28301	X
Crystal Lake Court Casaworks	Mental Health Homes	Po Box 190	Lakeview	Moore	28350	X
Magnolia Group Home	Mental Health Homes	15235 Airport Road	Maxton	Moore	28364	X
Sherwood Park Home	Mental Health Homes	15235 Airport Road	Maxton	Moore	28364	X
Woodland House	Mental Health Homes	P.O. Box 877	Pinebluff	Moore	28373	X
Sandhills Center For Mh/Dd/Sas Services-Pinehurst	Mental Health Homes	P.O. Drawer 639	Pinehurst	Moore	28370	X
Steele Therapeutic Home	Mental Health Homes	300 Sugar Pine	Pinehurst	Moore	28374	X
Goff Home	Mental Health Homes	3125 Poplarwood Court, Ste 300	Raleigh	Moore	27604	X
Brower Therapeutic Home	Mental Health Homes	4947 Highway 705	Robbins	Moore	27325	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
E.L. Ives	Mental Health Homes	163 East New Hampshire Avenue	Southern Pines	Moore	28388	X
Moore County Group Home #4	Mental Health Homes	163 E New Hampshire Ave.	Southern Pines	Moore	28387	X
Moore County Group Home #I - Connecticut Ave.	Mental Health Homes	P O Box 1322	Southern Pines	Moore	28388	X
Moore County Group Home Ii - Middleton Street	Mental Health Homes	P O Box 1322	Southern Pines	Moore	28388	X
Moore County Group Home Iii - Green Street	Mental Health Homes	P O Box 1322	Southern Pines	Moore	28388	X
Pennsylvania Avenue Group Home	Mental Health Homes	P O Box 1322	Southern Pines	Moore	28387	X
Recovery Associates	Mental Health Homes	770 N.W. Broad Street	Southern Pines	Moore	28387	X
Sandhills Teen Challenge	Mental Health Homes	P.O. Box 1701	Southern Pines	Moore	28388	X
Tanglewood Apartments	Mental Health Homes	231 Tanglewood Drive	Southern Pines	Moore	28387	X
The Bethany House, Inc.	Mental Health Homes	240 East Vermont Avenue	Southern Pines	Moore	28387	X
Underhill Therapeutic Home	Mental Health Homes	225 W. New Hampshire Avenue	Southern Pines	Moore	28387	X
Yadkin Place	Mental Health Homes	219 Rutherford Street	Wadesboro	Moore	28170	X
Sparks Therapeutic Home	Mental Health Homes	209 Lakeview Dr.	Whispering Pines	Moore	28327	X
Kingswood Nursing Center	Nursing Home Facilit	797 Pee Dee Road	Aberdeen	Moore	28315	X
Pinelake Health And Rehabilitation Center	Nursing Home Facilit	801 Pinehurst Avenue	Carthage	Moore	28327	X
Manor Care Health Services - Pinehurst	Nursing Home Facilit	205 Rattlesnake Trail	Pinehurst	Moore	0	X
Pinehurst Healthcare & Rehabilitation Center	Nursing Home Facilit	300 Blake Boulevard	Pinehurst	Moore	0	X
Quail Haven Village	Nursing Home Facilit	155 Blake Boulevard	Pinehurst	Moore	0	X
St. Joseph Of The Pines Health Center	Nursing Home Facilit	103 Gossman Drive	Southern Pines	Moore	0	X
Kingswood Nursing Center	Nursing Homes	915 Pee Dee Road	Aberdeen	Moore	28315	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Peak Resources - Pinelake	Nursing Homes	801 Pinehurst Avenue	Carthage	Moore	28327	X
Quail Haven Village	Nursing Homes	155 Blake Boulevard	Pinehurst	Moore	28374	X
Pinehurst Healthcare And Rehabilitation	Nursing Homes	300 Blake Boulevard	Pinehurst	Moore	28374	X
Manorcare Health Services - Pinehurst	Nursing Homes	205 Rattlesnake Trail	Pinehurst	Moore	28374	X
Saint Joseph Of The Pines Health Center	Nursing Homes	103 Gossman Road	Southern Pines	Moore	28387	X
Penick Village	Nursing Homes	East Rhode Island Avenue Extension	Southern Pines	Moore	28387	X
The Academy Of Moore County	Regular School	12588 Hwy 15501 South	Aberdeen	Moore	28315	X
Aberdeen Primary	Regular School	310 Keyser St	Aberdeen	Moore	28315	X
Aberdeen Elementary	Regular School	503 Sandhills Blvd N	Aberdeen	Moore	28315	X
Southern Middle	Regular School	717 Johnson Street	Aberdeen	Moore	28315	X
Cameron Elementary	Regular School	2636 Nc Hwy 24 27	Cameron	Moore	28326	X
New Century Middle	Regular School	1577 Union Church Road	Cameron	Moore	28326	X
Union Pines High	Regular School	1981 Union Church Rd	Cameron	Moore	28326	X
Carthage Elementary	Regular School	312 Rockingham St	Carthage	Moore	28327	X
Sandhills Farm Life Elementary	Regular School	2201 Farm Life Rd	Carthage	Moore	28327	X
Crain's Creek Middle	Regular School	4625 Union Church Rd	Carthage	Moore	28327	X
Highfalls Elementary	Regular School	1220 Nc Hwy 22	Highfalls	Moore	27259	X
Pinehurst Elementary	Regular School	100 Dundee Road	Pinehurst	Moore	28374	X
Elise Middle	Regular School	180 W Elm St	Robbins	Moore	27325	X
North Moore High	Regular School	1504 North Moore Rd	Robbins	Moore	27325	X
Robbins Elementary	Regular School	268 Rushwood Rd	Robbins	Moore	27325	X
Westmoore Elementary	Regular School	2159 Nc Hwy 705	Seagrove	Moore	27341	X
Pinecrest High	Regular School	250 Voit Gilmore Lane	Southern Pines	Moore	28387	X
Southern Pines Primary	Regular School	1250 W New York Ave	Southern Pines	Moore	28387	X
Southern Pines Elementary	Regular School	255 S May St	Southern Pines	Moore	28387	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Vasslakeview Elementary	Regular School	141 James Street	Vass	Moore	28394	X
Sandhills Theatre Arts Renaiss	Regular School	140 Southern Dunes Drive	Vass	Moore	28394	X
West End Elementary	Regular School	4483 Nc Hwy 211	West End	Moore	27376	X
West Pine Middle	Regular School	144 Archie Road	West End	Moore	27376	X
West Pine Elementary	Regular School	272 Archie Rd	West End	Moore	27376	X
Aberdeen Rescue Squad	Rescue Services, Medical	301 Lakeshore Drive	Aberdeen	Moore	28315	AE
Carthage Rescue Squad	Rescue Services, Medical	108 Bruce Street	Carthage	Moore	28327	X
Pinehurst Rescue Squad	Rescue Services, Medical	300 Mccaskill Road	Pinehurst	Moore	28374	X
Robins Rescue Squad 10	Rescue Services, Medical	141 Horner Street	Robbins	Moore	27325	X
Vass Rescue Squad Incorporated	Rescue Services, Medical	211 Main Street	Vass	Moore	28394	X
Whispering Pines Rescue	Rescue Services, Medical	1320 Rays Bridge Road	Whisperin g Pines	Moore	28327	X
Moore County Emergency Management		103 Saunders St	Carthage	Moore	28327	X
North Carolina State Highway Patrol Troop D District I - Substation	Law Enforcement	2210 Carthage Street	Sanford	Lee	27330	X
North Carolina State Highway Patrol Troop C District Vi	Law Enforcement	3783 United States Highway 301 South	Smithfield	Johnston	27577	X
Chatham County Sheriffs Department / Chatham County Jail	Law Enforcement	295 West Street	Pittsboro	Chatham	27312	X
Moore County Sheriffs Department	Law Enforcement	101 Courthouse Square	Carthage	Moore	28327	X
Johnston County Sheriffs Department / Johnston County Correctional Center	Law Enforcement	120 South 3rd Street	Smithfield	Johnston	27577	X

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Princeton Police Department	Law Enforcement	503 Doctor Donnie H Jones Junior Boulevard West	Princeton	Johnston	27569	X
Coats Police Department	Law Enforcement	237 North Mckinley Street	Coats	Harnett	27521	X
North Carolina State Highway Patrol Troop D District I	Law Enforcement	1103 North 2nd Avenue	Siler City	Chatham	27344	X
Fox Fire Village Police Department	Law Enforcement	1 Town Hall Drive	Jackson Springs	Moore	27281	X
Dunn Police Department	Law Enforcement	401 East Broad Street	Dunn	Harnett	28334	X
Broadway Police Department	Law Enforcement	119 South Main Street	Broadway	Lee	27505	X
North Carolina Department Of Environment And Natural Resources Division Of Forest Resources - Griffith Forestry Center	Law Enforcement	2411 Old United States Highway 70 West	Clayton	Johnston	27520	X
Taylortown Police Department	Law Enforcement	8350 Main Street	West End	Moore	27376	X
Pinebluff Police Department	Law Enforcement	580 South Walnut Street	Pinebluff	Moore	28373	X
City Of Aberdeen Police Department	Law Enforcement	804 North Sandhills Boulevard	Aberdeen	Moore	28315	X
Lee County High School Police Resource	Law Enforcement	1708 Nash Street	Sanford	Lee	27330	X
Angier Police Department	Law Enforcement	55 North Broad Street West	Angier	Harnett	27501	X
Pittsboro Police Department	Law Enforcement	635 East Street	Pittsboro	Chatham	27312	X
North Carolina Division Of Parks - Jordan Lake State Park	Law Enforcement	280 State Park Road	Apex	Chatham	27523	X
Siler City Police Department	Law Enforcement	312 North Chatham Avenue	Siler City	Chatham	27344	X
Kenly Police Department	Law Enforcement	206 West 2nd Street	Kenly	Johnston	27542	X
Selma Police Department	Law Enforcement	201 North Webb Street	Selma	Johnston	27576	X
Benson Police Department	Law Enforcement	303 East Church Street	Benson	Johnston	27504	X

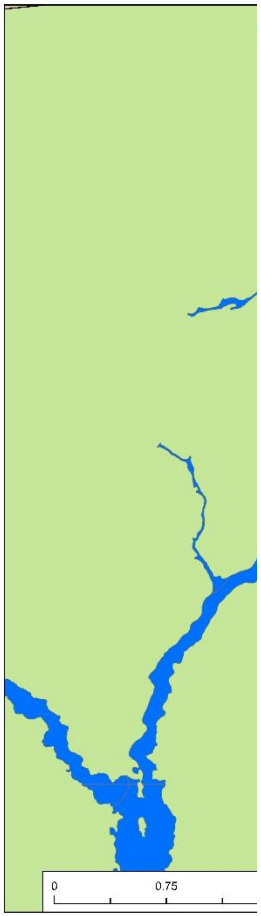
Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
Cameron Police Department	Law Enforcement	253 Carter Street	Cameron	Moore	28326	X
Harnett County Sheriffs Office / Harnett County Jail	Law Enforcement	1005 Edwards Drive	Lillington	Harnett	27546	X
City Of Whispering Pines Police Department	Law Enforcement	14 Hardee Lane	Whisperin g Pines	Moore	28327	X
City Of Southern Pines Police Department	Law Enforcement	145 Southeast Service Road	Southern Pines	Moore	28387	X
Sanford Police Department	Law Enforcement	225 East Weatherspoon Street	Sanford	Lee	27330	X
City Of Robbins Police Department	Law Enforcement	110 South Middleton Street	Robbins	Moore	27325	X
North Carolina Division Of Parks - Raven Rock State Park	Law Enforcement	3009 Raven Rock Road	Lillington	Harnett	27546	X
Carthage Police Department	Law Enforcement	4396 United States Highway 501	Carthage	Moore	28327	X
Lee County Sheriffs Department / Lee County Jail	Law Enforcement	1401 Elm Street	Sanford	Lee	27330	X
Erwin Police Department	Law Enforcement	100 West F Street	Erwin	Harnett	28339	X
Lillington Police Department	Law Enforcement	819 South Main Street	Lillington	Harnett	27546	X
North Carolina State Highway Patrol Troop B District Viii	Law Enforcement	1005 Edwards Drive	Lillington	Harnett	27546	X
Central Carolina Community College - Siler City Campus Police	Law Enforcement	502 West 3rd Street	Siler City	Chatham	27344	X
North Carolina State Highway Patrol - Eastern Criminal Interdiction Team	Law Enforcement	303 East Church Street	Benson	Johnston	27504	X
Vass Police Department	Law Enforcement	140 South Alma Street	Vass	Moore	28394	X
Clayton Police Department	Law Enforcement	201 South Barbour Street	Clayton	Johnston	27520	X
Village Of Pinehurst Police Department	Law Enforcement	420 Magnolia Road	Pinehurst	Moore	28374	X

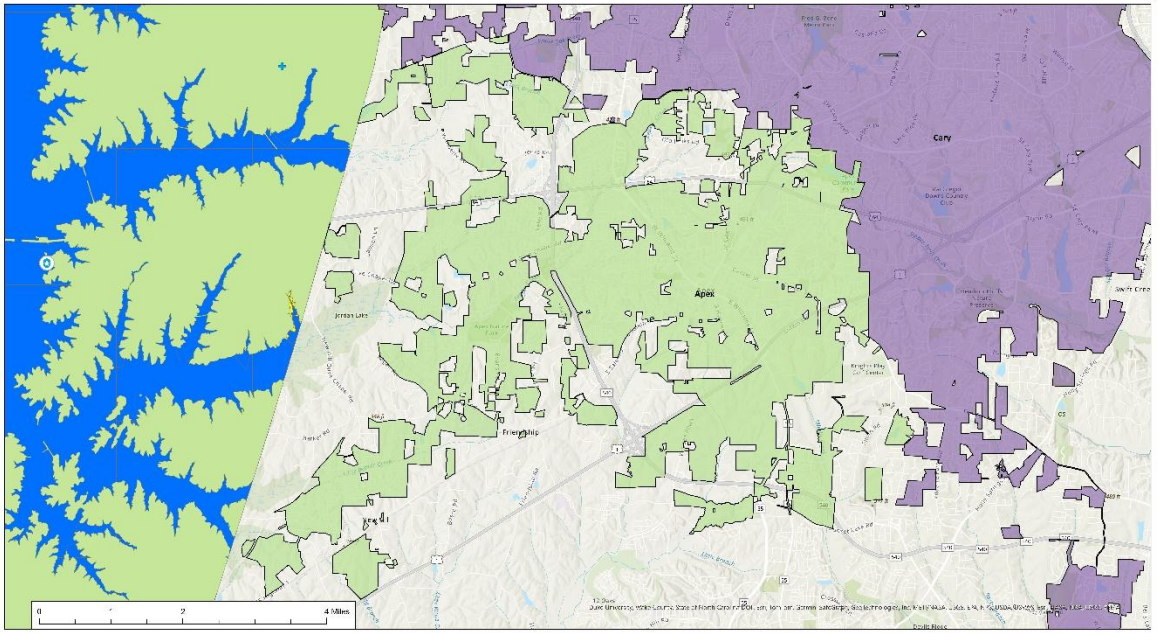
Table A- 1: Critical Facilities in the planning area and their flood hazard zones

Facility Name	Facility Type	Facility Address	Facility City	Facility County	Facility Zip	Flood Hazard Zone
North Carolina Forestry Service	Law Enforcement	3259 Old United States Highway 421	Lillington	Harnett	27546	X
City Of Pine Level Police Department	Law Enforcement	214 North Peedin Avenue	Selma	Johnston	27576	X
North Carolina Division Of Parks - Weymouth Woods-Sandhill Nature Preserve	Law Enforcement	1024 Fort Bragg Road	Southern Pines	Moore	28387	X
North Carolina State Highway Patrol Troop H District Vi	Law Enforcement	521 South Sandhills Boulevard	Aberdeen	Moore	28315	X
City Of Selma Police Department - Substation	Law Enforcement	501 West Street	Selma	Johnston	27576	X
Micro Police Department	Law Enforcement	101 United States Highway 301 North	Micro	Johnston	27555	X
Smithfield Police Department	Law Enforcement	110 South Fifth Street	Smithfield	Johnston	27577	X
Four Oaks Police Department	Law Enforcement	304 North Main Street	Four Oaks	Johnston	27524	X

Critical Facilities: Aberdeen

Critical Facilities: Apex







Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Horton Home	Mental Health Homes	200 Caley Wilson Road		Apex	27502	MHL-019-025
NORTH CAROLINA DIVISION OF PARKS - JORDAN LAKE STATE PARK	PARK POLICE	280 STATE PARK ROAD		APEX	27523	

Legend

Critical Facilities
- Law Enforcement - Zone X
- Medical Fac ity - Zone X

Jurisdictional Boundaries
- Apex
- Cary

Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Cardinal Cottage	Family Care	155 Blake Boulevard		Pinehurst	28374	FCL-063-005
American Health Services	Home Care	750 N. Sandhills Blvd.		Aberdeen	28315	HCI 720
Quail Haven Village	Home Care	155 Blake Blvd.		Pinehurst	28374	HCI 342
Specialized Services & Personnel, Inc.	Home Care	P. O. Box 1356		Aberdeen	28315	HCI 545
Alterra Clare Bridge of Southern Pines	Home For The Aged	115 Brookwood Road		Southern Pines	28387	HAL-063-013
Magnolia Gardens	Home For The Aged	594 Murray Hill Road		Southern Pines	28387	HAL 063 007
Bethesda Link	Mental Health Homes	204 N. Pine Street		Aberdeen	28315	MHL-063-010
Bethesda Link Adolescent Program/Bivens Building	Mental Health Homes	204 N. Pine St.		Aberdeen	28315	MHL-063-025
Bethesda, Inc.	Mental Health Homes	201 N. Pine Street		Aberdeen	28315	MHL-063-002
Brooks Therapeutic Home	Mental Health Homes	212 Elm Street		Aberdeen	28315	MHL-063-060
Cardinal Clinic LLC	Mental Health Homes	4155 Fairmont Dr., Ste. 201		Fayetteville	28314	MHL-063-030
F.I. Tyler	Mental Health Homes	163 East New Hampshire Avenue	PO Box 1322	Southern Pines	28388	MHL-063-050
Heather Trail	Mental Health Homes	P.O. Box 1356		Aberdeen	28315	MHL-063-021
Magnolia Group Home	Mental Health Homes	15235 Airport Road		Manson	28361	MHL-063-022
Moore County Home For Autistic Adults	Mental Health Homes	201 Thorn Street		Fayetteville	28301	MHL-063-035
Murray Hill	Mental Health Homes	PO Box 1356	Specialized Svcs & Personnel	Aberdeen	28387	MHL-063-051
Pennsylvania Avenue Group Home	Mental Health Homes	P O Box 1322		Southern Pines	28387	MHL-063-056
Sherwood Park Home	Mental Health Homes	15235 Airport Road		Manson	28361	MHL-063-007
Woodland House	Mental Health Homes	P.O. Box 877		Pinebluff	28373	MHL-063-009
KingsWood Nursing Center	Nursing Home Facilit	797 Pee Dee Road		Aberdeen	28315	NH0597
Pinehurst Healthcare & Rehabilitation Center	Nursing Home Facilit	300 Blake Boulevard	P O Box 5309	Pinehurst	0	NH0094
Quail Haven Village	Nursing Home Facilit	155 Blake Boulevard		Pinehurst	0	NH0605
PINEHURST HEALTHCARE AND REHABILITATION	NURSING HOMES	300 BLAKE BOULEVARD		PINEHURST	9774	NH0297
KINGSWOOD NURSING CENTER	NURSING HOMES	955 PEE DEE ROAD		ABERDEEN	3817	NH0597
NORTH CAROLINA DIVISION OF PARKS - WEYMOUTH WOODS-SANDHILL NATURE PRESERVE	PARK POLICE	1024 FORT BRAGG ROAD		SOUTHERN PINES	28387	
The Academy of Moore County	None	12588 Hwy 15501 South		Aberdeen	28315	
Aberdeen Primary	None	310 Keyser St		Aberdeen	28315	
Aberdeen Elementary	None	903 Sandhills Blvd N		Aberdeen	28315	
Southern Pines Elementary	None	255 S May St		Southern Pines	28387	
Southern Middle	None	717 Johnson Street		Aberdeen	28315	

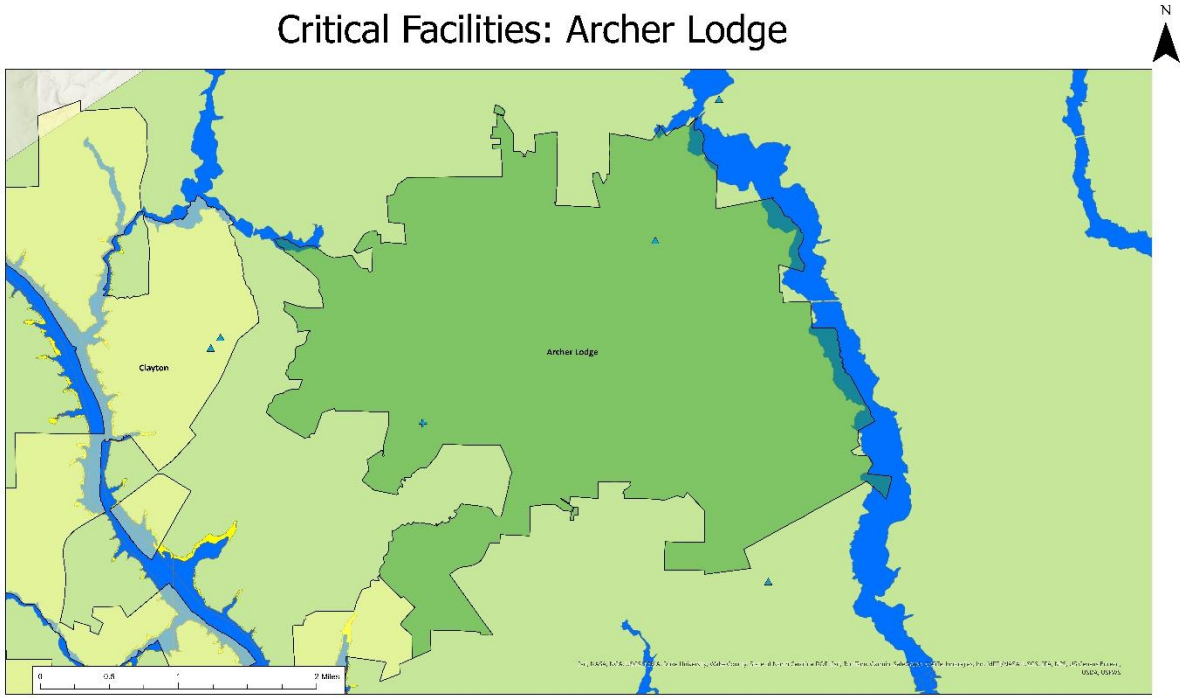
Legend

Critical Facilities
- Law Enforcement - Zone X
- Medical Facility - Zone X
- Nursing Home - Zone X
- Public Schools - Zone X

Jurisdictional Boundaries
- Aberdeen
- Foxfire Village
- Pinebluff
- Pinehurst
- Southern Pines



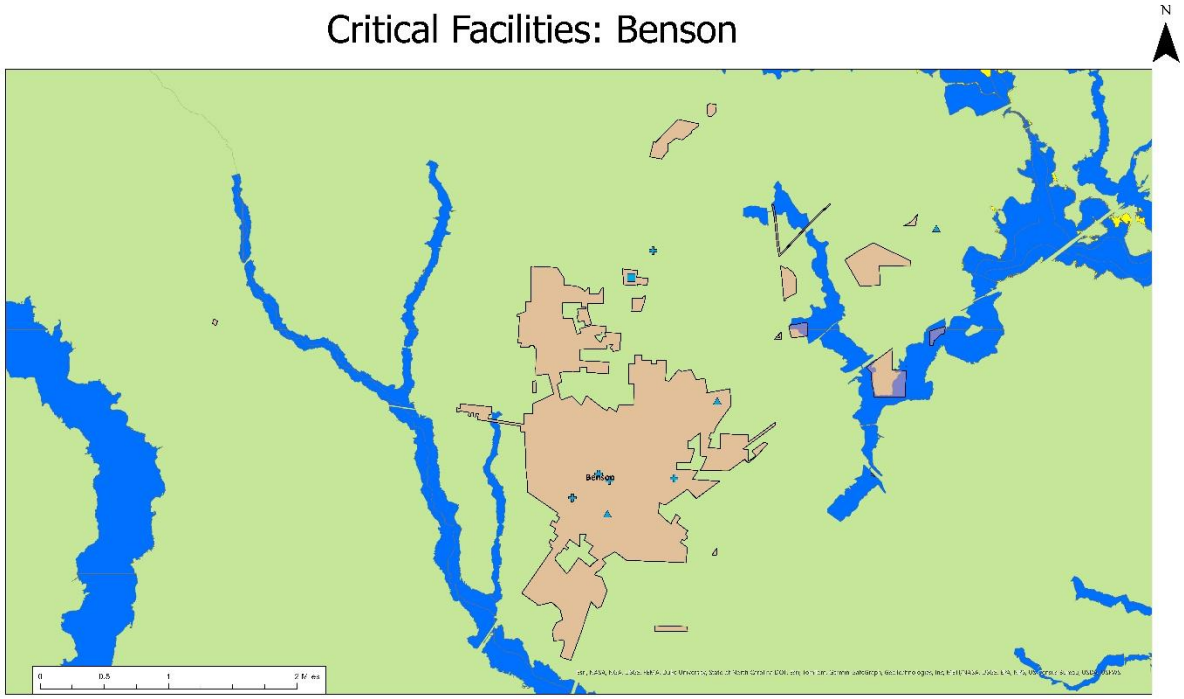
Critical Facilities: Archer Lodge



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Altman Therapeutic Home	Mental Health Homes	214 Dogwood Ave.		Clayton	27520	MHL-051-104
Serenity Place	Mental Health Homes	120 Lake Point Drive	Serenity Place	Clayton	27520	MHL-051-126
Wendell Elementary	Magnet	3355 Wendell Blvd		Wendell	27591	
Riverwood Elementary	None	108 Athletic Club Blvd		Clayton	27527	
Riverwood Middle	None	204 Athletic Club Blvd		Clayton	27527	
River Dell Elementary	None	12100 Buffalo Road		Clayton	27527	
Archer Lodge Middle	None	762 Wendell Rd		Wendell	27591	



Critical Facilities: Benson

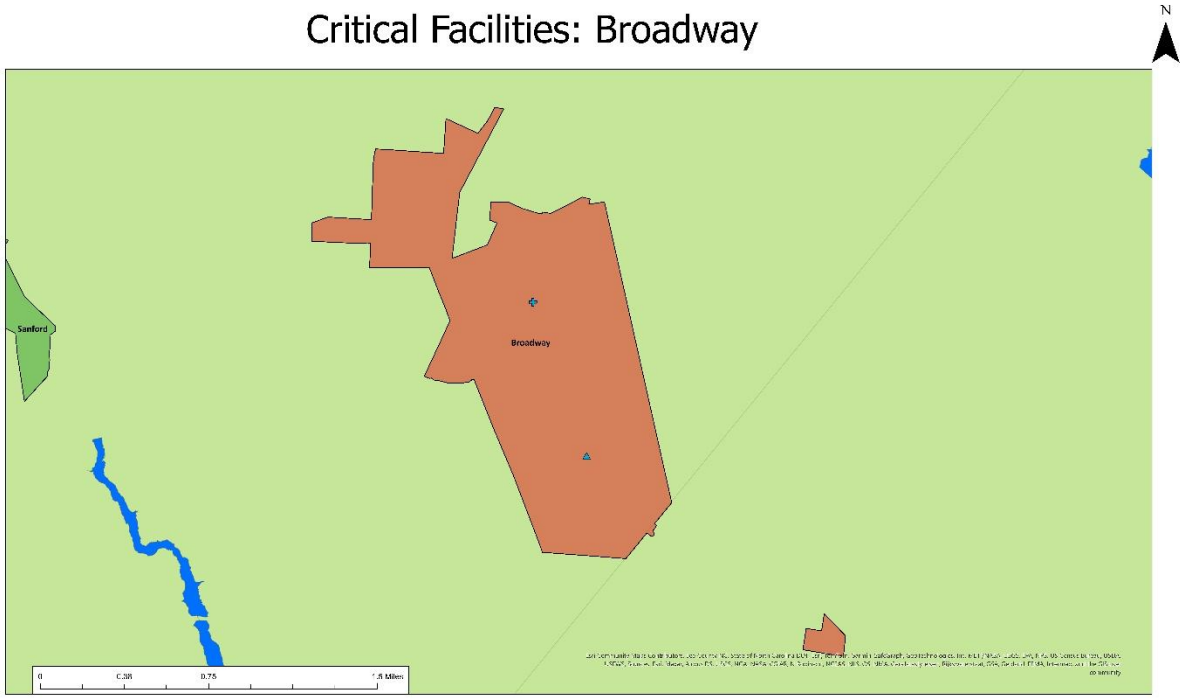


Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Personal Home Care Specialists, Inc.	Home Care	P.O. Box 1292		Benson	27504	HC2059
Oasis #1	Home For The Aged	PO Box 636		Benson	27504	HAL-051-010
Oasis #2	Home For The Aged	P O Box 636		Benson	27504	HAL-051-011
Oasis #3	Home For The Aged	P O Box 636		Benson	27504	HAL-051-012
Oasis #4	Home For The Aged	P.O. Box 636		Benson	27504	HAL-051-013
Oasis #5	Home For The Aged	P.O. Box 636		Benson	27504	HAL-051-014
Oasis #6	Home For The Aged	P.O. Box 636		Benson	27504	HAL-051-015
Benson Vocational Center	Mental Health Homes	501-C South Wall Street	Benson Vocational Center	Benson	27504	MHI-051-027
Canterbury Road Home	Mental Health Homes	503 S. Wall Street		Benson	27504	MHI-051-011
Johnston Counseling Services	Mental Health Homes	102G North Market Street		Benson	27504	MHI-051-103
Liberty Commons Nsg. and Rehab. Ctr. of Johnston Ct	Nursing Home Facilit	2315 Highway 242 North		Benson	0	NH0606
Unprecedented Care	Home For The Aged	157 Stewart Road		Dunn	28334	HAL-043-009
LIBERTY COMMONS NURSING AND REHABILITATION CENTER OF JOHNSTON COUNTY	NURSING HOMES	2315 NC HIGHWAY 242 NORTH		BENSON	7820	NH0606
South Johnston High	None	10381 US Hwy 301 S		Four Oaks	27524	
Benson Elementary	None	2040 Hwy 50 N		Benson	27504	
Benson Middle	None	1600 N Wall Street		Benson	27504	

Legend

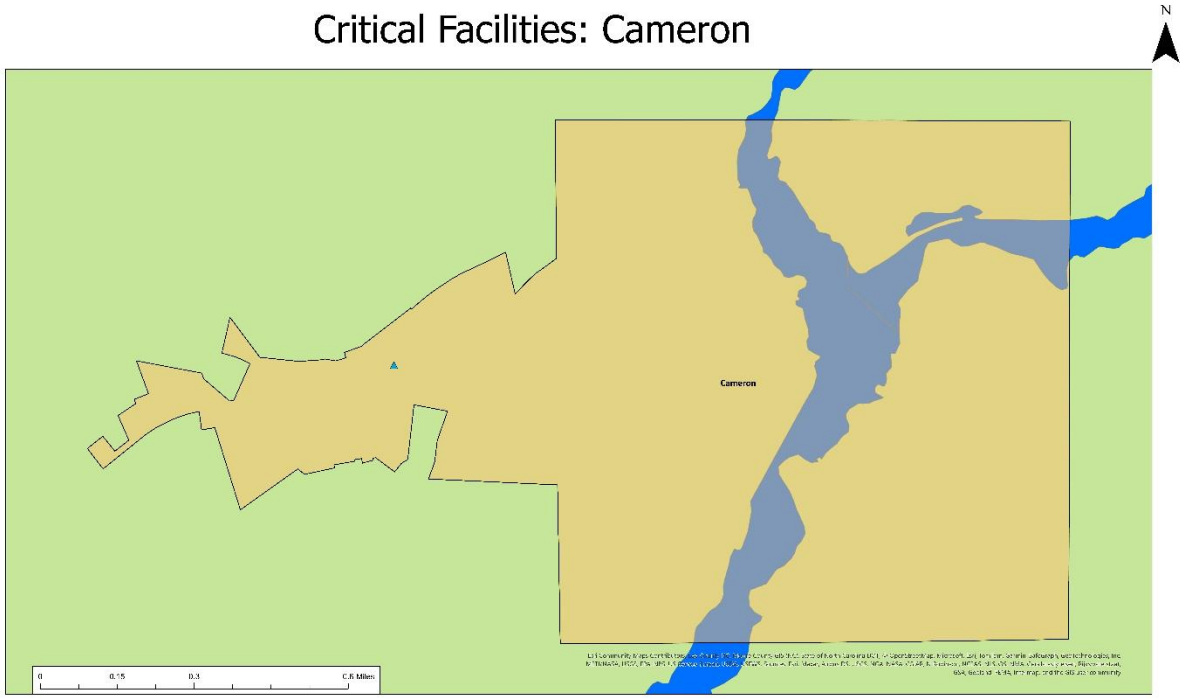
Critical Facilities
- Medical Facility - Zone X
- Nursing Home - Zone X
- Public Schools - Zone X

Jurisdictional Boundaries
- Benson



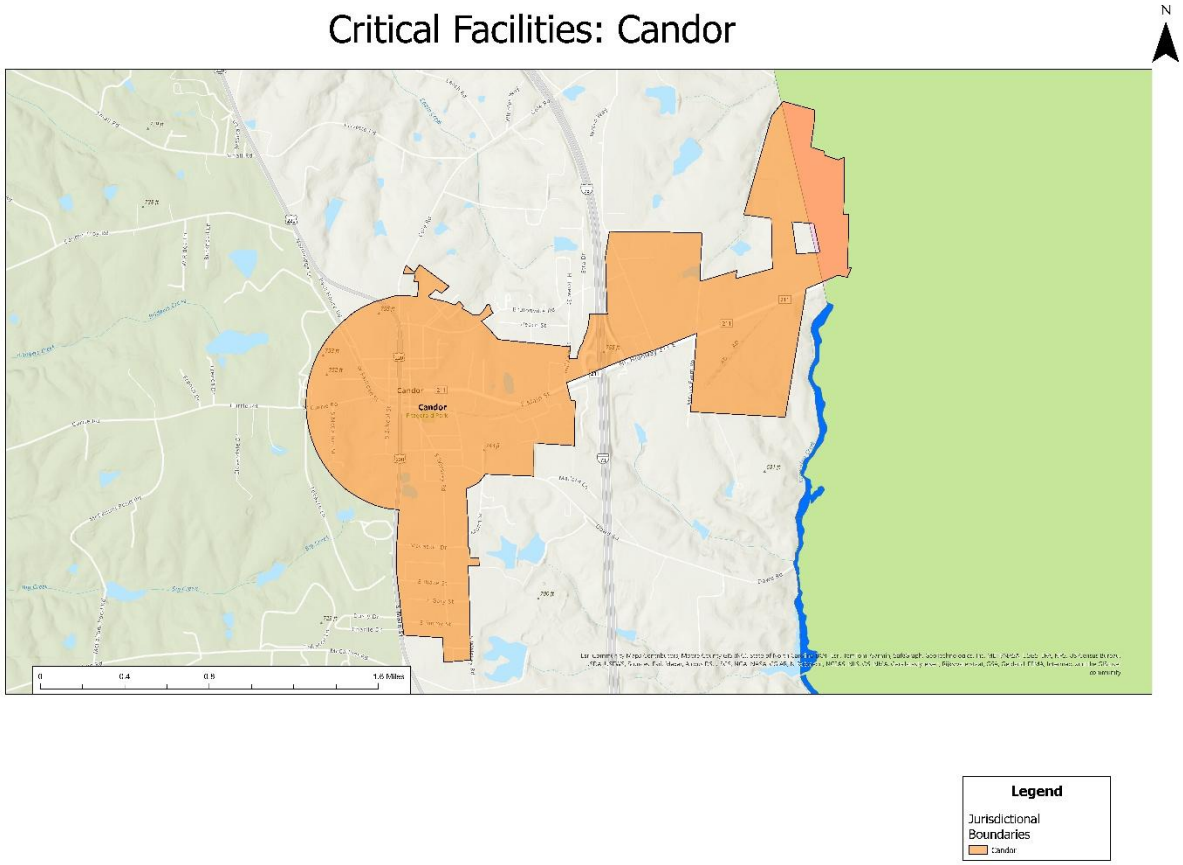
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
John Rey IRT	Mental Health Homes	P.O. Box 37399		Raleigh	27627	MHL-053-038
Broadway Elementary	None	307 S Main St		Broadway	27505	





Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Cameron Elementary	None	2636 NC Hwy 24 27		Cameron	28326	




Critical Facilities: Candor
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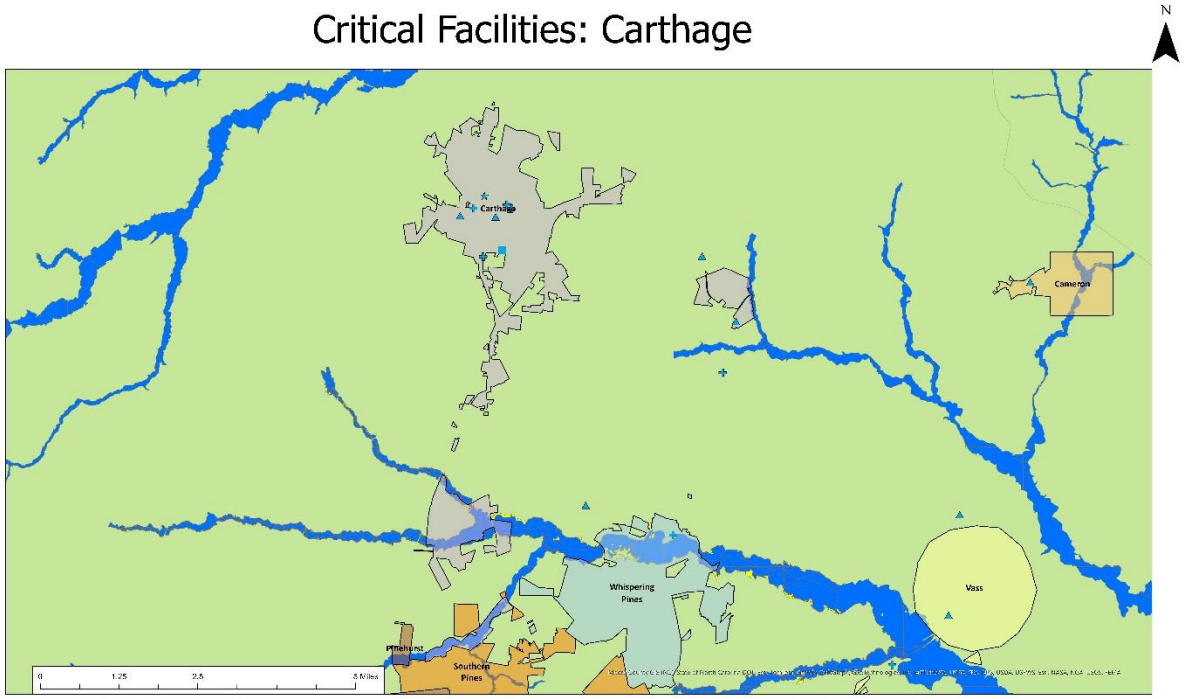
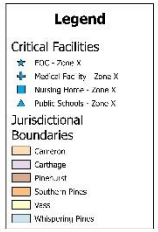
1.6 Miles
Legend
Jurisdictional Boundaries
Candor

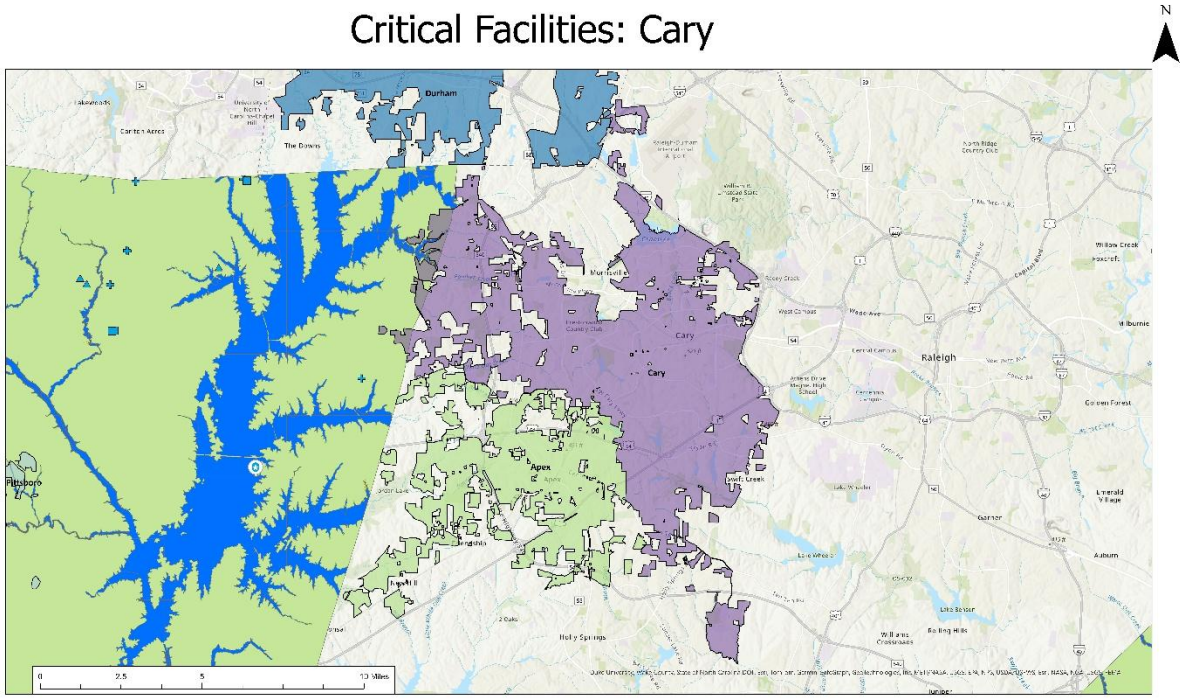
Critical Facilities: Carthage



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Moore County Department of Aging	Home Care	P O Box 487		Carthage	28327	HC0775
Tara Plantation of Carthage	Home For The Aged	820 South McNeill Street		Carthage	28327	HAL-063-011
Crystal Lake Court CASAWORKS	Mental Health Homes	PO Box 190	285 Camp Easter Road	Lakeview	28350	MHL-063-055
Helen Johnson	Mental Health Homes	P.O. Box 1831		Carthage	28327	MHL-063-054
Sandhills Teen Challenge	Mental Health Homes	P.O. Box 1701		Southern Pines	28388	MHL-063-008
Sparks Therapeutic Home	Mental Health Homes	209 Lakeview Dr.		Whispering Pines	28327	MHL-063-035
Pinelake Health and Rehabilitation Center	Nursing Home Facilit	801 Pinehurst Avenue		Carthage	28327	NH0539
PEAK RESOURCES - PINELAKE	NURSING HOMES	801 PINEHURST AVENUE		CARTHAGE	9338	NH0539
Moore County Emergency Management	EOC	103 Saunders St		Carthage, NC 28327		
Cameron Elementary	None	2636 NC Hwy 24 27		Cameron	28326	
Carthage Elementary	None	312 Rockingham St		Carthage	28327	
New Century Middle	None	1577 Union Church Road		Cameron	28326	
Sandhills Farm Life Elementary	None	2201 Farm Life Rd		Carthage	28327	
Union Pines High	None	1981 Union Church Rd		Cameron	28326	
VassLakeview Elementary	None	141 James Street		Vass	28394	
Pinckney Academy	None	160 Pinckney Road		Carthage	28327	
Crain's Creek Middle	Public School	4625 Union Church Rd		Carthage	28327	



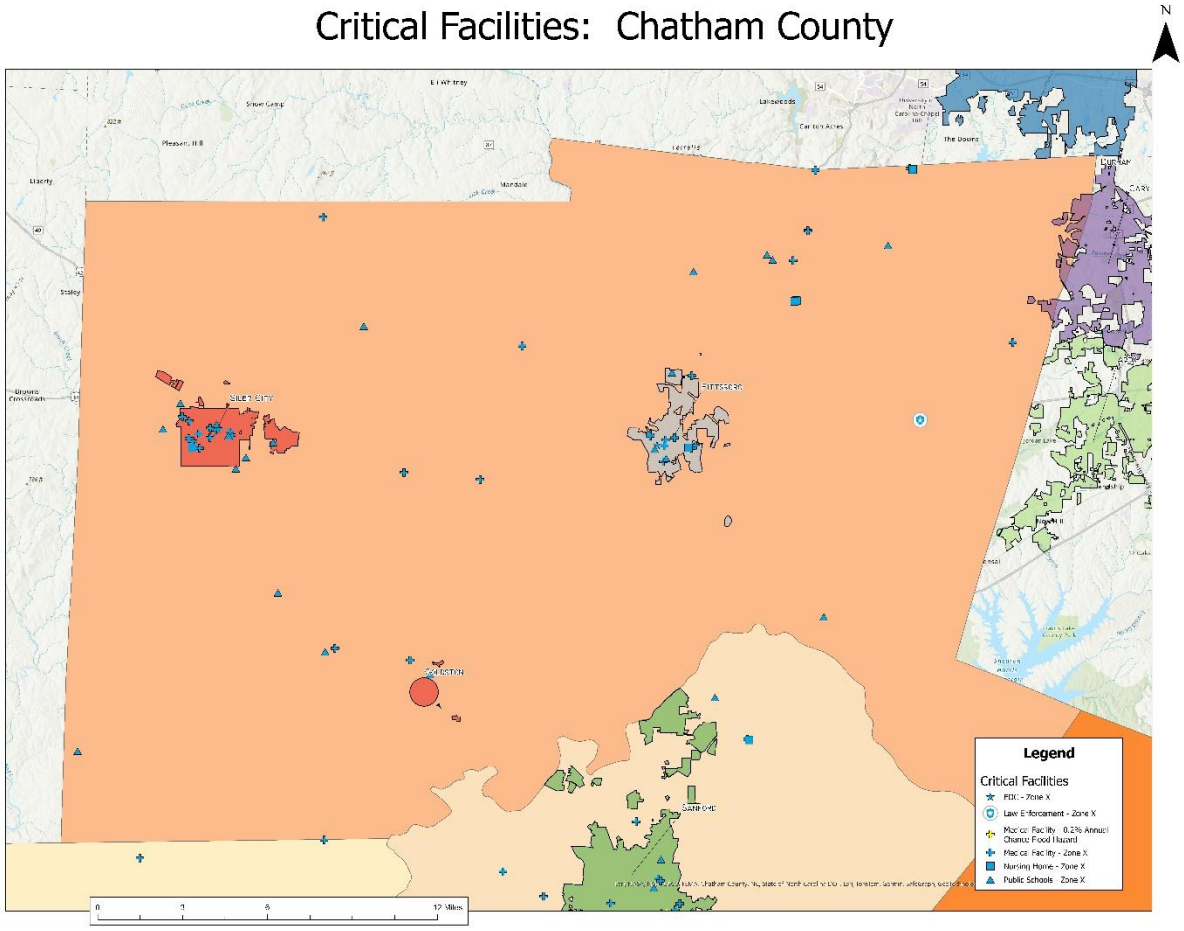
Critical Facilities: Cary



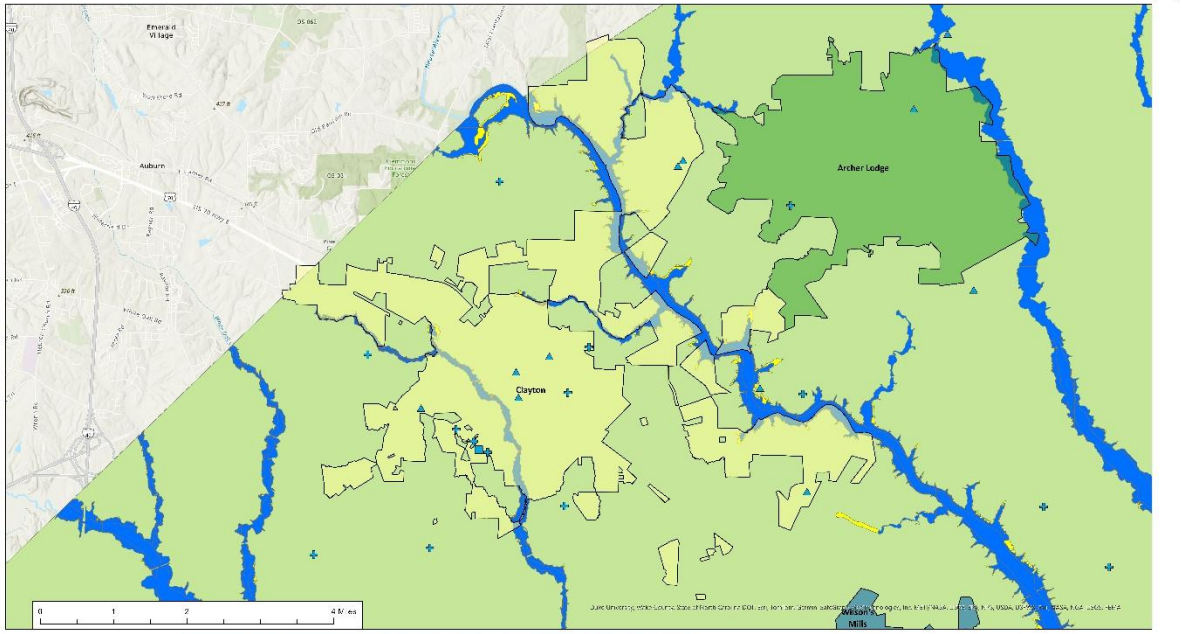
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Keston Care	Home Care	11312 US 15-501	Chatham Crossing, Suite 400	Chapel Hill	27517	HC1170
Liberty Home Care	Home Care	11312 US 15-501 N	Suite 403	Chapel Hill	27517	HC0528
Liberty Nursing Services	Home Care	11312 US 15-501 North	Suite 403	Chapel Hill	27517	HC2277
Community Housing of Chatham	Mental Health Homes	PO Box 5031	Program Director	Chapel Hill	27514	MHL-019-008
Hope Meadow	Mental Health Homes	P.O. Box 5270		Chapel Hill	0	MHL-019-017
Horton Home	Mental Health Homes	200 Caley Wilson Road		Apex	27502	MHL-019-025
Carolina Meadows Health Center	Nursing Home Facilit	500 Carolina Meadows		Chapel Hill	0	NH0490
THE ARBOR AT GALLOWAY RIDGE	NURSING HOMES	3000 GALLOWAY RIDGE ROAD		PITTSBORO	0	NH0619
THE ARBOR HEALTH CARE CENTER	NURSING HOMES	300 CLYNELISH CLOSE		PITTSBORO	4930	
CAROLINA MEADOWS HEALTH CENTER	NURSING HOMES	100 WHIPPOORWILL LANE		CHAPEL HILL	8566	NH0490
NORTH CAROLINA DIVISION OF PARKS - JORDAN LAKE STATE PARK	PARK POLICE	280 STATE PARK ROAD		APEX	27523	
Moncure Elementary	None	600 Moncure School Road		Moncure	27559	
North Chatham Elementary	None	3380 Lystra Road		Chapel Hill	27517	
Woods Charter	None	160 Woodland Grove La.		Chapel Hill	27516	
Margaret B. Pollard Middle	None	185 Granite Mill Blvd.		Chapel Hill	27516	



Critical Facilities: Chatham County



Critical Facilities: Clayton



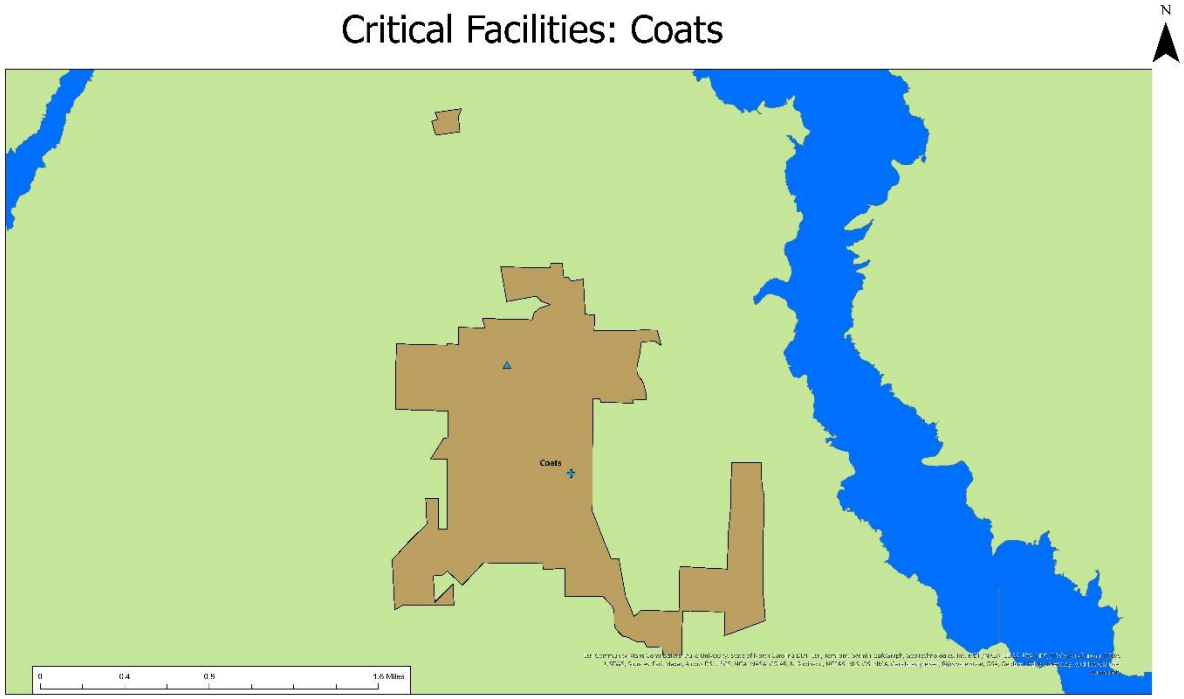
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Front Street Family Care Home	Family Care	P.O. Box 25752		Raleigh	27611	FCL-351-C.7
Hilltop Home	Family Care	1900 Hilltop Road		Selma	27576	FCL-351-C.6
Autumn Health Staffing	Home Care	P.O. Box 158		Wilson	27894	HCL-352
Agnes Village	Home For The Aged	P.O. Box 627		Clayton	27520	484-051-022
Altman Therapeutic Home	Mental Health Homes	2[illegible] Edgewood Ave.		Clayton	27520	NHL-05[illegible]
Dorsana Dunn	Mental Health Homes	10 Sunnybrook Road		Raleigh	27610	NHL-05[illegible]-063
Bridge	Mental Health Homes	2[illegible] Blackwood Rd		Clayton	27520	NHL-05[illegible]-075
Golden Honey Care	Mental Health Homes	4[illegible] Clark Pond Road		Clayton	27520	NHL-05[illegible]
Mary and Geddie Barnes	Mental Health Homes	1050 Sunbow Hill Road		Clayton	27520	NHL-05[illegible]-097
Rose Of Sharon Group Home	Mental Health Homes	61 Kentucky Derby Dr		Clayton	27520	NHL-05[illegible]-05
Royal Home	Mental Health Homes	4[illegible] Chapel Hill Road		Raleigh	27602	NHL-05[illegible]
Serenity Place	Mental Health Homes	120 Lake Point Drive	Serenity Place	Clayton	27520	NHL-05[illegible]-25
Serenity Place	Mental Health Homes	120 Lake Point Drive	Serenity Place	Clayton	27520	NHL-05[illegible]-25
Wilson Center Health & Retirement/Clayton	Nursing Home Facility	20[illegible] Lacey Road		Clayton	[illegible]	NHK475
BRIAN CENTER HEALTH AND RETIREMENT - CLAYTON	NURSING HOMES	204 DUCKY ROAD		CLAYTON	7215	NHK475
Fast Clayton Elementary	None	2075 NC Highway 42 East		Clayton	27527	
Clayton High	None	301 Lakeview Rd SE		Clayton	27520	
West Clayton Elementary	None	1012 S Lombard St		Clayton	27520	
Cooper Elementary	None	848 West Mid St		Clayton	27520	
Clayton Middle	None	1[illegible] Lacey Rd		Clayton	27520	
Wendell Elementary	Mecklen	1325 Wendell Blvd		Wendell	27591	
Bunnwood Elementary	None	108 Athletic Club Blvd		Clayton	27527	
Bunnwood Middle	None	20[illegible] Athletic Club Blvd		Clayton	27527	
River Dell Elementary	None	12,000 Buffalo Road		Clayton	27527	
Archer Lodge Middle	None	2[illegible] Vermont Rd		Wendell	27591	
Hodgkins Elementary	None	2[illegible] Vermont Rd		Clayton	27520	

Legend

Critical Facilities
- Medical Facility - Zone X
- Nursing Home - Zone X
- Public Schools - Zone X

Jurisdictional Boundaries
- Archer Lodge
- Clayton
- Wilson's Mills

Critical Facilities: Coats



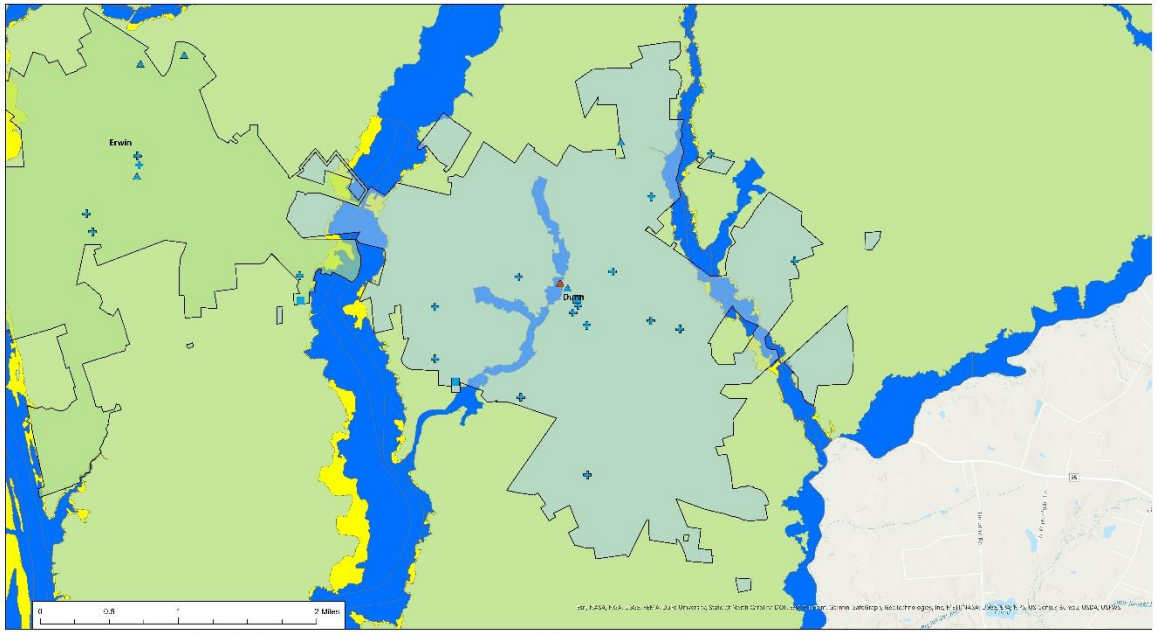
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
RHA Health Services, Inc./Jackson Street Group Home	Mental Health Homes	503 South Wall Street		Benson	27504	MHL-043-012
Coats Elementary	None	585 Brick Mill Road		Coats	27521	

Legend

Critical Facilities
- Medical Facility - Zone X
- Public Schools Zone X

Jurisdictional Boundaries
- Coats

Critical Facilities: Dunn



Facility Name	Facility Type	Address	Address [2]	City	Zip Code	License Number (if applicable)
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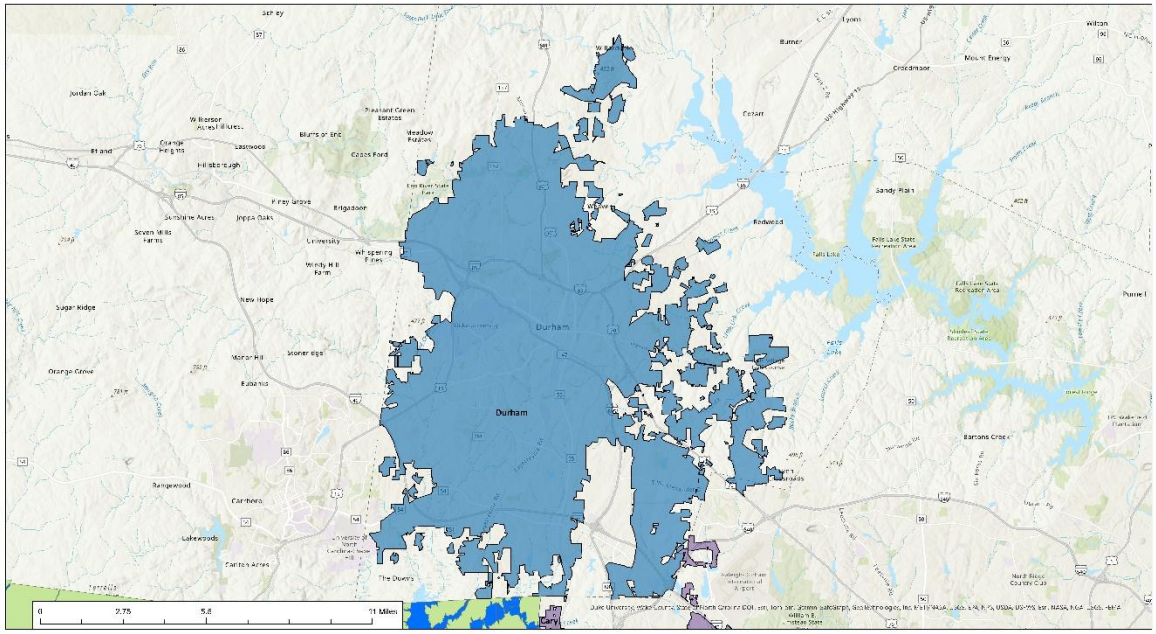
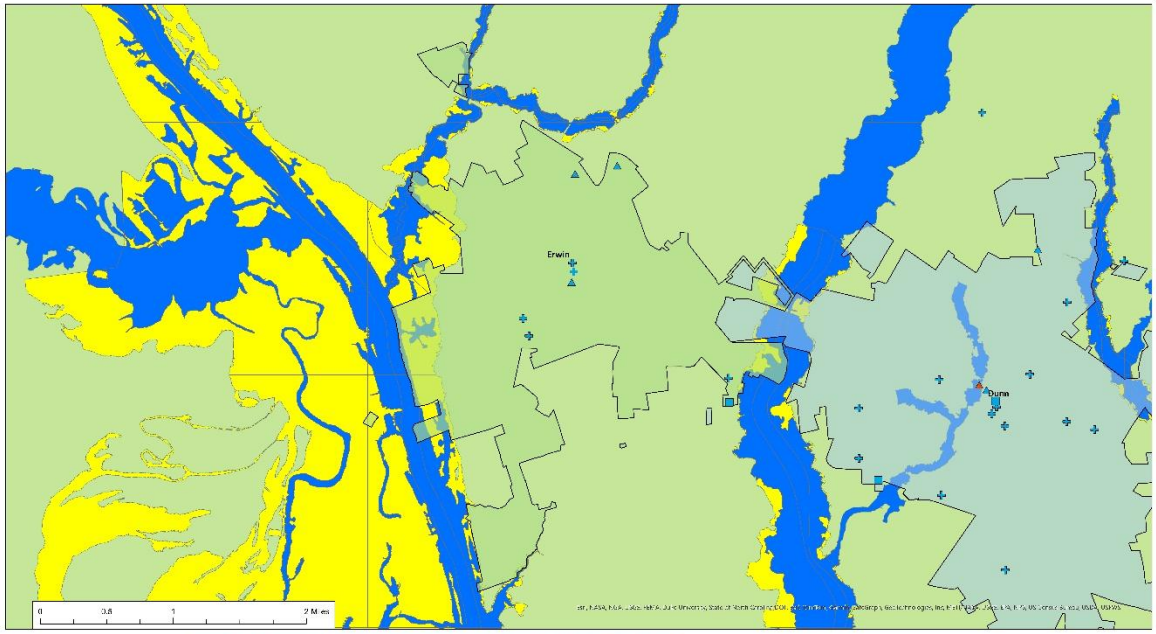
Critical Facilities: Durham



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Community Housing of Chatham	Mental Health Homes	PO Box 5031	Program Director	Chapel Hill	27514	MHL-019-008
Carolina Meadows Health Center	Nursing Home Facilit	500 Carolina Meadows		Chapel Hill	0	NH0490
CAROLINA MEADOWS HEALTH CENTER	NURSING HOMES	100 WHIPPOORWILL LANE		CHAPEL HILL	8566	NH0490



Critical Facilities: Erwin



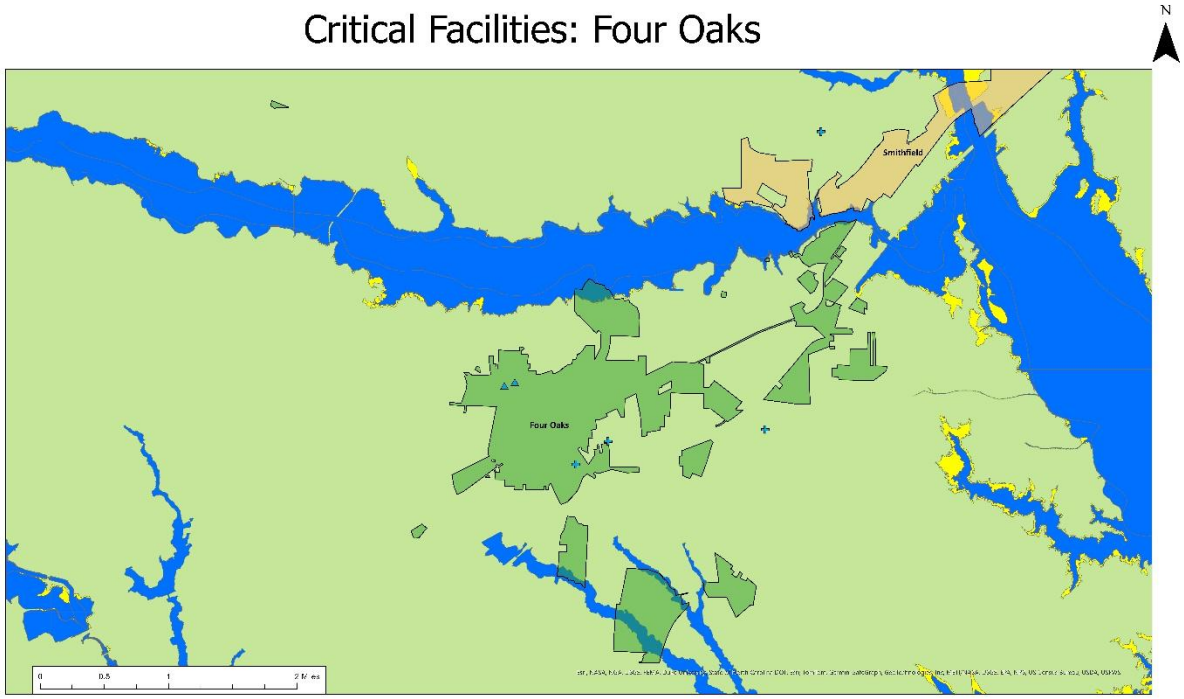
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Rose Home Health Care, LLC	Home Care	P.O. Box 2455		Dunn	28335	HC2250
Trinity Medical Supply, Inc.	Home Care	P. O. Box 1121		Dunn	28334	HC1556
Trinity Home Care	Home Care	P. O. Box 2545		Coats	n	HC5586
Family Home Care	Home Care	99 Bent Valley Road		Dunn	28334	HC3117
Pathway Home Health	Home Care	P.O. Box 3742		Spring Lake	284	HC2397
Senior Citizens Village	Home For The Elderly	P.O. Box 340		Dunn	28335	HEALTH SVS
Community Home Care and Hospice	Hospice	509 Magnolia Drive		Spring Lake	284 4	HOSP045
Chapter of Harnett County, Inc.	Hospice	P.O. Box 773		Lillington	27546	HOSP075
Betsy Johnson Regional Hospital	Hospital	P.O. Box 1796		Dunn	28335	H0734
Coastal Plain Hospital, Inc.	Hospital	4000 Division Drive		Wilson	27893	H0042
Fair Haven	Nursing Home/Rest Home	531 Edwards Mill Street	Health Services, Inc.	Dunn	28334	NH-BA5 027
Pioneer Nursing & Rehab Home	Nursing Home/Rest Home	PO Box 483	Progressive Enterprises	Dunn	28335	NH-BA5 019
Rose of Dunn Manor	Nursing Home/Rest Home	200 West 8th Street		Lillington	27546	NH-BA5 015
Rose Avenue Home	Nursing Home/Rest Home	100 Rose Avenue		Dunn	28334	NH-BA5 026
Mosley Home	Nursing Home/Rest Home	519 E. Divisional Drive		Dunn	28334	NH-BA5 016
Mosley's Place	Nursing Home/Rest Home	PO Box 2011		Spring Lake	28390	NH-BA5 028
Retirement Manor	Nursing Home/Rest Home	PO Box 1407		Dunn	28335	NH0075
Inn of Dunn	Nursing Home/Rest Home	711 Cain's The Road	P.O Box 936	Dunn	n	NH0187
Rolling Meadow Convalesc.	Nursing Home/Rest Home	231 North Elm Avenue	P.O Box 1737	Dunn	n	NH0117
STATE HEALTH DEPARTMENT	NURSING - OTHER	50 - HEAS ROAD		FUQUAY	9655	NH0075
JOHN BRYAN CHILDREN'S DENTAL CENTER	NURSING - OTHER	711 S MAIN EAST STREET		FUQUAY	9332	NH0187
MCCOLL HOME CENTRE	NURSING - OTHER	201 NORTH ELM AVENUE		FUQUAY	9496	NH0117
County Dispatch	Police	117 Dunn Drive		Dunn	28335	
Police Dept	Police	518 Municipal Lake Road		Dunn	28335	
Dunn Fire Station	Police	311 S Elm St		Dunn	28335	
Western Station	Police	1001 W Harnett St		Dunn	28334	
Lafayette Avenue Fire	Police	1101 N Layette St		Dunn	28334	
Dunn Police	Police	110 Powhatan Road		Dunn	28334	

Legend

Critical Facilities
- Medical Facility - Zone X
- Nursing Home - Zone X
- Public Schools - Zone AE
- Public Schools - Zone X

Jurisdictional Boundaries
- Dunn
- Erwin

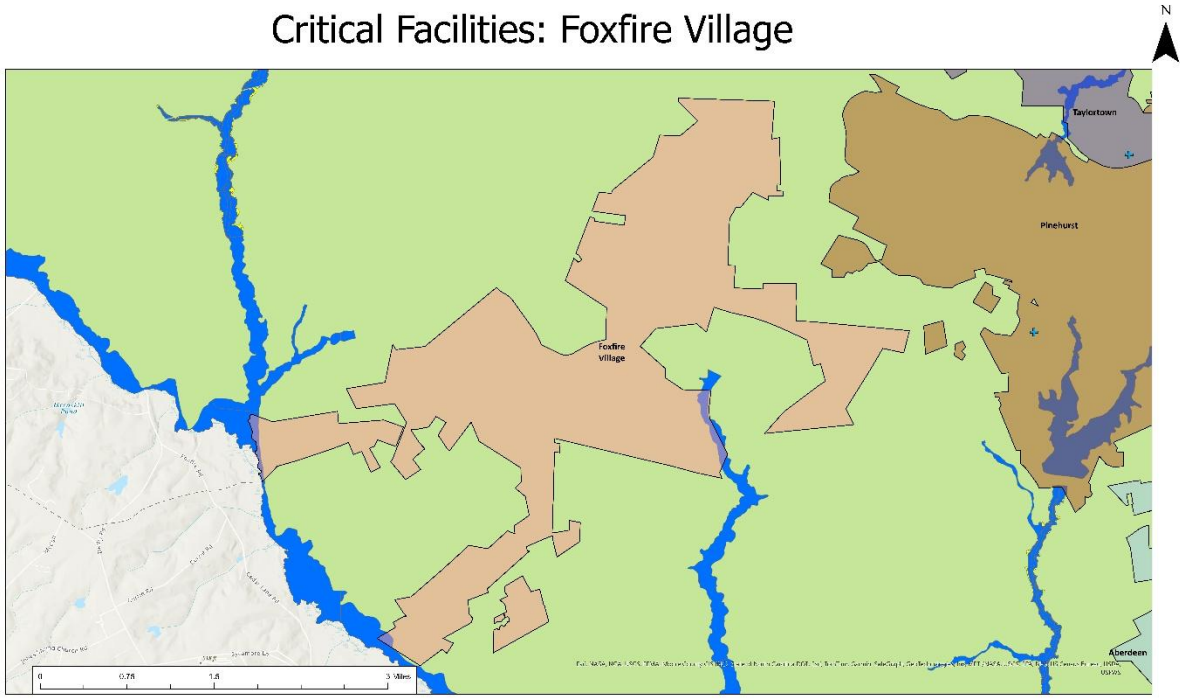
Critical Facilities: Four Oaks



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Johnston County Group Home #1	Family Care	P. O. Box 1768		Smithfield	27577	FCL-051-006
The Oasis of Four Oaks	Home For The Aged	P O Box 759		Four Oaks	27524	HAL-051-016
Country Manor Group Home	Mental Health Homes	503 South Wall Street		Benson	27504	MHL-051-009
Ward Home	Mental Health Homes	6036 Six Forks Road	Alpha Omega Health	Raleigh	27609	MHL-051-121
Four Oaks Elementary	None	180 Hatcher St		Four Oaks	27524	
Four Oaks Middle	None	1475 Boyette Road		Four Oaks	27524	



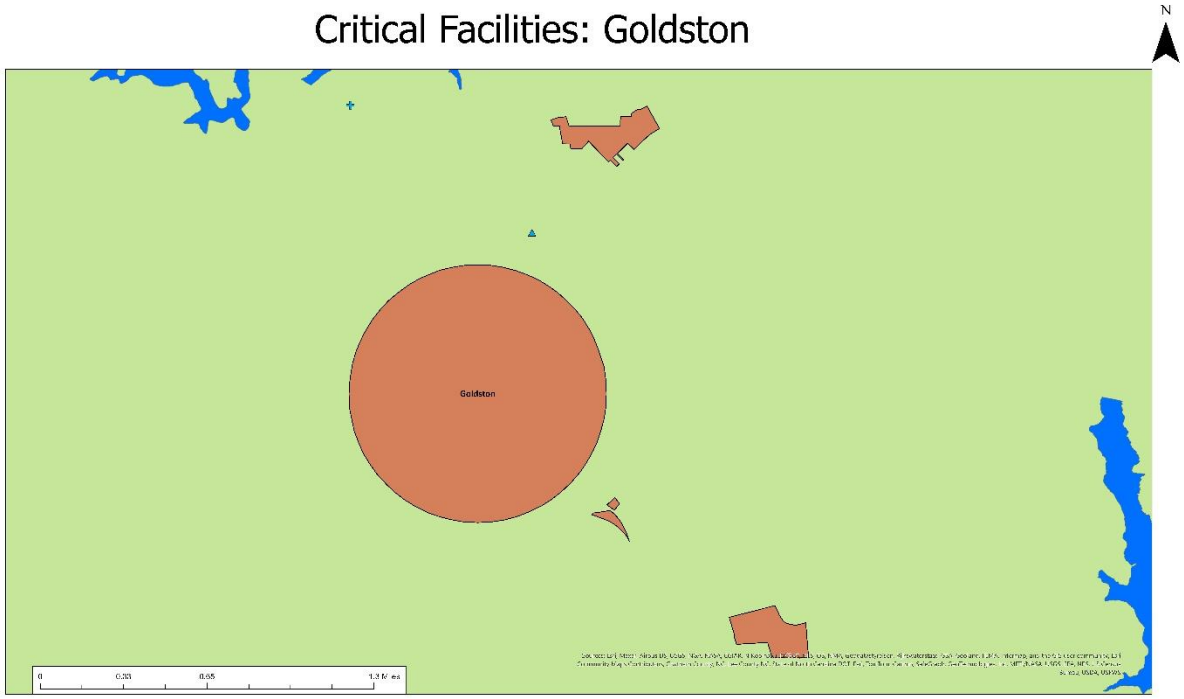
Critical Facilities: Foxfire Village



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
HealthKeeperz	Home Care	PO Box 1030		Pembroke	28372	HC2278
Steele Therapeutic Home	Mental Health Homes	300 Sugar Pine		Pinehurst	28374	MHL-063-049

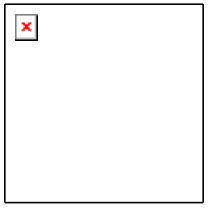


Critical Facilities: Goldston

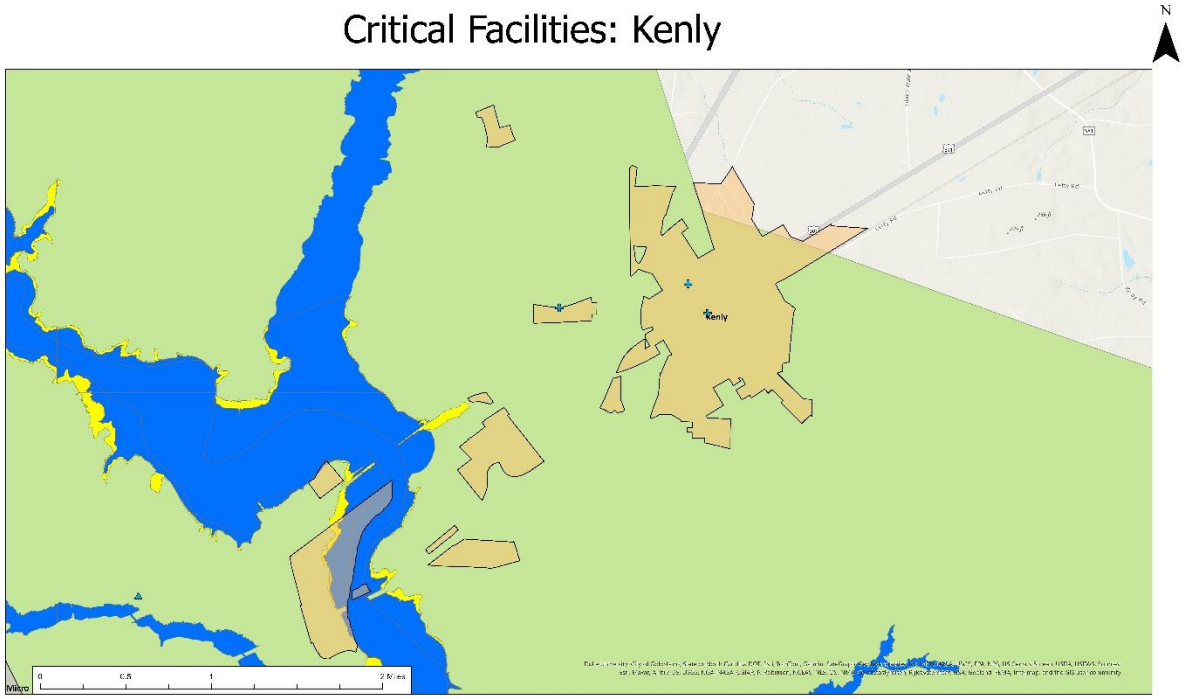


Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Hillforest Rest Home	Home For The Aged	P O Box 98		Gaston	27832	HAL-019-016
J S Waters Elementary	None	55 J S Waters School Road		Goldston	27252	





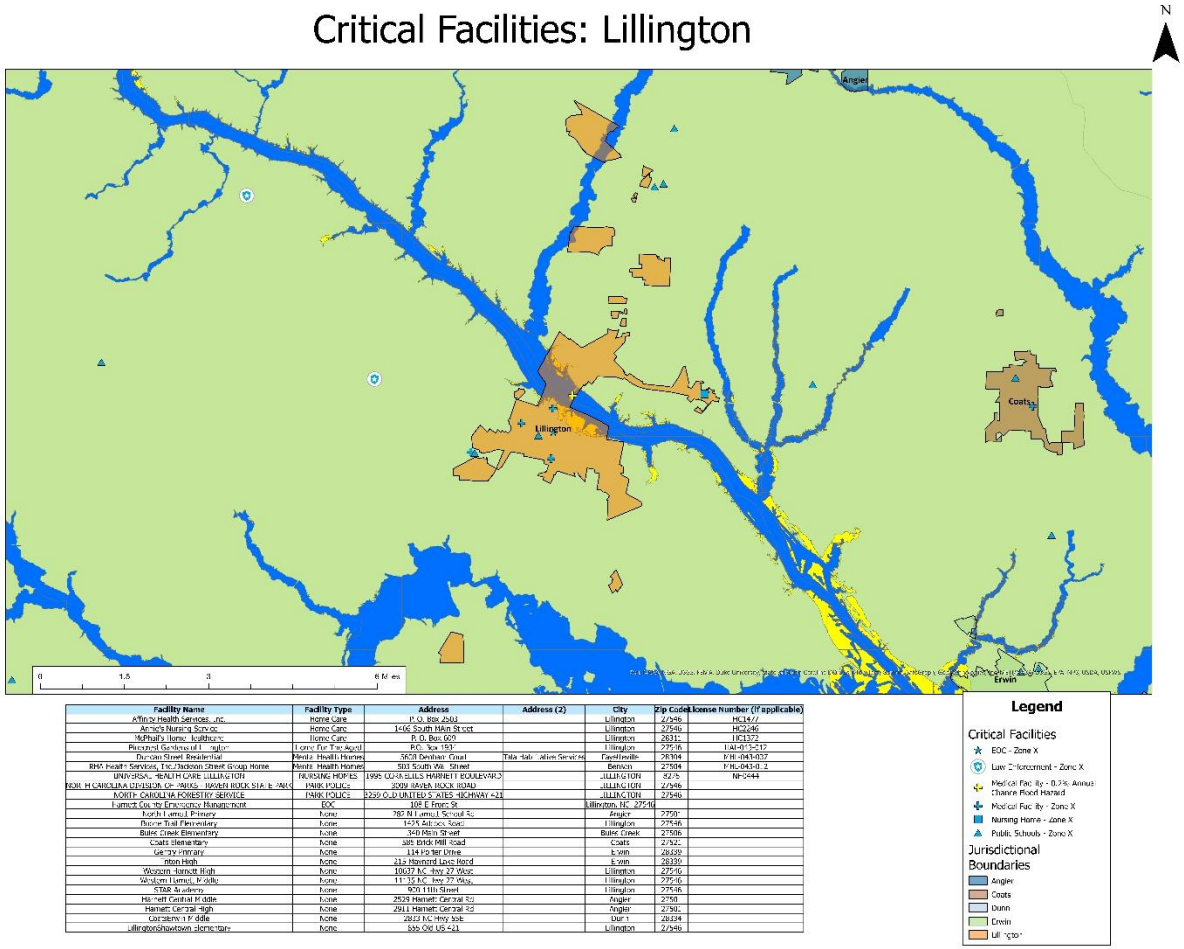
Critical Facilities: Kenly



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Cornerstone Residential Services	Mental Health Homes	301 Darden Street		Kenly	27542	MHL-051-102
Ida's Place of Caring	Mental Health Homes	P O Box 1107		Kenly	27542	MHL-051-099
Kenly House	Mental Health Homes	433 South Meeting Street	Community Living Concepts-N	Statesville	28677	MHL-051-045
North Johnston High	None	5915 US Hwy 301 N		Kenly	27542	

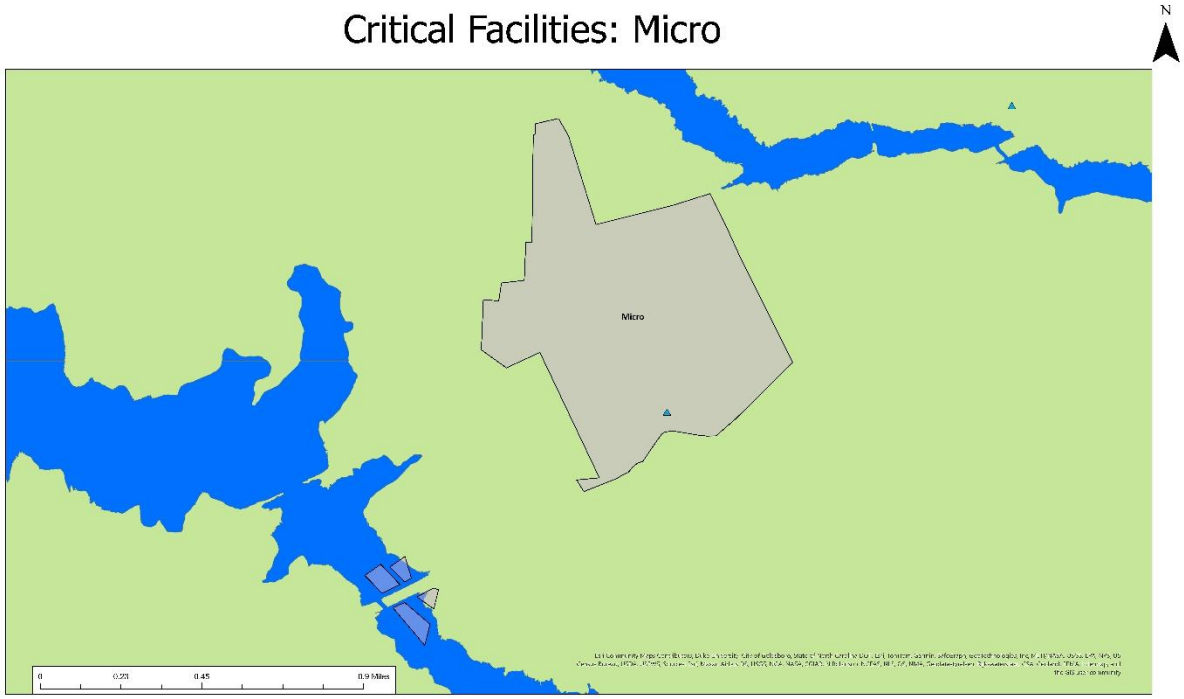


Critical Facilities: Lillington



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (If applicable)
Affinity Health Services, Inc.	Home Care	P. O. Box 2503		Lillington	27546	HC1477
Annie's Nursing Service	Home Care	1406 South Main Street		Lillington	27546	HC2246
McPhail's Home Healthcare	Home Care	P. O. Box 609		Lillington	28312	HC1372
Pleasant Gardens of Lillington	Home For The Aged	P.O. Box 1937		Lillington	27546	HAF-013-012
Duncan Street Residential	Mental Health Homes	5628 Denham Road	Tala Habilitation Services	Fayetteville	28304	MHF-043-037
RMA Health Services, Inc./Jackson Street Group Home	Mental Health Homes	503 South Wall Street		Benson	27504	MHL-043-012
UNIVERSAL HEALTH CARE LILLINGTON	NURSING HOMES	1995 COMMELLS HARNETT BOULEVARD		LILLINGTON	8275	NH-0444
NORTH CAROLINA DIVISION OF PARKS - HAVEN ROCK STATE PARK	PARK POLICE	3009 HAVEN ROCK ROAD		LILLINGTON	27546	
NORTH CAROLINA FORESTRY SERVICE	PARK POLICE	8239 OLD UNITED STATES HIGHWAY 421		LILLINGTON	27546	
Harnett County Emergency Management	EOC	108 E Front St		Lillington, NC 27546		
North Lemuel Primary	None	782 N Lemuel School Rd		Angier	27501	
Dunn Trail Elementary	None	1425 Adcock Road		Lillington	27546	
Buies Creek Elementary	None	340 Main Street		Buies Creek	27506	
Coats Elementary	None	585 Brick Mill Road		Coats	27521	
Gentry Primary	None	114 Potter Drive		Erwin	28339	
Erwin High	None	215 Maynard Lake Road		Erwin	28339	
Western Harnett High	None	10037 NC Hwy 27 West		Lillington	27546	
Western Harnett Middle	None	11135 NC Hwy 27 West		Lillington	27546	
STAR Academy	None	900 11th Street		Lillington	27546	
Harnett Central Middle	None	2529 Harnett Central Rd		Angier	27501	
Harnett Central High	None	2911 Harnett Central Rd		Angier	27501	
Coreberwin Middle	None	2833 NC Hwy 55E		Dunn	28334	
LillingtonShawtown Elementary	None	555 Old US 421		Lillington	27546	

Critical Facilities: Micro



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
North Johnston Middle	None	301 E Main St		Micro	27555	
North Johnston High	None	5915 US Hwy 301 N		Kenly	27542	

Legend

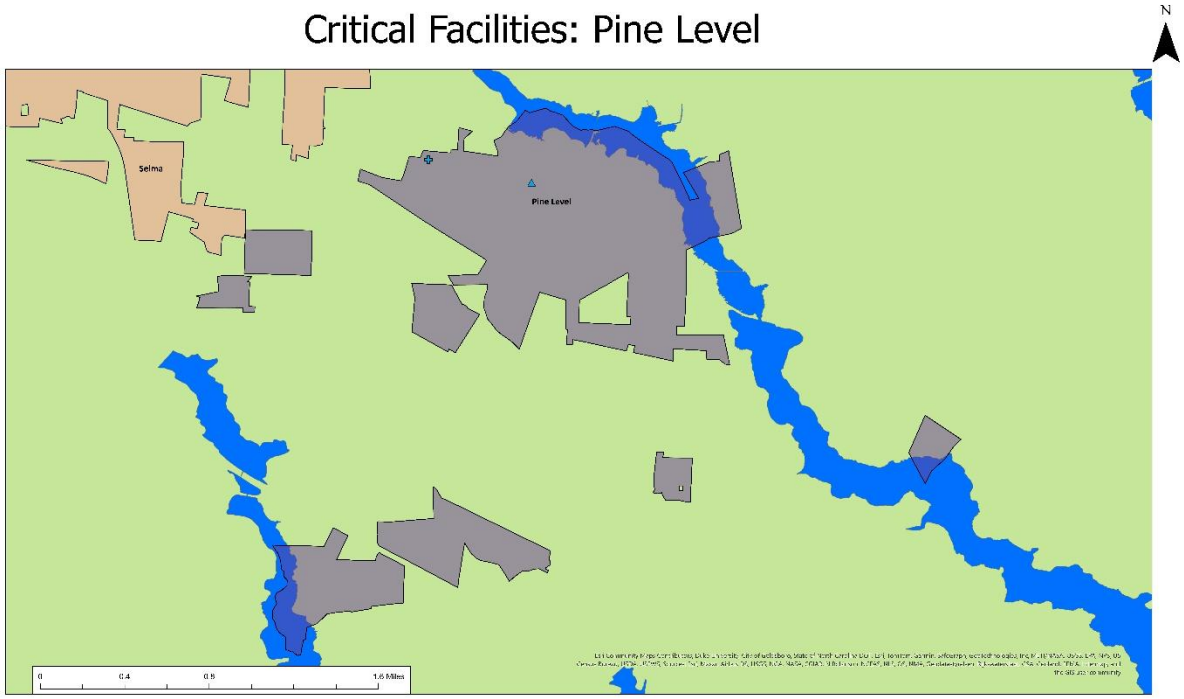
Critical Facilities

Public Schools - Zone X

Jurisdictional Boundaries

Micro

Critical Facilities: Pine Level



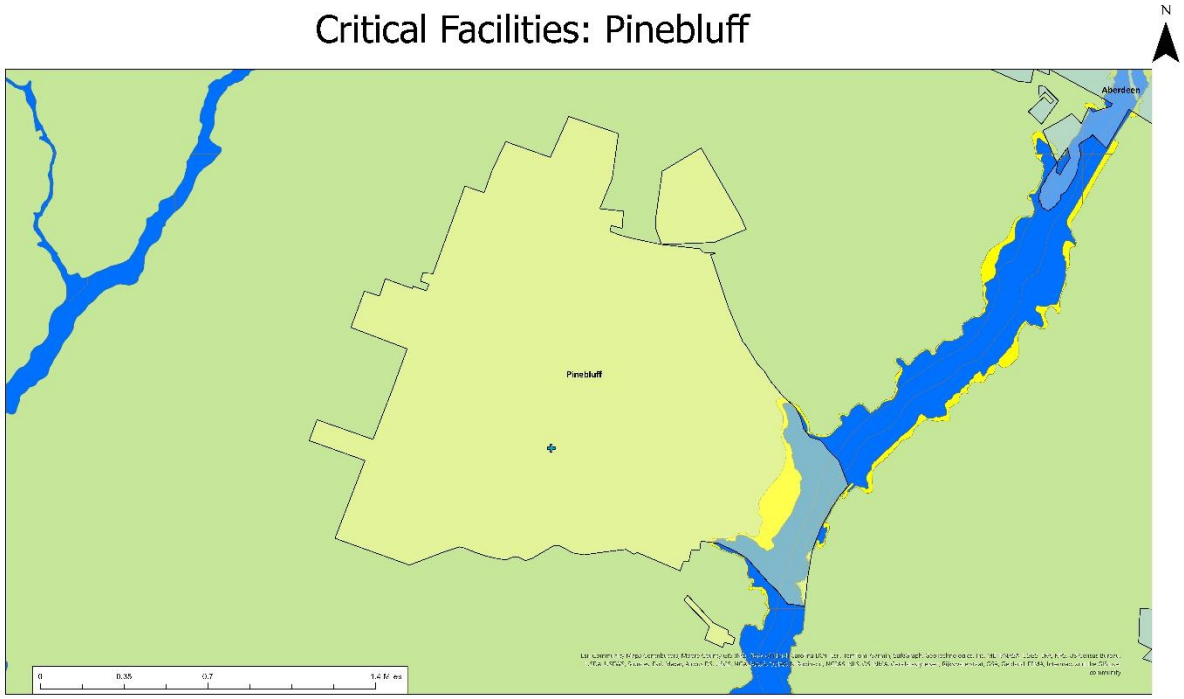
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Johnston County Group Home #3	Mental Health Homes	PO Box 1768	Johnston County Group Homes	Smithfield	27577	MHL-051-113
MicroPine Level Elementary	None	304 Blanche Street		Pine Level	27568	

Legend

Critical Facilities
- Medical Facility - Zone X
- Public Schools - Zone X

Jurisdictional Boundaries
- Pine Level
- Selma

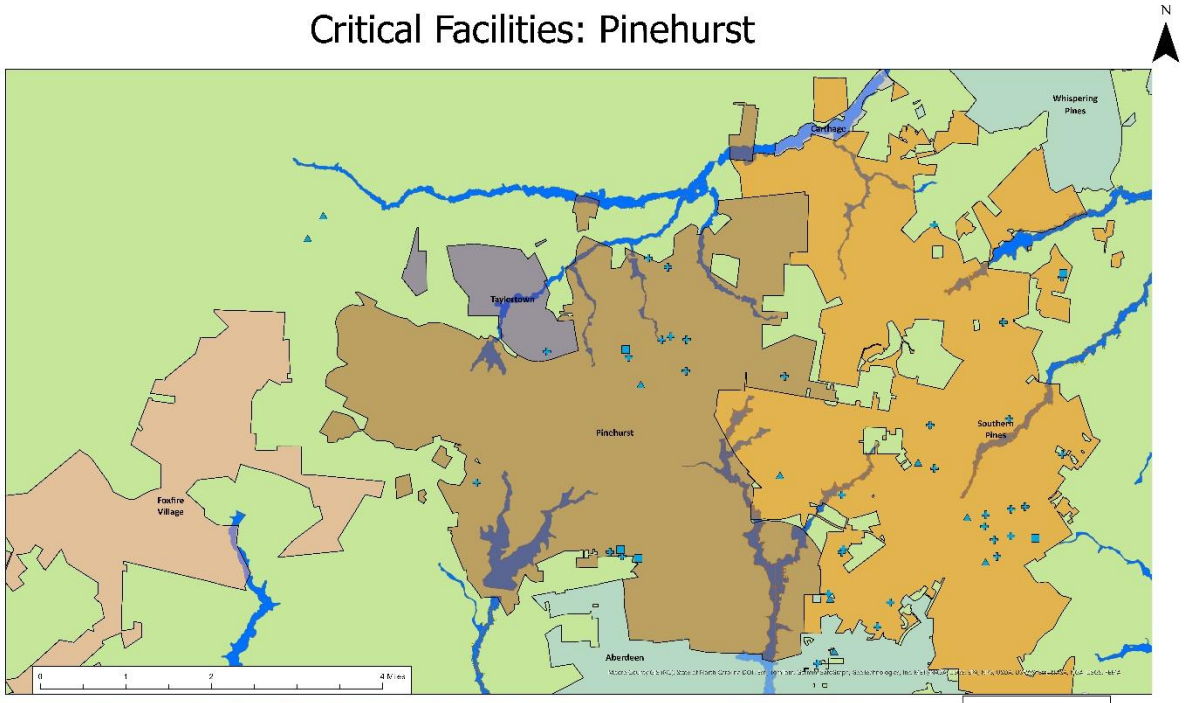
Critical Facilities: Pinebluff



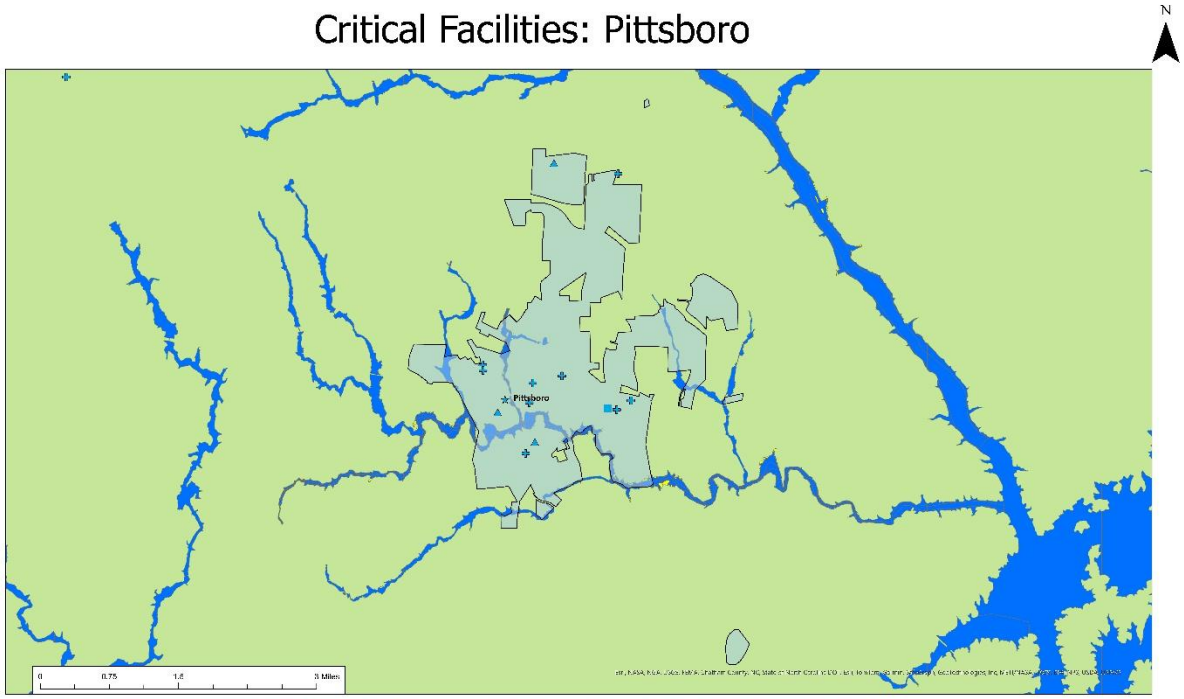
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Woodland House	Mental Health Homes	P.O. Box 877		Pinebluff	28373	MHL-063-009



Critical Facilities: Pinehurst



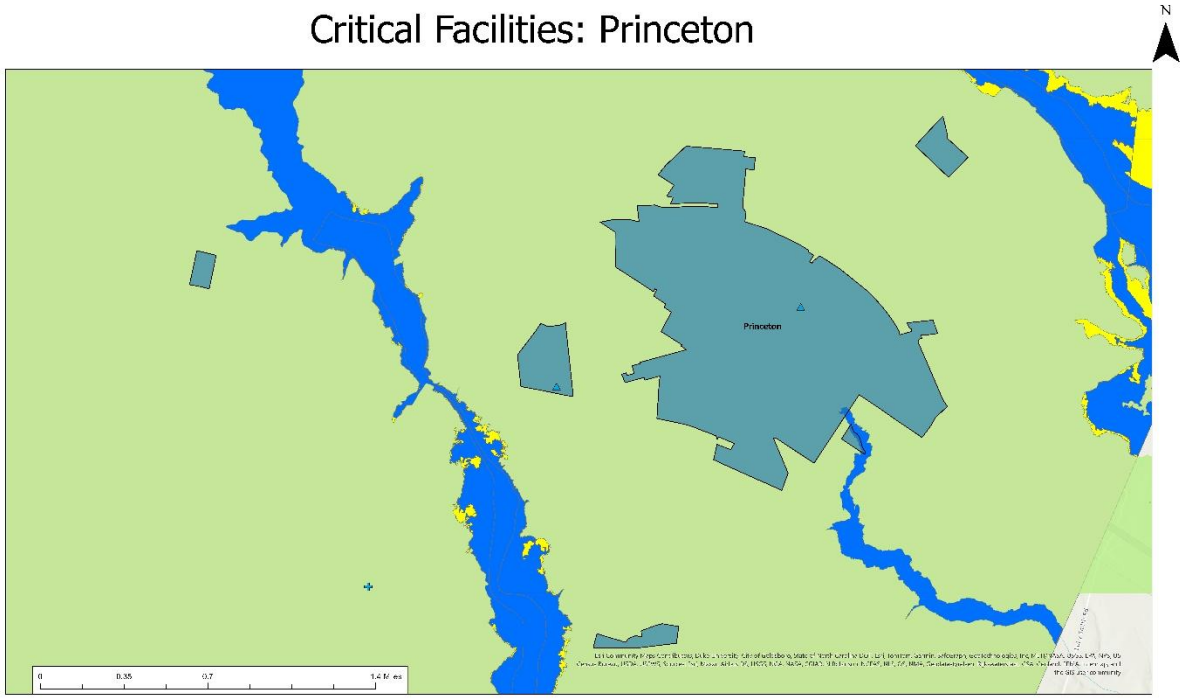
Critical Facilities: Pittsboro



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Liselotte Care Home	Family Care	3004 Silk Hope Gum Springs Rd.		Pittsboro	27312	FCL-019-006
Cambridge Hills of Pittsboro	Home For The Aged	PO Box 1209		Pittsboro	27312	HAL-019-015
Pittsboro Christian Village	Home For The Aged	1825 East Street		Pittsboro	27312	HAL-019-006
Summerfield Assisted Living	Home For The Aged	P O Box 4094		Burlington	27215	HAL-019-014
UNC Hospice	Hospice	P O Box 1077		Pittsboro	27312	HOS0370
Chatham Counseling Center	Mental Health Homes	40 Camp Drive		Pittsboro	27312	MHL-019-002
CLLC (Carolina Living & Learning Center)	Mental Health Homes	325 Russet Run		Pittsboro	27312	MHL-019-007
Club Insight	Mental Health Homes	815 Sanford Road	Kathleen Cole	Pittsboro	27312	MHL-019-024
Horton's Assessment Agency	Mental Health Homes	P.O. Box 1423		Pittsboro	27312	MHL-019-003
The Laurels of Chatham	Nursing Home Facilit	72 Chatham Business Park		Pittsboro	0	NH0523
THE LAURELS OF CHATHAM	NURSING HOMES	72 CHATHAM BUSINESS DRIVE		PITTSBORO	5687	NH0523
Chatham County Emergency Management	EOC	297 West St		Pittsboro, NC 27312		
Horton Middle	None	79 Horton Road		Pittsboro	27312	
Northwood High	None	310 Northwood High School Rd		Pittsboro	27312	
Pittsboro Elementary	None	375 Pittsboro School Road		Pittsboro	27312	



Critical Facilities: Princeton



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Tarheel Medical Staffing	Nursing Pool	1853 Progressive Church Road		Princeton	27569	NP1964
Princeton High	None	101 Dr Donnie H Jones Jr Bvd		Princeton	27569	
Princeton Elementary	Public School	650 Holt's Pond Rd		Princeton	27569	

Legend

Critical Facilities

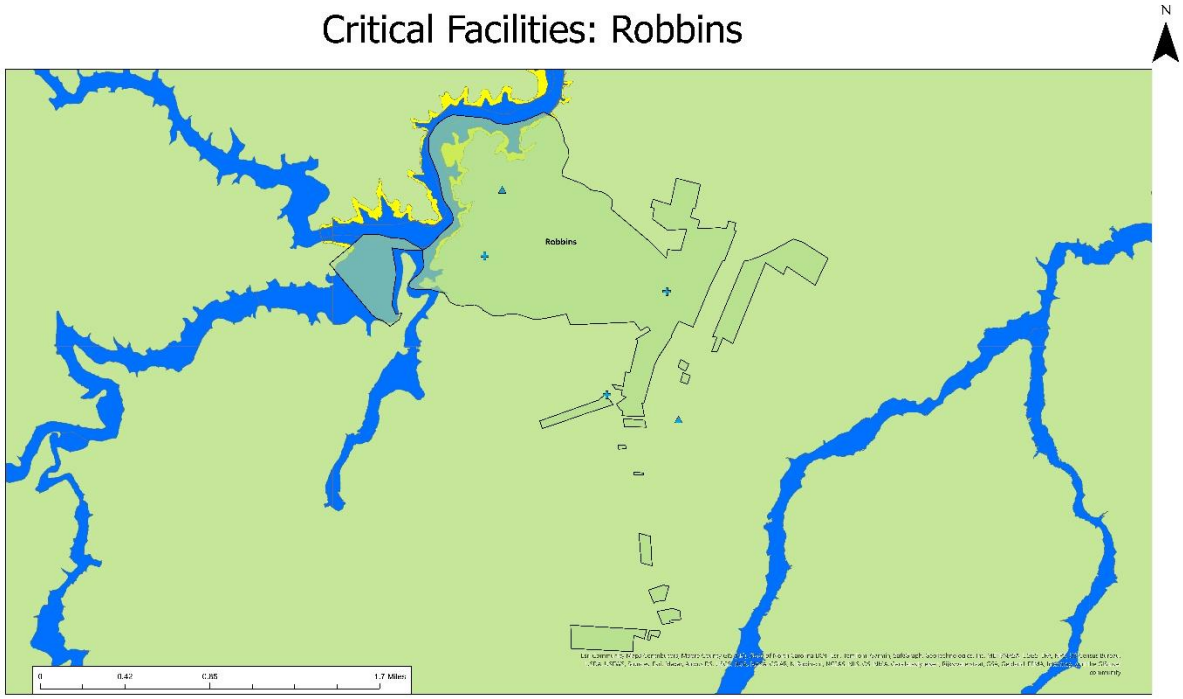
Medical Facility - Zone X

Public Schools Zone X

Jurisdictional Boundaries

Princeton

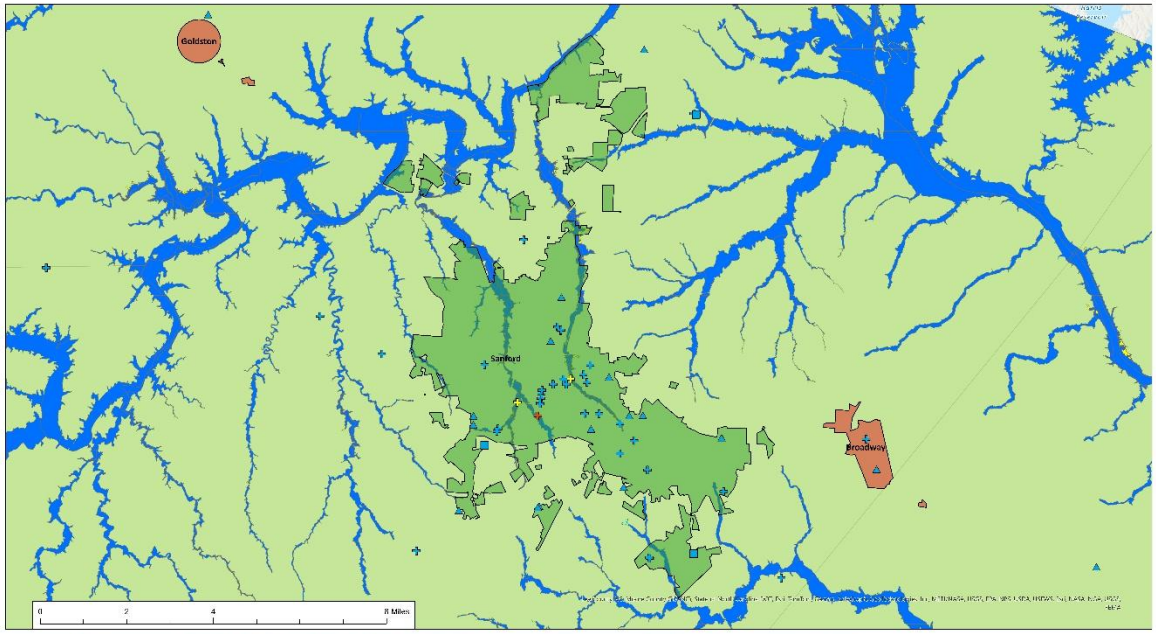
Critical Facilities: Robbins



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Brower Therapeutic Home	Mental Health Homes	4947 Highway 705		Robbins	27325	MHL-063-037
Moore County Group Home II - Middleton Street	Mental Health Homes	P O Box 1322		Southern Pines	28388	MHL-063-057
Moore County Group Home III - Green Street	Mental Health Homes	P O Box 1322		Southern Pines	28388	MHL-063-059
Elise Middle	None	180 W Elm St		Robbins	27325	
Robbins Elementary	None	268 Rushwood Rd		Robbins	27325	

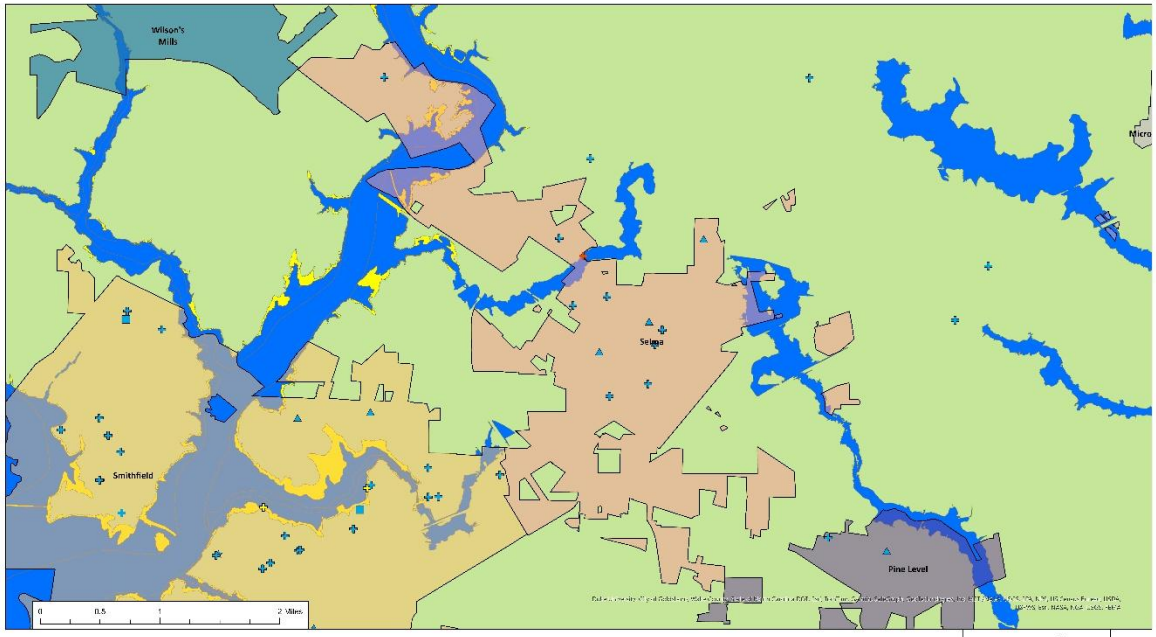


Critical Facilities: Sanford

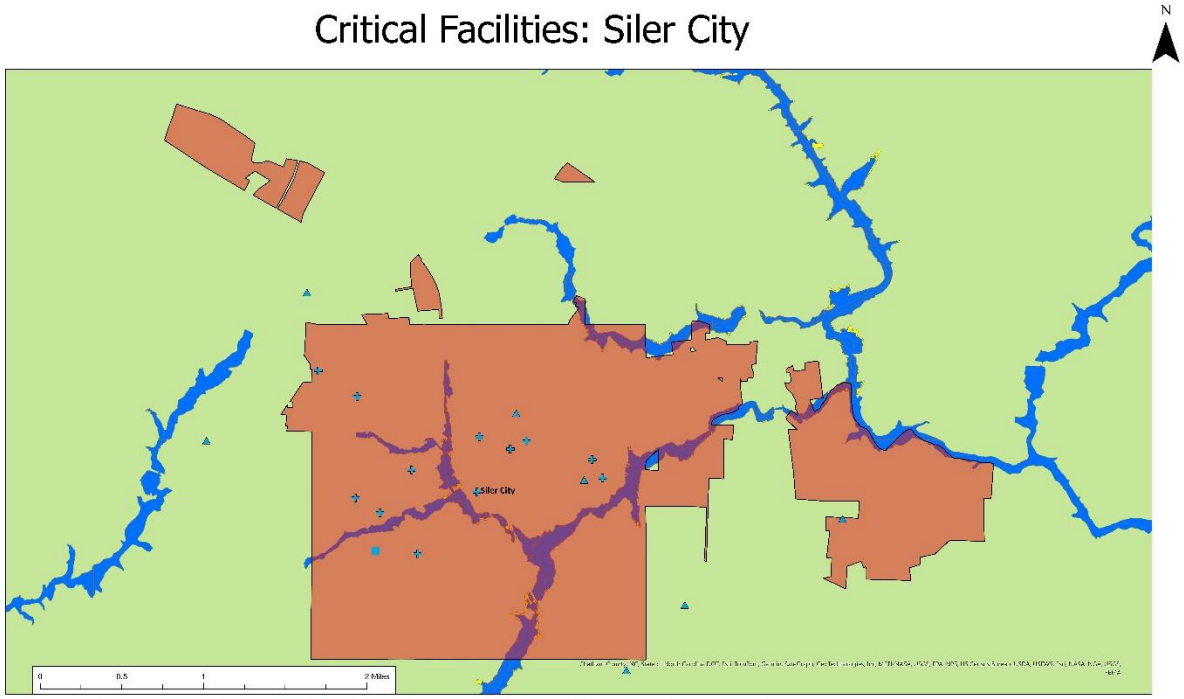


Facility Name	Facility Type	Address	Address (2)	City	Zip Code	Census Number (if applicable)
ABF Inc	[illegible]	[illegible]		Sanford	27330	[illegible]
[illegible]

Critical Facilities: Selma



Critical Facilities: Siler City



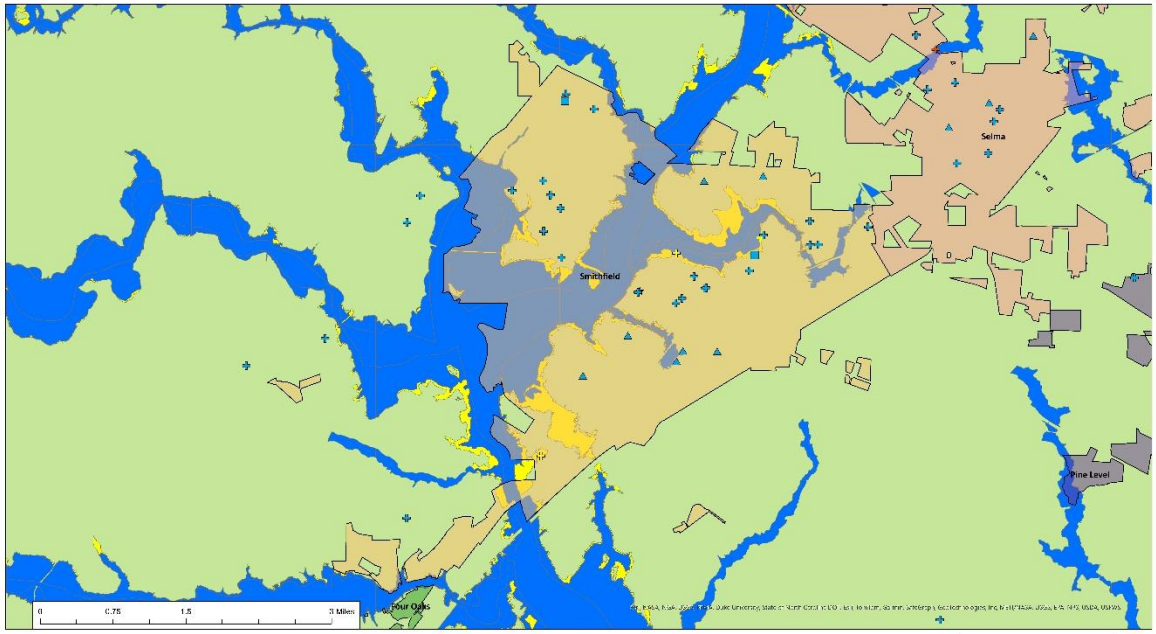
Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Fire, Choice Home Care, Inc.	Home Care	114 West Raleigh Street		Siler City	27344	HC2070
Sister 2 Sister Solution Inc.	Home Care	1002 12th Street		Siler City	27344	HC2152
UNC Home Health	Home Care	401 East Third Street		Siler City	27344	HC0305
Chatham Hospital, Inc.	Hospital	P O Box 649		Siler City	27344	HC007
Chatham County Group Home #1	Mental Health Homes	217 East Beaver Street	Chatham County Group Homes,	Siler City	27344	MHL-019-026
Chatham County Group Home #2	Mental Health Homes	217 East Beaver Street	Chatham County Group Homes,	Siler City	27344	MHL-019-027
Chatham County Group Home #3	Mental Health Homes	217 East Beaver Street	Chatham County Group Homes,	Siler City	27344	MHL-019-028
East Cardinal Street Facility-Siler City	Mental Health Homes	1105 E. Cardinal Street		Siler City	27344	MHL-019-001
Griffin House	Mental Health Homes	PO Box 707	Chatham County Group Homes,	Siler City	27344	MHL-019-029
Noae House A	Mental Health Homes	217 East Beaver Street	Chatham County Group Homes,	Siler City	27344	MHL-019-030
Noae House B	Mental Health Homes	217 East Beaver Street	Chatham County Group Homes,	Siler City	27344	MHL-019-031
Services for Alcohol and Substance Abuse (SASA)	Mental Health Homes	514 East Third Street Suite A	51 Pamela Prairie	Siler City	27344	MHL-019-032
Winfree West	Mental Health Homes	217 East Beaver Street	Chatham County Group Homes,	Siler City	27344	MHL-019-022
Sunbridge Care & Rehabilitation for Siler City	Nursing Home Facilit	900 West Dolphin Street	P O Box 789	Siler City	0	NH0355
SILER CITY CARE AND REHABILITATION CENTER	NURSING HOMES	900 WEST DOLPHIN STREET		SILER CITY	3711	NH0355
Chatham Middle	None	2025 South 2nd Avenue Ext		Siler City	27344	
SAGE Academy	None	501 Martin L King Jr Blvd		Siler City	27344	
Jordan Matthews High	None	910 East Cardinal Street		Siler City	27344	
Siler City Elementary	None	671 Tinsdale Road		Siler City	27344	
Chatham Charter	None	2200 Hamp Stone Road		Siler City	27344	
Virginia Cross Elementary	None	234 Cross School Road		Siler City	27344	
Chatham Youth Dev Center	None	500 Progress Blvd		Siler City	27344	

Legend

Critical Facilities
- Medical Facility - Zone X
- Nursing Home - Zone X
- Public Schools - Zone X

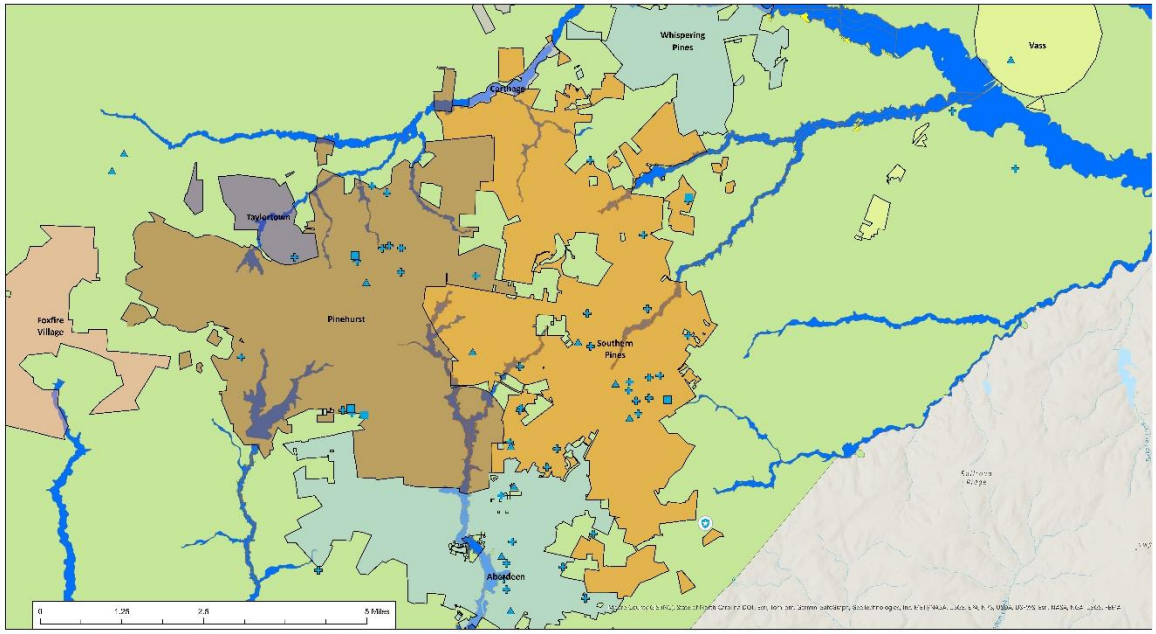
Jurisdictional Boundaries
- Siler City

Critical Facilities: Smithfield



Facility Name	Facility Type	Address	Address CD	City	Zip Code	Assessment Number (if applicable)	Facility Name	Facility Type	Address	Address CD	City	Zip Code	Assessment Number (if applicable)
[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]	[illegible]

Critical Facilities: Southern Pines



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
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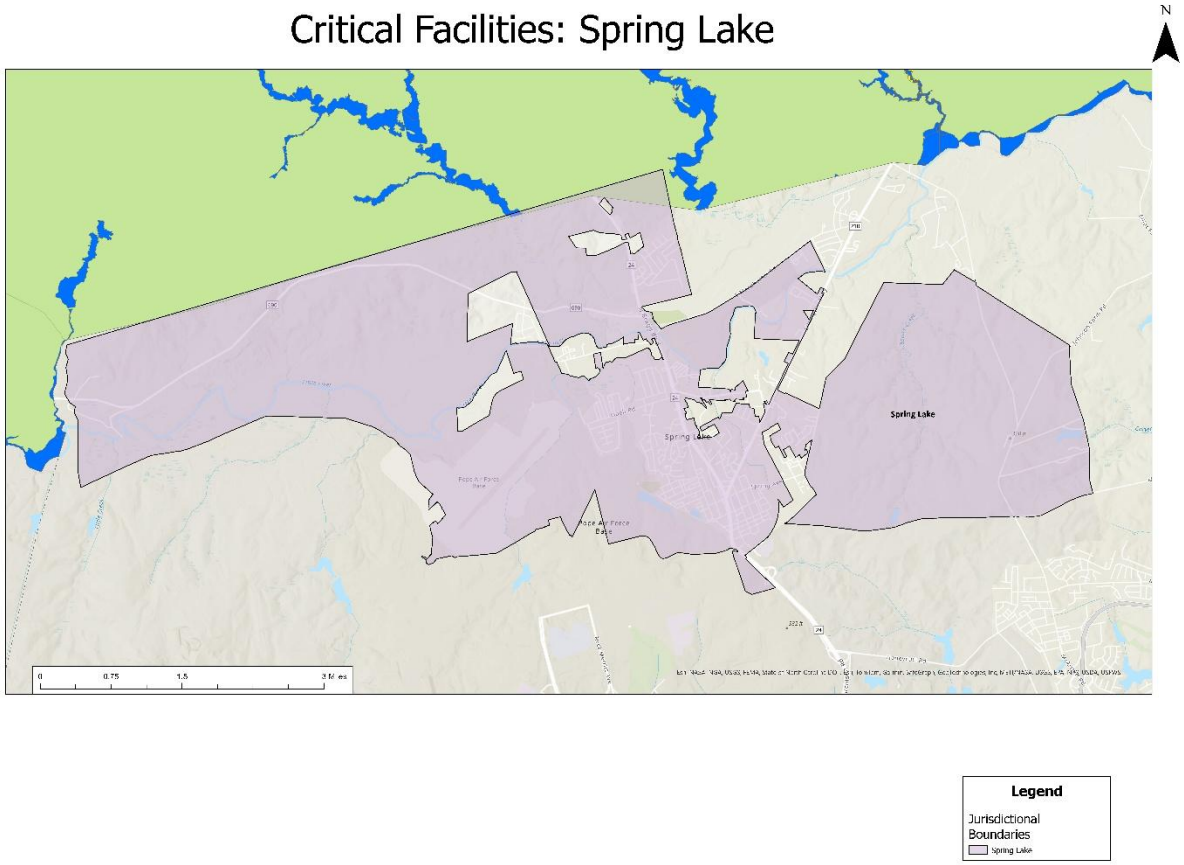
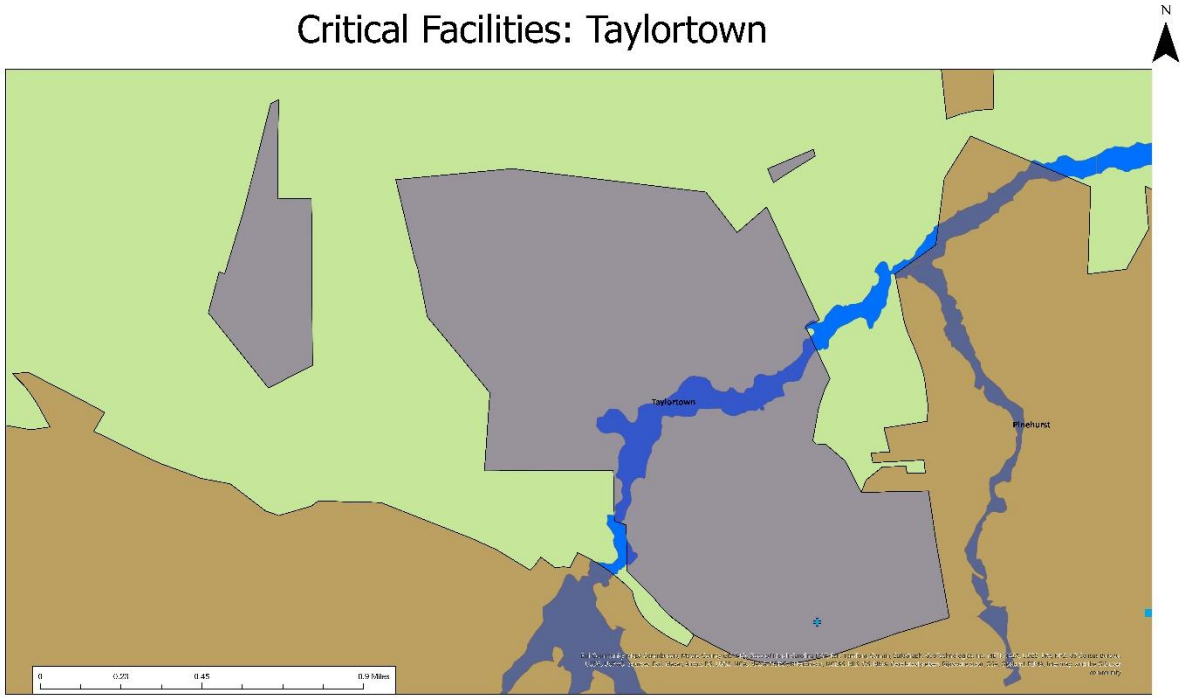
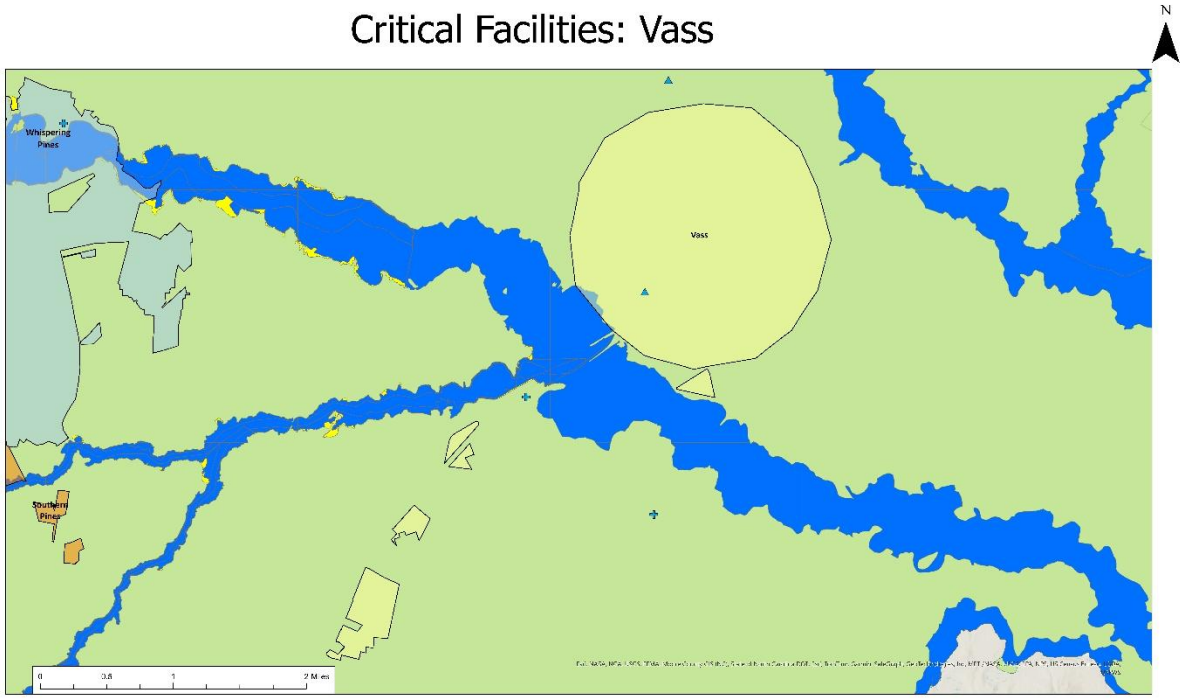

Critical Facilities: Spring Lake
N
Spring Lake
Legend
Jurisdictional Boundaries
Spring Lake



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
HealthKeeperz	Home Care	PO Box 1030		Pembroke	28372	HC2278
MANORCARE HEALTH SERVICES - PINEHURST	NURSING HOMES	205 RATTLESNAKE TRAIL		PINEHURST	7639	NH0230

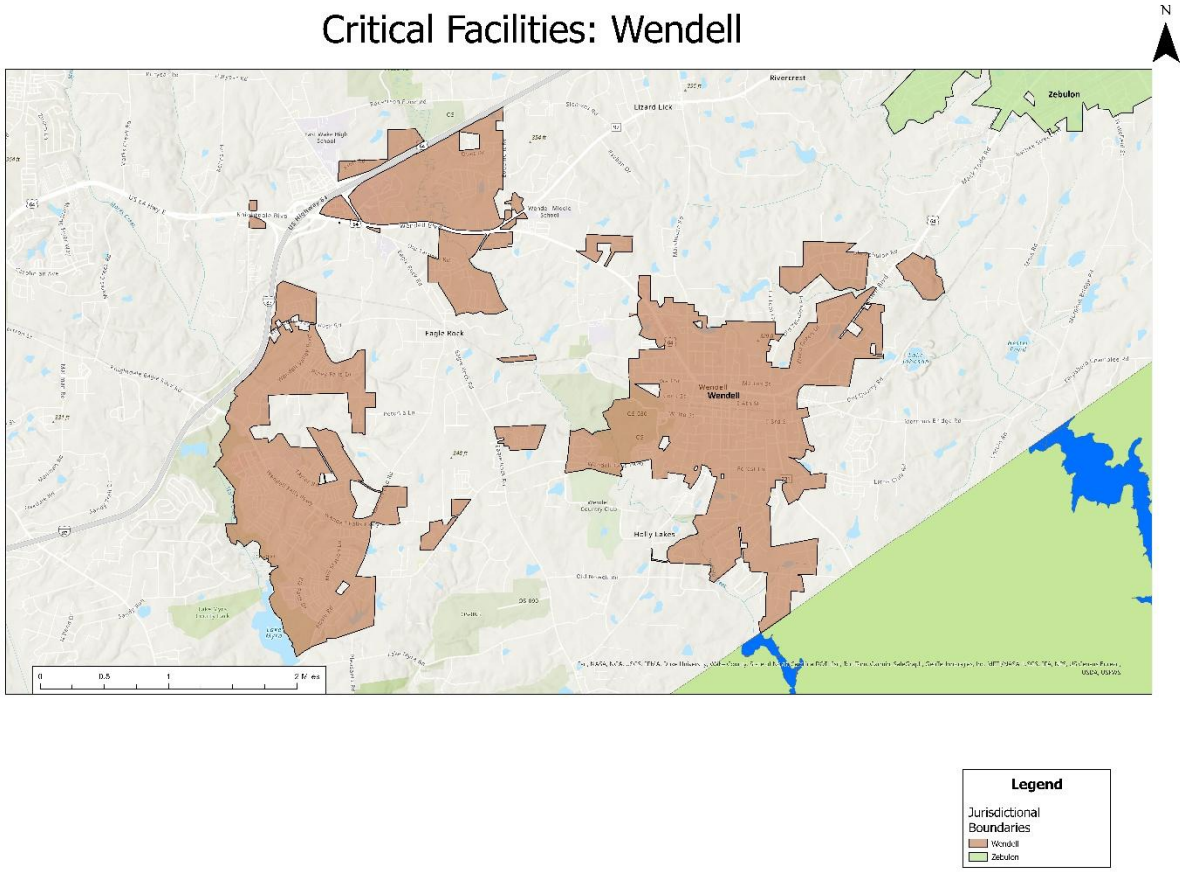


Critical Facilities: Vass

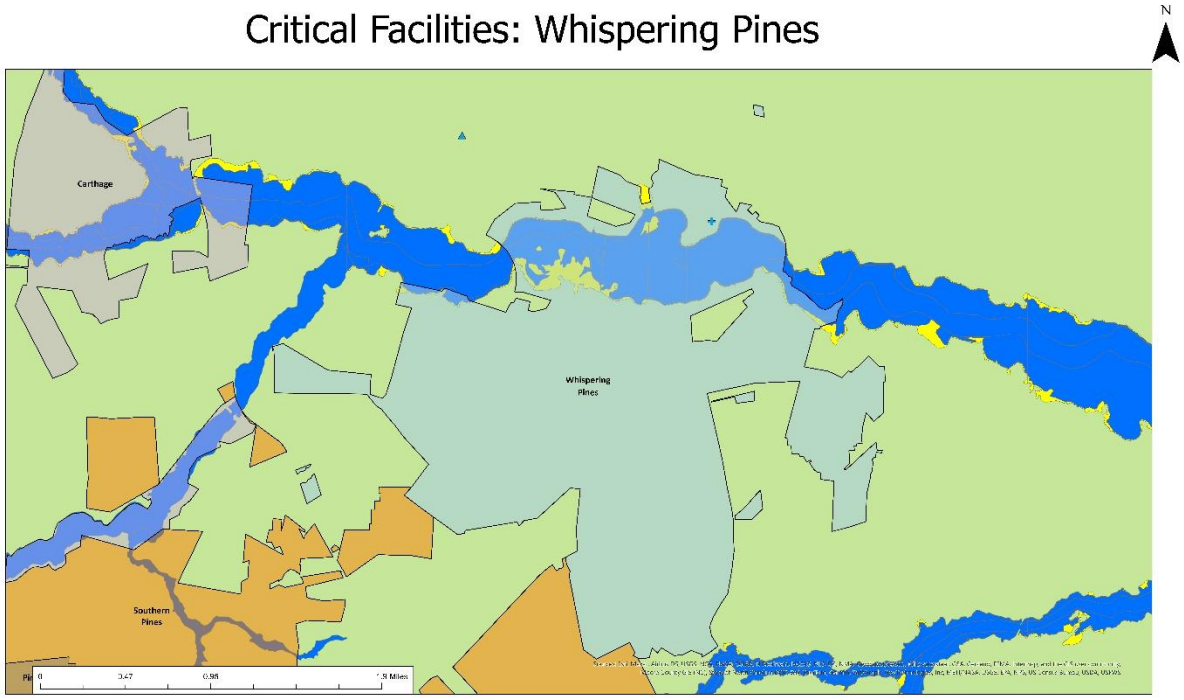


Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
McKeithen Family Care Home	Family Care	P O Box 163		Vass	28394	FCL-063-006
Crystal Lake Court CASAWORKS	Mental Health Homes	PO Box 190	285 Camp Easter Road	Lakeview	28350	MHL-063-055
Sparks Therapeutic Home	Mental Health Homes	209 Lakeview Dr.		Whispering Pines	28327	MHL-063-035
VassLakeview Elementary	None	141 James Street		Vass	28394	
Crain's Creek Middle	Public School	4625 Union Church Rd		Carthage	28327	




Critical Facilities: Wendell
N
Rivercrest
Zebulon
Litard Lick
Eagle Rock
Wendell
Holly Lakes
0
0.5
1
2 Miles
Legend
Jurisdictional Boundaries
Wendell
Zebulon

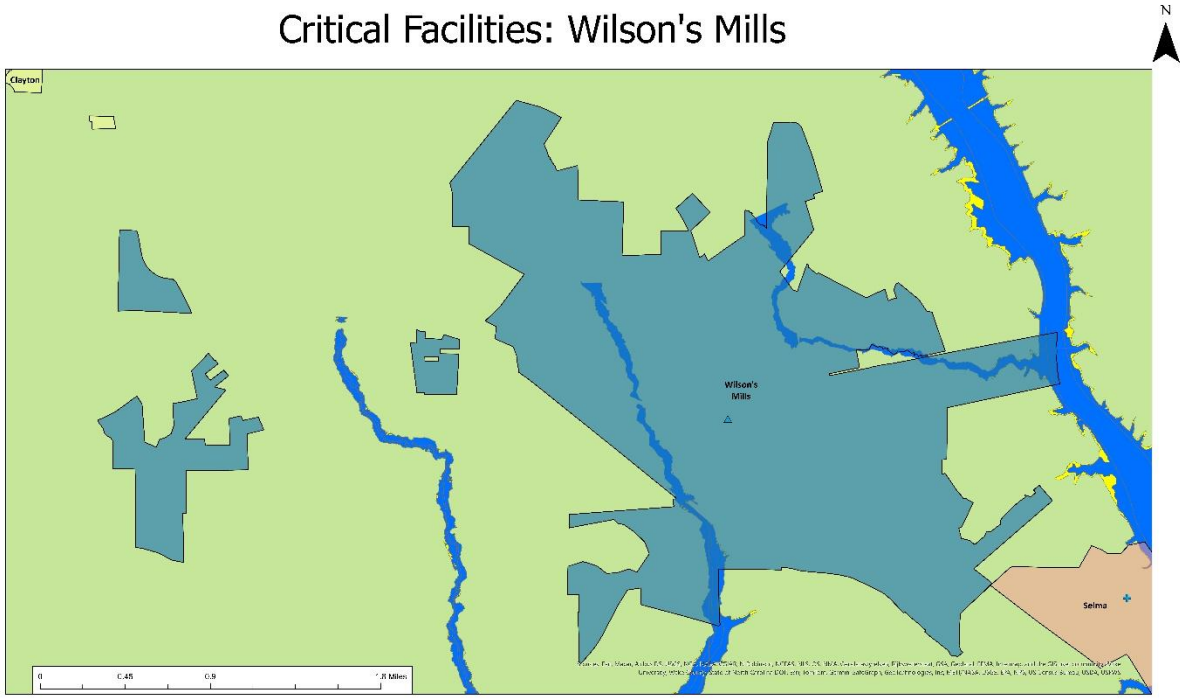
Critical Facilities: Whispering Pines



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Sparks Therapeutic Home	Mental Health Homes	209 Lakeview Dr.		Whispering Pines	28327	MHL-063-035
Sandhills Farm Life Elementary	None	2201 Farm Life Rd		Carthage	28327	

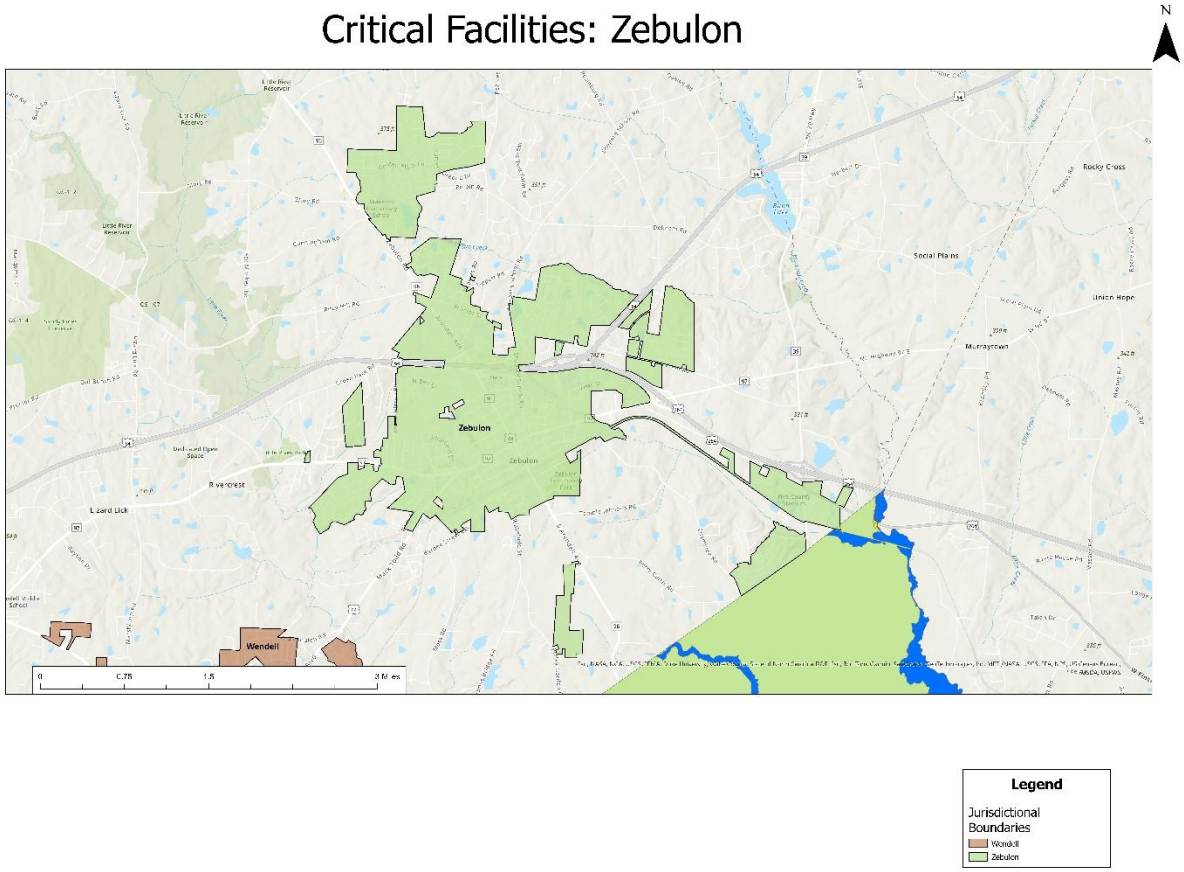


Critical Facilities: Wilson's Mills



Facility Name	Facility Type	Address	Address (2)	City	Zip Code	License Number (if applicable)
Exodus House	Mental Health Homes	P.O. Box 1078		Smithfield	27577	MHL-051-035
Wilson's Mills Elementary	None	4654 Wilson's Mills Rd		Wilson's Mills	27593	




Critical Facilities: Zebulon
N
Zebulon
Wendell
Rocky Cross
Social Plains
Union Hope
Murraytown
Riverdrest
Lizard Lick
Legend
Jurisdictional Boundaries
Wendell
Zebulon

APPENDIX E: NFIP INFORMATION

Jurisdiction	Floodplain Management & NFIP Administration
Chatham County	1) The Chatham County Manager, or their designee serving as the Floodplain Administrator, is responsible for floodplain management activities. 2) The Floodplain Administrator coordinates with the County's Building Official to make determinations regarding substantial damage (SD) and substantial improvements (SI). 3) For proposed improvements or repairs, the Floodplain Administrator (with the Building Official) must estimate or require an appraisal of market value; compare improvement/repair costs to market value; determine and document whether the work is a substantial improvement or repair of substantial damage; and notify the applicant that compliance with flood-resistant construction is required when SI/SD applies. 4) Chatham County's Flood Damage Prevention Ordinance meets and, in some cases, exceeds the state's minimum requirements for floodplain regulations. For example, Chatham County exceeds the floodproofing and utility protection standards by requiring all new construction and substantial improvements to meet a Regulatory Flood Protection Elevation (RFPE) equal to the Base Flood Elevation (BFE) plus three feet of freeboard. The ordinance further mandates that all electrical, mechanical, plumbing, and HVAC systems be elevated or floodproofed to this higher elevation to ensure continued operation during flooding. Additionally, non-residential structures must be floodproofed to the RFPE, not merely the BFE, and certified by a licensed engineer or architect, accompanied by a maintenance plan. 5) A Floodplain Development Permit is required for all developments in SFHAs. Applications must include a scaled plot plan; flood zone and floodway/non-encroachment boundaries; BFE (if available); proposed reference-level elevations; foundation details; utility protection; copies of other required permits; and documentation for RVs/temporary structures; and, if altering a watercourse, an engineering report and map. The permit specifies the development, Special Flood Hazard Areas (SFHA) determination, required RFPEs, certification submittals, and flood-opening/material requirements. Elevation and/or Floodproofing Certificates are required at specified stages. 6) The Floodplain Administrator monitors compliance with local floodplain regulations through reviews of applications, on-site inspections during work, periodic inspections throughout SFHAs, maintenance of permanent records, and verification of required certifications (e.g., Elevation Certificates, Floodproofing Certificates). Chatham County enforces compliance with local floodplain regulations through corrective procedures and enforcement powers, including written violation notices, hearings, orders to remedy within specified timeframes, stop-work orders, permit revocation, and penalties (civil penalties and/or misdemeanor charges). 7) Chatham County has no (identified) outstanding compliance issues with the National Flood Insurance Program.

Jurisdiction	Floodplain Management & NFIP Administration
	8) Chatham County does not participate in the Community Rating System.
Goldston	1) The Mayor or designee serves as the Floodplain Administrator responsible for administering and implementing the Flood Damage Prevention Ordinance. The Floodplain Administrator, in coordination with the Building Official, determines whether work constitutes substantial improvement or repair of substantial damage. 2) After a flood event, the Floodplain Administrator evaluates all damaged structures within the Special Flood Hazard Area to determine whether repair costs meet or exceed 50 percent of the structure's pre-damage market value. If a structure is found to be substantially damaged, it must be brought into full compliance with the standards for new construction under the ordinance. Residential structures must have the reference level (lowest floor) elevated to or above the Regulatory Flood Protection Elevation, which Goldston defines as the Base Flood Elevation plus three feet of freeboard. Non-residential structures must either be elevated or floodproofed to this same elevation, with a licensed engineer or architect certifying the design and maintenance plan. The determination process is administered through the Floodplain Development Permit system, which requires Elevation Certificates before construction and again after completion, as well as Floodproofing Certificates for non-residential projects. If a structure sustains flood-related damage twice within ten years, with average repair costs equaling or exceeding 25 percent of market value each time, it is treated as substantially damaged. The Floodplain Administrator verifies compliance through site inspections, record-keeping, and coordination with the Building Official before issuing final certificates of compliance. 3) Goldston's floodplain development regulations meet, and in some cases, exceed the state's minimum requirements through its three-foot freeboard, stricter AO Zone and unnumbered-zone elevation standards, critical-facility prohibitions, elevated roadway standards, and enhanced stream and floodway protections. 4) Floodplain development permit applicants must submit plot plans, elevation data, and certifications. The Floodplain Administrator reviews applications, issues permits, ensures compliance, and maintains permanent records. 5) The Floodplain Administrator monitors and enforces compliance with the Town's ordinance by conducting site inspections, issuing stop-work orders, and potentially revoking permits. Violations are subject to corrective orders, hearings, and penalties under N.C.G.S. §143-215.58. 6) Goldston has no (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Goldston does not participate in the Community Rating System. 8) According to the Federal Emergency Management Agency's (FEMA) Community Status Book (10/22/2025), there are no structures in Goldston within a Special Flood Hazard Area. All areas are considered Zone C.
Pittsboro	1) The Town Manager, or their designee, is appointed as the Floodplain Administrator to administer and implement the provisions of the Flood Damage Prevention Ordinance.

Jurisdiction	Floodplain Management & NFIP Administration
	2) The Floodplain Administrator, in coordination with the Building Inspection Department, estimates market value, compares improvement or repair costs to that value, determines and documents whether work constitutes substantial improvement or repair of substantial damage, and notifies the applicant when compliance with the NC Building Code and this ordinance is required. 3) Following a flood event, the Floodplain Administrator, in coordination with the Building Inspections Department, conducts evaluations of all damaged structures within the Special Flood Hazard Area to determine whether the cost of repair equals or exceeds 50 percent of the structure's pre-damage market value. If this threshold is met, the structure is classified as substantially damaged and must be brought into full compliance with all current flood damage prevention standards for new construction. Residential buildings must elevate the reference level (lowest floor, including basement) to or above the Regulatory Flood Protection Elevation, defined as the Base Flood Elevation plus two feet of freeboard. Non-residential structures may be elevated or floodproofed to that same elevation, with certification by a registered professional engineer or architect verifying design compliance and operational maintenance. Implementation occurs through the Floodplain Development Permit process, which requires multiple forms of certification: an Elevation Certificate within seven days of setting the reference level and another at final construction, with accompanying photographs of the structure and foundation; and, for non-residential projects, Floodproofing Certificates both before and after construction to verify as-built conditions. The ordinance also applies the substantial damage/improvement rule to repetitive-loss structures that sustain flood damage twice within ten years, with each loss averaging 25 percent of market value. All post-flood reconstruction is therefore reviewed, inspected, and documented by the Floodplain Administrator before a Certificate of Compliance/Occupancy is issued. 4) Pittsboro's floodplain development regulations meet and exceed the state minimum requirements, primarily through its three-foot freeboard requirement as well as through its elevation requirements for all mechanical, electrical, and service equipment, requiring flood-resistant materials to that same higher elevation. 5) A Floodplain Development Permit is required before development in Special Flood Hazard Areas (SFHA); applications must include a certified plot plan with SFHA boundaries, flood zones, floodway/non-encroachment limits, BFE, proposed elevations relative to the Regulatory Flood Protection Elevation (RFPE), and foundation/utility/flood-opening details; permits specify RFPE for the reference level and utilities and include submittal requirements; Elevation Certificates are required after setting the reference level and at finished construction with photographs, and Floodproofing Certificates with operational and inspection/maintenance plans are required when floodproofing is used.

Jurisdiction	Floodplain Management & NFIP Administration
	6) The Floodplain Administrator monitors for and enforces compliance through performing on-site inspections, issuing stop-work orders, and revoking permits; corrective procedures include written notice, a hearing, and an order with a specified compliance period, and violations are a Class 1 misdemeanor pursuant to G.S. 143-215.58. 7) Pittsboro has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Pittsboro does not participate in the Community Rating System.
Siler City	1) The Floodplain Administrator, as designated by ordinance, is the Town Manager (Jack Meadows); however, Senior Planner (Tim Garner) has been designated by resolution to administer the ordinance. Mr. Garner also serves as a delegated Zoning Administrator for Siler City. 2) The appointed Floodplain Administrator and the Siler City Planning Department are responsible for making determinations regarding substantial damage/substantial improvement. 3) Siler City has staff trained to make substantial damage/substantial improvement determinations and has completed Certified Floodplain Manager training. 4) The Floodplain Administrator determines substantial improvement and substantial damage by reviewing building permit applications, conducting inspections, and comparing the cost of repairs or improvements to the market value of the structure. If a structure is determined to be substantially damaged or substantially improved, the Administrator ensures that it is brought into full compliance with the elevation or floodproofing requirements of Article 5 before issuing a permit. Implementation occurs during the post-disaster permitting and reconstruction process, ensuring all repaired or improved structures meet current flood-resistant construction standards. 5) The current ordinance meets and exceeds the state's minimum requirements. For new construction, development is restricted within the 100-year floodplain unless the applicant can demonstrate that the lot would be unbuildable. 6) Any person proposing development within the Special Flood Hazard Area must obtain a Floodplain Development Permit before construction or alteration. The applicant is required to submit detailed plans that include elevation data, proposed fill, utilities, and drainage information for review by the Floodplain Administrator. The Administrator reviews each application to ensure that the proposed work meets all flood-resistant construction, elevation, and encroachment standards outlined in the ordinance. If the proposal meets all requirements, the Administrator issues the permit and conducts inspections during and after construction to confirm compliance. Once the project is complete, the applicant must provide as-built elevation certificates and other required documentation before final approval or issuance of a certificate of compliance. 7) Compliance is monitored through the zoning permit process, which involves reviewing the application and conducting periodic inspections during the construction phase. Siler City enforces local floodplain regulations through its Flood Damage Prevention Ordinance, included in its Unified Development Ordinance. Violations are

Jurisdiction	Floodplain Management & NFIP Administration
	addressed through written notices and enforcement actions, including stop-work orders, permit revocation, and legal proceedings. 8) Siler City has no (identified) outstanding compliance issues with the National Flood Insurance Program. 9) Siler City does not participate in the Community Rating System.
Harnett County	1) The Manager of Planning Services serves as the Floodplain Administrator and is responsible for administering and implementing the Flood Damage Prevention Section of the Ordinance. The Administrator's duties include reviewing floodplain development applications, issuing permits, conducting inspections, maintaining records, and coordinating with state and federal agencies. 2) The Floodplain Administrator determines whether proposed repairs or improvements meet the threshold of substantial improvement or substantial damage when reviewing development permits. Both determinations are part of the Administrator's responsibilities during the permit review and inspection process. 3) The Floodplain Administrator reviews permit applications and elevation certificates to determine whether the cost of repairs or improvements equals or exceeds 50 percent of the market value of the structure, thereby meeting the definition of substantial improvement or substantial damage. When a structure is found to meet these thresholds, the Administrator ensures the building is brought into full compliance with the ordinance, including anchoring, elevation to or above the regulatory flood protection elevation, use of flood-resistant materials, and compliance with utility design standards. After flood events, implementation occurs through the permit and inspection process to verify that reconstruction complies with all flood hazard reduction provisions. 4) The ordinance meets the state minimum standards. It exceeds them by including additional requirements, such as a two-foot freeboard for structures in areas of shallow flooding (Zone AO), mandatory professional certification for elevation, floodproofing, and foundation design, and detailed standards for accessory, temporary, and manufactured structures. 5) Before any development occurs within a Special Flood Hazard Area, applicants must obtain a Floodplain Development Permit. The application must include site plans, elevation data, certifications, and, if applicable, engineering analyses for watercourse alterations or encroachments. The Floodplain Administrator reviews all permit materials to ensure compliance with state and federal floodplain management standards, confirms the accuracy of submitted elevation and floodproofing certificates, and verifies that all necessary state and federal permits are secured. During construction, the Administrator performs on-site inspections and reviews interim certifications. Upon completion, the applicant must submit final "as-built" elevation or floodproofing certificates before a Certificate of Compliance or Occupancy is issued. Failure to provide or correct certifications results in stop-work orders or withholding of final approvals.

Jurisdiction	Floodplain Management & NFIP Administration
	6) The Floodplain Administrator monitors compliance through site inspections during and after construction to verify that work aligns with approved plans. All elevation, floodproofing, and foundation certifications must be submitted and reviewed before proceeding with work or final occupancy approval. The Administrator may issue stop-work orders or revoke floodplain development permits if violations occur and may follow corrective procedures outlined in the enforcement section of the ordinance. Records of all permits and certifications are permanently maintained for public inspection. 7) Harnett County has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Harnett County does not participate in the Community Rating System.
Angier	1) Angier's Town Manager is responsible for floodplain management. However, Angier and Harnett County staff are responsible for making determinations regarding substantial improvement/ substantial damage. Angier primarily relies on County staff for these activities due to a lack of training. 2) Angier works with Building Inspectors and Harnett County Emergency Management to implement the substantial improvement/ substantial damage provisions of its floodplain ordinance. 3) Substantial improvements and damages are addressed through permit review and certification processes. The Floodplain Administrator reviews all development applications, ensures that improvements meet regulatory flood protection elevations, and verifies elevation certificates for compliance. Reconstruction or substantial improvement of structures must adhere to new-construction standards, with no additional encroachments permitted below the regulatory flood protection elevation. 4) The Town of Angier's regulations meet and, in some areas, exceed state minimum standards. Notably, residential and nonresidential structures must be elevated or floodproofed to the regulatory flood protection elevation, which includes the base flood elevation plus a two-foot freeboard. This exceeds the state's minimum requirement of one foot. The ordinance also restricts encroachments and requires elevation or floodproofing certifications for various development types. 5) All development within the special flood hazard area requires a floodplain development permit issued by the Floodplain Administrator. Applicants must submit a detailed plot plan, elevation data, certifications (such as FEMA elevation or floodproofing certificates), and documentation of other required federal or state permits. The Administrator reviews these materials, ensures compliance with all provisions, conducts inspections, and maintains public records of permits and certificates. Stop-work orders or revocations may be issued for noncompliance. 6) The Floodplain Administrator monitors compliance through application review, inspections during and after construction, and maintenance of elevation and floodproofing certificates. Enforcement mechanisms include stop-

Jurisdiction	Floodplain Management & NFIP Administration
	work orders, permit revocations, and corrective procedures. Violations constitute misdemeanors punishable by fines or imprisonment, and each day a violation continues is treated as a separate offense. 7) Angier has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Angier does not participate in the Community Rating System.
Coats	1) The Zoning Administrator serves as the Floodplain Administrator for the Town of Coats. This individual is responsible for administering and implementing the flood damage prevention regulations, reviewing and approving Floodplain Development Permits, ensuring compliance with FEMA and state requirements, maintaining elevation and floodproofing certificates, and performing inspections. 2) The Floodplain Administrator (Zoning Administrator) is also responsible for making determinations regarding substantial improvement and substantial damage. 3) After a flood event, the Floodplain Administrator inspects and evaluates structures within the Special Flood Hazard Area to determine whether the cost of repairs equals or exceeds 50 percent of the pre-damage market value. If so, the structure is deemed substantially damaged and must be brought into full compliance with the ordinance's flood damage prevention standards for new construction. For residential buildings, this includes elevating the lowest floor (reference level) to or above the Regulatory Flood Protection Elevation, defined as the Base Flood Elevation plus two feet of freeboard. Non-residential structures must be either elevated or floodproofed to the same level, with design certification by a professional engineer or architect. Implementation occurs through the Floodplain Development Permit process, requiring Elevation Certificates at three stages: before construction, after the reference level is set, and after completion. Non-residential projects also require Floodproofing Certificates. Repetitive-loss structures meeting the two-event, 25 percent rule are also brought into compliance. The Floodplain Administrator oversees all inspections, documentation, and approvals before issuing a final certificate of compliance. 4) Coats' ordinance meets and, in some cases, exceeds the state's minimum requirements by applying a two-foot freeboard above the Base Flood Elevation for all new and substantially improved structures. It also prohibits solid-waste disposal sites, hazardous-waste management facilities, salvage yards, and chemical storage facilities within Special Flood Hazard Areas unless elevated or floodproofed to the regulatory elevation. Encroachments within floodways are prohibited unless certified by a licensed engineer to cause no rise in Base Flood Elevation levels. 5) All proposed development within Special Flood Hazard Areas requires a Floodplain Development Permit issued by the Floodplain Administrator before any construction begins. Applications must include scaled site plans identifying flood hazard boundaries, Base Flood Elevations, foundation details, and proposed utility protection methods. The Administrator reviews the application for compliance, ensures necessary state and federal permits are obtained, and

Jurisdiction	Floodplain Management & NFIP Administration
	requires Elevation and Floodproofing Certificates at each construction phase. Field inspections are conducted before the issuance of a final Certificate of Compliance. 6) The Floodplain Administrator monitors compliance by reviewing permit applications, conducting field inspections, and collecting required Elevation and Floodproofing Certificates. The Administrator may issue stop-work orders, revoke permits, or require corrective action for noncompliance. Each day of continued violation constitutes a separate offense, subject to fines or misdemeanor penalties. All floodplain development records are maintained permanently for reference and reporting. 7) Coats adopted a Flood Damage Prevention Ordinance in 2022 and submitted an NFIP enrollment package to FEMA Region 4 on July 11, 2025. The jurisdiction is still waiting for an enrollment letter from FEMA, which means Coats is not participating in the NFIP at the time of this plan update (2026).
Dunn	1) Dunn's Planning Director is responsible for floodplain management activities and oversees the Building, Code Enforcement, and Planning Departments when making determinations regarding substantial damage/ substantial improvement. 2) Dunn's Floodplain Administrator works with trained NC Building Code Officials on staff to make substantial damage/ substantial improvement determinations. 3) After a flood event, the Floodplain Administrator (Planning Director) and Building Code Officials are responsible for evaluating structures in Special Flood Hazard Areas to determine whether the cost of restoring a damaged structure equals or exceeds 50 percent of its pre-damage market value. If a structure meets this threshold, it is classified as substantially damaged and must comply with the same requirements as new construction. This includes elevating the reference level of the structure to or above the regulatory flood protection elevation, which in Dunn's ordinance is defined as the Base Flood Elevation plus two feet of freeboard. The ordinance also requires new or substantially improved non-residential buildings to be either elevated or floodproofed to this same elevation standard. Additionally, any structure that sustains flood-related damage on two occasions within ten years, with repair costs averaging at least 25 percent of its market value each time, is treated as substantially damaged and subject to these reconstruction requirements. 4) Dunn's floodplain development regulations meet and exceed the state's minimum requirements by adopting a two-foot freeboard above the base flood elevation for both residential and nonresidential structures. The ordinance also mandates elevation or floodproofing for utilities and structures within special flood hazard areas and requires maintenance of floodway capacity and elevation certification for development. 5) Any proposed development within a special flood hazard area requires a Floodplain Development Permit issued by the Floodplain Administrator before work begins. Applicants must submit detailed plot plans, elevation data, and,

Jurisdiction	Floodplain Management & NFIP Administration
	when applicable, floodproofing certificates and other required federal or state permits. The Floodplain Administrator reviews applications, conducts inspections, ensures compliance, and maintains permanent public records of permits and elevation certificates. 6) The Floodplain Administrator monitors compliance through application reviews, permit tracking, and on-site inspections during and after construction. Enforcement tools include stop-work orders, permit revocations, and corrective procedures. Violations constitute misdemeanors, and each day a violation continues is considered a separate offense. Appeals and hearings are available for property owners who contest violations or enforcement actions. 7) Dunn has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Dunn does not participate in the Community Rating System.
Erwin	1) The Town Planner of Erwin (as a designee of the Town Manager) is responsible for floodplain management activities. The Town Planner and Town Manager are responsible for making substantial damage reports and implementing substantial improvements for damaged properties. 2) Erwin staff are trained in substantial damage/ substantial improvement determinations and participate in NC Emergency Management training throughout the year. 3) In recent years, Erwin has not completed any substantial damage/ substantial improvement determinations due to a lack of severe storm impacts. However, following a flood event, the Floodplain Administrator reviews affected structures to determine if the cost of restoring damage equals or exceeds 50 percent of the structure's pre-damage market value. If a structure meets this threshold, it is classified as substantially damaged and must comply with new construction requirements under the ordinance. This includes elevating the reference level to or above the regulatory flood protection elevation, which is defined as the Base Flood Elevation plus two feet of freeboard. For nonresidential structures, floodproofing to the same standard is allowed as an alternative. The ordinance also specifies that any building sustaining flood-related damage twice within ten years, with average repairs equaling or exceeding 25 percent of market value each time, is considered substantially damaged and must be reconstructed in compliance with all applicable flood-resistant design provisions 4) Erwin's floodplain development regulations meet and exceed minimum floodplain management requirements by requiring a two-foot freeboard above the base flood elevation for both residential and nonresidential structures. It also applies cumulative substantial improvement requirements over three years, meaning that improvements whose combined costs equal or exceed 50 percent of a structure's market value during that time are treated as substantial improvements. These provisions strengthen long-term compliance and resilience against repeated flooding events.

Jurisdiction	Floodplain Management & NFIP Administration
	5) All development within a Special Flood Hazard Area requires a Floodplain Development Permit issued by the Floodplain Administrator before the start of construction. Applications must include scaled plot plans, elevation data, foundation details, utility protection plans, and documentation of required state and federal permits. Elevation and floodproofing certifications are required before, during, and after construction to verify compliance with the regulatory flood protection elevation. The Administrator maintains public records of all permits and certifications to support ongoing compliance management. 6) The Floodplain Administrator monitors compliance through permit reviews, inspections of work in progress, and maintenance of elevation and floodproofing certifications. The Administrator has the authority to issue stop-work orders, revoke permits for noncompliance, and require corrective actions. Violations are classified as misdemeanors, and each day of continued violation is treated as a separate offense 7) Erwin educates developers on the risks of developing within a flood zone on an ongoing basis. 8) Erwin has no (identified) outstanding compliance issues with the National Flood Insurance Program. 9) Erwin does not participate in the Community Rating System
Lillington	1) The Floodplain Administrator is the individual appointed by the Town of Lillington to administer and implement the provisions of the Flood Damage Prevention Ordinance. The ordinance does not identify the specific title of this individual, but it does assign them duties that include permit review, inspection, and recordkeeping for all development within Special Flood Hazard Areas. 2) The Floodplain Administrator reviews all floodplain development applications and ensures that structures are built or repaired in accordance with flood hazard reduction provisions. This role includes determining whether a project constitutes a substantial improvement or substantial damage and whether it must meet new construction standards. 3) After a flood event, the Floodplain Administrator evaluates affected structures to determine whether the cost of repairs equals or exceeds 50 percent of the pre-damage market value. Any structure meeting this threshold is considered substantially damaged and must be brought into compliance with the standards for new construction. Residential and nonresidential buildings must have the reference level elevated no lower than the regulatory flood protection elevation, which is defined as the Base Flood Elevation plus two feet of freeboard. Nonresidential structures may alternatively be floodproofed to this elevation. The ordinance further clarifies that additions or improvements that constitute a substantial improvement, whether from flood damage or cumulative modifications, must meet all requirements for new construction, ensuring resilience in reconstruction after flooding. 4) Lillington's ordinance meets and exceeds minimum requirements by mandating a two-foot freeboard above the base flood elevation for both residential and nonresidential structures. It also prohibits new solid waste disposal, hazardous waste management, salvage yards, and chemical storage facilities in Special Flood Hazard Areas except

Jurisdiction	Floodplain Management & NFIP Administration
	by variance. It requires that any permitted tanks or storage be elevated or floodproofed to the regulatory flood protection elevation. Additional standards, such as engineered foundation certifications for manufactured homes elevated more than 36 inches above grade, also strengthen compliance beyond the minimum. 5) All development within a Special Flood Hazard Area requires a floodplain development permit issued by the Floodplain Administrator. Applicants must provide elevation or floodproofing certifications, engineered foundation certifications for manufactured homes (when required), and supporting documents such as engineering analyses for watercourse alterations. The Administrator reviews all applications to ensure compliance with local, state, and federal regulations, verifies certifications at multiple construction stages, and maintains all records for public inspection. 6) The Floodplain Administrator monitors compliance through review of permit applications, elevation and floodproofing certifications, and on-site inspections during and after construction. The Administrator also maintains permanent public records, issues stop-work orders when violations occur, and coordinates with state and federal agencies regarding map revisions and regulatory updates. Violations may result in permit revocation or penalties under Article XIII “Enforcement & Penalties.” 7) Lillington has no (identified) compliance issues with the National Flood Insurance Program. 8) Lillington does not participate in the Community Rating System.
Johnston County	1) The County Manager or their designee serves as the Floodplain Administrator for Johnston County and is responsible for administering and implementing the provisions of the Flood Damage Prevention Ordinance. The Floodplain Administrator ensures overall compliance with the National Flood Insurance Program, coordinates with state and federal agencies, issues permits, and conducts inspections. 2) The Floodplain Administrator is responsible for determining whether proposed work constitutes a substantial improvement or repair of substantial damage. This determination includes comparing the cost of repair or improvement to the structure's market value prior to damage and notifying the applicant when flood-resistant construction requirements must be applied. 3) After a flood event, the Floodplain Administrator evaluates damaged structures to determine whether repair costs equal or exceed 50 percent of the structure’s pre-damage market value. If the threshold is met, the building is classified as substantially damaged and must meet all new-construction standards. This includes elevating the reference level to at least the Regulatory Flood Protection Elevation, defined as the Base Flood Elevation plus two feet of freeboard. Non-residential structures may be floodproofed to this same elevation. The ordinance also applies a cumulative damage provision, under which any structure that sustains flood-related damage twice within ten years,

Jurisdiction	Floodplain Management & NFIP Administration
	with repair costs averaging at least 25 percent of market value each time, is considered substantially damaged and must comply with reconstruction and elevation standards. 4) Johnston County's ordinance meets and exceeds the minimum standards by requiring a two-foot freeboard above the base flood elevation for all residential and non-residential structures. It also prohibits new solid waste disposal facilities, hazardous waste management facilities, salvage yards, and chemical storage facilities in Special Flood Hazard Areas except by variance. Furthermore, it applies to a cumulative substantial improvement calculation within one year and includes a repetitive loss clause, both of which strengthen resilience beyond the baseline requirements. 5) Any proposed development in a Special Flood Hazard Area requires a Floodplain Development Permit before construction. Applicants must submit detailed plans, including elevation data, flood zone boundaries, foundation systems, floodproofing certifications, and documentation of other state and federal permits. The Floodplain Administrator reviews applications, conducts site inspections, and ensures compliance before issuing a certificate of occupancy. Elevation and floodproofing certifications must be submitted both before and after construction, and all records are permanently maintained for public inspection. 6) The Floodplain Administrator monitors compliance through permit reviews, inspections, and maintenance of elevation and floodproofing certificates. They have the authority to issue stop-work orders, revoke permits for noncompliance, and conduct hearings when violations occur. Violations are classified as Class 1 misdemeanors, with each day of noncompliance constituting a separate offense. The County's governing body may hear appeals of enforcement actions. 7) Johnston County has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Johnston County does not participate in the Community Rating System.
Archer Lodge	1) The Town Administrator and Town Planner share the responsibilities associated with floodplain management, including determinations of substantial damage/substantial improvement. 2) After a flood event, the Floodplain Administrator evaluates all structures within Special Flood Hazard Areas to determine if the cost of repairs equals or exceeds 50 percent of the pre-damage market value. Structures meeting this threshold are deemed substantially damaged and must be brought into full compliance with new-construction requirements. This includes elevating the reference level to or above the Regulatory Flood Protection Elevation, defined as the Base Flood Elevation plus two feet of freeboard. Non-residential buildings may be floodproofed to this same elevation instead of being elevated. Additionally, Archer Lodge's ordinance includes a repetitive loss provision: any structure that sustains flood-related damage twice within 10 years, with repair costs averaging at least 25

Jurisdiction	Floodplain Management & NFIP Administration
	percent of market value each time, is considered substantially damaged and must comply with reconstruction standards. 3) The Town of Archer Lodge meets and exceeds minimum standards by adopting a two-foot freeboard above the Base Flood Elevation for all new and substantially improved residential and nonresidential structures. The ordinance also prohibits fill within the Special Flood Hazard Area, disallows approval of letters of map revision based on fill (LOMR-F/CLOMR-F), and mandates that solid-waste, hazardous-waste, and chemical-storage facilities are either elevated or floodproofed to the regulatory elevation and only permitted by variance when serving a critical community need. 4) When a development application is submitted, Archer Lodge's Zoning Official reviews that the project meets all requirements of the Town's Unified Development Ordinance, including floodplain management provisions. Applicants must submit a certified plot plan, elevation data, foundation plans, and floodproofing or utility-protection details. Additional documents, such as watercourse alteration studies and required state/federal permits, must be provided before approval. If the application is not compliant with these provisions, mitigation actions are proposed. 5) The Town Administrator and Town Planner monitor for compliance through plan review, required elevation and floodproofing certifications, and multiple site inspections before, during, and after construction. The Administrator also issues stop-work orders, conducts corrective hearings, and may revoke permits for noncompliance. Each day a violation continues constitutes a separate offense, classified as a Class 1 misdemeanor under G.S. 143-215.58, with fines or imprisonment possible. The local governing body may hear appeals of enforcement decisions. 6) Archer Lodge has no (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Archer Lodge does not participate in the Community Rating System.
Benson	1) The Town Manager or their designee serves as the Floodplain Administrator for the Town of Benson. This individual is responsible for administering, implementing, and enforcing the provisions of the ordinance, including reviewing development proposals, issuing permits, and ensuring compliance with NFIP regulations. 2) The Floodplain Administrator (Town Manager or designee) is responsible for determining whether development, repair, or reconstruction projects constitute substantial improvement or substantial damage. This includes evaluating the cost of repairs or improvements against the structure's pre-damaged market value to ensure proper application of floodplain standards. 3) Following a flood event, the Floodplain Administrator evaluates flood-damaged structures to determine whether repair costs equal or exceed 50 percent of the structure's pre-damage market value. Structures meeting this threshold are considered substantially damaged and must be reconstructed in accordance with new construction requirements. The ordinance requires that all substantially improved or damaged residential structures be elevated so that the reference level is at or above the Regulatory Flood Protection Elevation, defined as the Base Flood

Jurisdiction	Floodplain Management & NFIP Administration
	Elevation plus two feet of freeboard. Nonresidential structures may alternatively be floodproofed to this same standard. The ordinance also applies these provisions to repetitive-loss properties, requiring that structures with repeated flood damage that meet the defined thresholds be brought into compliance upon repair. 4) Benson's ordinance meets and exceeds the state's minimum floodplain management requirements by adopting a two-foot freeboard above the Base Flood Elevation for both residential and nonresidential development. It also prohibits new solid waste disposal facilities, hazardous waste management operations, salvage yards, and chemical storage facilities in Special Flood Hazard Areas except by variance. The ordinance mandates that any such facilities permitted by variance must be elevated or floodproofed to the Regulatory Flood Protection Elevation. Additionally, Benson's ordinance includes provisions for cumulative improvement tracking and repetitive loss that strengthen post-flood reconstruction requirements. 5) All proposed development within Special Flood Hazard Areas requires a Floodplain Development Permit issued by the Floodplain Administrator. Permit applications must include site plans showing flood zone boundaries, Base Flood Elevations, and proposed reference levels; certifications of elevation or floodproofing; and documentation of applicable state or federal permits. The Floodplain Administrator reviews each application for compliance with floodplain standards, conducts inspections during and after construction, and maintains public records of all floodplain permits and elevation certificates for community reference. 6) The Floodplain Administrator monitors compliance through plan reviews, on-site inspections, and verification of elevation and floodproofing certifications. The Administrator maintains permanent records of permits and certifications and issues stop-work orders or revokes permits for noncompliance. Violations of the ordinance constitute misdemeanors, with each day of continued violation treated as a separate offense. Appeals or variance requests are managed in accordance with procedures outlined in the ordinance's administrative provisions. 7) Benson has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Benson does not participate in the Community Rating System.
Clayton	1) Per section 1.8.7.C.2 of the Town of Clayton's UDO, the Engineering Director shall perform the duties of the Floodplain Administrator. The Assistant Engineering Director, being a Certified Floodplain Manager, acts in both the Assistant Engineering Director and Floodplain Administrator roles. Clayton's floodplain administrator is responsible for substantial damage (SD) and substantial improvement (SI) determinations. The acting Floodplain Administrator is a Certified Floodplain Manager with multiple years of experience in SD/SI determinations. 2) The Town conducts SD/SI determinations as part of building permit reviews for structures within the SFHA and conducts damage assessments for structures within the SFHA after flood events. After a flood event, the Floodplain Administrator reviews flood-damaged structures within the Special Flood Hazard Area to determine whether repair

Jurisdiction	Floodplain Management & NFIP Administration
	costs equal or exceed 50 percent of the structure's pre-damage market value. Any structure meeting this threshold is deemed substantially damaged and must meet the same standards as new construction. Residential buildings must have the reference level elevated at or above the Regulatory Flood Protection Elevation, which is defined as the Base Flood Elevation + two feet of freeboard. Nonresidential structures may alternatively be floodproofed to the same elevation. The ordinance also includes a repetitive loss provision, requiring that any structure sustaining flood-related damage twice within ten years, with repair costs averaging at least 25 percent of its market value each time, be considered substantially damaged and brought into compliance with reconstruction requirements. 3) Clayton's floodplain development regulations meet and exceed the state's minimum standards by requiring a two-foot freeboard above the Base Flood Elevation for all new and substantially improved structures. It prohibits fill within the floodway or non-encroachment areas unless supported by an engineer's certification showing no increase in flood levels, and it restricts new solid-waste, hazardous-waste, salvage, and chemical-storage facilities in flood hazard areas unless elevated or floodproofed to the regulatory elevation. The Town also disallows LOMR-F and CLOMR-F approvals for fill-based elevation and applies cumulative improvement calculations to track substantial improvements over time. 4) All proposed development within Special Flood Hazard Areas requires a Floodplain Permit issued by the Floodplain Administrator before construction. Applicants must submit certified site plans showing floodplain boundaries, elevation data, and proposed building elevations, along with documentation of applicable state and federal permits. The Administrator reviews applications for compliance with all FPOD standards, verifies elevation certificates before and after construction, and maintains public records of all permits and certifications to demonstrate community compliance with NFIP requirements. 5) The Floodplain Administrator monitors compliance through permit reviews, required elevation and floodproofing certifications, and field inspections before, during, and after construction. A Floodplain Permit is required before any development activity within the FPOD. The Administrator may issue stop-work orders, revoke permits, or require corrective actions for noncompliance. Violations are subject to enforcement under the Town's general penalty provisions, and each day of a continuing violation is treated as a separate offense. 6) Clayton has no (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Clayton does not participate in the Community Rating System.
Four Oaks	1) The Zoning Administrator serves as the Floodplain Administrator for the Town of Four Oaks. This individual is responsible for administering and implementing the provisions of the Flood Damage Prevention Ordinance, including issuing floodplain development permits, maintaining elevation and certification records, conducting inspections, and coordinating with FEMA and the North Carolina Division of Emergency Management.

Jurisdiction	Floodplain Management & NFIP Administration
	2) The Floodplain Administrator (Zoning Administrator) is responsible for making substantial damage and substantial improvement determinations. This includes comparing the cost of proposed repair or reconstruction work to the structure's market value before damage occurred and determining whether compliance with new construction standards is required. 3) After a flood event, the Floodplain Administrator assesses damaged structures in Special Flood Hazard Areas to determine whether the cost of repair equals or exceeds 50 percent of the structure's pre-damage market value. Structures meeting this threshold are deemed substantially damaged and must comply with the standards for new construction. Residential buildings must have the reference level elevated to or above the Regulatory Flood Protection Elevation, defined as the Base Flood Elevation plus two feet of freeboard. Non-residential structures may be floodproofed to the same elevation. The ordinance also includes a repetitive loss provision, requiring that structures incurring flood damage twice within ten years, with repair costs averaging at least 25 percent of market value each time, be classified as substantially damaged and brought into compliance upon repair. 4) Four Oaks' ordinance meets and exceeds minimum requirements by adopting a two-foot freeboard above the Base Flood Elevation for all new and substantially improved structures. It also prohibits fill or encroachments within designated floodways and non-encroachment areas, unless supported by certified engineering analyses demonstrating that no rise in flood levels will occur. Additionally, it prohibits new solid-waste, hazardous-waste, salvage, and chemical-storage facilities in Special Flood Hazard Areas except by variance, and such facilities must be elevated or floodproofed to the Regulatory Flood Protection Elevation if approved. 5) Any proposed development within a Special Flood Hazard Area requires a Floodplain Development Permit before construction. Applicants must submit a scaled plot plan, elevation data, foundation details, flood zone designation, and documentation of all required state and federal permits. The Floodplain Administrator reviews the application, conducts site inspections, and requires elevation and floodproofing certifications at pre-construction, mid-construction, and final stages. Records of permits and certifications are permanently maintained for public inspection. 6) The Floodplain Administrator enforces compliance through permit application review, required elevation and floodproofing certifications, and multiple site inspections during construction. The Administrator may issue stop-work orders, revoke permits, and hold corrective hearings for violations. Each day a violation continues constitutes a separate misdemeanor offense. The local governing body hears appeals, and unresolved violations can result in written orders to correct or remove noncompliant development. 7) Four Oaks has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Four Oaks does not participate in the Community Rating System.

Jurisdiction	Floodplain Management & NFIP Administration
Kenly	1) The Town Manager is responsible for floodplain management in Kenly, including determinations of substantial damage and substantial improvement. 2) After a flood event, the Town conducts post-disaster damage assessments in coordination with Johnston County Emergency Services. Properties in the floodplain are inspected to determine the extent of damage. When a structure is found to be substantially damaged, the property owner is notified and required to bring the structure into compliance with current floodplain management standards before any permits are issued for repair or reconstruction. Documentation such as elevation certificates, cost estimates, and market value appraisals is maintained as part of the permitting record. The Town of Kenly enforces the Substantial Improvement and Substantial Damage (SI/SD) provisions through the Floodplain Development Permit process administered by the Town's Floodplain Administrator. Any structure within the Special Flood Hazard Area that is proposed for repair, renovation, or reconstruction is evaluated to determine if the cost of improvements or damages equals or exceeds 50% of the structure's market value, as required by FEMA and the Town's Flood Damage Prevention Ordinance. 3) The Town of Kenly's floodplain development regulations meet and, in some areas, exceed the State's minimum requirements. Kenly's ordinance (UDO Chapter 8 – Flood Damage Prevention) fully adopts the minimum standards required by FEMA and the North Carolina Floodplain Mapping Program. It goes further by requiring that all new and substantially improved structures be elevated at least one foot above the Base Flood Elevation (BFE), known as the Regulatory Flood Protection Elevation (RFPE). The ordinance also applies to the Town's entire jurisdiction, including its extraterritorial area (ETJ), to ensure consistent enforcement across flood hazard areas. 4) The Town requires floodplain development permits, elevation certificates, and substantial improvement/substantial damage evaluations for any development within the Special Flood Hazard Area. These provisions ensure Kenly's compliance with both FEMA's National Flood Insurance Program (NFIP) and state-level floodplain management goals. 5) Kenly monitors floodplain compliance through its Floodplain Development Permit process. The Floodplain Administrator reviews all proposed work in Special Flood Hazard Areas, conducts site inspections, and requires elevation certificates before occupancy. The Town coordinates with Johnston County Inspections and NC Emergency Management to ensure compliance with FEMA and state requirements and enforces violations under the UDO. Kenly enforces its floodplain regulations through the Floodplain Administrator and the procedures outlined in the UDO. Any development in a Special Flood Hazard Area must obtain a Floodplain Development Permit before construction. Violations are subject to stop-work orders, fines, or legal action until compliance is achieved. The Town also works with Johnston County Inspections and NC Emergency Management to ensure enforcement aligns with FEMA's National Flood Insurance Program requirements. 6) Kenly has no (identified) outstanding compliance issues with the National Flood Insurance Program.

Jurisdiction	Floodplain Management & NFIP Administration
	7) Kenly does not participate in the Community Rating System.
Micro	Micro has adopted Johnston County's Flood Damage Ordinance by Resolution and relies on the County's services for floodplain administration activities. Refer to the Johnston County entry for further details.
Pine Level	1) The Zoning Administrator serves as the Floodplain Administrator for the Town of Pine Level. This individual is responsible for administering and enforcing the Flood Damage Prevention Ordinance, including permit review, inspections, and maintaining all required documentation. 2) The Floodplain Administrator (Zoning Administrator) is responsible for determining whether a project constitutes a substantial improvement or substantial damage. The Administrator compares the cost of repair or improvement to the structure's market value before the damage occurred to determine if NFIP-compliant rebuilding standards apply. 3) Following a flood event, the Floodplain Administrator inspects flood-damaged structures in the Special Flood Hazard Area to determine whether repair costs equal or exceed 50 percent of the structure's pre-damage market value. If so, the building is considered substantially damaged and must be brought into full compliance with requirements for new construction. All new and substantially improved residential structures must have the reference level elevated to or above the Regulatory Flood Protection Elevation, which equals the Base Flood Elevation plus two feet of freeboard. Nonresidential structures may be floodproofed to the same elevation rather than elevated. The ordinance also includes a repetitive loss provision, which requires structures that sustain flood-related damage twice within ten years, with repair costs averaging at least 25 percent of market value each time, to comply with the same standards for new construction. 4) Pine Level's ordinance meets and exceeds the state's minimum requirements by requiring a two-foot freeboard above the Base Flood Elevation for both residential and non-residential structures. It also prohibits new solid-waste disposal, hazardous-waste, salvage, and chemical-storage facilities in flood hazard areas except by variance, and such facilities must be elevated or floodproofed to the Regulatory Flood Protection Elevation. Additionally, fill and encroachments are prohibited in floodways unless certified by an engineer as not affecting flood levels. 5) All development within the Special Flood Hazard Area requires a Floodplain Development Permit issued by the Floodplain Administrator. Applicants must provide detailed site plans showing existing and proposed structures, flood zone boundaries, Base Flood Elevations, reference levels, and applicable state or federal permits. Elevation or floodproofing certifications are required both before and after construction. The Administrator conducts field inspections to ensure compliance and maintains all documentation as part of the community's public record. 6) The Floodplain Administrator monitors compliance through permit reviews, field inspections, and verification of elevation and floodproofing certifications. The Administrator maintains permanent public records of all permits and

Jurisdiction	Floodplain Management & NFIP Administration
	certificates. Enforcement mechanisms include stop-work orders, permit revocations, and written corrective actions. Violations constitute misdemeanors, and each day a violation continues is considered a separate offense. 7) Pine Level has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Pine Level does not participate in the Community Rating System.
Princeton	1) The Town Clerk of Princeton, or a designated representative, serves as the Floodplain Administrator. This individual administers and enforces the ordinance, including reviewing floodplain development applications, issuing permits, maintaining elevation and floodproofing certifications, and ensuring compliance with all local, state, and federal requirements. The Floodplain Administrator also coordinates with FEMA and the North Carolina Division of Emergency Management for map updates and notifications of watercourse alterations. 2) The Floodplain Administrator is responsible for determining whether a structure meets the criteria for substantial improvement or substantial damage. The ordinance defines substantial damage as repairs equaling or exceeding 50 percent of the market value of the structure before damage, or repetitive loss damage equal to or exceeding 25 percent of the structure's market value in two flood events within ten years. 3) Following a flood event, the Floodplain Administrator reviews structures within Special Flood Hazard Areas to determine whether repair costs meet or exceed 50 percent of the structure's pre-damage market value. If a structure meets this threshold, it is deemed substantially damaged and must comply with the same standards as new construction. Residential buildings must elevate the lowest floor to or above the Regulatory Flood Protection Elevation, defined as the Base Flood Elevation plus two feet of freeboard. Nonresidential buildings must be elevated or floodproofed to this elevation and certified by a professional engineer or architect. Repetitive-loss structures meeting the 25 percent × 2 threshold must also comply. Implementation occurs through the Floodplain Development Permit process, which requires elevation certificates at multiple construction stages and final certification before occupancy. 4) Princeton's ordinance meets and, in some cases, exceeds minimum state requirements by mandating a two-foot freeboard above Base Flood Elevation for all new and substantially improved structures. It also prohibits solid-waste disposal sites, hazardous-waste facilities, salvage yards, and chemical storage facilities within Special Flood Hazard Areas unless elevated or floodproofed to the regulatory flood protection elevation. In addition, encroachments in floodways or non-encroachment areas are prohibited unless a registered engineer certifies that no increase in base flood levels will occur. 5) All development within Special Flood Hazard Areas requires a Floodplain Development Permit before work begins. Applicants must submit a plot plan showing proposed construction, elevations, boundaries of the floodplain or floodway, and Base Flood Elevations. The Floodplain Administrator reviews the application for compliance, ensures all required state and federal permits are obtained, and may require engineering documentation for watercourse

Jurisdiction	Floodplain Management & NFIP Administration
	alterations. Elevation and floodproofing certifications must be submitted at various stages —pre-construction, post-foundation, and post-construction —before a Certificate of Occupancy is issued. 6) The Floodplain Administrator monitors compliance through detailed review of permit applications, site inspections, and permanent recordkeeping of all certifications. Stop-work orders may be issued for noncompliance, and permits can be revoked for violations or false statements. Violations trigger corrective procedures, including written notices, hearings, and legally enforceable orders requiring compliance within 60 days to one year. Each day a violation continues is considered a separate misdemeanor offense, subject to fines or imprisonment. 7) Princeton has no (identified) outstanding compliance issues with the National Flood Insurance Program 8) Princeton does not participate in the Community Rating System.
Selma	1) Selma's Planning Technician is responsible for floodplain management in the town, including determinations of substantial damage or improvements, and would be considered the NFIP administrator. Selma adheres to its floodplain ordinance but directs applicants to contact NCDEQ for more complex questions. The Planning Technician also oversees any stormwater and landscaping needs. Selma would rely on the NC Department of Emergency Management and their region's NCEM coordinator to make determinations of substantial damage or improvements. 2) Following a flood event, the Floodplain Administrator, in coordination with the Johnston County Building Official and NCEM, evaluates damaged structures to determine whether the cost of restoring the structure equals or exceeds 50 percent of its pre-damage market value. If so, the structure is classified as substantially damaged and must meet requirements for new construction under the North Carolina Building Code and Selma's ordinance. All new or substantially improved residential buildings must have their reference level elevated to or above the Regulatory Flood Protection Elevation, defined as the Base Flood Elevation + three (3) feet of freeboard. At the same time, non-residential structures may be floodproofed to the same standard. The ordinance also applies a repetitive-loss clause, under which buildings damaged by flooding twice within ten years, with repair costs averaging at least 25 percent of market value each time, are treated as substantially damaged and must be reconstructed in compliance. 3) Selma's floodplain development regulations meet and exceed state minimum requirements in several ways. It adopts a three-foot freeboard standard above the Base Flood Elevation for all new and substantially improved structures, which is higher than the typical minimum. It also prohibits solid-waste disposal sites, hazardous-waste management facilities, salvage yards, and chemical-storage facilities within the Special Flood Hazard Area unless granted a variance and elevated or floodproofed to the Regulatory Flood Protection Elevation. In addition, all encroachments in floodways or non-encroachment areas are prohibited unless certified by an engineer to cause no increase in base flood levels.

Jurisdiction	Floodplain Management & NFIP Administration
	4) Before any development in a Special Flood Hazard Area, applicants must obtain a Zoning Permit (Floodplain Development Permit) from the Floodplain Administrator. Applications must include detailed site plans with structure locations, flood zone boundaries, Base Flood Elevations, utilities, and certifications by a professional engineer or surveyor. Construction requires submission of Elevation Certificates before, during, and after building, and Floodproofing Certificates when applicable. The Administrator verifies compliance through on-site inspections and maintains all documentation for public record. 5) The Floodplain Administrator monitors compliance through the permit process, field inspections, and the review of required elevation and floodproofing certificates at multiple construction stages. Violations can lead to stop-work orders, permit revocation, or corrective procedures under the enforcement article of the Town's UDO. Each day a violation continues constitutes a separate misdemeanor, and fines or imprisonment may be imposed. 6) Most of Selma's at-risk structures are adjacent to or within the Neuse River and Moccasin Creek floodplains. 7) Selma has no (identified) compliance issues with the National Flood Insurance Program. 8) Selma does not participate in the Community Rating System.
Smithfield	1) Smithfield's Planning Director or their designee serves as the Town's Floodplain Administrator. This individual is responsible for administering and implementing all provisions of the ordinance, coordinating compliance with the National Flood Insurance Program (NFIP), and ensuring local adherence to FEMA and state floodplain standards. The Administrator's duties include issuing permits, conducting inspections, monitoring compliance, maintaining records of elevation and floodproofing, and coordinating with state and federal agencies. Smithfield would rely on external professionals, in coordination with the Floodplain Administrator, to make substantial damage or substantial improvement determinations if needed. 2) After a flood event, the Floodplain Administrator, in coordination with external professionals and the Building Official, reviews structures within the Special Flood Hazard Area to determine whether repair costs equal or exceed 50 percent of the structure's pre-damage market value. If the threshold is met, the structure is deemed substantially damaged and must comply with requirements for new construction. Residential buildings must have their reference level elevated to or above the Regulatory Flood Protection Elevation, which is defined as the Base Flood Elevation plus two feet of freeboard. Nonresidential buildings may alternatively be floodproofed to the same elevation. The ordinance also includes a repetitive-loss clause, requiring that structures be damaged twice within ten years, with repair costs averaging at least 25 percent of market value each time, to be brought into full compliance with new construction standards. 3) Smithfield's floodplain development regulations meet and exceed the state's minimum requirements by requiring a two-foot freeboard above the Base Flood Elevation for all new and substantially improved structures. It prohibits new

Jurisdiction	Floodplain Management & NFIP Administration
	solid-waste, hazardous-waste, salvage, and chemical-storage facilities within flood hazard areas except by variance, in which case they must be elevated or floodproofed to the Regulatory Flood Protection Elevation. It also restricts encroachments in floodways or non-encroachment areas unless certified by an engineer to result in no rise in flood levels during the base flood. 4) All development within a Special Flood Hazard Area requires a Floodplain Development Permit issued by the Floodplain Administrator before construction. Applicants must submit a scaled plot plan showing boundaries, base flood elevations, proposed structures, flood zones, and watercourse alterations, along with applicable state and federal permits. The permit process requires Elevation Certificates at pre-construction, mid-construction, and post-construction stages and Floodproofing Certificates for non-residential projects. Site inspections are conducted throughout construction, and all records are permanently maintained for public reference. 5) The Floodplain Administrator monitors compliance through permit reviews, on-site inspections, and verification of elevation and floodproofing certificates. The Administrator maintains all records permanently and can issue stop-work orders, revoke permits, and issue corrective action notices for violations. Noncompliance may result in Class 1 misdemeanor charges, with each day constituting a separate offense, and the Administrator may also order demolition or removal of non-conforming structures after a hearing. 6) Smithfield has no (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Smithfield does not participate in the Community Rating System. 8) Smithfield expressed in the NFIP survey as a part of the hazard mitigation planning process that staffing and formal training are their main barriers to running an effective NFIP program.
Wilson's Mill	1) Wilson's Mill's Planning Director serves as the Floodplain Administrator and is responsible for substantial damage and substantial improvement determinations. If substantial damage and/or improvement determinations are needed, the Planning Director/Floodplain Administrator will partner with FEMA and Johnston County's building inspectors. 2) After a flood event, the Floodplain Administrator inspects flood-affected structures to determine whether repair costs equal or exceed 50 percent of the structure's pre-damage market value. Structures meeting this threshold are classified as substantially damaged and must be rebuilt in accordance with requirements for new construction. Residential buildings must have the reference level elevated to or above the Regulatory Flood Protection Elevation, defined as the Base Flood Elevation plus two feet of freeboard. Nonresidential buildings may be floodproofed to the same elevation. The ordinance also defines repetitive loss as two flood-related damages within ten years, each averaging at least 25 percent of market value, and requires such structures to be brought into compliance during reconstruction.

Jurisdiction	Floodplain Management & NFIP Administration
	3) Wilson's Mill's local floodplain development regulations meet and exceed the state's minimum requirements by requiring a two-foot freeboard above the Base Flood Elevation for all new and substantially improved structures. It prohibits new solid-waste disposal sites, hazardous-waste management facilities, salvage yards, and chemical storage facilities within Special Flood Hazard Areas unless a variance is granted and the facilities are elevated or floodproofed to at least the regulatory elevation. It also prohibits any encroachments within floodways or non-encroachment areas unless certified by an engineer as not affecting base-flood levels. 4) Before any development within a Special Flood Hazard Area, applicants must obtain a Floodplain Development Permit from the Floodplain Administrator. When a permit is received, staff verify if the property is in a floodplain using the state's Flood Risk Information System (FRIS). If the property is found to be in a floodplain, an application is completed and reviewed by the floodplain administrator. It is required that the floodplain be shown on the deed to the property. The application must include a certified plot plan showing flood zone boundary, Base Flood Elevations, proposed reference levels, and foundation and utility details. Elevation Certificates are required at three stages—pre-construction, mid-construction, and post-construction—and Floodproofing Certificates are required for non-residential projects. The Administrator reviews applications for compliance with state and federal regulations, conducts site inspections, and retains all records permanently for public reference. 5) The Floodplain Administrator monitors compliance through application review, inspection, and certification requirements. Elevation and floodproofing certificates are required before, during, and after construction to verify compliance with the ordinance. The Administrator may issue stop-work orders or revoke permits for violations and conduct follow-up inspections to ensure corrective actions are taken. Violations are misdemeanors punishable by fines or imprisonment, and each day of continued violation is a separate offense. 6) Wilson's Mill educates property owners and stakeholders about the importance of flood insurance through pop-ups at town events, where staff share information regarding the NFIP. 7) Wilson's Mill has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Wilson's Mill does not participate in the Community Rating System. 9) Wilson's Mill expressed in the NFIP survey as a part of the hazard mitigation planning process that a lack of education and training support from FEMA has been a barrier to effectively running its NFIP program.
Lee County	1) The Senior Planner for the Sanford/Lee County Community Development Department is responsible for floodplain management, including determinations of substantial damage or improvements, in the three jurisdictions the Department serves (Lee County, Broadway, and Broadway). Staff's only formal training is via virtual classes offered by the NC Emergency Management Division.

Jurisdiction	Floodplain Management & NFIP Administration
	2) The Senior Planner implements the substantial improvement/substantial damage provisions of the floodplain ordinance by reviewing information submitted with building permit applications and zoning clearance permits, as well as conducting site inspections of these locations. They also drive around the jurisdictions after flood events for visual inspections and coordinate with Sanford's Public Works Department and Lee County's Office of the Fire Marshall. Following a flood event, the Floodplain Administrator evaluates flood-damaged structures to determine whether the cost of restoring the structure equals or exceeds 50 percent of its pre-damage market value. If this threshold is met, the structure is considered substantially damaged and must be reconstructed in compliance with new construction standards. Residential buildings must have the reference level elevated to or above the Regulatory Flood Protection Elevation, defined as the Base Flood Elevation plus two feet of freeboard. Non-residential structures may be floodproofed to the same elevation. Additionally, the ordinance includes a repetitive loss provision, under which any structure sustaining flood damage twice within ten years, with repair costs averaging at least 25 percent of its market value each time, is also treated as substantially damaged and must be brought into compliance. 3) The jurisdictions' current floodplain development regulations do not align with the state's 2021 NC Model Flood Damage Prevention Ordinance (Non-Coastal); however, Lee County, Sanford, and Broadway are working diligently to hold the public hearings needed to update their ordinance. The Senior Planner expressed that having an ordinance adopted by the three jurisdictions that they serve can be cumbersome. 4) Regarding the permitting process, building permit applications are submitted to an online portal connected with their permitting software. All parcels with floodplain on the property are "flagged" by the permitting software using information from a GIS mapping system, so the applicant & reviewers are made aware that some portion of the property is within a mapped flood hazard area. All submittals are routed to the person responsible for floodplain review (Senior Planner) for review/approval, and final inspection requests for all issued permits are issues by the Sanford/Lee County Building Inspections Department. 5) The Floodplain Administrator monitors compliance by reviewing development permits, conducting field inspections, and requiring elevation and floodproofing certifications at multiple stages of construction. The Administrator maintains all floodplain records permanently for public inspection and may issue stop-work orders or revoke permits for noncompliance. Each day a violation continues constitutes a separate misdemeanor offense, and corrective actions may be enforced through written orders, administrative hearings, or penalties authorized under the County Code. 6) Lee County, Sanford, and Broadway do not have any (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Lee County, Sanford, and Broadway do not participate in the Community Rating System.

Jurisdiction	Floodplain Management & NFIP Administration
	8) The jurisdictions expressed in the NFIP survey, as part of the hazard mitigation planning process, that development pressures versus current staffing levels are the primary barrier to running an effective NFIP program. The jurisdictions have experienced significant population growth and military development, straining staff capacity. The Senior Planner responsible for floodplain management activities also serves as the Watershed Administrator, processes zoning requests, and acts as the coordinating planner for the Planning Boards of Lee County, Sanford, and Broadway.
Broadway	Broadway, Sanford, and Lee County have adopted a shared ordinance. Floodplain management and NFIP program administration are managed at the county level (see Lee County entry).
Sanford	Broadway, Sanford, and Lee County have adopted a shared ordinance. Floodplain management and NFIP program administration are managed at the county level (see Lee County entry).
Moore County	1) The Moore County Director of Central Permitting & Inspections, in coordination with the Planning Director, is responsible for floodplain management, including determinations of substantial damage or improvement. Appraisers from the County's Tax Department also assist in substantial damage or improvement determinations. 2) Staff hold standard certificates, administered by the state government, in building, electrical, plumbing, and mechanical practices. There are Certified Floodplain Managers on staff, and county staff have also received North Carolina Business Inspector Association training in preparation for Hurricane Helene Damage Assessments. 3) The Assistant Director of Moore County's Public Safety Department coordinates substantial damage or improvement determinations. Moore County implements the substantial improvement/substantial damage provisions of its floodplain ordinance by tracking the cost of damage repairs compared to a property's structural value. Once the repairs exceed a continuously calculated 50% of the property's value, the project must be brought into compliance with current requirements. 4) Moore County's floodplain development regulations exceed the state's minimum requirements by requiring a two-foot freeboard; prohibiting new solid-waste, hazardous-waste, salvage, chemical storage, or critical facilities in SFHAs except by variance and then only if elevated/floodproofed to the regulatory elevation; disallowing new placements of manufactured homes in SFHAs (only replacements, with strict elevation/anchoring and evacuation plan requirements); and applying no-rise standards in designated floodways/non-encroachment areas (or Conditional Letter of Map Revision / Letter of Map Revision (CLOMR/LOMR) process). 5) A Floodplain Development Permit is required before any development in SFHAs; applications must include a scaled site plan (SFHA/floodway boundaries, BFE, watercourse alterations), proposed elevations of structures/utilities, foundation and enclosure details, drainage/utilities protection, other state/federal permits, and (when applicable) watercourse alteration analyses. Permit conditions specify regulatory elevations, certification submittals/timelines,

Jurisdiction	Floodplain Management & NFIP Administration
	flood-opening requirements, and enclosure-use limits; elevation/floodproofing certificates are reviewed before start and at completion, before CO. 6) Compliance is monitored through a required Floodplain Development Permit, detailed application materials (site plan, BFE, flood zones, foundation details, utilities), and staged certifications: elevation certificate before start, mid-construction verification, and final as-built certificate before CO. During construction, the County conducts inspections to ensure all structures and grading projects meet minimum requirements before issuing permits. The Administrator reviews certificates, requires corrections of deficiencies, can deny permits or withhold COs if standards aren't met, and requires floodproofing certificates/engineered foundation certifications, where applicable. 7) Moore County educates property owners and stakeholders about the importance of flood insurance through community meetings, handouts, links to helpful resources on its website, and quarterly meetings with local real estate agents. 8) Moore County is not currently participating in the Community Rating System; however, the County has started the process to become an active member of the Program. 9) Moore County expressed in the NFIP survey as a part of the hazard mitigation planning process that a barrier to effectively running its NFIP program is a lack of adequately trained staff, as well as a need to educate customers and contractors.
Aberdeen	1) The Planning and Inspections Director serves as the Floodplain Administrator for the Town of Aberdeen. This official administers and enforces the provisions of the Flood Damage Prevention section, including reviewing floodplain development permit applications, conducting field inspections, maintaining elevation and floodproofing certificates, and ensuring compliance with NFIP standards. The Floodplain Administrator (Planning and Inspections Director) is also responsible for making determinations of substantial improvement and substantial damage. 2) Following a flood event, the Floodplain Administrator assesses affected structures to determine if the cost of restoring a structure equals or exceeds 50 percent of its pre-damage market value. Structures meeting this threshold are deemed substantially damaged and must comply with the same elevation standards required for new construction. Residential buildings must elevate the reference level to or above the Regulatory Flood Protection Elevation (Base Flood Elevation + 2 ft freeboard), while nonresidential buildings may be floodproofed to this elevation. The ordinance also applies this standard to repetitive-loss structures and ensures compliance through required elevation and floodproofing certifications at each construction stage. 3) Aberdeen's ordinance meets and exceeds the state's minimum requirements by requiring a two-foot freeboard above the Base Flood Elevation for all new and substantially improved structures. It prohibits new solid-waste disposal, hazardous-waste management, salvage, and chemical-storage facilities in Special Flood Hazard Areas,

Jurisdiction	Floodplain Management & NFIP Administration
	except by variance, and mandates that such facilities be elevated or floodproofed to the regulatory elevation if permitted. It further restricts encroachments in floodways and non-encroachment areas unless supported by engineering analyses showing no rise in base-flood levels and requires professional certification for watercourse alterations. 4) Before any development in a Special Flood Hazard Area, an applicant must obtain a Floodplain Development Permit from the Planning and Inspections Director. Applications must include site plans showing floodplain boundaries, Base Flood Elevations, reference-level elevations, and documentation of state and federal approvals. Required Elevation Certificates and, if applicable, Floodproofing Certificates must be submitted at specific construction milestones. The Administrator reviews certifications, conducts inspections, and ensures compliance before issuing a certificate of occupancy. 5) Compliance is monitored through a Floodplain Development Permit process overseen by the Planning and Inspections Director, who reviews site plans, elevation data, and required certifications before and after construction. The ordinance requires three elevation certificates—pre-construction, mid-construction, and final as-built—and, when applicable, additional floodproofing or engineered foundation certifications. The Administrator may issue stop-work orders or withhold certificates of occupancy until deficiencies are corrected. All records are permanently maintained for public inspection. 6) Aberdeen has no (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Aberdeen does not participate in the Community Rating System.
Cameron	Cameron has adopted Moore County's Flood Damage Prevention Ordinance by Resolution and relies on the County's services for floodplain administration activities. Refer to the Moore County entry for further details.
Carthage	1) Moore County's Building Inspections Department manages all floodplain management activities for Carthage. The Planning Director serves as the Town of Carthage's official Floodplain Administrator and coordinates with the County for management activities. Moore County's Building Inspections Department is responsible for determining substantial improvement and substantial damage in the Town. 2) After a flood event, the County Building Inspections Department, in coordination with the local Floodplain Administrator, inspects and evaluates structures in Special Flood Hazard Areas to determine whether the cost of repair equals or exceeds 50 percent of the structure's pre-damage market value. If so, the structure is classified as substantially damaged and must be reconstructed to meet new construction standards. Residential structures must elevate the reference level to or above the Regulatory Flood Protection Elevation, defined as the Base Flood Elevation plus two feet of freeboard, while non-residential structures may be floodproofed to this same elevation. The ordinance also applies a repetitive loss provision, requiring that any structure sustaining flood-related damage

Jurisdiction	Floodplain Management & NFIP Administration
	twice within ten years, with repair costs averaging at least 25 percent of its market value each time, be brought into full compliance during reconstruction. 3) Carthage's ordinance meets and exceeds state minimum requirements by adopting a two-foot freeboard above the Base Flood Elevation for all new and substantially improved structures. It also prohibits solid-waste disposal, hazardous-waste management, salvage, and chemical-storage facilities within Special Flood Hazard Areas unless a variance is granted, and such facilities must then be elevated or floodproofed to at least the regulatory flood protection elevation. Additionally, the ordinance prohibits encroachments within the floodway unless certified by a professional engineer to not affect the base flood levels. 4) All development within the Special Flood Hazard Area requires a Floodplain Development Permit issued by the County before construction. The application must include detailed site plans showing boundaries of flood zones, Base Flood Elevations, proposed structure locations, reference levels, foundation details, and copies of any required state or federal permits. Elevation Certificates must be submitted before, during, and after construction, and Floodproofing Certificates are required for non-residential projects. The County, in coordination with the Planning Director, conducts inspections, verifies documentation, and retains all records permanently for public access. 5) Carthage contracts with a third-party engineering firm for the review of new development plans. Moore County is responsible for issuing building permits and reviewing floodplain elevations. The County monitors compliance through permit review, field inspections, and the collection of elevation and floodproofing certificates at different stages of construction. The County maintains all floodplain development records permanently and may issue stop-work orders or revoke permits for noncompliance. Violations are classified as misdemeanors, and each day of violation constitutes a separate offense. Enforcement actions include written notices, corrective orders, and possible legal remedies as provided in the ordinance. 6) Carthage has no (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Carthage does not participate in the Community Rating System. 8) Carthage expressed in the NFIP survey as a part of the hazard mitigation planning process that staff are their most significant barrier to effectively running their NFIP program.
Foxfire Village	Foxfire Village has adopted Moore County's Flood Damage Prevention Ordinance by Resolution and relies on the County's services for floodplain administration activities. Refer to the Moore County entry for further details.
Pinebluff	1) The Land Use Administrator, or their designee, serves as the Floodplain Administrator responsible for administering and enforcing Pinebluff's Flood Damage Prevention Ordinance, as well as making determinations of substantial damage and substantial improvement.

Jurisdiction	Floodplain Management & NFIP Administration
	2) Following a flood event, the Floodplain Administrator (Land Use Administrator) inspects damaged structures within Special Flood Hazard Areas to determine the extent of damage and whether repairs meet the definition of substantial damage, where the cost of restoring a structure equals or exceeds 50 percent of its pre-damage market value. When this threshold is met, the structure must be brought into full compliance with the standards for new construction. This includes elevating the lowest floor (reference level) to or above the Regulatory Flood Protection Elevation, which Pinebluff defines as the Base Flood Elevation plus two feet of freeboard. Non-residential structures must either be elevated or floodproofed to the same elevation using watertight construction certified by a registered professional engineer or architect. The Administrator applies the same evaluation to repetitive-loss structures, which are defined as those that incur flood damage twice within 10 years and have average repair costs of at least 25 percent of the building's market value. These determinations trigger reconstruction requirements consistent with FEMA and state NFIP standards and are enforced through the permit process and required Elevation Certificates submitted before, during, and after reconstruction. 3) Pinebluff's floodplain ordinance meets and exceeds the state's minimum standards by requiring a two-foot freeboard above the Base Flood Elevation. It also prohibits solid-waste disposal sites, hazardous-waste facilities, salvage yards, chemical storage facilities, and new critical facilities in Special Flood Hazard Areas unless a variance is granted. 4) All development within Special Flood Hazard Areas requires a Floodplain Development Permit issued by the Floodplain Administrator before construction. Applications must include site plans with flood zone boundaries, Base Flood Elevations, foundation details, utility protection plans, and copies of other applicable permits. Applicants must submit Elevation Certificates at three stages—before construction, after setting the reference level, and at completion—as well as Floodproofing Certificates when applicable. The Administrator reviews applications, conducts inspections, and permanently maintains records. 5) The Floodplain Administrator monitors compliance through review of permit applications, collection of elevation and floodproofing certificates before, during, and after construction, and on-site inspections. They may issue stop-work orders and revoke permits for non-compliance. Violations must be corrected upon notice; failure to do so can lead to hearings, orders to alter or demolish structures, and Class 3 misdemeanor penalties. 6) Pinebluff has no (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Pinebluff does not participate in the Community Rating System.
Pinehurst	1) Pinehurst has two Senior Planners responsible for floodplain management activities, including determinations of substantial damage or substantial improvements.

Jurisdiction	Floodplain Management & NFIP Administration
	2) Staff have received some formal training in substantial damage and substantial improvement topics through participating in FEMA's 273 courses. 3) The Village of Pinehurst adopted ordinance #06-28 on October 10, 2006, in accordance with the Legislature of the State of North Carolina Part 6, Article 21 of Chapter 143, Parts 3, 5, and 8 of Article 19 of Chapter 160 A; and Article 8 of Chapter 160A of the North Carolina General Statutes, delegated to local government units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. 4) Pinehurst monitors and enforces compliance with local floodplain regulations on a case-by-case basis. When a new application is submitted for a development in the floodplain, the Village ensures that a floodplain development permit accompanies it. 5) Pinehurst educates property owners and stakeholders about the importance of flood insurance by holding an annual workshop where floodplain development is one of the primary topics. 6) Pinehurst has no (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Pinehurst does not participate in the Community Rating System. 8) Pinehurst expressed in the NFIP survey, as a part of the hazard mitigation planning process, that a barrier to effectively running their NFIP program is the lack of understanding among residents of the value and importance of floodplain compliance.
Robbins	1) The Moore County Planning Director is responsible for floodplain management activities, including determinations of substantial damage and substantial improvements. Moore County staff have received formal training in determining substantial damage and substantial improvements. 2) After a flood event, the County evaluates structures within the Special Flood Hazard Area to determine whether they meet the definition of substantial damage, that is, when the cost of restoring the structure equals or exceeds 50 percent of its pre-damage market value. When this occurs, the structure must be brought into full compliance with standards for new construction. For residential structures, this includes elevating the lowest floor (including basement) to or above the Base Flood Elevation. For non-residential structures, the lowest floor must be either elevated or floodproofed to or above the Base Flood Elevation, with certification from a registered engineer or architect verifying the design. The ordinance also applies the substantial improvement requirement to any repair, reconstruction, or addition that meets or exceeds the 50 percent threshold during any one year. Repetitive-loss properties that sustain flood-related damage twice within ten years, averaging 25 percent of market value each time, must likewise be reconstructed in compliance with these standards. Implementation occurs through the floodplain development permitting process, where permits are required before any construction or repair in a floodplain, and elevation or floodproofing certificates are collected before, during, and after construction to document compliance.

Jurisdiction	Floodplain Management & NFIP Administration
	3) Robbins' ordinance meets and, in some areas, exceeds the state minimum requirements. The ordinance prohibits fill, new construction, and substantial improvements within floodways and non-encroachment areas, and it requires residential and nonresidential buildings to be elevated or floodproofed to the Base Flood Elevation. It further restricts solid-waste disposal, hazardous-waste, salvage-yard, and chemical-storage facilities within flood hazard areas unless elevated or floodproofed to the regulatory protection elevation and certified accordingly. 4) Regarding the floodplain management permitting process, development applications are reviewed by the Town Planner (Manager) before being passed to the Moore County Planning Department for final approval. All development within Special Flood Hazard Areas requires a Floodplain Development Permit before construction. The Town Planner (Manager) and County review applications to ensure that proposed development minimizes flood damage, provides adequate drainage, and includes properly elevated or floodproofed utilities. Elevation Certificates are required both before and after construction to verify compliance. The County maintains all permitting records permanently and conducts inspections to ensure adherence to the ordinance standards before issuing a certificate of occupancy. 5) Robbins monitors and enforces compliance with local floodplain regulations through an interlocal agreement with Moore County, as well as coordination with an ordinance officer and zoning inspector. The County and Town monitor for compliance by reviewing floodplain development applications, conducting site inspections, and maintaining permanent records such as elevation and floodproofing certificates. The County and Town have the authority to issue stop-work orders, revoke floodplain development permits, and perform on-site inspections to ensure compliance. Violations may result in permit revocation or misdemeanor charges. 6) Robbins has no (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Robbins does not participate in the Community Rating System.
Southern Pines	1) The Floodplain Administrator is the individual appointed to administer and enforce the floodplain management regulations in the Town of Southern Pines. The ordinance establishes the position within the town's administrative structure, granting responsibility for reviewing floodplain development permits, conducting inspections, enforcing regulations, and coordinating with FEMA and state agencies. The Floodplain Administrator is also responsible for making substantial damage and substantial improvement determinations. 2) After a flood event, the Floodplain Administrator inspects and assesses structures in the Special Flood Hazard Area to determine whether the cost of restoring the structure equals or exceeds 50 percent of its pre-damage market value. If the structure meets this threshold, it is classified as substantially damaged, and any repair, reconstruction, or improvement must comply fully with current flood hazard reduction standards for new construction. For residential structures, this includes elevating the reference level (lowest floor) to or above the Regulatory Flood Protection Elevation, defined as the Base Flood Elevation plus two feet of freeboard. Nonresidential structures must be either

Jurisdiction	Floodplain Management & NFIP Administration
	elevated or floodproofed to the same level, with certification by a professional engineer or architect. The Floodplain Administrator verifies compliance through the floodplain development permitting process, which requires Elevation Certificates at three stages—before construction, after establishment of the reference level, and following completion of construction—and Floodproofing Certificates when applicable. Repetitive-loss properties that meet the substantial damage threshold are also required to comply. This process ensures damaged structures are reconstructed to meet all elevation, anchoring, and material-resistance standards under the ordinance's flood hazard reduction provisions. 3) Southern Pines meets and, in some cases, exceeds the state's minimum requirements by adopting a two-foot freeboard above the Base Flood Elevation for its Regulatory Flood Protection Elevation and prohibiting new solid-waste disposal sites, hazardous-waste facilities, salvage yards, and chemical storage facilities within Special Flood Hazard Areas unless elevated or floodproofed to that elevation. The ordinance also explicitly prohibits encroachments in floodways and non-encroachment areas unless hydraulic analyses demonstrate that no rise in base flood levels will occur. 4) All development within Special Flood Hazard Areas requires a Floodplain Development Permit before construction. Applications must include a scaled plot plan showing flood zone boundaries, Base Flood Elevations, proposed elevations of reference levels and utilities, foundation details, and certification from a surveyor or engineer. The Floodplain Administrator reviews each submittal for compliance, coordinates with state and federal agencies, and ensures other necessary permits (e.g., wetlands, sedimentation control, or buffer permits) are obtained. Elevation Certificates and Floodproofing Certificates are required at specified stages to document compliance. Permanent records of all permits, certifications, and inspections are maintained and made publicly available. 5) Compliance is monitored through a structured permitting and inspection process. The Floodplain Administrator reviews all development applications, issues permits, verifies certifications, and conducts on-site inspections. Required documentation includes Elevation Certificates, Floodproofing Certificates, and engineering reports for watercourse alterations. The Administrator has the authority to issue stop-work orders, revoke permits, and require corrective action. Violations trigger written notice, a hearing, and, if uncorrected, orders to alter or demolish structures, with penalties of up to $50 per day for continued noncompliance. 6) Southern Pines has no (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Southern Pines does not participate in the Community Rating System.
Taylortown	Taylortown does not participate in the National Flood Insurance Program, according to FEMA's Community Status Book (10/22/2025).
Vass	1) Moore County's Building Inspections Department manages all floodplain management activities for Vass, including substantial damage and substantial improvement determinations.

Jurisdiction	Floodplain Management & NFIP Administration
	2) After a flood event, the Moore County Building Inspections Department inspects affected properties and compares repair costs to the structure's pre-damage market value to determine if the 50 percent threshold for substantial damage is met. If so, the structure must be brought into full compliance with the flood damage prevention standards for new construction. Residential structures must have the reference level (lowest floor) elevated to or above the Regulatory Flood Protection Elevation, which equals the Base Flood Elevation plus two feet of freeboard. Non-residential structures must either be elevated or floodproofed to the same elevation, with a professional engineer or architect certifying that the floodproofing design resists hydrostatic and hydrodynamic forces. The ordinance also applies these standards to repetitive-loss properties meeting the 25 percent threshold. Vass and Moore County implement this process through the Floodplain Development Permit system, which requires Elevation Certificates before construction, after the reference level is established, and following completion, as well as Floodproofing Certificates where applicable 3) The Town of Vass meets and, in some cases, exceeds the state's minimum requirements by adopting a two-foot freeboard standard above the Base Flood Elevation, prohibiting new solid-waste disposal facilities, hazardous-waste facilities, salvage yards, and chemical storage facilities within Special Flood Hazard Areas unless elevated or floodproofed to the regulatory elevation. The ordinance also prohibits new critical facilities in flood hazard areas and limits encroachments into floodways and non-encroachment areas unless certified to cause no rise in flood levels. 4) All proposed development within Special Flood Hazard Areas requires a Floodplain Development Permit before construction. Applicants must provide a plot plan, base flood and elevation data, foundation details, utility protection plans, and watercourse alteration descriptions if applicable. The Moore County Building Inspections Department coordinates with Vass and a third-party engineering firm to review applications for compliance with local, state, and federal requirements, verifies necessary certifications, and ensures that encroachments do not violate floodway or non-encroachment standards. Moore County conducts inspections at multiple stages and maintains permanent public records of all permits and certifications. 5) Vass contracts with a third-party engineering firm for the review of new development plans. Moore County is responsible for issuing building permits and reviewing floodplain elevations. The County monitors compliance through permit review, field inspections, and the collection of elevation and floodproofing certificates at different stages of construction. The County maintains all floodplain development records permanently and may issue stop-work orders or revoke permits for noncompliance. Violations are classified as misdemeanors, and each day of violation constitutes a separate offense. Enforcement actions include written notices, corrective orders, and possible legal remedies as provided in the ordinance.

Jurisdiction	Floodplain Management & NFIP Administration
	6) Vass has an Interlocal Agreement (2009), passed by Resolution (2009), with Moore County, where the Town contracts with the County to use the services of the County to administer the Town's ordinance within the corporate limits and extra-territorial jurisdiction of the Town. a. The Town shall take receipt of development applications within the corporate limits of the Town and extra-territorial jurisdiction, and determine if a proposed development project will be located within a Special Flood Hazard Area or adopted Flood of Record Contour; and b. The Town shall inform the County of any potential development projects within the areas identified above to the County Floodplain Administrator or designee; and c. All development to take place within the Town's corporate limits and extra-territorial jurisdiction shall be subject to the rules and regulations set forth in the aforementioned Flood Damage Prevention Ordinance. No building permits shall be issued for any property until the flood zone is determined and the necessary building standards are met. If the property is located within the Special Flood Hazard Area and if the structure is to be constructed within the flood hazard area, three (3) elevation certificates will be required prior to construction, after reference level is established and upon final construction; and d. The County Floodplain Administrator or designee will provide technical assistance, review the Floodplain Permit request for compliance with the Town Flood Damage Prevention Ordinance and issue a Floodplain Permit Determination to be attached to the Town's Zoning Permit; and e. The County will provide technical assistance to the Town in completion of all of the Duties and Responsibilities of the Floodplain Administrator contained in the Town's Flood Damage Prevention Ordinance. However, it is responsibility of the Town to make the initial determination regarding Special Flood Hazard Area or Flood of Record Contour, maintain permanent records and official program documents, and conduct variance proceedings and enforcement actions as identified in the Town's Flood Damage Prevention Ordinance; and f. The County will use every effort to enforce the Flood Damage Prevention Ordinance, except that if any civil or criminal action becomes necessary, the Town shall bring any legal action as may be required to effectively enforce said Ordinance, upon written notice from the County of such violations; and g. Should any claims arise out of the services provided by the County under this agreement, the Town agrees to indemnify and hold the County, its employees, agents and contractors harmless from any and all claims for liability, loss, injury, damages to persons or property, costs or attorney's fees resulting from any allegation or act of negligence brought against the County, its employees, agents, contractors and Commissioners arising as a result of these services performed on behalf of the Town that are the subject of this Agreement that are due to the negligence of the Town. The County agrees to indemnify and hold

Jurisdiction	Floodplain Management & NFIP Administration
	the Town, its employees, agents and contractors harmless from any and all claims for liability, loss, injury, damages to persons or property, costs or attorney's fees resulting from any allegation or act of negligence brought against the Town, its employees, agents, contractors and Commissioners arising as a result of these services performed on behalf of the Town that are the subject of this Agreement and are due to the negligence of the County, its employees, agents or contractors; and h. All fees and charges associated with administering the Flood Damage Prevention Ordinance as adopted by the Board of County Commissioners, shall be collected by the County, shall be the sole property of the County, and no part thereof shall be payable to the Town; and i. This Agreement shall continue until such time as either the Town or County resolves to discontinue the Agreement and presents six (6) months written notice to the other party of said termination or upon mutual agreement of both parties 7) Vass has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Vass does not participate in the Community Rating System. 9) Vass expressed in the NFIP survey, as a part of the hazard mitigation planning process, that staff are their most significant barrier to effectively running their NFIP program. For example, Vass has only four full-time positions outside of public safety.
Whispering Pines	1) The Zoning Administrator, or their designee, serves as the Floodplain Administrator for the Village of Whispering Pines. This role is responsible for administering and implementing the flood damage prevention provisions, reviewing permit applications, conducting inspections, and ensuring community compliance with the National Flood Insurance Program. 2) The Floodplain Administrator makes all determinations related to substantial improvement and substantial damage. The ordinance defines these terms and directs the Administrator, in coordination with the Building Official, to evaluate structures for compliance by comparing the cost of improvements or repairs to 50 percent of the structure's market value before damage. 3) After a flood event, the Floodplain Administrator evaluates all damaged structures within the Special Flood Hazard Area to determine whether the cost of repairs equals or exceeds 50 percent of the building’s pre-damage market value. If a structure meets this threshold, it is deemed substantially damaged and must be brought into compliance with all flood damage prevention requirements for new construction. For residential buildings, this includes elevating the reference level (lowest floor, including basement) to or above the Regulatory Flood Protection Elevation, which equals the Base Flood Elevation plus freeboard as defined by the ordinance. Nonresidential structures must be elevated or floodproofed to the same elevation, with certification by a registered engineer or architect. The

Jurisdiction	Floodplain Management & NFIP Administration
	Administrator ensures compliance through the floodplain development permitting process, which requires Elevation Certificates before construction, after the reference level is set, and following completion. A Floodproofing Certificate is required for non-residential designs. Repetitive-loss properties sustaining flood damage twice within ten years, each averaging at least 25 percent of market value, are treated as substantially damaged and must comply with these reconstruction standards. 4) Whispering Pines' ordinance meets and, in some cases, exceeds the state's minimum standards by prohibiting all new solid-waste disposal facilities, hazardous-waste management facilities, salvage yards, and chemical storage sites within Special Flood Hazard Areas unless elevated or floodproofed to the regulatory elevation. The ordinance also applies a no-rise standard in floodways and non-encroachment areas, requires two-foot freeboard, and limits encroachments in floodplains without established Base Flood Elevations by professional engineering certification. 5) All development within Special Flood Hazard Areas requires a Floodplain Development Permit before construction. Applicants must submit a scaled site plan, base flood data, foundation plans, and utility information to the Floodplain Administrator. Additional required documentation includes Elevation Certificates, Floodproofing Certificates (if applicable), and engineering reports for watercourse alterations. The Administrator reviews the submittal for compliance with all federal and state requirements and ensures that other environmental permits are obtained before approval. The Administrator maintains permanent records of all applications, inspections, and certifications. 6) The Floodplain Administrator monitors compliance through a formal permitting and certification process. This includes reviewing floodplain development permit applications, inspecting sites, and verifying all required elevation or floodproofing documentation. Violations trigger a corrective-action procedure that includes written notice, a hearing, and the potential issuance of an order requiring alteration, removal, or demolition of noncompliant development. Continued violations may result in misdemeanor charges and daily fines of up to $100. 7) Whispering Pines has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Whispering Pines participates in the Community Rating System (CRS) with a CRS entry date of 10/01/1991, a current effective date of 10/01/1996, and a current class rating of 10, according to FEMA's Community Status Book (10/22/2025). A community participating in the CRS with a Class 10 rating does not receive any premium discounts on flood insurance because it either does not meet the minimum CRS participation requirements or does not exceed those required for compliance with the National Flood Insurance Program. Essentially, the community participates in name only, without qualifying for CRS benefits.

HHPD Report for Eligible Dams in Planning Area for Cape Fear Regional HMP

1. Boy Scouts of America Dam Upper (John Beard Lake Dam)

1.1. Dam Characteristics

The Boy Scouts of America Dam Upper also called the Beard Lake Dam and Camp Reeves Dam, is a private, earthen dam that is used primarily for recreation, and the listed owner is Boy Scouts of America, Occoneechee Council. The surface area of the dam 25 acres, and the drainage area is 2.97 mi^2. It has a max storage capacity of 278 Acre feet and a normal storage capacity of 232-acre feet. The dam does not have any incidents listed on the Association of Dam Safety Officials Incident Database, but it is listed as a High Hazard Dam, as of July 19, 2016, in unsatisfactory condition, as of April 25, 2024. Boy Scouts of America Dam Upper is listed as having an Emergency Action Plan which was last revised on December 1, 2023, but these are not made available to the public for confidentiality reasons. The last listed inspection was on April 25, 2024, and the condition and hazard level have remained the same, but the next inspection date was listed as April 25, 2025.

- **Alternate Name:** Beard Lake Dam and Camp Reeves Dam
- **State Dam ID:** MOORE-074
- **Owner Type**: Private
- **Emergency Action Plan (EAP) Date:** December 1, 2023
- **Dam Status:** Impounding
  - **Dam Hazard:** High
- **Dam Hazard Date:** April 25, 2024
  - **Dam Condition:** Poor
- **Condition Assessment Date:** April 25, 2024
  - **Next Inspection:** April 25, 2025
  - **Last Inspection:** April 25, 2024

Table G- 1: *Dam ID, type, purpose, hydraulic height, structural height, maximum storage (acre feet), drainage area (square miles), surface area (acres), and normal storage (acre feet).*

NID ID	Dam Type	Dam Purpose	Hydraulic Height (ft)	Structural Height (ft)	NID Height	Max Storage (Acre Ft)	Drainage Area (Mi^2)	Surface Area (Acres)	Normal Storage (Acre ft)
NC00711	Earth	Recreation	20	30	30	278	2.97	25	232

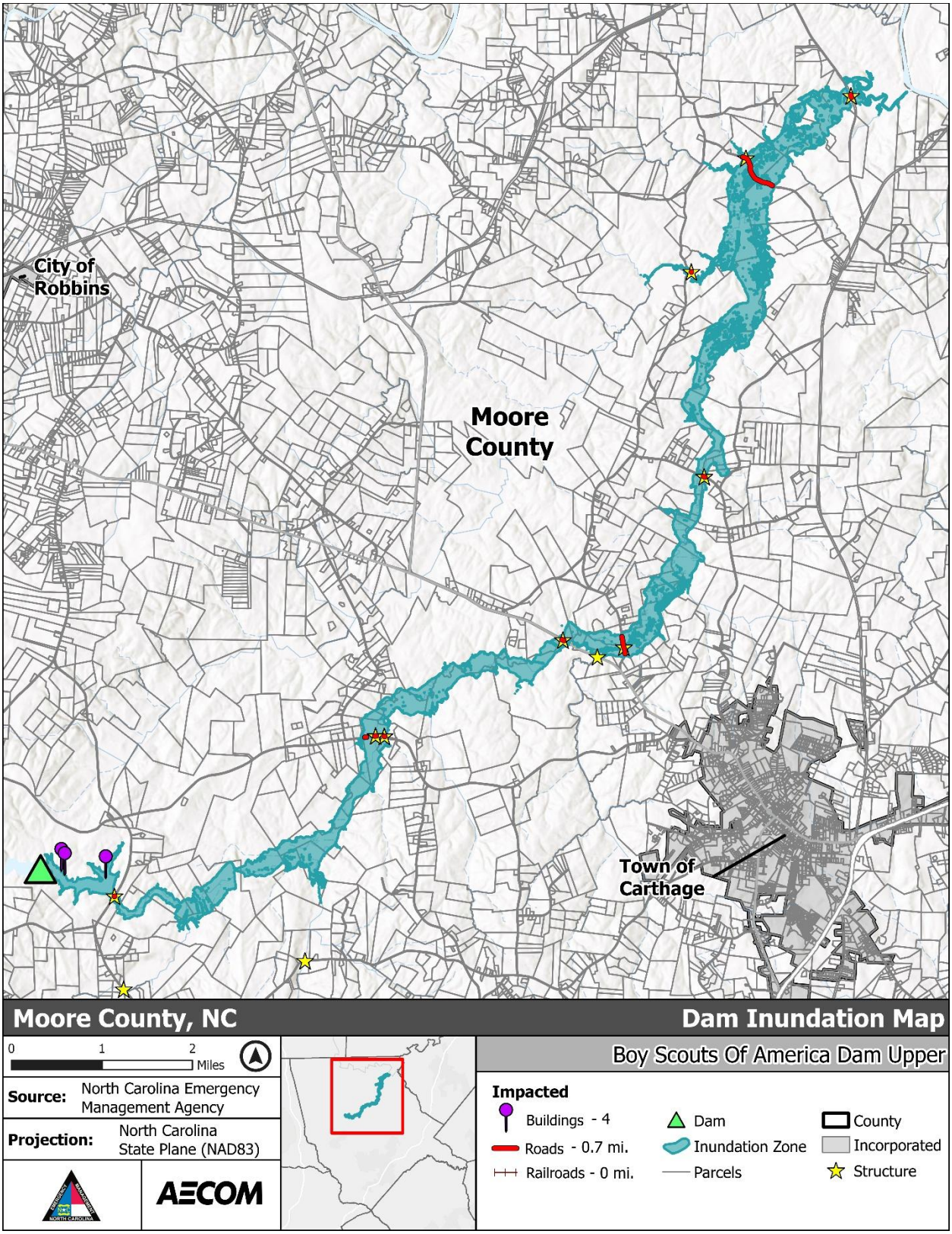


Figure G- 1: *Moore County Boy Scouts of America Dam Upper Inundation Area (MOORE-074)*

1.2. Inundation modeling methodology

The Boy Scouts of America Dam Upper failure model was prepared based on a full pond failure, an overtopping failure mechanism was used, and a 100-year baseflow was used to develop the inundation data provided by NCEM and NCDEQ. Not all dams in NC have mapped inundation areas, and not all inundation areas that are mapped are readily accessible by the public. Using the inundation area raster provided by NCDEQ, ArcGIS was used to determine the properties that intersect the inundation area. The types of facilities and infrastructure that were evaluated to determine what assets are at risk of inundation in the event of a dam failure event included fire stations, medical facilities, law enforcement locations, nursing homes, schools, emergency medical services, roads, NCDOT facilities, railroads, and buildings.

***Table G- 2**: Facilities and Infrastructure Evaluated in the Inundation Area and Data Sources*

Facility/Infrastructure Type	In Inundation Area	Source
Fire Stations	No	NC OneMap
Medical Facilities	No	NC OneMap
Law Enforcement Locations	No	NC OneMap
Nursing Homes	No	NC OneMap
Public Schools	No	NC OneMap
Private Schools	No	NC OneMap
Emergency Medical Services	No	NC OneMap
Roads	Yes	NCDOT
NCDOT Facilities	Yes	NCDOT
Railroads	No	NCDOT
Buildings	Yes	NCEM Spatial Data Downloads

1.3. Infrastructure, Buildings, and People at Risk

There are no critical facilities within the inundation area based on GIS analysis, but there are structures, roads, and bridges that are at risk. The following sections summarize the assets that were found to be located within the inundation area.

1.3.1. Buildings at Risk

There are four buildings located within the inundation area, two are residential, one is agricultural, and one is unspecified. The total building replacement value of the structures in the inundation area is $631,605 and the total building value is $148,113, but the lower building value than building replacement value could be a result of inaccurate or unavailable building value data. Because these buildings are categorized as residential occupancy, these residents are especially vulnerable to dam failure impacts which include property damage and loss of life. Residential structures that are constructed with inadequate anchoring, improper foundations, and low-quality materials may experience disproportionate damage in the event of dam failure.

Table G- 3: *Buildings in the inundation area. -- = Not specified*

Occupancy Type	Building Type	Building Value	Building Replacement Value	Foundation Type	Number of Stories	First Floor Elevation	Lowest Adjacent Grade (Lidar Determined)
AGR1 - Agricultural	Wood – NSI Derived	$37,681	$111,261	Slab on Grade	1	391.58	389.36
--	--	$27,089	$103,572	--	--	388.56	386.39
RES1 – Single Family Residential	Wood – NSI Derived	$27,089	$159,763	Pier	1	393.37	386.20
RES1 – Single Family Residential	Masonry – NSI Derived	$56,253	$257,008	Pier	1	390.01	382.35
--	--	**$148,113**	**$631,605**	--	--	--	--

1.3.2. Population at Risk

There are 3 census tracts that overlap the inundation area that have a total population of 11,687, with 3,159 under 18, 6,884 between 18 and 64, and 1,645 over the age of 64, as of 2020[1]. However, there may be more residents impacted by dam failure events that rely on businesses, infrastructure, and facilities in or around the inundation area.

1.3.3. Roads and Bridges at Risk

There are 0.723 miles or 3,818.62 feet of road that overlap the dam inundation area that are connected to roads that support a total of approximately 14,800 cars in Annual Average Daily Traffic. This includes Access 15-501, Main St, Old Carthage Rd, Cool Springs Rd, Kelly Plantation Rd, Coles Mill Rd, and Central Dr.

Table G- 4: *Roads at risk within the planning area*

Street Name	Route Name	Route Class	Feet of Road at risk	Miles at risk	Annual Average Daily Traffic	Arrival Time (Minutes)[2]
Access 15-501	SR-1006	Secondary Route	26.52	0.01	--	1590
Main St	SR-1210	Secondary Route	2524.99	0.48	7000	30
Old Carthage Rd	SR-1261	Secondary Route	172.16	0.03	--	380

[1] U.S. Census Bureau. (n.d.). TOTAL POPULATION. Decennial Census, DEC 118th Congressional District Summary File, Table P1. Retrieved November 6, 2025, from https://data.census.gov/table/DECENNIALCD1182020.P1?q=2020+census&t=Population+Total.

[2] Arrival Time from the SERA Database

Street Name	Route Name	Route Class	Feet of Road at risk	Miles at risk	Annual Average Daily Traffic	Arrival Time (Minutes)[2]
Cool Springs Rd	SR-1628	Secondary Route	100.32	0.02	--	1410
Kelly Plantation Rd	SR-1640	Secondary Route	161.45	0.03	--	750
Coles Mill Rd	SR-1642	Secondary Route	120.75	0.02	200	930
Central Dr	NC-22	NC Route	712.44	0.13	7600	670
--			3,818.62	0.723	14,800	--

Table G- 5: *NCDOT Bridges at Risk of Dam Inundation*[3]

Bridge Number	Feature Intersected by Structure	Facilities Carried by Structure	AADT	Maintenance Responsibility	Detour Length
620043	McLendon's Creek	NC22, NC24, NC27	6700	State Highway Agency	1
620059	McLendon's Creek	SR1006	950	State Highway Agency	5
620100	Suck Creek	SR1210	1400	State Highway Agency	1
620067	McLendon's Creek	SR1261	550	State Highway Agency	9
620068	McLendon's Creek	SR1261	550	State Highway Agency	9
620060	McLendon's Creek	SR1628	--	State Highway Agency	6
620061	Richland Creek	SR1640	--	State Highway Agency	4
620062	McLendon's Creek	SR1640	--	State Highway Agency	1
620064	McLendon's Creek	SR1642	250	State Highway Agency	6

[3] North Carolina Department of Transportation [NCDOT]. (2025). NCDOT Structures [Dataset]. In NC OneMap, NC OneMap. NC OneMap. https://www.nconemap.gov/maps/NCDOT::ncdot-structures-/about

2. Thagard Lake Dam

2.1. Dam Characteristics

The Thagard Lake Dam, also called the Williford Dam, is a private, earthen dam that is used primarily for recreation, and the listed owner is the Local Government of Whispering Pines. The dam is listed as a High Hazard Dam, in poor condition, as of March 26, 2024. Thagard Lake Dam is listed as having an Emergency Action Plan, but these are not made available to the public for confidentiality reasons. The last listed inspection was on March 26, 2024, and the condition and hazard level have remained the same, but the next inspection date is listed as March 26, 2025.

- **Alternate Name:** None
- **State Dam ID:** MOORE-058
- **Owner Type:** Local Government
- **Emergency Action Plan (EAP) Date:** October 1, 2024
- **Dam Status:** Impounding
- **Dam Hazard:** High
  - **Dam Hazard Date:** March 26, 2024
- **Dam Condition:** Poor
  - **Condition Assessment Date:** March 26, 2024
- **Next Inspection:** March 26, 2025
- **Last Inspection:** March 26, 2024

Table G- 6: *Dam ID, type, purpose, hydraulic height, structural height, maximum storage (acre feet), drainage area (square miles), surface area (acres), and normal storage (acre feet).*

NID ID	Dam Type	Dam Purpose	Hydraulic Height (ft)	Structural Height (ft)	NID Height	Max Storage (Acre Ft)	Drainage Area (Mi^2)	Surface Area (Acres)	Normal Storage (Acre ft)
NC00073	Concrete, Earth, Gravity	Recreation	17	21	21	2,505	65.84	211	1,335

2.2. Inundation modeling methodology

The dam failure model was prepared based on a full pond failure, an overtopping failure mechanism was used, and a 100-year baseflow was used to develop the inundation data provided by NCEM and NCDEQ. Not all dams in NC have mapped inundation areas, and not all inundation areas that are mapped are readily accessible by the public. Using the inundation area raster provided by NCDEQ, ArcGIS was used to determine the properties that intersect the inundation area. The types of facilities and infrastructure that were evaluated to determine what assets are at risk of inundation in the event of a dam failure event included fire stations, medical facilities, law enforcement locations, nursing homes, schools, emergency medical services, roads, NCDOT facilities, railroads, and buildings. The census tracts that overlap the inundation area were also used to determine how many people were at risk surrounding the inundation area.

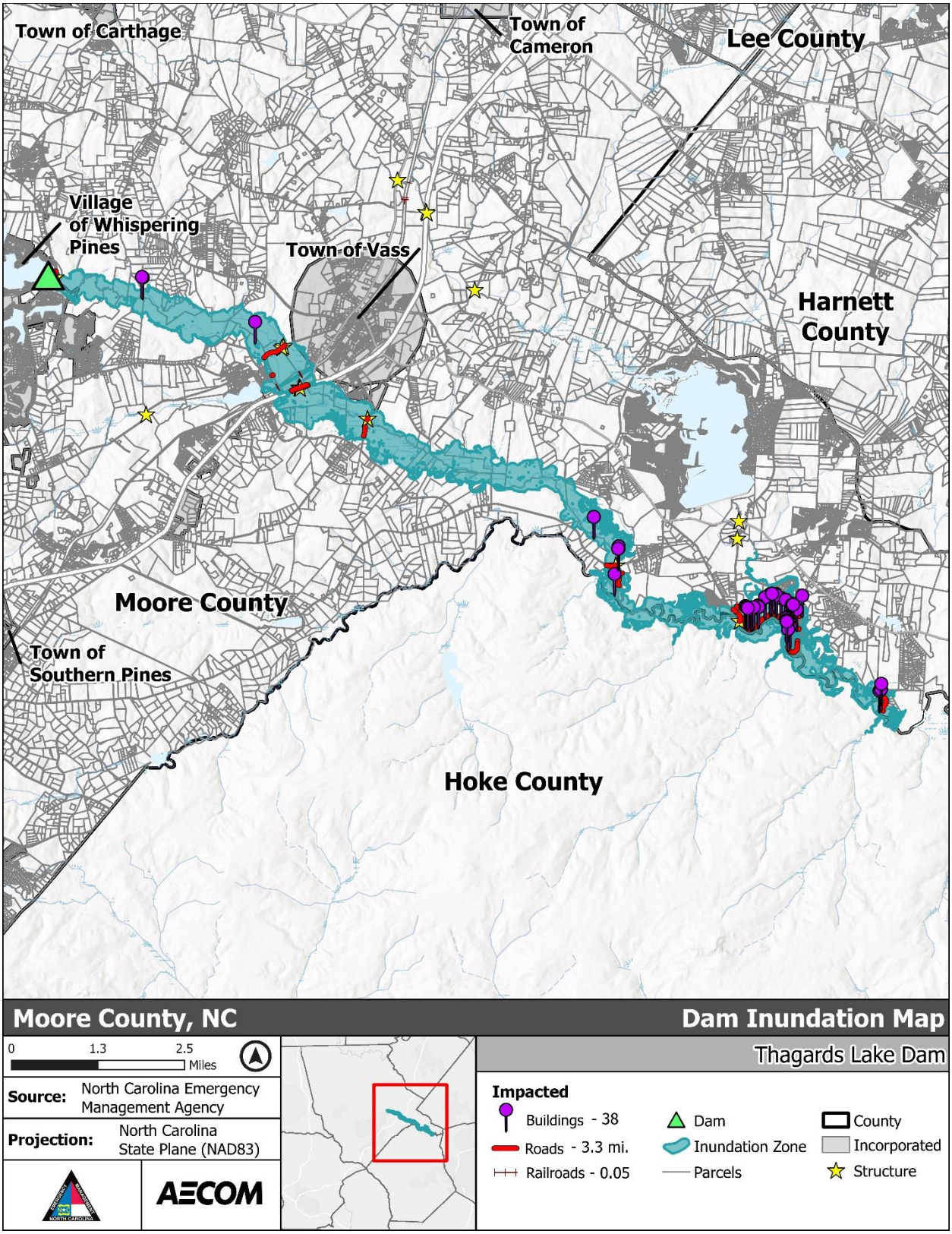


Figure G- 2: *Thagard Lake Dam Inundation Map*

Table G- 7: *Facilities and Infrastructure Evaluated in the Inundation Area and Data Sources*

Facility/Infrastructure Type	In Inundation Area	Source
Fire Stations	No	NC OneMap
Medical Facilities	No	NC OneMap
Law Enforcement Locations	No	NC OneMap
Nursing Homes	No	NC OneMap
Public Schools	No	NC OneMap
Private Schools	No	NC OneMap
Emergency Medical Services	No	NC OneMap
Roads	Yes	NCDOT
NCDOT Facilities	Yes	NCDOT
Railroads	Yes	NCDOT
Buildings	Yes	NCEM Spatial Data Downloads

2.3. Infrastructure, Buildings, and People at Risk

There are no critical facilities within the inundation area based on GIS analysis, but there are structures, roads, and bridges that are at risk. The following sections summarize the assets that were found to be located within the inundation area.

2.3.1. Buildings at Risk

There are eight buildings located within the inundation area, 6 single-family residences and 2 multi-family dwelling units with 3 or more units.

The total building replacement value of the structures in the inundation area is $6,029,098 and the total building value is $873,733, but the lower building value than building replacement value could be a result of inaccurate or unavailable building value data. Because these buildings are categorized as residential occupancy, these residents are especially vulnerable to dam failure impacts which include property damage and loss of life. Residential structures that are constructed with inadequate anchoring, improper foundations, and low-quality materials may experience disproportionate damage in the event of dam failure.

Table G- 8: *Buildings in the inundation area. -- = Not specified*

Occupancy Type	Building Type	Building Value	Building Replacement Value	Foundation Type	Number of Stories	First Floor Elevation	Lowest Adjacent Grade (Lidar Determined)
RES3C - Hazus Derived	Wood - Hazus Derived	$83,915	$2,151,634	Slab On Grade - Hazus Derived	2 - Hazus Derived	214.11	211.57
RES1 - Hazus Derived	Wood - Hazus Derived	$50,013	$451,835	Slab On Grade - Hazus Derived	2 - Hazus Derived	214.36	212.19
RES1 - Hazus Derived	Wood - Hazus Derived	$9,230	$364,524	Slab On Grade - Hazus Derived	2 - Hazus Derived	207.35	205.11

Occupancy Type	Building Type	Building Value	Building Replacement Value	Foundation Type	Number of Stories	First Floor Elevation	Lowest Adjacent Grade (Lidar Determined)
RES1 - Hazus Derived	Wood - Hazus Derived	$54,120	$1,713,693	Slab On Grade - Hazus Derived	2 - Hazus Derived	213.12	211.18
RES1 - Nsi Derived	Masonry - NSI Derived	--	$162,872	Basement - Nsi Derived	1 - Estimated	272.07	267.64
RES1 - Hazus Derived	Wood - Hazus Derived	--	$359,507	Slab On Grade - Hazus Derived	2 - Hazus Derived	270.24	267.72
RES3C - Hazus Derived	Concrete - Hazus Derived	$400,300	$603,103	Slab On Grade - Hazus Derived	2 - Hazus Derived	257.02	254.37
RES1 - Estimated	Concrete - Nsi Derived	$276,155	$221,930	Slab On Grade - NSI Derived	1 - Estimated	215.01	213.59
--	--	$873,733	$6,029,098	--	--	--	--

2.4. Population at Risk

There are approximately 15,341 residents of the census tracts that overlap the Thagard Dam, as of the 2020 Census[4]. Of all residents, 4,411 are under 18, 8,604 are between 18 and 64, and 2,326 are over 64 years of age. While residents in the surrounding census tracts may not be directly impacted, there may be facilities, infrastructure, businesses, and property located in inundation areas and at risk of dam failure impacts. As detailed below, 3.30 miles of road which support 17,300 vehicles per day AADT are at risk of inundation impacts, which would likely impact the ability of residents to travel throughout the area following dam failure events.

2.5. Roads and Bridges at Risk

There are miles or feet of road that overlap the dam inundation area that are connected to roads that support a total of approximately 17,300 cars in Annual Average Daily Traffic. This includes S Lakeshore Drive, Dougald Road, Niagara-Carthage Road, Holly Street, Long Point Road, and Lakebay Rd. Niagara-Carthage Road supports a significant number of AADT, and the arrival time, according to SERA, is approximately 10 minutes, in the case of dam failure events. There are also 4 bridge structures which overlap the inundation areas, crossing the Little River and supporting 6,300 AADT.

There is one railroad segment that is in the inundation area, operated and owned by CSX Transportation, and offering active passenger service that stretched 253 feet or approximately

[4] U.S. Census Bureau. (n.d.). TOTAL POPULATION. Decennial Census, DEC 118th Congressional District Summary File, Table P1. Retrieved November 6, 2025, from https://data.census.gov/table/DECENNIALCD1182020.P1?q=2020+census&t=Population+Total.

0.48 miles. Dam failure events could potentially interrupt service that use this stretch of the railroad.

Table G- 9: *Roads at risk within the planning area*

Street Name	Route Name	Route Class	Feet of Road at risk	Miles at risk	Annual Average Daily Traffic	Arrival Time (Minutes)[5]
S Lakeshore Dr	NS-97014	Non-System (not state maintained)	15.53	0.00	--	60
	NS-97772	Non-System (not state maintained)	770.19	0.15	--	40
	NS-97773	Non-System (not state maintained)	148.78	0.03	--	30
Dougald Rd	NS-99522	Non-System (not state maintained)	162.17	0.03	--	540
Niagara-Carthage Rd	SR-1802	Secondary Route	1113.99	0.21	2900	10
		Secondary Route	840.30	0.16	2100	
		Secondary Route	905.00	0.17	2100	
		Secondary Route	814.41	0.15	2900	
		Secondary Route	1287.74	0.24	2100	
		Secondary Route	89.81	0.02	2100	
Holly St	SR-1861	Secondary Route	495.28	0.09	1100	170
		Secondary Route	1316.04	0.25	1100	170
Long Point Rd	SR-1864	Secondary Route	525.66	0.10	--	250
Lakebay Rd	SR-2023	Secondary Route	256.42	0.05	900	500
--			17,444.82	3.30	17,300	--

Table G- 10: *NCDOT Bridges at Risk of Dam Inundation*[6]

Bridge Number	Feature Intersected by Structure	Facilities Carried by Structure	AADT	Maintenance Responsibility	Detour Length
620033	Little River	SR1802	3400	State Highway Agency	2
620149	Little River	SR1861	1200	State Highway Agency	1
620150	Little River	SR1861	1200	State Highway Agency	1
620196	Little River	SR2023	500	State Highway Agency	3

[5] Arrival Time from the SERA Database

[6] North Carolina Department of Transportation [NCDOT]. (2025). NCDOT Structures [Dataset]. In NC OneMap, NC OneMap. NC OneMap. https://www.nconemap.gov/maps/NCDOT::ncdot-structures-/about

3. Watson Lake Dam

3.1. Watson Lake Dam Characteristics

The Watson Lake Dam is a private, earthen dam that is used primarily for recreation, and the listed owner is the Local Government of the Town of Broadway. The dam is listed as a High Hazard Dam, in poor condition, as of May 22, 2023. Watson Lake Dam is listed as having an Emergency Action Plan, but these are not made available to the public for confidentiality reasons. The last listed inspection was on January 24, 2025, and the condition and hazard level have remained the same, but the next inspection date is listed as January 24, 2027.

- **Alternate Name**: None
- **State Dam ID:** LEE-002
- **Owner Type:** Local Government
- **Emergency Action Plan (EAP) Date:** December 1, 2022
- **Dam Status:** Impounding
- **Dam Hazard:** High
  - **Dam Hazard Date:** December 1, 2021
- **Dam Condition: Poor**
  - **Condition Assessment Date:** January 24, 2025
- **Next Inspection:** January 24, 2027
  - **Last Inspection: January 24, 2025**

Table G- 11: *Dam ID, type, purpose, hydraulic height, structural height, maximum storage (acre feet), drainage area (square miles), surface area (acres), and normal storage (acre feet).*

NID ID	Dam Type	Dam Purpose	Hydraulic Height (ft)	Structural Height (ft)	NID Height (ft)	Max Storage (Acre Ft)	Drainage Area (Mi^2)	Surface Area (Acres)	Normal Storage (Acre ft)
NC00015	Earth	Water Supply	27	32	32	112	0.26	8.7	71

3.2. Inundation modeling methodology

The dam failure model was prepared based on a full pond failure, an overtopping failure mechanism was used, and a 100-year baseflow was used to develop the inundation data provided by NCEM and NCDEQ. Not all dams in NC have mapped inundation areas, and not all inundation areas that are mapped are readily accessible by the public. Using the inundation area raster provided by NCDEQ, ArcGIS was used to determine the properties that intersect the inundation area. The types of facilities and infrastructure that were evaluated to determine what assets are at risk of inundation in the event of a dam failure event included fire stations, medical facilities, law enforcement locations, nursing homes, schools, emergency medical services, roads, NCDOT facilities, railroads, and buildings. The census tracts that overlap the inundation area were also used to determine how many people were at risk surrounding the inundation area.

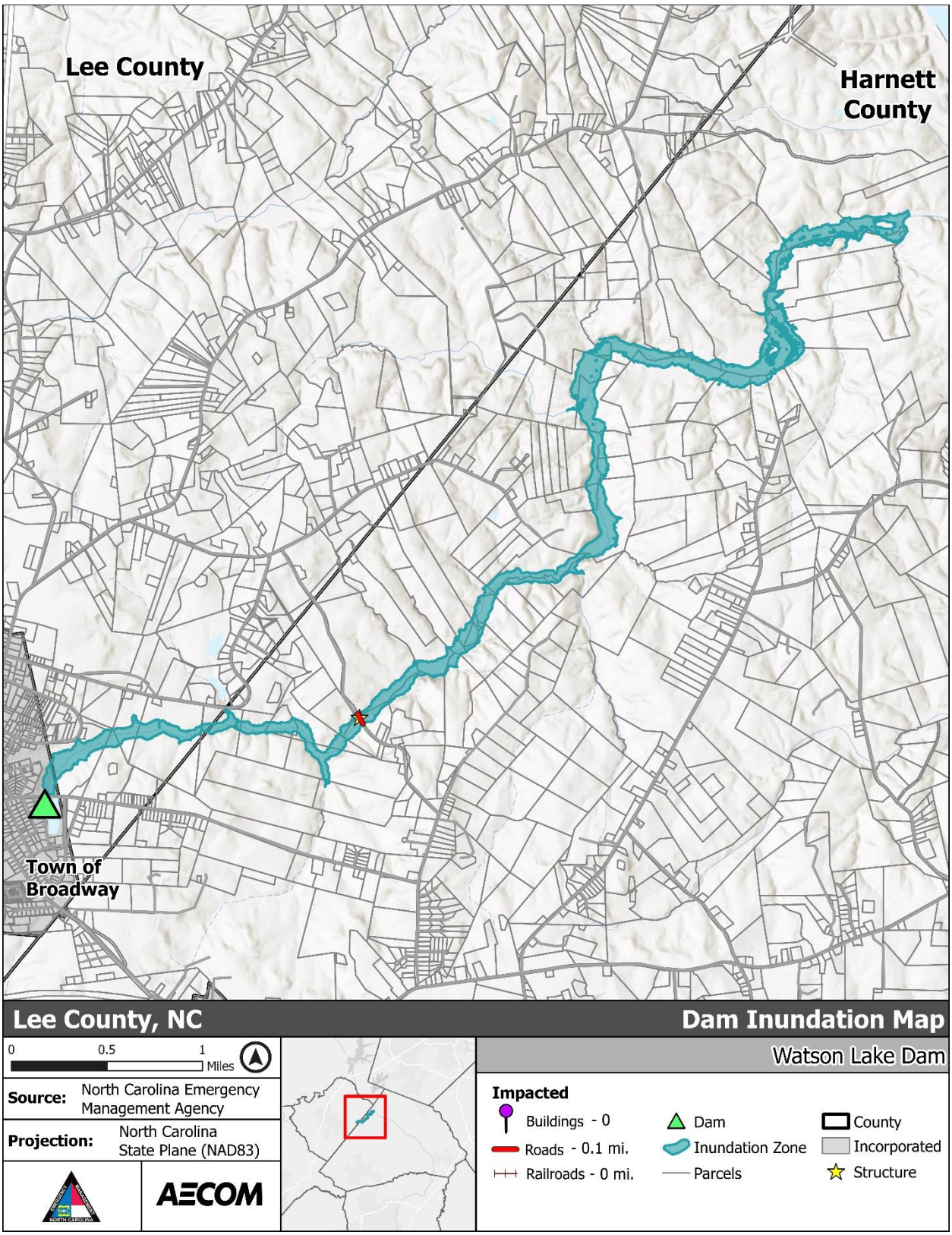


Figure G- 3: *Watson Lake Dam Inundation Area Map*

Table G- 12: *Facilities and Infrastructure Evaluated in the Inundation Area and Data Sources*

Facility/Infrastructure Type	In Inundation Area	Source
Fire Stations	No	NC OneMap
Medical Facilities	No	NC OneMap
Law Enforcement Locations	No	NC OneMap
Nursing Homes	No	NC OneMap
Public Schools	No	NC OneMap
Private Schools	No	NC OneMap
Emergency Medical Services	No	NC OneMap
Roads	Yes	NCDOT
NCDOT Facilities	Yes	NCDOT
Railroads	No	NCDOT
Buildings	No	NCEM Spatial Data Downloads

3.3. Infrastructure, Buildings, and People at Risk

There are no critical facilities within the inundation area based on GIS analysis, but there are structures, roads, and bridges that are at risk. The following sections summarize the assets that were found to be located within the inundation area.

3.3.1. Buildings at Risk

There are no buildings located within the inundation area.

3.3.2. Population at Risk

There are approximately 7,734 residents that live in census tracts that overlap the dam inundation area[7]. There are 1,854 residents under the age of 18, 4,530 between ages 18 and 64, and 1,349 residents over the age of 64, as of 2020. Residents that live in the surrounding census tracts may experience disruptions of day to day activities, damage to property, disruption to travel, and potentially severe injury or death.

3.3.3. Roads and Bridges at Risk

There are 0.058 miles or 305.87 feet of road that overlap the dam inundation, but the AADT is not specified for this road segment, which is part of Shue road. However, if there were to be a dam failure incident, the arrival time of the incident would be 50 minutes, according to SERA.

[7] U.S. Census Bureau. (n.d.). TOTAL POPULATION. Decennial Census, DEC 118th Congressional District Summary File, Table P1. Retrieved November 6, 2025, from https://data.census.gov/table/DECENNIALCD1182020.P1?q=2020+census&t=Population+Total.

Table G- 13: *Roads at risk within the planning area*

Street Name	Route Name	Route Class	Feet of Road at risk	Miles at risk	Annual Average Daily Traffic	Arrival Time (Minutes)[8]
Shue Road	SR-1271	Secondary Route	305.87	0.058	--	50

Table G- 14: *NCDOT Structures at Risk of Dam Inundation*[9]

Culvert Number	Feature Intersected by Structure	Facilities Carried by Structure	AADT	Maintenance Responsibility	Detour Length
420027	Daniels Creek	SR-1271	--	State Highway Agency	3

4. Mitigation Actions

4.1. Recommendations for Roads And Bridges at Risk

To reduce the vulnerability of roads and bridges, the planning area should consider the following mitigation actions:

- Evaluate and implement projects that elevate or protect roadways at risk of dam inundation to improve resiliency of roadways and assist with post-disaster recovery.
- Consider retrofitting bridges to improve their resilience in the event of dam failure
- Coordinate with NCDOT to prioritize road and bridge protections in the event of dam failure

4.2. Recommendations for Buildings at Risk

To reduce vulnerability of structures that are within the dam inundation zones, the planning area should consider the following mitigation actions:

- Evaluate structures that are in inundation zones and ensure that the building is adequately anchored and elevated above the determined dam inundation height.
- Assist residents of the structures at risk to understand the potential impacts of dam failure and determine whether they require assistance to safely evacuate in a timely manner.

[8] Arrival Time from the SERA Database

[9] North Carolina Department of Transportation [NCDOT]. (2025). NCDOT Structures [Dataset]. In NC OneMap, NC OneMap. NC OneMap. https://www.nconemap.gov/maps/NCDOT::ncdot-structures-/about

- Determine whether residents in structures at risk have a way of receiving emergency dam failure notifications and to safely evacuate in a timely manner.
- Prohibit development of new residential structures within the inundation area and ensure that any future development in or around the inundation areas are built with adequate construction methods to reduce damage from dam inundation or flooding.

4.3. Recommendations for Population at Risk

To reduce vulnerability of the planning area to dam failure impacts, the following mitigation actions were added to the mitigation action plan:

- Ensure that residents who live in buildings within the inundation area are aware of the dam failure hazard and encourage them to develop an emergency strategy to evacuate in a timely manner
- Ensure that any residents who live in the inundation area who require assistance to evacuate are assisted in the event of a dam failure event.
- Develop inundation modeling for each dam in the planning area that does not already have inundation data.
- Ensure that emergency action plans developed for dams in the planning area are shared with emergency management and incorporated into emergency management plans

4.4. Cascading Impacts

In the context of high-hazard dams, cascading impacts refer to a chain reaction of different disasters. For example, a drought can cause vegetation loss, leading to additional stormwater runoff and erosion, which can result in dam overtopping and/or silting. Due to a lack of available data and software modeling capabilities, the probability of the other 12 hazards identified in this plan having a cascading impact leading to a dam failure was not quantitatively analyzed. Cascading impacts are briefly discussed in the list below for each hazard covered by this plan. The list indicates whether the planning committee and the relevant literature consider a hazard unlikely to have a significant cascading impact on dams.

Drought: a prolonged drought can weaken a dam's foundation or cause cracks, potentially leading to structural failure when water levels rise again.

Extreme Heat: prolonged extreme heat can exacerbate structural weaknesses in dam components, increasing the risk of dam failure. This may lead to downstream flooding and severe water-quality degradation, which can affect ecosystems and public health.

Hurricane and Tropical Storm: hurricane winds can cause significant structural damage or increase water inflow from heavy rainfall, raising the risk of dam failure.

Severe Weather: thunderstorm winds alone are unlikely to cause cascading impacts leading to dam failure, though associated heavy rain could increase the risk. Hail alone is unlikely to cause cascading impacts leading to dam failure, as it does not significantly affect water levels or structural integrity. Lightning strikes can disrupt dam monitoring systems and damage critical

infrastructure, potentially impairing emergency response and increasing the risk of unmonitored or uncontrolled dam breaches.

Tornado: tornadoes could damage a dam's infrastructure or surrounding vegetation, but are less likely to trigger a cascading impact that would directly cause dam failure.

Winter Storm: rapid snowmelt can lead to increased runoff, potentially causing overtopping and dam failure. Ice buildup can block spillways or cause structural damage, increasing the likelihood of overtopping or dam failure.

Earthquake: earthquakes can weaken a dam’s structural integrity or trigger landslides in the reservoir, increasing the risk of dam failure.

Flood: river flooding can increase water pressure on a dam, potentially causing overtopping or structural failure and creating a cascading impact.

Hazardous Materials Incident: a hazardous materials spill near a dam or reservoir could contaminate the water supply and damage structural integrity, creating a cascading risk of environmental pollution, public health crises, and downstream flood hazards.

Wildfire: wildfires can remove vegetation, increasing runoff and erosion, which may contribute to dam overtopping or silting, leading to potential failure.

Nuclear Accident: nuclear accidents could damage critical infrastructure or disrupt power and monitoring systems needed to maintain dam operations, increasing the risk of an uncontrolled release and downstream flooding.

Terror Threat: terror threats targeting a dam, related infrastructure, or nearby location could compromise structural integrity or disable emergency systems, increasing the likelihood of a breach.

APPENDIX H: COMPLETED MITIGATION ACTIONS

The following table contains mitigation actions that participating jurisdictions have completed since the last Cape Fear Regional Hazard Mitigation Plan update (2020). Participating jurisdictions indicated that a mitigation action had been completed during the mitigation action planning step of the plan update process in the Fall of 2025. The completed mitigation action details are included in the table below, accompanied by implementation details (where provided by jurisdictions).

***Table H-1**: Mitigation Actions Completed Between 2020 and 2025*

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
Chatham County	Prevention	At the next Land Use Plan Update, review and include hazard mitigation objectives for all hazards.	All Hazards	Moderate	Chatham County Planning and Zoning, County Manager	Local	Medium	Complete	The Chatham County Comprehensive Plan was adopted in 2017, and these objectives were completed as part of that.
Chatham County	Prevention	Create a Storm Water Management Ordinance to require storm water control from development.	Flood	High	Chatham County Public Works, County Manager	Local	Medium	Complete	Chatham County Watershed Protection has taken over these duties for stormwater inspections and field visits.
Siler City	Prevention	At the next Land Use Plan Update, review and include hazard mitigation objectives.	All Hazards	Moderate	Siler City Planning Department, Jurisdiction Manager	Local	Medium	Complete	New Comprehensive Land Use Plan was adopted in July 2024 and includes goals and objectives related to hazard mitigation.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
Coats	Prevention	The Town will develop a checklist to be used for an annual inspection of all Public Buildings to ensure they remain as structurally secure as possible during all hazard events.	All Hazards	High	Coats Public Works Department, Town Manager, Town Board	Local	Low	Complete	Major renovations were completed to keep stormwater from entering parts of Town Hall complex.
Dunn	Natural Resource Protection	Create a policy to establish vegetative buffers on all properties bordering drainage canals, creeks, streams, etc. to prevent water contamination.	Flood	Moderate	Planning Department, Planning Board, Inspections Department, City Council, Public Works, County Environmental Health Department	Local, State	Low	Complete	We have a landscape ordinance that requires buffers.
Lillington	Natural Resource Protection	Rewrite Zoning Ordinance to protect natural areas along the Cape Fear River and to determine the correct riparian buffer to preserve open space and limit development.	Flood	High	Town Manager	Local	Low	Complete	The Zoning Ordinance has been re-written to protect natural areas along the Cape Fear River and to preserve open space and limit development. This ordinance is in place, so this action is complete and is a capability.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
Lillington	Prevention	To include in our rewrite of our Zoning Ordinance and Subdivision Ordinance sound planning practices that allow only responsible growth in floodplain areas. Note: All new buildings are inspected by Harnett County. The Town will coordinate with the County to make sure that all applicable building codes are followed with regard to hurricane or high wind standards.	Flood, Hurricane, High Wind	High	Town Board of Commissioners, Town Manager	Local	Low	Complete	The Town has their own inspections department and no longer work with Harnett County for building inspections.
Johnston County	Emergency Services	Establish a site for supporting an NCOEMS Medical Support Shelter. (CapRac).	All Hazards	High	Emergency Services Department	In house staff	High	Complete	JCES, CapRac, and NCEM have worked with C3 churches to utilize their facility as a Special Medical Needs Shelter. This action is complete.
Johnston County	Property Protection	Relocation of 4 server boxes located in the basement of the Johnston County Courthouse and/or increase from one to multiple servers at the Johnston County Health	Flood, Hurricane, Thunderstorm	High	Technology Services Director	Grants, General Fund budget	Low	Complete	Relocated server boxes.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
		Department to increase redundancy.							
Johnston County	Property Protection	Replace generator at Pine Level wastewater pump station.	All Hazards	High	Public Utilities Director	General Fund Budget	Medium	Complete	--
Johnston County	Property Protection	Provide auxiliary heating and cooling capability and generator connections to shelter sites at North Johnston Middle School, West Johnston High School, and First Baptist Church Smithfield.	All Hazards	Moderate	Emergency Services Director, Johnston County School System	Public/private partnership, industry donations, lease units, assistance groups (i.e. Red Cross)	High	Complete	--
Johnston County	Structural Project	Complete rehabilitation work on three gravity sewer outfalls to reduce system infiltration.	Flood, Hurricane, Thunderstorm	High	Public Utilities Director	General Fund Budget	High	Complete	--
Johnston County	Structural Project	Replace bridge No. 40 located on US 70 Business (Market St.) over Neuse River.	Flood	High	Emergency Services Director	In house staff	Low	Complete	This bridge was constructed in 2013.
Clayton	Prevention	Develop a comprehensive plan.	All Hazards	High	Planning Department	Town Budget	Low	Complete	Implemented in 2021
Clayton	Property Protection	Auxiliary power for Town of Clayton sewer lift stations.	All Hazards	High	Public Works Director	Town water/sewer fund budget	Medium	Complete	All sewer lift stations are equipped with a generator or bypass pump, or the ability to have a portable generator

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
									and/or bypass pump hooked up. Those not equipped permanently mounted equipment are equipped with hookups for portable equipment.
Kenly	Prevention	Conduct smoke test and sewer system audit to study excess water that flows into sewer pipes from groundwater and storm water infiltration and inflow.	Flood, Hurricane, Thunderstorm, Tornado	High	Town Manager	Grants	Low	Complete	Engineer has performed the work and audit is complete.
Pine Level	Structural Project	Upgrade lift station located on the East Side due to its location being at a low point in the flood plain.	Flood, Hurricane, Tornado, Thunderstorm	Moderate	Public Works	Federal/State Grants	Low	Complete	--
Princeton	Emergency Services	Provide warning communications to citizens for all hazards.	All Hazards	High	Police Department, Administration	Grants	High	Complete	--
Princeton	Prevention	Maintain Moccasin Creek and right away from erosion.	Flood, Hurricane, Tornado, Thunderstorm	Moderate	Public Works	Operating Budget	High	Complete	--
Princeton	Prevention	Maintain right of way for water and sewer lines.	Hurricane, Tornado, Thunderstorm, Winter Storm	High	Public Works	Operating Budget	Low	Complete	--

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
Princeton	Prevention	Maintain a list of contractors to assist towns in emergencies.	All Hazards	Moderate	Administration	Local	Low	Complete	--
Princeton	Prevention	Maintain town ordinances, policies, and procedures for the Town of Princeton on their website.	All Hazards	High	Administration	In house staff, grants	Low	Complete	--
Princeton	Property Protection	Conduct annual smoke testing of existing sewer lines. 10% of lines to be tested annually.	Flood, Hurricane, Tornado, Thunderstorm	High	Public Works	Operating Budget, Federal/State grants	Low	Complete	--
Princeton	Property Protection	Install and maintain auxiliary power generators at all sewage lift stations.	All Hazards	High	Water and Sewer Commission, Mayor	Federal, State, Local	Medium	Complete	--
Princeton	Property Protection	Install stationary 75kw generator for Town Hall.	All Hazards	High	Public Works	Federal/State grants	Medium	Complete	--
Princeton	Property Protection	Provide backup power at critical facilities.	All Hazards	High	Administration	Federal/State grants	High	Complete	--
Princeton	Public Education and Awareness	Develop and print a brochure outlining wind proofing methods above and beyond Code. This will be offered in the Inspections Department receptionist area.	Hurricane, Thunderstorm, Tornado	Low	Steven Finn (Planning and Inspections Director)	Federal, State, Local	Low	Complete	--

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
Princeton	Public Education and Awareness	Educate public on all potential natural disasters by maintaining town's website to include links to ReadyNC.org and FEMA – www.dhs.gov/ready.	All Hazards	Moderate	Town Administration	Federal, State, Local, Operating Budget	Medium	Complete	--
Selma	Prevention	Provide Cloud access for government software and data.	All	High	Administration	Local	Low	Complete	--
Smithfield	Structural Project	Complete the Spring Branch Wetlands Restoration Project in order to improve the quality of stormwater runoff before it enters the Neuse River.	Flood, Hurricane, Thunderstorm	Moderate	Public Works Director	Local Funding, Grants	High	Complete	Wetland facility was restored in 2019, and Spring Branch restoration was completed in 2022.
Wilson's Mills	Prevention	Adopt NFIP.	Flood, Hurricane, Thunderstorm	High	Town staff	Local budget	Low	Complete	Done
Wilson's Mills	Prevention	Maintain a list of contractors to assist the town in emergencies.	All Hazards	Moderate	Administration	Local	Low	Complete	Public Works has compiled a list of reliable contractors.
Wilson's Mills	Prevention	Digitize copies of town ordinances, policies, and procedures.	All Hazards	High	Administration and Town Council	Local, Grants	Low	Complete	This has been completed.
Moore County	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to	All Hazards	High	Moore County Public Safety Department	Local, NCEM	Medium, Staff Time	Complete	We created a dashboard of live data concerning disaster options for sharing situational awareness and common operating picture as a one stop

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
		natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.							shop. We also have a subscription to WEBEOC to share and collect information from partners.
Moore County	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system, and improve upon the accuracy and effectiveness of this system when feasible for all hazards.	All Hazards	High	Moore County Public Safety Department	Local	Medium, Staff Time	Complete	We just updated our data in the Emergency Notification System platform from the 911 system data in the 1st quarter of 2025. We are also fully compliant with IPAWS.
Moore County	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department	HMGP	High	Complete	Three (3) flood gauges installed and operational inside Moore County.
Aberdeen	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to	All Hazards	High	Moore County Public Safety Department	Local, NCEM	Low	Complete	We created a dashboard of live data concerning disaster options for sharing situational awareness and common operating picture as a one stop

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
		natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.							shop. We also have a subscription to WEBEOC to share and collect information from partners.
Aberdeen	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction. The goal of this effort will be to provide the jurisdictions with better information regarding riverine water levels.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction	HMGP	Low	Complete	Three (3) flood gauges installed and operational inside Moore County.
Aberdeen	Public Education and Awareness	Moore County will conduct outreach activities aimed at educating business owners about addressing the issue of continuity of operations in the face of all natural and man-made disasters. Following a disaster, the reopening of	All Hazards	High	Moore County Public Safety Department	Local	Low	Complete	Completed in 2020 by county.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
		commercial operations is critical to recovery efforts.							
Pinebluff	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction, Town of Pinebluff, Mayor	HMGP	High	Complete	Three (3) flood gauges installed and operational inside Moore County.
Pinebluff	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.	Dam Failure, Flood	Low	Moore County Public Safety Department, Town of Pinebluff, Mayor	Local, NC DENR	Medium, Staff Time	Complete	Not as detailed or as functional as we envisioned that it would be. He has, however, mapped all of our High Hazard Dams to improve our overall situational awareness and common operating picture for our response agencies. We have also delivered two (2) Dam EAP tabletop exercises. All the Dam Safety EAPs that we have received are stored digitally and available to staff in the field. We continually look for opportunities to gather Dam owner/operator contact information.
Pinehurst	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of	All Hazards	High	Moore County Public Safety Department, Jurisdiction	Local, NCEM	Medium, Staff Time	Complete	Pinehurst shares the ability of using a GIS dashboard of live data concerning disaster options for sharing situational

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
		information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.			(Village Manager)				awareness and common operating picture as a one stop shop. We also have a subscription to WEBEOC to share and collect information from local municipalities and Moore County.
Pinehurst	Emergency Services	Moore County Public Safety will continue to utilize the existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible for all hazards.	All Hazards	High	Moore County Public Safety Department, Jurisdiction (Village Manager)	Local	Medium, Staff Time	Complete	Working with Moore County Pinehurst has an Emergency Notification System platform from the 911 system data in the 1st quarter of 2025. We are also fully compliant with IPAWS.
Pinehurst	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along watercourses impacting the jurisdiction.	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Jurisdiction (Village Manager)	HMGP	High	Complete	Three (3) flood gauges installed and operational inside Moore County that Pinehurst can also see the information Moore County collects.
Pinehurst	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a	Dam Failure,	Low	Moore County Public Safety Department, Jurisdiction	Local, NC DENR	Medium, Staff Time	Complete	Pinehurst working alongside Moore county has our High Hazard Dams noted to improve our overall situational awareness and common

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
		vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.			(Village Manager)				operating picture for our response agencies. We have also delivered two (2) Dam EAP tabletop exercises. All the Dam Safety EAPs that we have received are stored digitally and available to staff in the field. We continually look for opportunities to gather Dam owner/operator contact information.
Robbins	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.	All Hazards	High	Moore County Public Safety Department, Jurisdiction (Town Manager)	Local, NCEM	Medium, Staff Time	Complete	Moore County Public Safety continually updates and improves its email group list of employees, partner agencies, emergency services providers and municipalities. Look for ways to improve the POC database for each jurisdiction. Create short hard-hitting slide presentations for staff to use to educate residents and Boards as these would be helpful and used more often. Continue to refine distribution methods. Use social media, mobile apps, school administrators and principals, and classrooms teachers. This action will be implemented as needed and this action will be updated as

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
									needed or during the next HMP review process.
Robbins	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department, Jurisdiction (Town Manager)	Local	Medium, Staff Time	Complete	Updated internal CODE RED Notification System activated for Robbins Region in FY 2022.
Robbins	Prevention	Moore County, with the assistance of all participating jurisdictions, will work towards the development of a vulnerability assessment to address the potential impacts of dam breaches throughout the County. This effort will aim to assess existing vulnerabilities, as well as mitigate future risk through informed planning efforts.	Dam Failure	Low	Moore County Public Safety Department, Jurisdiction (Town Manager)	Local, NC DENR	Medium	Complete	Dam was reinspected in 2022 and rated "fair" condition.
Robbins	Property Protection	Purchase and install generators on one of more water wells for small water systems (e.g. Foxfire Village); and/or	All Hazards	High	Moore County Emergency Management, Public Utilities,	HMGP	High	Complete	Generators purchased for critical infrastructure.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
		purchase and install transfer switches to allow for fast hook-up of emergency generators, particularly for water wells.			Jurisdiction (Town Manager)				
Robbins	Property Protection	Purchase and install generators on critical infrastructure / key facilities; and/or purchase and install transfer switches to allow for fast hook-up of emergency generators.	All Hazards	Moderate	Moore County, Town of Robbins Manager	HMGP, Local	High	Complete	Generators purchased for critical infrastructure.
Southern Pines	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department, Town of Southern Pines Town Manager	Local	Medium, Staff Time	Complete	The Town of Southern Pines routinely utilizes Code Red to disseminate information to the public. We also use Zencity Software to stay abreast of Citizen concerns and we routinely communicate thorough our social media pages to the public.
Southern Pines	Prevention	Moore County Public Safety will work with NCEM to acquire grant funding that will be utilized to acquire and locate flood gauges strategically along	Dam Failure, Flood	Moderate	Moore County Public Safety Department, Town of Southern Pines Town Manager	HMGP	High	Complete	Partnered with the state to place a Flood Gauge in Reservoir Park.

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Status	Implementation Details
		watercourses impacting the jurisdiction.							
Whispering Pines	Emergency Services	Moore County Public Safety will work to broaden efforts regarding the dissemination of information relating to natural and man-made hazard events. This effort will focus on forwarding information provided by NCEM to municipal staff members and elected officials.	All Hazards	High	Moore County Public Safety Department; Moore County, Village of Whispering Pines Mayor	Local, NCEM	Medium, Staff Time	Complete	Moore County Public Safety created a dashboard of live data concerning disaster options for sharing situational awareness and common operating picture as a one stop shop. We also have a subscription to WEBEOC to share and collect information from partners.
Whispering Pines	Emergency Services	Moore County Public Safety will continue to utilize the County's existing emergency notification system and improve upon the accuracy and effectiveness of this system when feasible.	All Hazards	High	Moore County Public Safety Department; Moore County, Village of Whispering Pines Mayor	Local, State, Federal	Medium, Staff Time	Complete	Moore County Public Safety just updated or data in the Emergency Notification System platform from the 911 system data in the 1st quarter of 2025. We are also fully compliant with IPAWS. The Village completed a transition from CodeRed to CivicReady (Mass Communication System) last year.

Worksheet 8: Mitigation Action Implementation

This worksheet will help you identify all the components you need to successfully carry out your mitigation actions. You can do this by looking at previous worksheets that were used in the planning process.

Describing the Action	
Action description Be as specific as you can with what you want to accomplish. Include potential locations where applicable.	
Assessing the Risk	
Risk(s) addressed Describe how the action connects to the risk assessment.	
Implementing the Action	
Cost estimate This can be a rough number. You do not need a quote.	
Potential funding sources Example: FEMA Hazard Mitigation Grant Program (HMGP), local budget for match.	
Responsible party Who from the planning team is responsible for carrying out the action?	
Partner agencies (optional) Can any stakeholders help to carry out the action?	

Describing the Action	
Estimated timeline for completion Consider adding specific start and end dates, as applicable. **Short Term** For example, the period for hazard mitigation planning, capital improvements, or jurisdictions budget cycles. **Medium Term** For example, the period for structural projects, regulation, education and outreach, natural systems protections, or comprehensive plans. **Long Term** For example, the period for comprehensive plans, economic development plans, transportation plans or the lifetime of infrastructure assets.	
Prioritizing the Action (Use only one of the options below. Planning teams should decide which one to use and decide on criteria.)	
Qualitative: This option has you describe the costs, benefits, and how each action fits in with other (for example, high, medium, or low). **Quantitative:** Choose criteria to rank your hazard and assign them a rank (such as +1 or -1).	
Integrating and Aligning the Action	
Integration opportunity Could this action support other local plans or planning mechanisms? Refer to the Hazard Information Integration Worksheet to fill out this section.	

Describing the Action	
Integration status Has this action been worked into any other local plans or planning mechanisms? Refer to the Hazard Information Integration Worksheet to fill out this section.	
Aligning with the state plan Does the action align with any goals or objectives outlined in the state hazard mitigation plan?	

Worksheet 9: Action Monitoring Form

Use this form to help identify the status of each action in the plan. This can help you find out if you need other resources to complete it. Completed actions also give you a chance to celebrate the plan's success.

Table 1. Example of Action or Project Evaluation Matrix

Progress Report Period	
Describe the action or project.	
Who is responsible for the action?	
Project status:	☐ Complete ☐ In progress, anticipated completion date: _____ ☐ Not started ☐ Canceled
Has there been any progress with this project so far?	
Are there any obstacles or challenges with this action so far?	
What steps do you need to take to complete this project?	
Other comments:	