

Cumberland-Hoke Regional Hazard Mitigation Plan

Cumberland County, Hoke County

Prepared by:

Cumberland-Hoke Regional Hazard Mitigation Planning Committee

With Professional Planning Assistance from

AECOM

Plan Update 2026

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SECTION 1: INTRODUCTION

Section 1 introduces the Cumberland-Hoke Regional Hazard Mitigation Plan (RHMP). It consists of the following subsections:

- 1.1 Background
- 1.2 Purpose and Need
- 1.3 Scope
- 1.4 Authority
- 1.5 Organization of the Plan

1.1. Background

Each year in the United States, natural disasters take the lives of hundreds of people and injure thousands more. Nationwide, taxpayers pay billions of dollars annually to help communities, organizations, businesses, and individuals recover from disasters. Government assistance only partially reflects the true cost of disasters because tax dollars are not used to reimburse additional expenses incurred by insurance companies and non-governmental organizations. Many natural disasters are predictable, and much of the damage they cause can be reduced or even eliminated.

To reduce the Nation's mounting natural disaster losses, the U.S. Congress passed the Disaster Mitigation Act of 2000 (DMA 2000), which established new and revitalized approaches to mitigation planning. Section 322 of the DMA 2000 emphasizes the need for state and local government entities to closely coordinate mitigation planning activities. It requires that the development of a hazard mitigation plan be a specific eligibility requirement for any local government applying for federal mitigation grant funds. These funds include the Hazard Mitigation Grant Program (HMGP), the Pre-Disaster Mitigation (PDM) program, and the Flood Mitigation Assistance (FMA) Program, all of which are administered by the Federal Emergency Management Agency (FEMA) under the Department of Homeland Security. Communities with an adopted and federally approved hazard mitigation plan 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 the Biggert-Waters Flood Insurance Reform Act (P.L. 112-141), a new federal flood insurance legislation 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.

This Plan was prepared in coordination with FEMA Region IV and the North Carolina Division of Emergency Management (NCEM) to ensure compliance with all applicable DMA 2000 planning requirements. A Local Mitigation Plan Review Tool, found in Appendix J, provides a summary of FEMA's current minimum standards of acceptability and notes the location within the Plan where each planning requirement is met.

1.2. Purpose and Need

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

The purpose of this plan is to identify, assess, and mitigate risk to better protect the people and property of the Cumberland-Hoke Region from the effects of natural and man-made hazards. This plan documents the hazard mitigation planning process and identifies relevant hazards and strategies the participating communities will use to decrease vulnerability and increase resiliency and sustainability. This plan demonstrates the participating communities' commitment to reducing risks from identified hazards and serves as a tool to help decision-makers direct mitigation activities and resources. This plan will ensure the involved communities' continued eligibility for federal disaster assistance, including the HMGP, PDM, and FMA programs.

1.3. Scope

This document comprises a Hazard Mitigation Plan (HMP) for Cumberland and Hoke Counties Region in North Carolina.

The jurisdictions participating in this Plan are the Unincorporated Areas of Cumberland County; the City of Fayetteville; the Towns of Eastover, Falcon, Godwin, Hope Mills, Linden, Spring Lake, Stedman, and Wade; the Unincorporated Areas of Hoke County; and the City of Raeford.

Table 1-1: Jurisdictions Participating in the Cumberland-Hoke Regional Hazard Mitigation Plan (Update)

Cumberland County	Hoke County
City of Fayetteville	City of Raeford
Town of Eastover	-
Town of Falcon	-
Town of Godwin	-
Town of Hope Mills	-
Town of Linden	-
Town of Spring Lake	-
Town of Stedman	-
Town of Wade	-

Even though portions of Fort Bragg and Pope Field (Pope Army Airfield) are part of the City of Fayetteville and the Town of Spring Lake, these portions of the jurisdictions have been omitted from this Plan update.

1.4. Authority

Cumberland and Hoke Counties will adopt this Hazard Mitigation Plan Update in accordance with the authority and police powers granted to counties as defined by the State of North Carolina (N.C.G.S., Chapter 153A). The participating municipalities will adopt this Hazard Mitigation Plan under the authority granted to cities and towns as defined by the State of North Carolina (N.C.G.S., Chapter 160A).

This Plan was developed in accordance with current state and federal rules and regulations governing local hazard mitigation plans. The Plan shall be monitored and updated on a routine basis to maintain compliance with the following 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) and by FEMA's Interim Final Rule published in the Federal Register on February 26, 2002, at 44 Code of Federal Regulations (CFR) Part 201.
- National Flood Insurance Act of 1968, as amended 42 U.S.C. 4001 et seq; and
- North Carolina General Statutes, Chapter 166A: North Carolina Emergency Management Act, as amended by House Bill 251, An Act to Make Various Reforms Related to Disaster Response and Recovery (2025).
- Also utilized the Local Mitigation Planning Handbook, June 2025. The Handbook was used together with the Local Mitigation Plan Review Guide, June 2025. The handbook offers practical approaches and examples for how communities can engage in effective planning to reduce long-term risk from natural hazards and disasters.

1.5. Organization of the Plan

The Regional Hazard Mitigation Plan is organized as follows:

- Section 1 – Introduction
- Section 2 – Planning Process
- Section 3 – Community Profile
- Section 4 – Hazard Identification
- Section 5 – Hazard Profiles
- Section 6 – Capability Assessment
- Section 7 – Mitigation Strategy
- Section 8 – Mitigation Action Plan
- Section 9 – Plan Maintenance
- Appendix A – Acronyms
- Appendix B – Participation and Meetings
- Appendix C – Public Survey Results

- Appendix D – Critical Facilities
- Appendix E – NFIP Information
- Appendix F – Adoption Resolutions
- Appendix G – HHPD Report(s)
- Appendix H – Completed Mitigation Actions
- Appendix I – Mitigation Action Implementation and Monitoring
- Appendix J – CRS: 10-Step Planning Process

SECTION 2: PLANNING PROCESS

Section 2 provides an overview of the planning process used to develop the Cumberland-Hoke Regional Hazard Mitigation Plan. It consists of the following subsections:

- 2.1 Overview of Hazard Mitigation Planning
- 2.2 History of Hazard Mitigation Planning in the Cumberland-Hoke Region
- 2.3 Preparing the Plan
- 2.4 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

44 CFR Part 201.6(c)(1) Requirement:
The plan shall include documentation of the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.

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 to routinely 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 can 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 Cumberland-Hoke Region

Each of the twelve participating jurisdictions had a previously adopted hazard mitigation plan.

- Cumberland County
  - Fayetteville
  - Eastover
  - Falcon
  - Godwin
  - Hope Mills
  - Linden
  - Spring Lake
  - Stedman
  - Wade
- Hoke County
  - Raeford

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 Cumberland and Hoke 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 AECOM was hired to provide professional mitigation planning services. The Region ensured that a professional and experienced 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, found in Appendix J, 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 where each requirement is met within this Plan. 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 Tool (June 2025)[2] as a reference while completing the Plan.

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, contains 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 (illustrated in Figure 2-1) produced critical work products and outcomes that, together, make up the Plan. Specific plan sections are further described in Section 1: *Introduction*.

[1] *FEMA Publication Series 386: Tools for Successful Mitigation*. (2002). FEMA. https://emilms.fema.gov/is_0552/groups/110.html
[2] *Local Mitigation Plan Review Guide*. (2025). FEMA. https://www.fema.gov/sites/default/files/documents/fema_hmd_2025-local-mitigation-planning-handbook_06122025.pdf
[3] Title 44 Code of Federal Regulations Part 201—Hazard Mitigation Planning, Code of Federal Regulations § 201 (2024). https://www.ecfr.gov/current/title-44/part-201

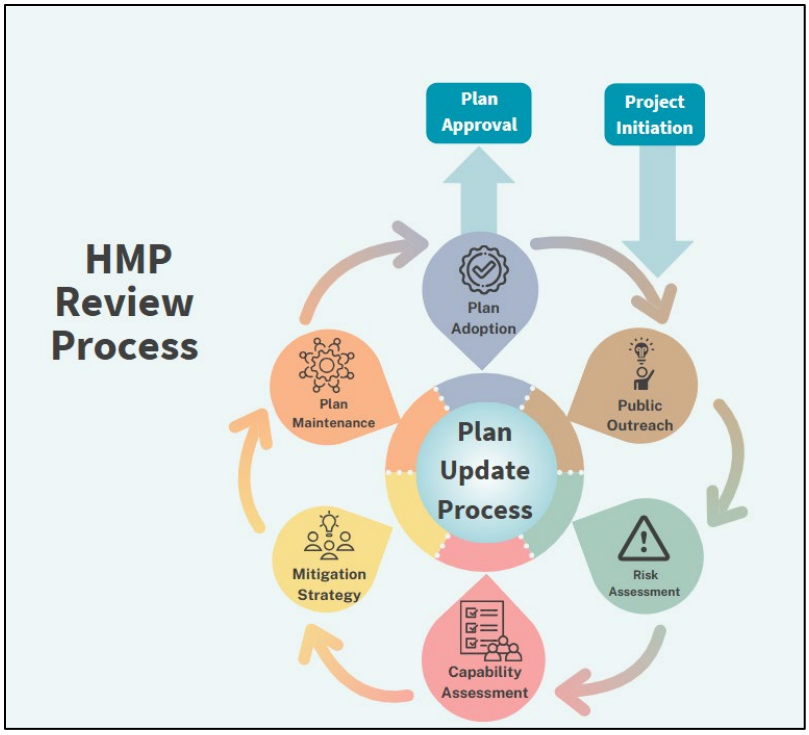


Figure 2-1: Mitigation Planning Process

Over the past five years, each participating jurisdiction has been actively working to implement 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 in Table 2-2, to virtual, in-person, and hybrid HMPC meetings described below. All jurisdictions in Table 2-2 and Table 2-1, and in the planning area, were invited by email to contribute to the plan update process by attending scheduled meetings, and were involved in the planning process by 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.

Table 2-1: Cumberland-Hoke Hazard Mitigation Planning Participation Details

Jurisdiction	Meeting Attendance	Capability Assessment Update	Mitigation Actions Update
Cumberland County	**Yes**	**Yes**	**Yes**

Eastover	Yes	Yes	Yes
Falcon	Yes	Yes	Yes
Fayetteville	Yes	Yes	Yes
Godwin	Yes	Yes	Yes
Hope Mills	Yes	Yes	Yes
Linden	Yes	Yes	Yes
Spring Lake	Yes	Yes	Yes
Stedman	Yes	Yes	Yes
Wade	Yes	Yes	Yes
Hoke County	**Yes**	**Yes**	**Yes**
Raeford	Yes	Yes	No

2.4. Hazard Mitigation Planning Committee

To guide the development of this Plan, Cumberland and Hoke Counties, along with their jurisdictions, created the Hazard Mitigation Planning Committee. The HMPC represents a community-based planning group composed of representatives from various County and municipal departments, as well as other key stakeholders identified as critical partners in the planning process.

Beginning in August 2025, HMPC members engaged in regular discussions, local meetings, and planning workshops to discuss and complete tasks related to 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 were kept informed through an e-mail distribution list.

- Specifically, the tasks assigned to the HMPC members included:
- Participating in HMPC 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 (MAP)*
- Review and provide timely comments on all study findings and draft plan deliverables
- Support the adoption of the Plan.

The table below lists the members of the Planning Committee who were responsible for participating in the development of the Plan.

Table 2-2: Members of the Mitigation Planning Committee with County Leads Indicated in Bold

Cumberland-Hoke Regional Hazard Mitigation Planning Committee		
Name	**Title**	**Jurisdiction/Agency**
Garry Crumpler	**Emergency Services Director**	**Cumberland County**
Chini Gault	Emergency Coordinator	Cumberland County
Charles McLaurin	Mayor	Eastover
Ronnie Autry	Interim Town Administrator	Eastover
Wayne Lucas	Mayor	Falcon
Cheryl Reed	Town Clerk/Public Works Administrator	Falcon
Dr. Gerald Newton	Director of the Development Services Department	Fayetteville
David Steinmetz	Development Services Assistant & Director	Fayetteville
Chris Cauley	Director of Economic and Community Development	Fayetteville
Laura Smith	Emergency Management Coordinator	Fayetteville
Justin McLaurin	Fire Marshal	Fayetteville
Willie Henry	Chief Information Officer	Fayetteville
Loren Bymer	Marketing and Communications Director	Fayetteville
Mitch Colvin	Mayor	Fayetteville
Sheila Thomas-Ambat	Public Services Director	Fayetteville
Daniel Edwards	Assistant Director	Fayetteville
Byron Reeves	Deputy Director of Public Services	Fayetteville
Jennifer Ayre	City Clerk	Fayetteville
Douglas Hewett	City Manager	Fayetteville
Willie Burnette	Mayor	Godwin
Jacqueline Cooper-Kelle	Town Clerk/Finance Officer	Godwin
Kenny Tatum	Chief Building Official/Director	Hope Mills
Bobby Carter	Fire Marshal	Hope Mills
Jessie Bellflowers	Mayor	Hope Mills
Emily Weidner	Planning Director	Hope Mills
Beth Brown	Stormwater Administrator	Hope Mills
Chancer McLaughlin	Town Manager	Hope Mills
Frances Collier	Mayor Pro Tem	Linden
Kimberly Turner	Town Clerk	Linden

Stephanie Hutchins	Building Inspector	Spring Lake
Jason Williams	Interim Fire Chief	Spring Lake
Kia Anthony	Mayor	Spring Lake
Deanna Rosario	Water Resources Manager	Spring Lake
Jonathan Rorie	Town Manager	Spring Lake
Martin Jones	Mayor	Stedman
Connie Veeder	Town Clerk/Finance Officer	Stedman
Johnny Lanthorn	Mayor	Wade
Cindy Burchett	Town Clerk	Wade
Bryan Marley	**Emergency Management Director**	**Hoke County**
Charles Jacob	Emergency Management Coordinator	Hoke County
Terry Tapp	Fire Marshal/Deputy Chief	Raeford
Donnie Smith	Fire Chief	Raeford
Felecia Locklear	Codes Administrator	Raeford

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 contributed suggestions and comments on the plan via municipal-level review meetings, email, and phone conversations.

2.4.1. Multi-Jurisdictional Participation

The Plan includes Cumberland and Hoke Counties and their 10 incorporated municipalities. To satisfy multi-jurisdictional participation requirements, the Counties and their participating jurisdictions were required to perform the following tasks:

- Participating in mitigation planning workshops
- Identify completed mitigation projects, if applicable
- Develop and adopt (or update) 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 the Plan, including the individual Mitigation Action Plan, which provides a means for jurisdictions to monitor and update the 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, neighboring communities, 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, local staff held routine discussions and additional meetings to accomplish planning tasks specific to their department or agency, such as approving mitigation actions for their department or agency to undertake and include in the Mitigation Action Plan. Please see Appendix B for sign-in sheets and flyers for meetings and workshops throughout the planning process.

2.5.1. Pre-Kickoff Meeting (August 28th, 2025)

This meeting was held to introduce the AECOM planning committee and the Hazard Mitigation Plan 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 for 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
- 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 Kickoff Meeting (September 25th, 2025)

Ms. Kelly Keefe, Ms. McKenzie Houston, Ms. Peyton Campbell, and Ms. Ashley Ervin from AECOM led the Planning Committee meeting 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 provided an overview of the items to be discussed at the meeting before presenting a PowerPoint. During the presentation, Ms. Keefe led the group in 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 hazard event had the biggest impact on your county/jurisdiction?
  - Flood – 77%
  - Heatwave – 5%
  - Strong winds – 11%
  - Other – 5%

- Which population or areas in your county/jurisdiction are most at risk during disasters?
  - “Low areas subject to flooding”
  - “Downtown Fayetteville”
  - “The little river area”
  - “Access and functions needs. Areas near Cape Fear River tributaries”
  - “Unhoused, low income, more isolated/rural communities”
  - “Students”
  - “Aging”
  - “Spring Lake and Robeson County”
  - “Those at lower elevations and flatter terrain; often these tend to be lower income”
  - “Low income areas tend to be in areas prone to flooding in heavy rains”

- Have you worked with any nearby counties or cities on mitigation projects before?
  - Yes – 66%
  - No – 33%

- How will you engage vulnerable populations in your planning process?
  - “Public notice”
  - “Variable message boards”
  - “Meeting them where they are. Social media channels”
  - “Getting their input, using multiple ways to reach them both print and electronic”
  - “Future goals of expanding access to available resources for homeless populations”
  - “Mass Feeding & Hydration and Spiritual & Emotional Care”
  - “Factor them into the planning process”
  - “Engaging citizens at shelters and recreation centers”
  - “We rely on direct engagement and county Emergency Operations Center (EOC) for notification and activation”

  - "Coordination with Team Rubicon and public outreach with community representatives"
  - "Post Cards"
  - "Email, Facebook, town app, meetings"
  - "Through Emergency Management"

- Have you had success applying for FEMA or State mitigation grants?
  - Yes – 50%
  - No – 50%

- What will help you stay engaged and active in this regional effort?
  - "Direct communication"
  - "I prefer in person meetings"
  - "Frequent touch points, in person meetings"
  - "Sharing of information for inclusion in our Emergency Operations Plan (EOP), Hazard Vulnerability Analysis (HVA), etc."
  - "Keeping the Salvation Army in the communications for Mass Care"
  - "Knowledge of available mitigation grants and how to access them"
  - "Engagement from County Emergency Management Offices"
  - "Regular communication"
  - "Virtual meetings"
  - "The continued needs for assistance to help the residents"



Figure 2-2: Cumberland-Hoke Regional Hazard Mitigation Plan Kick-off Survey and QR Code

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. A list of jurisdictions participating in

the planning process was presented to confirm its accuracy and to ensure it does not omit any newly incorporated or unincorporated cities or towns.

Next, the minimum criteria for the planning process were presented, including risk assessment, mitigation strategy plan maintenance, adoption, and review by the state and federal governments. This included specific tasks for the project, the planning process, risk and capability assessments, the mitigation strategy, the mitigation action plan, and plan maintenance procedures. The plan update process was outlined, including the initial assessments, planning phase, plan development phase, and plan finalization.

The hazards identified in the previous plan were presented, and attendees were given an opportunity to comment on the hazards included in the previous update and to suggest new natural hazards to include. The previous hazards included dam failure, drought, earthquake, extreme heat, hurricane/tropical storm, flooding, severe weather, thunderstorm wind, lightning, hail, tornado, wildfire, and winter storms.

Attendees were introduced to the capabilities assessment portion of the plan update, which covered planning, regulatory, administrative, technical, financial, educational, outreach, mitigation, and political capabilities. This included a walk-through of the capabilities assessment form, information on how to access it, and the due date of October 16th, 2025.

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. Ms. Keefe stated that the next Regional Hazard Mitigation Planning Committee meeting would be scheduled for October 23rd, 2025, to discuss the findings of the risk and capability assessments, which are due on October 16th, to begin proposing mitigation actions.

2.5.3. Hazard Identification and Risk Assessment Meeting (October 23rd, 2025)

The risk assessment meeting on October 23rd, 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. An introduction to the AECOM planning team was then provided, followed by a brief overview of the meetings' purpose. The participating jurisdictions were listed to allow attendance to be taken, and the presenters knew which jurisdictions could be used in the demonstration of mitigation actions. Next, the most recent participation table was shown, allowing attendees to identify which items were still missing and which jurisdictions had or had not attended meetings so far. The attendees were reminded that capabilities assessments were due on October 16th, 2025, and that any missing assessments should be submitted as soon as possible.

Next, the AECOM team demonstrated how to access, update, and add new mitigation actions to the plan. This included a demonstration of Excel, explaining the categories that need to be updated and how to access definitions for reference while completing the updates. Attendees were given links to access the mitigation actions via the meeting chat and were reminded that the mitigation action spreadsheet would be emailed to the HMPC after the meeting concluded.

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 could 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 Hazard Mitigation Plan 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 invitation 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.



Figure 2-3: Public Participation Survey distributed for the Cumberland Hoke Planning Area

Attendees were asked to provide critical facilities information, repetitive loss property data, dam information, floodplain administration information, hazard history, and photos or documentation of hazard damage and mitigation projects.

The next meeting was given to attendees: November 20th, 2025, for the mitigation action strategy meeting. The HMPC draft meeting and public meeting dates were also provided as a reminder, tentatively set for early 2026. Because the capabilities assessment deadline had passed, jurisdictions that had not yet submitted their assessments were asked to do so as soon as possible. The due date for the mitigation action updates was set for November 20th, 2025, so the planning team could review the updates and answer questions at the next meeting. However, due to scheduling conflicts, the Mitigation Action Strategy Meeting was rescheduled for December 18th, 2025.

2.5.4. HMPC Mitigation Actions Strategy Meeting (December 18th, 2025)

The risk assessment meeting 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.

The summary of capabilities assessment and mitigation actions received was presented. The due date for the mitigation actions was set for December 18th, 2026, but due to the number of missing mitigation actions, the AECOM team asked that anyone with outstanding mitigation action updates complete them as soon as possible.

Next, the hazard risk summary was described, including major hazards identified, vulnerable geographic areas, historical data and impacts, and mitigation prioritizations. The mitigation goals from the previous plan update were presented to get feedback from the HMPC, which include the following:

1. Protect properties and natural resources that are at risk of damage due to hazards and undertake cost- effective mitigation measures to minimize losses.
2. Reduce vulnerability of Cumberland and Hoke Counties and their municipalities to all ha zards for existing development, future development, redevelopment, and infrastructure.
3. Improve public awareness of hazards through a variety of education and outreach programs.
4. Establish and participate in local, state, and federal mitigation-oriented and disaster-based programs and planning efforts to reduce damage and protect lives and property.

AECOM demonstrated how to access the mitigation actions again for anyone on the call who had not completed the mitigation actions updates required for the HMP update process. This included sending links to access the spreadsheet, going over the mitigation action prioritization categories, and navigating the mitigation actions Excel spreadsheet. The AECOM team then 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:

7.3% Residents in Cumberland County and 8.3% Residents in Hoke County have an independent living difficulty:

- Older adults, people with disabilities, and residents with independent living difficulties could lead to disproportionate impact on vulnerable populations, who may rely on the availability of emergency services and community assistance to reach emergency shelters, evacuate, and seek emergency services in the event of natural hazard impacts.

Recommendation:

- The planning area should support evacuation strategies and determine how to best assist transit in the event of evacuations

- The planning area should ensure that accessible emergency alerts and community-based support networks are available to reduce natural hazard impacts in the planning area.

The public survey was presented again during this meeting 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 a 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 tentative date for the draft plan meeting, which was expected to be scheduled in early 2026.

2.5.5. HMPC Draft Review Meeting and Public Draft Review Meeting (February 26th, 2026)

This meeting was held virtually to show attendees how to provide input and access the draft Cumberland-Hoke Regional Hazard Mitigation Plan. 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 Cumberland-Hoke Regional Hazard Mitigation Plan were reviewed along with the hazards addressed 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 draft Plan, 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 feedback 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 Hazard Mitigation Plan update process. The attendees were asked to provide proof of an opportunity for the public to comment by March 27th, 2026, so that it can be incorporated into the next HMP draft. Attendees were asked to provide comments by March 13th, 2026, 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 Hazard Mitigation Plan 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 mobilizing community investment from those directly affected by public officials' decisions. As citizens become more involved in decisions that affect their safety, they are more likely to gain a greater appreciation of the hazards present in their community and take the steps necessary to reduce their impact. Public awareness is a key component of any community's overall mitigation strategy aimed at making a home, neighborhood, school, business, or entire city safer from the potential effects of hazards.

The public was given the opportunity to participate in the planning process through social media invitations to public meetings, public feedback surveys, and the review of the draft Plan. Documentation of opportunities to participate is provided in Appendix B.

Each participating jurisdiction will hold public meetings before its local governing body adopts the final Plan. These meetings will occur at various times after the State and/or FEMA have granted conditional approval of the Plan. Adoption resolutions will be included in Appendix F.

2.6.1. Public Survey

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 October 23rd, 2025 (HMPC meeting), until February 9th, 2026. There were 21 responses in the area, and numerous counties and jurisdictions assisted in distributing the survey throughout the planning area.

1) **Have you ever experienced or been impacted by a natural disaster?**
   a) **Yes:** 95.24%
   b) **No:** 4.76%

2) **If yes, which of these natural hazards have you experienced or been impacted by? (Check all that apply)**
   a) **Dam Failure:** 35%
   b) **Drought:** 15%
   c) **Extreme Heat:** 35%
   d) **Earthquake:** 0%
   e) **Flood:** 65%
   f) **Hurricane:** 95%
   g) **Severe Weather (Thunderstorm/Lightning/Wind):** 75.00%
   h) **Tornado:** 40%
   i) **Wildfire:** 15%
   j) **Winter Weather**: 55%

3) **What was the most difficult part for your recovering from past disasters that you have experienced?: Majority of respond (1 being most difficult and 6 being the least difficult)**

Category	1	2	3	4	5	6
Financial	35%	40%	10%	15%	0%	0%
Emotional	25%	10%	30%	5%	30%	0%
Direct Damage to Property	25%	30%	20%	25%	0%	0%
Loss of Possessions	0%	5%	20%	40%	30%	5%
Long Recovery Time	10%	15%	20%	15%	35%	5%
Other	5%	0%	0%	0%	5%	90%

4) How concerned are you about the possibility of your community being impacted by each of these natural hazards?: Majority of participants responded with the following level of concern (Check the corresponding circle for each natural hazard.)

a) **Dam Failure:** Somewhat Concerned (42.86%)
b) **Drought:** Somewhat Concerned (47.62%)
c) **Extreme Heat:** Somewhat Concerned (52.38%)
d) **Earthquake:** Not Concerned (80.95%)
e) **Flood:** Very Concerned (57.14%)
f) **Hurricane/tropical storm:** Very Concerned (80.95%)
g) **Sinkhole:** Somewhat Concerned (52.38%)
h) **Severe Weather (Thunderstorm/Light/Wind):** Somewhat Concerned (52.38%)
i) **Tornado:** Somewhat Concerned (60%)
j) **Wildfire:** Somewhat Concerned (47.62%)
k) **Winter Weather:** Somewhat Concerned (38.1%)

5) Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following categories are most at risk to the impacts caused by natural hazards within the county? (Please rank the community assets in order of vulnerability, 1 being most at risk and 6 least at risk.)

Category	1	2	3	4	5	6
Cultural/ Historic: Damage or loss of libraries, museums, historic properties, etc.	4.76%	0.00%	4.76%	14.29%	19.05%	57.14%
Economic: Business interruptions/ closures, job losses, etc.	4.76%	19.05%	23.81%	28.57%	23.81%	0.00%
Environmental: Damage, contamination, or loss of	9.52%	14.29%	23.81%	19.05%	19.05%	14.29%

forests, wetlands, waterways, etc.						
Governance: Ability to maintain order and/or provide public amenities and services	4.76%	23.81%	9.52%	23.81%	19.05%	19.05%
Infrastructure: Damage/loss of roads, bridges, utilities, schools, etc.	9.52%	33.33%	38.10%	4.76%	14.29%	0.00%
People: Loss of life and/or injuries	66.67%	9.52%	0.00%	9.52%	4.76%	9.52%

6) **How important are the following community assets to you?: (majority of respondents reported this level of concern)**
   a) **Airports:** Somewhat Important (33.33%)
   b) **Colleges and universities:** Neutral (25%) & Somewhat Important (25%)
   c) **Day Care and Elder Care Facilities:** Somewhat Important (47.62%)
   d) **Emergency Operations Centers:** Very Important (71.43%)
   e) **Emergency Shelters:** Very Important (66.67%)
   f) **Fire, Police, and EMS Stations:** Very Important (66.67%)
   g) **Historic Buildings:** Neutral (52.38%)
   h) **Hospitals and Medical Facilities:** Very Important (76.19%)
   i) **Local Businesses:** Somewhat Important (45%)
   j) **Major Roads and Bridges:** Very Important (80.95%)
   k) **Parks and Recreation:** Somewhat Important (38.1%)
   l) **Schools (K-12):** Very Important (57.14%)
   m) **Town Hall/Courthouse:** Very Important (33.33%)

7) **Natural hazards can have a significant impact on a community, but planning for these types of events can help lessen the impact. Please tell us how important each statement is to you by checking the appropriate circle for each: (majority of respondents reported this level of concern)**
   a) **Protecting Private Property:** Very Important (52.38%)
   b) **Protecting Critical Facilities:** Very Important (95.24%)
   c) **Preventing Development in Hazard Areas:** Very Important (57.14%)
   d) **Enhancing the Function of Natural Features:** Somewhat Important (38.1%) & Very Important (38.1%)
   e) **Protecting Historical and Cultural Landmarks:** Somewhat Important (47.62%)
   f) **Protecting and Reducing Damage to Utilities:** Very Important (76.19%)
   g) **Strengthening Emergency Services:** Very Important (61.9%)
   h) **Promoting Cooperation Among Public Agencies, Citizens, Non-profit organizations, and Businesses:** Very Important (57.14%)

8) **What are some steps that you and/or your local government could take to reduce or eliminate the risk of future natural hazard damage in your neighborhood? Check all that apply:**
   a) **Assist Vulnerable Populations:** 80%
   b) **Education and Awareness Activities:** 85%
   c) **Elevate your Home or Business:** 15%
   d) **Emergency Preparedness Kits:** 85%
   e) **Floodproof your Home or Business:** 35%
   f) **Keep Storm Drains Clean:** 100%
   g) **Protect Power Lines:** 100%
   h) **Reduce Stormwater Runoff:** 65%
   i) **Restrict Development in Floodplain Areas:** 80%
   j) **Other:** 20%

9) **A number of community-wide activities can reduce risk from natural hazards. Please tell us how important each one is for your community to consider pursuing: Most respondents responded the following:**
   a) **Local Plans and Regulations:** Very Important (80%)
   b) **Structure and Infrastructure Projects:** Very Important (80%)
   c) **Natural Systems Protection:** Very Important (75%)
   d) **Education and Awareness:** Very Important (75%)
   e) **Other Types of Actions:** Very Important (50%)

10) **What are the most effective ways for you to receive information about how to make your home and neighborhood more resistant to natural hazards? (Check all that apply):**
   a) **Local Government Channel:** 15%
   b) **Internet (Social Media):** 100%
   c) **Internet (Web Pages):** 70%
   d) **Mail:** 30%
   e) **Mobile Messages/Alerts:** 75%
   f) **Newspaper:** 20%
   g) **Public Meetings/Workshops:** 25%
   h) **Radio Programs:** 35%
   i) **Radio Ads:** 35%
   j) **Television News:** 40%
   k) **Television Ads:** 30%
   l) **Other:** 5%

11) **Is your home located in a floodplain?**
   a) **Yes:** 9.52%
   b) **No:** 76.19%
   c) **I Don't Know:** 14.29%

12) **Do you have flood insurance?**
   a) **Yes:** 19.05%
   b) **No:** 76.19%
   c) **I Don't Know:** 4.76%

13) **If you answered "no" to the previous question, why not?**
   a) **The house is not located in a floodplain**: 77.78%
   b) **Flood insurance is too expensive:** 5.56%

c) **I don't think it's necessary because it never floods**: 0%
d) **I don't think it's necessary because I'm elevated or otherwise protected:** 5.56%
e) **I don't think it's necessary because I have homeowners' insurance:** 0%
f) **I've never really considered it**: 5.56%
g) **Other (please specify)**: 5.56%

14) In the following list, please check the activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. (Please check one response for each preparedness activity.)

Activity Type	Have Done	Plan To Do	Not Done	Unable To Do
Attended meetings or received written information on natural disasters or emergency preparedness?	66.67%	9.52%	23.81%	0.00%
Talked with members in your household about what to do in case of a natural disaster or emergency?	80.95%	4.76%	9.52%	4.76%
Developed a "Household/Family Emergency Plan" to decide what everyone would do in the event of a disaster?	76.19%	19.05%	4.76%	0.00%
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries or other emergency supplies)?	57.14%	28.57%	14.29%	0.00%
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	61.90%	4.76%	28.57%	4.76%
Prepared your home by installing smoke detectors on each level of the house?	80.95%	9.52%	9.52%	0.00%
Discussed or created a utility shutoff procedure in the event of a natural disaster?	28.57%	19.05%	47.62%	4.76%

15) In which community do you live?

Community	Percentage of Respondents
Cumberland County	
Eastover	15.79%

Falcon	5.26%
Fayetteville	15.79%
Godwin	0%
Hope Mills	31.58%
Linden	5.26%
Spring Lake	5.26%
Stedman	5.26%
Wade	5.26%
Unincorporated Areas	10.53%
Hoke County	
Raeford	0%
Unincorporated Areas	100%

16) How long have you lived in the Cumberland-Hoke Region?

a) **Less than one year:** 5.26%
b) **1-5 Years:** 5.26%
c) **6-9 Years:** 5.26%
d) **10-19 Years:** 10.53%
e) **20 Years or More:** 73.68%

17) What type of building do you live in?

a) **Single Family Home:** 95.24%
b) **Duplex:** 0%
c) **Apartment (3-4 Units in Structure):** 0%
d) **Apartment (5 or more units in structure):** 0%
e) **Condominium:** 0%
f) **Manufactured Home:** 4.76%
g) **Other:** 0%

18) Additional Comments:

a) "Potential problems in Hoke Co are a result of unchecked buildings allowed by county commissioners even after citizens have attempted to voice their opposition to a flurry of subdivisions being built."
b) "Please create a map of flood prone areas. In Hurricane Matthew so many roads were closed due to flooding, along with homes with people stranded. We need to be better informed of waterways and alternate routes."

2.7. Involving the Stakeholders

At the beginning of the planning process for the Cumberland-Hoke planning area, the project consultant worked with the HMPC to initiate outreach to stakeholders. The Planning Committee encouraged greater, more widespread participation in the mitigation planning process by designing and distributing the *Public Participation Survey*. These opportunities were provided to local officials, residents, businesses, academia, and other private interests in the 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.[4] Stakeholders designated as "Community Lifelines" are listed in the table below under the Stakeholder Type column.

The Planning Committee sought input from stakeholders outside the planning area, including surrounding counties. Surrounding counties were contacted after a draft of the Plan was developed and asked to review it and provide suggestions/comments to the consultant's project manager. The Planning Committee vetted these suggestions and comments before implementation to ensure they met the needs of the communities for whom the Plan was developed. Surrounding stakeholders and neighboring communities contacted included Bladen, Harnett, Moore, Richmond, Robeson, Sampson, Lee and Scotland counties.

New stakeholder requirements have been implemented in the 2025 Hazard Mitigation Plan review process and require the planning process to include the following stakeholder groups located within the planning area:

- Local and regional agencies involved in hazard mitigation activities
- Agencies that have the authority to regulate development
- Neighboring communities
- Representatives of businesses, academia, and other private organizations
- Representatives of nonprofit organizations, including community-based organizations

Table 2-3: Example list of stakeholders invited to participate in the Hazard Mitigation 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 Group	Organization	Title	County, Jurisdiction, or Affiliation
Joey Coleman	Neighboring Community	Bladen County Emergency Services	Emergency Services Director	Bladen County
Tye Vaught	Community Lifeline	Department of Community Development	Interim Director	Cumberland County
Lashonda Cherry-Crawford	Community Lifeline	Community Transportation Program	Director	Cumberland County

[4] *National Response Framework (Fourth Edition)*. (2019). FEMA. https://www.fema.gov/sites/default/files/documents/NRF_FINALApproved_2011028.pdf

Lisa Childers	Natural Resources	Cooperative Extension	Director	Cumberland County
Garry Crumpler	Safety	Emergency Services	Emergency Services Director	Cumberland County
Heather Hall	Community Lifeline	Library	Library Director	Cumberland County
Dr. Jennifer Green	Health	Public Health	Director	Cumberland County
Brenda Jackson	Community Lifeline	Social Services	DSS Director	Cumberland County
Eric Redrick	Community Lifeline	Veteran Services	Director	Cumberland County
Dr. Gerald Newton	Land Development	Development Services	Director	Cumberland County
-	Safety	Eastover Volunteer Fire Department	-	Eastover
Chris Cauley	Economic Development	Economic and Community Development (ECD) Department	Director	Fayetteville
Kevin Dove	Safety	Fire Department	Deputy Fire Chief	Fayetteville
Tyffany Neal	Infrastructure	Fayetteville Area System of Transit (FAST)	Director	Fayetteville
Roberto E. Bryan Jr.	Safety	Police Department	Chief	Fayetteville
Emily Weidner	Land Development; Economic Development	Planning & Development Department	Planning & Economic Development Director	Hope Mills
Matthew Cain	Safety	Fire Department	Fire Chief	Hope Mills
Lamarco Morrison	Safety	Parks and Recreation Department	Parks and Recreation Director	Hope Mills
Stephen Dollinger	Safety	Police Department	Chief	Hope Mills
Don Sisko	Infrastructure	Public Works	Public Works Director	Hope Mills
Beth Brown	Infrastructure	Stormwater	Stormwater Administrator	Hope Mills

Jason Williams	Safety	Fire Department	Fire Chief	Spring Lake
Patricia (Lynn) Hickmon	Land Use	Inspections Department	Program Assistant/Zoning Administrator	Spring Lake
Deanna Rosario	Natural Resources	Water Resources	Water Resources Manager	Spring Lake
Tracy Towson	Safety	Police Department	Chief of Police	Spring Lake
Henry Taylor	Infrastructure	Waste Water Treatment	Waste Water Treatment Plan Supervisor	Spring Lake
Tracy Jackson	Safety	Police Department	Stedman Police Chief	Stedman
Brandon Walker	Safety	Stedman Volunteer Fire Department	Fire Chief	Stedman
Zach Shean	Neighboring Community	Harnett County Emergency Management	Emergency Management Coordinator	Harnett County
Jimmy Stewart	Safety	Emergency Communications	Director	Hoke County
Jason Lycans	Health	Environmental Health	Environmental Health Coordinator	Hoke County
Dr. Sad'a Rascoe	Community Lifeline	Parks & Recreation	Parks & Recreation Director	Hoke County
Roderick Virgil	Safety	Sheriff's Office	Sheriff	Hoke County
Terry Stanton	Community Lifeline	Social Services	Director of Social Services	Hoke County
Kenny McCollum	Infrastructure	Solid Waste	Solid Waste Director	Hoke County
Donnie Smith	Safety	Fire Department	Fire Chief	Raeford
Felecia Locklear	Land Use	Code Administration (Code Enforcement/Planning/Zoning & Building Inspections)	Codes Administrator	Raeford
Marcus E. Godwin	Safety	Police Department	Chief	Raeford
Travis Sutherland	Infrastructure	Public Works	Public Works Director	Raeford

Matthew Britt	Neighboring Community	Office of Emergency Management	Emergency Management Director	Lee County
Scot Brooks	Neighboring Community	Moore County Emergency Management	Emergency Manager/Deputy Director	Moore County
Bob Smith	Neighboring Community	Emergency Services	Director of Emergency Services	Richmond County
Brandy Oxendine	Neighboring Community	Robeson County Emergency Management	Administrative Assistant	Robeson County
Casey Locklear	Neighboring Community	Robeson County Emergency Management	Fire Inspector	Robeson County
Justin Hunt	Neighboring Community	Robeson County Emergency Management	Emergency Management Director	Robeson County
Nakela Deese	Neighboring Community	Robeson County Emergency Management	Fire Inspector	Robeson County
Dawson McLamb	Neighboring Community	Emergency Services	Emergency Management Coordinator	Sampson County
R Sampson	Neighboring Community			Scotland County
Matt Locklear	Neighboring Community			Scotland 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 Section 8 - *Mitigation Action Plan*.

In addition, community capabilities continue 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.

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

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

For the Regional HPMC, “participation” meant the following:

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

The HMPC met all the above participation requirements. Stakeholders such as local emergency management agencies, participating municipalities, state agencies, neighboring jurisdictions (Bladen, Harnett, Moore, Richmond, Robeson, Sampson, and Scotland counties), businesses, academia, and nonprofits were invited to participate in the planning process through email invitations, follow-up phone calls, and announcements at related government meetings. The Committee’s representatives included County, City, and Town Departments, as well as other stakeholders. The participants comprised the Cumberland-Hoke County Mitigation Planning Committee, as lead agents, and included the following:

- **Cumberland County**: Garry Crumpler, Emergency Services Director & Chini Gault, Emergency Coordinator
- **Hoke County**: Bryan Marley, Emergency Management Director

During the planning process, HMPC members communicated via face-to-face meetings, virtual meetings, email, and telephone. Although not all HMPC members could be physically present at every meeting, coordination continued throughout the planning process.

SECTION 3: COMMUNITY PROFILE

General information topics such as location, topography/geology, climate, and history are presented in this section. Following the introductory information are summaries of the counties and their municipalities, including pertinent demographic information such as population, housing, and economic characteristics. It consists of the following subsections:

- 3.1 Geography and Environment
- 3.2 Climate
- 3.3 History
- 3.4 Population and Demographics
- 3.5 Housing, Infrastructure, and Land Use
- 3.6 Employment and Industry

3.1. Geography and Environment

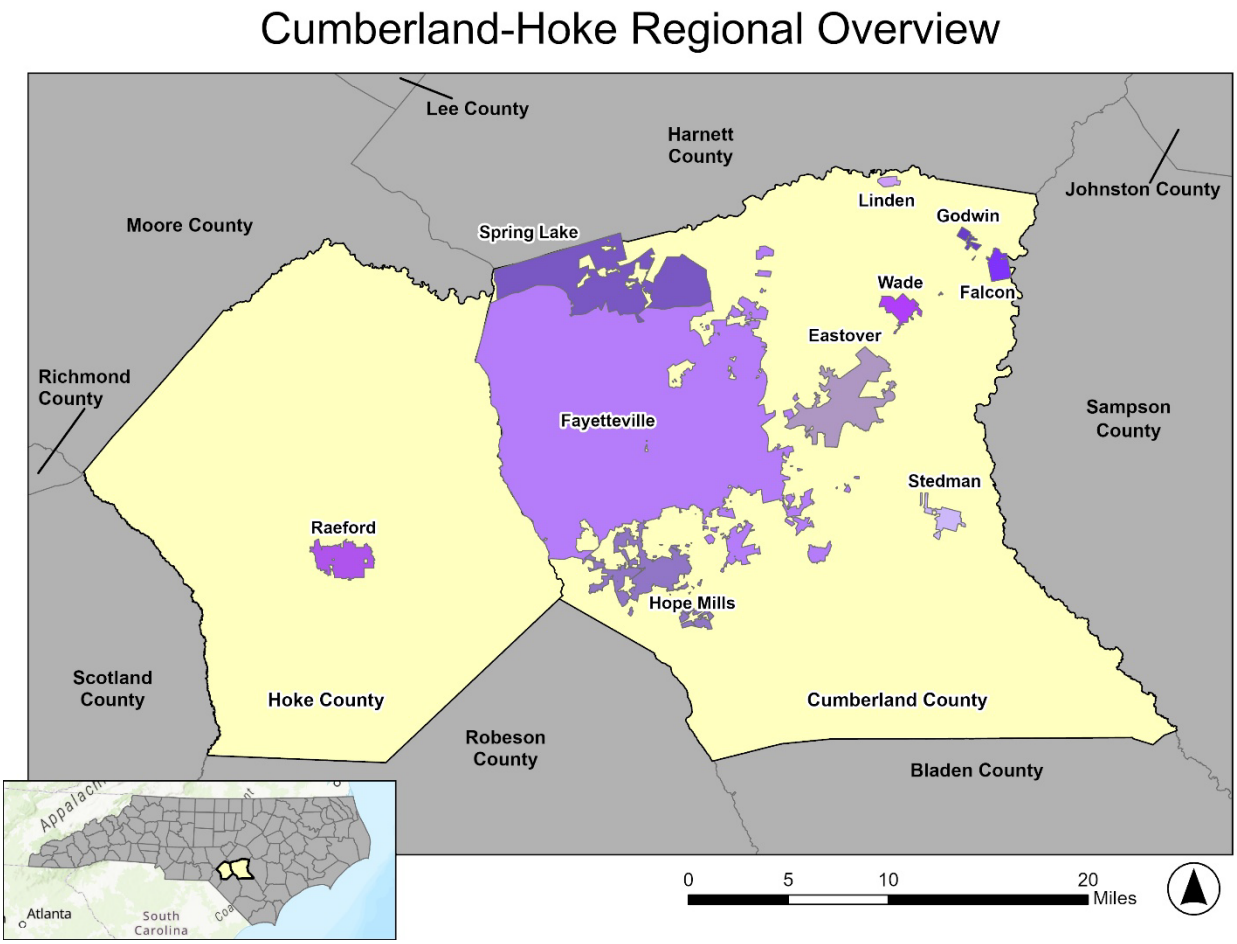


Figure 3-1: Cumberland County and Hoke County Overview Map

Cumberland and Hoke Counties are located in the Upper Coastal Plains section of North Carolina (NC), distinctively known as the “Sandhills.” Moore and Harnett Counties border the Counties to the north, Sampson County to the east, Robeson and Bladen Counties to the south, and Scotland County to the west.

The land in Cumberland County slopes generally from northwest to southeast. The northwestern section of Cumberland County, within Fort Bragg, has elevations of over 400 feet. Elevations in the southeastern section of Cumberland County tend to be 100 feet or less. The Cape Fear River runs through Cumberland County from north to south. The elevation of the river is approximately 35 feet above sea level. Land on the western side of the river is dissected by several systems of streams that flow into the Cape Fear River. There are nine municipalities within the County: The City of Fayetteville and the Towns of Hope Mills, Spring Lake, Eastover, Stedman, Wade, Falcon, Godwin, and Linden.

The topography in Hoke County is gently rolling, with land elevations ranging from the lowest point on Rockfish Creek (36 feet above sea level) in the southeastern portion of the County to the highest point (550 feet above sea level) in the northwestern portion of the County near the McCain area. Hoke County is in two river basins – the Cape Fear River Basin to the north and east, and the Lumber River Basin to the south and west, with the Lumber River forming the southwestern boundary of the County. There is one municipality within the County: The City of Raeford. Figure 3-1shows the municipalities and river basins within Cumberland and Hoke Counties.

3.2. Climate

The Cumberland-Hoke Region gets an average of 44.02 inches of rainfall per year. The United States (US) average is 37 inches per year. The average snowfall in the Region is 3.39 inches. The average US city gets 25 inches of snow per year. The average July high temperature is around 81.51 degrees Fahrenheit. The low temperature in January is 43.45 degrees Fahrenheit. Table 3-1 provides basic statistics on annual climatic conditions across the Cumberland-Hoke Region.

Table 3-1: Cumberland-Hoke Region's Climate Conditions[1] Compiled with 2010-2025 Regional Data

Climate Conditions	Cumberland-Hoke Region
Rainfall (inches)	44.02in
Snowfall (inches)	3.39 in
Average July Temperature	81.51°
Average January Temperature	43.45°
Highest Elevation Above Sea Level (in feet)[2]	559.6 - Hoke County 486.6 - Cumberland County

Source: National Oceanic and Atmospheric Association (NOAA)

[1] *My Cardinal Requests*. (2025). North Carolina State Climate Office. https://products.climate.ncsu.edu/cardinal/user/

[2] NC Center for Geographic Information and Analysis, & NC Department of Public Safety. (2025, April 15). *NC Digital Elevation Model (3ft)*. NC OneMap. NC OneMap. https://www.nconemap.gov/

3.3. History

3.3.1. Cumberland County

According to the Cumberland County Website[3], Cumberland County was formed as a settlement between 1729 and 1736 by the European migrants, Highland Scots. Because of its location, the area served as a vital transportation link to other settlements. Cumberland County is approximately 661 mi^2 and is part of the Sandhills region. In 1754, the Colonial Legislature divided up Bladen County, from which Cumberland County was formed. The county was named after the Duke of Cumberland, William Augustus, a member of the English Army. The residents of Cumberland County wanted to petition to annex the land, originally part of Campbellton, which was chartered in 1762. In 1764, Cumberland County's borders were adjusted to include Campbellton. In 1778, Campbellton and Cross Creek combined to create lower Campbellton and upper Campbellton, previously known as Cross Creek. However, in 1783, Campbellton was renamed in honor of the Marquis de La Fayette, a French General who served in the Continental Army during the American Revolution, and was officially renamed Fayetteville.

Fayetteville experienced a devastating fire in 1831, which burned most of the city, and by the 1865 invasion of General Sherman. Assisting in the recover, Camp Bragg was opened up as an artillery and temporary training facility in 1918, but was closed in 1921 and later reopened as a permanent army post named Fort Bragg. Fort Bragg was named in honor of the Confederate General Braxton Bragg, who was from North Carolina, because of his success in the Mexican-American War as an artillery commander. However, in 2023, it was renamed Fort Liberty, which was changed back to Fort Bragg in 2025, now honoring the World War II paratrooper Roland L. Bragg.

3.3.2. Hoke County

According to NCpedia's summary of Hoke County's history[4], the area was originally inhabited by the Saura (Cherwa) and Lumbee Indians. The county was formed from parts of Cumberland and Robeson Counties in 1911, after two failed attempts to create new jurisdictions for disaffected residents of the two counties. Hoke County was named in honor of the Confederate general and railroad president Robert F. Hoke. In 1901, Raeford was incorporated and became the county's principal city. The Fort Bragg Military Reservation, established and developed in the 1910s and 1920s, accounts for a third of the northern part of the county.

Towards the end of the 20th century, Hoke County became the host of the annual NC Turkey Festival to honor the state's status as the nation's leader in turkey production. In addition to turkey, Hoke County produces a variety of agricultural products, including tobacco, corn, soybeans, hogs, cotton, and beef cattle. Hoke County also manufactures goods such as wool, polyester fabrics, beauty aids, and concrete blocks.

3.4. Population and Demographics

[3] *County History*. (2025). Cumberland County, North Carolina. https://www.cumberlandcountync.gov/departments/non-departmental-group/county-history
[4] *Hoke County*. (2006). NCpedia. https://www.ncpedia.org/geography/hoke

The planning area experienced an overall population increase between 2010 and 2023, with Cumberland County increasing by 5.42% and Hoke County increasing by 13.10%, according to the 2023 American Community Survey (ACS) population estimates.[5] The estimated population of the planning area in 2023 was approximately 389,851, an increase of around 6.02% from an estimated 2010 population of 366,383.[6] The jurisdictions with the most significant population growth from 2010 to 2023 were Stedman, Godwin, Hope Mills, and Fayetteville, with increases of 56.91%, 22.30%, 17.44%, and 4.55%, respectively. The jurisdictions with the smallest population growth, or negative population growth, are Falcon, Linden, Spring Lake, and Eastover, with percentage population change of -28.29%, -9.23%, -2.93%, and 1.05%, respectively. The largest jurisdiction in Cumberland County is Fayetteville (Population of 3,666), and the largest jurisdiction in Hoke County is Raeford (Population of 4,545).

Table 3-2: Population in the Planning Area

Jurisdiction	2010 Census Population[6]	2020 Census Population[7]	2023 ACS Population Estimate[5]	% Change 2010-2023
Cumberland County	**319,431**	**334,728**	**336,749**	**5.42%**
Eastover	3,628	3,656	3,666	1.05%
Falcon	258	324	185	-28.29%
Fayetteville	200,564	208,501	209,692	4.55%
Godwin	139	128	170	22.30%
Hope Mills	15,176	17,808	17,823	17.44%
Linden	130	136	118	-9.23%
Spring Lake	11,964	11,660	11,613	-2.93%
Stedman	1,028	1,277	1,613	56.91%
Wade	556	638	565	1.62%
Hoke County	**46,952**	**52,082**	**53,102**	**13.10%**
Raeford	4,611	4,559	4,545	-1.43%

Understanding the distribution of age, disabilities, independent living difficulties, household income, unemployment rates, and whether households with limited English proficiency are essential for developing hazard mitigation strategies that meet the needs of each specific community. The median age reflects the midpoint of the population, and the percentage of the population aged 65 years or older can help demonstrate the age distribution of the planning area, highlighting areas with a greater need for emergency services in the event of a natural hazard. Older adults (65 years and older) are more vulnerable during natural hazard events, and planning should include accessible shelters, medical support, and transportation considerations. The distribution of residents in the planning area with a disability or an independent living difficulty can help indicate where residents may need extra resources to

[5] U.S. Census Bureau. (2023). *ACS Demographic and Housing Estimates* (No. ACSDP5Y2023.DP05; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP05
[6] U.S. Census Bureau. (2010). *Total Population* (No. DECENNIALSF12010.P1; Version Decennial Census) [Dataset]. data.census.gov. https://data.census.gov/table/DECENNIALSF12010.P1
[7] U.S. Census Bureau. (2020). *Total Population* (No. DECENNIALSF12020.P1; Version Decennial Census) [Dataset]. data.census.gov. https://data.census.gov/table/DECENNIALPL2020.P1

prepare for, respond to, and recover from natural hazard events. Other economic characteristics can help predict areas of economic vulnerability, which affect the planning area's capacity to respond to and recover from natural hazards. Jurisdictions in the planning area should consider residents' characteristics that may indicate increased vulnerability and plan accordingly to address those vulnerabilities.

Table 3-3: Age, Disability, Economic, and Other Characteristics of the Planning Area

Jurisdiction	Age and Sex Estimates[8]		Disability Characteristics[9]		Limited English–speaking household[10]	Economic Characteristics[11]		
	Median age	65 years or older	People with a disability	People with an independent living difficulty		Median Household Income	Unemployment Rate	Mean Travel Time to Work (Minutes)
Cumberland County	**31.8**	**12.7%**	**16.9%**	**7.3%**	**1.9%**	**$58,780**	**7.7%**	**21.4**
Eastover	44.7	22.9%	17.4%	6.8%	0.0%	$80,000	5.4%	21.7
Falcon	67.8	50.8%	12.4%	0.0%	0.0%	$80,208	0.0%	48.5
Fayetteville	30.7	12.7%	16.2%	7.4%	2.4%	$56,395	8.2%	18.9
Godwin	57.5	29.4%	7.6%	0.0%	0.0%	-	0.0%	26.1
Hope Mills	33.3	11.4%	15.8%	6.8%	1.9%	$60,671	7.8%	26.7
Linden	39.5	27.1%	25.9%	12.9%	0.0%	$59,583	4.2%	34.9
Spring Lake	25.4	6.8%	12.3%	5.2%	3.3%	$50,497	6.1%	19.7
Stedman	34.4	8.2%	12.3%	6.8%	0.4%	$105,491	2.5%	29
Wade	43.1	17.0%	14.2%	4.8%	0.0%	-	19.1%	-
Hoke County	**33.7**	**11.4%**	**18.2%**	**8.3%**	**2.0%**	**$60,095**	**7.4%**	**30.2**
Raeford	36.2	20.2%	24.3%	10.8%	1.2%	$43,311	5.2%	23.1

[8] U.S. Census Bureau. (2023). *Age and Sex* (No. ACSST5Y2023.S0101; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S0101
[9] U.S. Census Bureau. (2023). *Disability Characteristics* (No. ACSST5Y2023.S1810; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S1810
[10] U.S. Census Bureau. (2023). *Limited English Speaking Households* (No. ACSST5Y2023.S1602; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S1602
[11] U.S. Census Bureau. (2023). *Selected Economic Characteristics* (No. ACSDP5Y2023.DP03; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP03

Table 3-4: Planning Area Demographics

Jurisdiction	Decennial Census Profile of General Population (2020)[12]							
	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)
Cumberland County	**42.2%**	**43.9%**	**3.6%**	**4.2%**	**0.8%**	**8.4%**	**10.2%**	**12.4%**
Eastover	11.2%	86.4%	3.7%	1.3%	0.0%	6.8%	9.3%	5.8%
Falcon	9.7%	91.4%	0.0%	0.0%	0.0%	0.5%	1.6%	2.7%
Fayetteville	47.5%	47.5%	3.2%	4.8%	0.9%	8.5%	11.0%	13.0%
Godwin	58.2%	41.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hope Mills	38.1%	56.2%	3.6%	5.0%	0.4%	9.2%	10.7%	15.5%
Linden	11.0%	89.0%	3.4%	0.0%	0.0%	0.0%	3.4%	1.7%
Spring Lake	44.1%	52.8%	2.9%	4.2%	1.6%	12.4%	16.2%	15.7%
Stedman	20.6%	80.7%	4.9%	2.4%	0.0%	2.6%	9.5%	4.3%
Wade	11.3%	87.4%	0.4%	0.4%	0.0%	1.6%	1.1%	1.6%
Hoke County	**37.4%**	**48.7%**	**10.0%**	**2.9%**	**0.8%**	**10.8%**	**9.2%**	**15.3%**
Raeford	44.7%	48.3%	13.2%	0.0%	0.0%	4.3%	8.7%	6.5%

3.4.1. Cumberland County

Cumberland County experienced a 5.42% increase in population from 2010 to 2023. The jurisdictions with the highest population growth between 2010 and 2023 were Stedman, Godwin, Hope Mills, and Fayetteville, which experienced 56.91%, 22.30%, 17.44%, and 4.55% population growth, respectively. The largest jurisdiction in Cumberland County is Fayetteville, with an estimated 209,692 residents in 2023, followed by Hope Mills and Spring Lake, with 17,823 and 11,613 residents, respectively, according to 2023 ACS estimates.

Cumberland County has a median age of 31.8 years. 12.7% of the residents are aged 65 years or older. 16.90% of the population in Cumberland County is reported to have a disability, and 7.30% have independent living difficulty. Falcon has the highest percentage of residents aged 65 or older, with an estimated 50.8%, followed by Godwin, Linden, and Eastover, with 29.4%, 27.1%, and 17.40%, respectively, in 2023. The jurisdictions with the highest proportions of residents with independent living difficulties in 2023 were Linden and Fayetteville, with 12.9% and 7.4%, respectively.

Approximately 1.9% of the county's households are reported to have limited English-speaking capabilities, suggesting that the planning area develop multi-lingual communications for outreach and emergency alerts. In 2023, according to ACS estimates, the median household income in Cumberland County was $183,700, and the unemployment rate was 7.7%.

[12] U.S. Census Bureau. (2020). *Total Population* (No. DECENNIALSF12020.P1; Version Decennial Census) [Dataset]. data.census.gov. https://data.census.gov/table/DECENNIALPL2020.P1

3.4.2. Hoke County

Hoke County's population has increased by 13.10% between 2010 and 2023. Table 3-2 has an overview of estimated populations by jurisdiction for 2010, 2020, and 2023. The County has an estimated 12.7% of residents aged 65 or older, with a median age of 33.7 in 2023. Raeford has a percentage of residents aged 65 or older at 20.2%, and the county has an estimated portion of residents with a disability and independent living difficulty at approximately 18.2% and 8.3%. Approximately 2.0% of the county's households are reported to have limited English-speaking capabilities, suggesting that the planning area develop multi-lingual communications for outreach and emergency alerts. In 2023, according to ACS estimates, the median household income in Hoke County was $60,095, and the unemployment rate was 7.4%.

3.5. Housing, Infrastructure, and Land Use

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 at the time the unit was built, access to computers, and access to the internet in the housing unit.

Table 3-5: Housing Characteristics of the Planning Area

Jurisdiction	ACS 2023 Selected Housing Characteristics 5-Year Estimates[13]							
	Housing Units (2013)[14]	Housing Units (2023)	Change in Housing Units (2013-2023)	Renter Occupied	Owner Occupied	Occupied Housing Units	Vacant Housing Units	Median Home Value (owner-occupied) (2023)
Cumberland County	**138,362**	**143,184**	**3.37%**	**46.3%**	**53.7%**	**128,118**	**15,066**	**$183,700**
Eastover	1,767	1,577	-12.1%	19.3%	80.7%	1,406	171	$238,900
Falcon	79	55	-43.6%	-	100.0%	25	30	$177,100
Fayetteville	88,207	91,309	3.4%	53.5%	46.5%	81,499	9,810	$171,900
Godwin	77	101	23.8%	43.8%	56.3%	80	21	$158,000
Hope Mills	6,159	6,872	10.4%	36.6%	63.4%	6,465	407	$176,300
Linden	53	62	14.5%	11.8%	88.2%	51	11	$139,600
Spring Lake	5,231	5,161	-1.4%	78.5%	21.5%	4,321	840	$101,300
Stedman	479	645	25.7%	10.7%	89.3%	551	94	$205,800
Wade	288	273	-5.5%	33.6%	66.4%	253	20	$204,200
Hoke County	**18,660**	**20,583**	**9.3%**	**28.3%**	**71.7%**	**18,763**	**1,820**	**$196,000**
Raeford	1,976	1,912	-3.4%	41.3%	58.7%	1,630	282	$177,900

[13] U.S. Census Bureau. (2023). *Selected Housing Characteristics* (No. ACSDP5Y2023.DP04; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP04
[14] U.S. Census Bureau. (2013). *Selected Housing Characteristics* (No. ACSDP5Y2013.DP04; Version 2013 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2013.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 evacuate the projected area of impact. The county with the highest estimated percentage of residents without vehicles available in their housing unit is Cumberland County at 6.6%, followed by Hoke County at 5.3%. In Cumberland County, the jurisdictions with the highest percentages of households without vehicle access are estimated to be Linden (7.8%), Fayetteville (7.5%), Spring Lake (6.3%), and Hope Mills (5.3%). In Hoke County, 5.3% of housing units lack vehicles, and in Raeford, 12.8% do.

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 planning area's counties is relatively low, with 0.2% in Cumberland and Hoke Counties estimated to lack plumbing facilities. However, jurisdictions with elevated percentages should evaluate how to address these vulnerabilities. This includes Wade and Raeford, which have 7.1% and 1.1% of housing units lacking plumbing facilities, respectively.

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 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.

Hoke County is estimated to have the highest percentage of housing units without telephone service (1.3%), followed by Cumberland County (0.9%). The three jurisdictions with the highest percentage of housing units without telephone service are Wade (1.2%), Fayetteville (1%), and Stedman (0.9%), all of which exceed the NC average of 0.9%. It is estimated that an average of 5.9% of households in NC lack access to a computing device, and 11.4% of households in NC do not have an internet subscription. Compared to the state average of 11.4% of households without an internet subscription, Cumberland and Hoke Counties have relatively similar

proportions of residents without internet subscriptions, at 6.1% and 8.6%, respectively. Other jurisdictions with notably higher percentages of households without access to a computing device and internet subscriptions include Wade (25.3%), Falcon (24%), and Linden (21.6%). 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, Recreational Vehicles (RVs), and Vans as Primary Housing Units

Residents of the planning area who have a Boat, Recreational Vehicle (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 tornados. Jurisdictions in the planning area with large portions of primary residences in these housing 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%. Hoke County has a significantly higher percentage of mobile homes at 21.8%. Cumberland County has 8.2% of housing units that are mobile homes.

Table 3-6: Alternative Housing Characteristics of the Planning Area

Jurisdiction	ACS Selected Housing Characteristics Estimates (2023)[15]							ACS Types of Computers and Internet Estimates (2023)[16]	
	No Vehicles Available	Lacking Plumbing Facilities	Lacking Complete Kitchen Facilities	No Telephone Service	Mobile Home	Boat, RV, Van, Etc.	Housing Units Built 2020 or Later	No Computing Devices	No Internet Subscription
Cumberland County	**6.6%**	**0.2%**	**0.4%**	**0.9%**	**8.2%**	**0.1%**	**0.9%**	**6.1%**	**10.2%**
Eastover	1.5%	0.0%	0.0%	0.0%	10.9%	0.6%	1.7%	9.0%	10.1%
Falcon	0.0%	0.0%	0.0%	0.0%	30.9%	0.0%	0.0%	24.0%	24.0%
Fayetteville	7.5%	0.1%	0.2%	1.0%	3.1%	0.0%	0.6%	6.2%	9.8%
Godwin	0.0%	0.0%	0.0%	0.0%	7.9%	0.0%	0.0%	12.5%	21.3%
Hope Mills	5.3%	0.3%	0.3%	0.5%	2.1%	0.0%	1.0%	6.0%	8.4%
Linden	7.8%	0.0%	0.0%	0.0%	14.5%	0.0%	3.2%	17.6%	21.6%
Spring Lake	6.3%	0.0%	0.2%	0.2%	4.7%	0.0%	0.0%	5.9%	11.9%
Stedman	1.1%	0.0%	0.0%	0.9%	2.2%	0.0%	1.1%	4.9%	14.7%
Wade	0.0%	0.0%	7.1%	1.2%	21.6%	0.0%	0.0%	16.6%	25.3%
Hoke County	**5.3%**	**0.2%**	**0.4%**	**1.3%**	**21.8%**	**0.0%**	**1.6%**	**8.6%**	**11.1%**
Raeford	12.8%	0.0%	1.1%	0.0%	1.4%	0.0%	1.5%	11.4%	16.3%

[15] U.S. Census Bureau. (2023). *Selected Housing Characteristics* (No. ACSDP5Y2023.DP04; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP04
[16] U.S. Census Bureau. (2023). *Types of Computers and Internet Subscriptions* (No. ACSDP5Y2023.S2801; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S2801

3.5.1. Cumberland County

The number of occupied housing units in the County, as reported in the 2013 American Community Survey, was 81,499, out of 128,118 total housing units. As of 2023, the ACS reported approximately 138,362 housing units in Cumberland County, of which 53.7% were owner-occupied, and 46.3% were rented. Cumberland County experienced a 3.37% increase in housing units, from 138,362 in 2013 to approximately 143,184 in 2023. The median home value of owner-occupied housing in Cumberland County was $183,700 in 2023. There were approximately 15,066 vacant housing units in the County in 2023. At least 53.7% of all occupied housing units in Cumberland County are owner-occupied, meaning these residents are more likely to engage in mitigation planning activities specific to their homes, such as applying for homeowner mitigation grant funding, elevating structures, or purchasing flood insurance.

3.5.2. Hoke County

The number of occupied housing units in the County, as reported in the 2013 American Community Survey, was 18,660, down from 20,583 in 2023. As of 2023, there were 18,763 occupied units and 1,820 vacant units, with an owner-occupancy rate of 71.7% and a renter-occupancy rate of 28.3%. Between 2013 and 2023, the number of housing units increased by 9.34%, from 18,660 to 20,583. In the county, the median home value for owner-occupied units was reported as $196,000. Due to the high proportion of owner-occupied housing units, the residents in the planning area may be more likely to participate in home mitigation projects such as home elevation, mitigation grant programs, and purchasing flood insurance. Approximately 1.6% of housing units in Hoke County were built in 2020 or later.

3.5.3. Transportation

According to the NC Department of Transportation (NCDOT) Rail Division dataset,[17] there are five different railway operators in the planning area, including Aberdeen & Rockfish Railroads, Cape Fear Railways, CSX Transportation, Raleigh and Fayetteville Railroad LLC, and Laurinburg & Southern Railroad Company. However, the CSX Transportation Railroad Operator is the only operator that offers passenger services within the planning area. There are approximately 46 miles of railroad in the planning area, all travelling through Cumberland County, which are designated as passenger train routes. There are eight railway facilities in the planning area, including one CSX Fayetteville Operated railroad yard in Cumberland County, a Fayetteville Amtrak Station, and 6 Transload facilities: 2 in Hoke County and 4 in Cumberland County.

Table 3-7: Miles of Railway in the Planning Area that are Active, Not Active, Passenger Routes, or a non-Passenger Route

County	No Passenger Service	Passenger Service	Total
Cumberland	**85.83**	**46.11**	**131.95**
Active Railway	85.83	46.11	131.95
Hoke	**41.95**	**-**	**41.95**
Active Railway	32.08	-	32.08

[17] North Carolina Department of Transportation. (2025). *NCDOT Rail Division Data* (Version 2025 Quarter 3) [Geodatabase]. Connect NCDOT. https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx

Inactive Railway	9.87	-	9.87
Planning Area Total	**127.79**	**46.11**	**173.90**

There are three airports in the planning area: Fayetteville Regional/Grannis Field Airport, Pope Army Airfield, and Simmons Army Airfield. The Fayetteville Regional Airport is the only public airport in the planning area and was established originally in the 1930s on Raleigh Road. The Airport Commission was formed in 1947 and secured 722 acres east of US 301, where the current airport was constructed, which opened in 1949. Over the past 25 years, Fayetteville Regional Airport has received approximately $106 million in Federal, State, and Passenger Facility Funding to support capital improvements. There are approximately 10,000 passenger boardings at the airport each year, and 14 daily departures as of 2016.[18]

There are approximately 3,694.8 miles of roadway in the planning area, which includes 198.01 miles within 0.2% Annual Chance Flood Hazard Areas, 0.247 miles in A Zones, 61.62 miles in AE Zones, and 3,434.92 miles in X Zones. The total number of roads in the planning area is summarized in Table 3-8.

Table 3-8: Miles of Road in Flood Hazard Areas in the Planning Area[19]

County	Jurisdiction	Miles of Road in Flood Hazard Areas				
		0.2% Annual Chance Flood Hazard	A	AE	X	Total
Cumberland	Eastover	7.97	-	2.83	72.29	83.1
	Falcon	-	-	0.12	5.59	5.71
	Fayetteville	72.57	0.067	23.46	1190.18	1286.28
	Godwin	-	-	-	6.12	6.12
	Hope Mills	0.42	-	0.54	95.24	96.2
	Linden	0.33	-	-	3.62	3.95
	Spring Lake	0.08	-	0.29	70.67	71.04
	Stedman	-	-	0.11	15.60	15.71
	Wade	-	-	0.06	10.69	10.76
	Unincorporated Area	115.67	-	21.04	1184.58	1321.2
Cumberland Total		**196.97**	**0.067**	**48.45**	**2654.58**	**2900.07**
Hoke	Raeford	0.04	-	0.25	49.47	49.76
	Unincorporated Area	1	0.18	12.92	730.87	744.97
Hoke Total		**1.04**	**0.18**	**13.17**	**780.34**	**794.73**
Planning Area Total		**198.01**	**0.247**	**61.62**	**3434.92**	**3694.8**

[18] City of Fayetteville, NC. (2025). *Fayetteville Regional Airport*. City of Fayetteville. https://www.fayettevillenc.gov/City-Departments/Airport

[19] North Carolina Department of Transportation. (2025). *Statewide System & Non-System Road Routes* (Version 2025 Quarter 2) [Geodatabase]. Connect NCDOT. https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx

In Cumberland County, the Fayetteville Area Metropolitan Planning Organization assists with local public transportation programs, including the Cumberland County Community Transportation Program, the Fayetteville Area System of Transit, the Harnett Area Rural Transit System (Harnett County), Hoke Area Transit Services, and the Southeast Area Transit System (Robeson County).

The Cumberland County Community Transportation Program offers eligible residents free or reduced-cost transportation for various riders, including the elderly and disabled, those needing assistance with job access, and the public.[20] There are three main funding programs: the Elderly and Disabled Transportation Assistance Program, the Urban Employment program, and the Rural General Public allotment. However, the program is largely an on-demand service and does not have scheduled route service. The Elderly and Disabled Transportation Assistance Program helps eligible riders (riders at least 60 years old, living within Cumberland County, able to travel by some means, not living in a nursing home, and not eligible for other transportation programs) travel to medical appointments and pharmacy pickups within the County, free of charge. The Urban Employment Transportation Program provides transportation to the public for Cumberland County Residents in an urban area of the county, between Monday and Friday from 5am to 8pm, to areas without access to public transportation to reach school and work, for $2.50 per one-way trip. The Rural General Public Transportation Program provides transportation to the general public in rural areas of Cumberland County, Monday through Friday from 5am to 8pm, for a cost of $2.50 per one-way trip.

The Fayetteville Area System of Transit (FAST) is the City of Fayetteville's public transportation system, which operates 30 fixed-route buses on 18 routes from Monday to Friday from 5am to 7:30pm, Saturday from 7am to 7pm, and Sunday from 9am to 7pm. There are also 21 FastTrack Vehicles that provide a paratransit service to customers with disabilities who cannot use the fixed-route transportation systems. The FAST system began in 1976 and now provides around 1.6 million passenger trips annually and around 6,000 daily passengers. Figure 3-2 shows the current bus routes that the FAST transit program offers.

The Hoke Area Transit System (HATS) is a county-operated public transportation system that provides door-to-door service to all Hoke County residents. There are currently no fixed-route public transportation systems. Residents may schedule on-demand rides, but all reservations must be received at least 48 hours in advance. Fares vary by rider type and the area where the rider's destination is located.

[20] *Rural Operating Assistance Program Grant*. (n.d.). Cumberland County, North Carolina. https://www.cumberlandcountync.gov/departments/planning-group/planning-and-inspections/fampo-(fayetteville-area-metropolitan-planning-organization)/ctp/rural-operating-assistance-program-grant

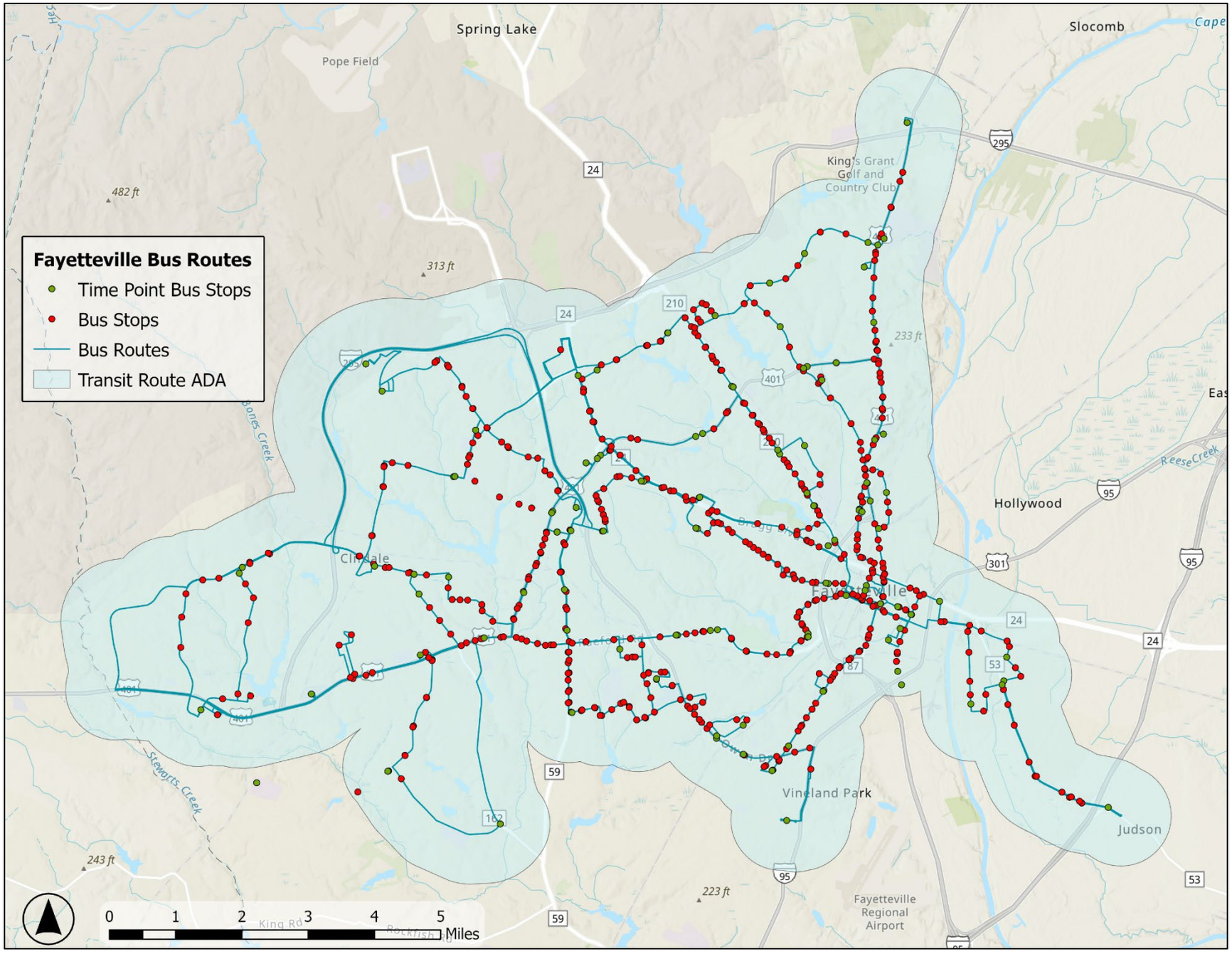


Figure 3-2: Fayetteville Area System of Transit (FAST) Bus Routes[21]

[21] City of Fayetteville Transit Department. (n.d.). *Bus Routes*. City of Fayetteville, NC. Retrieved https://www.fayettevillenc.gov/City-Departments/Transit/Bus-Routes

Cumberland Transportation Overview

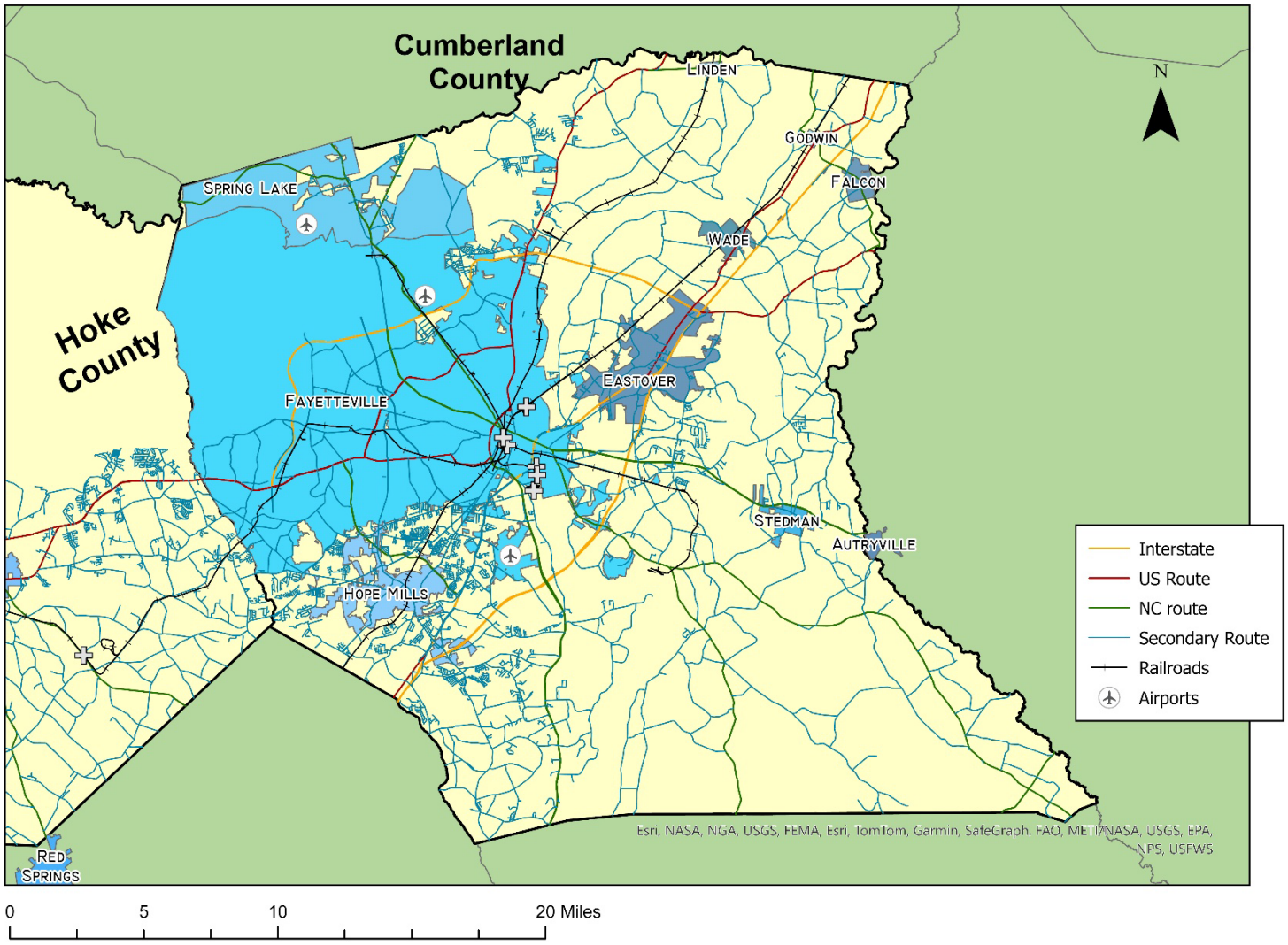


Figure 3-3: Cumberland Transportation Overview

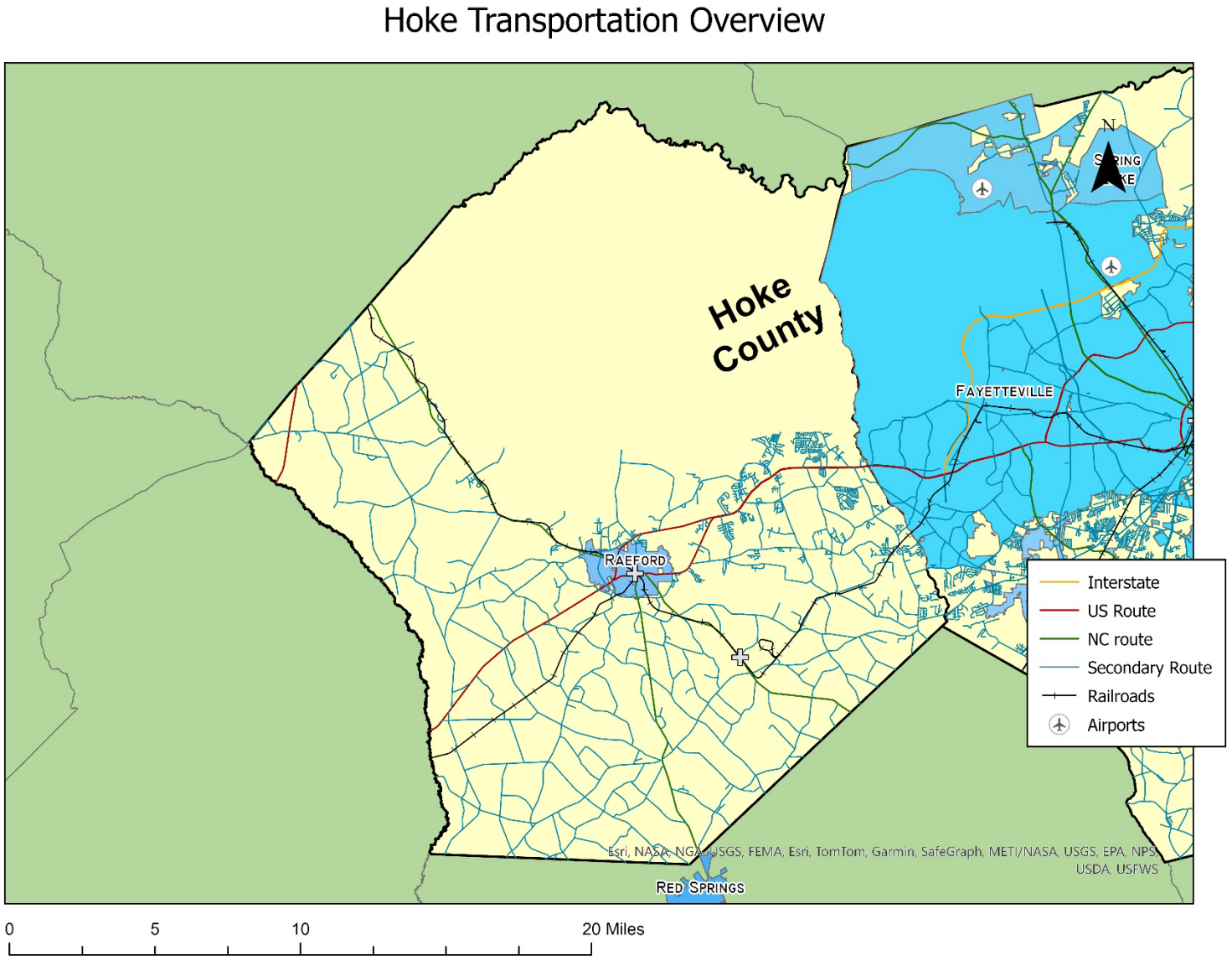


Figure 3-4: Hoke County Transportation Overview

3.5.4. Utilities

Hoke County Public Works manages the water and sewer systems throughout the county, including approximately 12,500 water connections and over 1,400 sewer connections. Cumberland County provides administration of water and sewer districts located within the county, which consists of the Gray's Creek Water and Sewer District, the Kelly Hills Water and Sewer District, the Northern Cumberland Regional Sewer System (NORCRESS) District, the Overhills Water and Sewer District, and the Southpoint Water District.

Hoke County electricity is provided by Duke Energy Progress and Lumbee River Electrical Membership Corporation (EMC), which also serves Cumberland County, among others. The Lumbee River EMC is a not-for-profit electric utility owned by more than 58,000 members and serving Cumberland, Hoke, Robeson, Moore, and Scotland Counties. Duke Energy Progress serves Anson, Cumberland, Moore, Montgomery, Richmond, Hoke, Robeson, Scotland, and 35 other counties in NC. In Cumberland County, Fayetteville Public Works purchases electricity from Duke Energy Progress and the Southeastern Power Administration and generates electricity at the municipal Butler-Warner Generation Plant. The Fayetteville Public Works Company provides electricity to 60% of Cumberland County and the Fayetteville Area, serving around 86,466 customers.

3.5.5. Critical Facilities

According to NC OneMap data, there are 6 critical facilities in an AE Zone, which have a 1% annual chance of flooding, also known as the 100-year floodplain. There are 27 critical facilities within the 0.2% annual chance flood hazard zone. For more information about the critical facilities in flood zones, see Appendix D.

Table 3-9: Critical Facilities in the Planning Area

County	Emergency Medical Services (EMS)	Emergency Operations Centers (EOC)	Fire Station	Law Enforcement	Medical Facility	Schools	Total
Cumberland	38	1	38	12	445	133	667
Hoke	10	1	10	3	51	23	98
Total	**48**	**2**	**48**	**15**	**496**	**155**	**764**

Table 3-10: Critical Facilities in the Planning Area and Their Flood Hazard Area[22, 23, 24, 25, 26, 27]

County	Jurisdiction	Critical Facility Type	Flood Hazard Area		
			0.2% Annual Chance Flood Hazard	AE	X
Cumberland County	Eastover	Home for the Aged	-	-	1
		Nursing Home Facility	-	-	1
		Fire Station	-	-	1
		Public Schools	-	-	2
	Falcon	Nursing Home Facility	-	-	1
		Ambulance and Fire Service Combined	-	-	1
		Fire Station	-	-	1
		Non-Public Schools	-	-	1
	Fayetteville	Ambulatory Surgery	-	-	1
		Cardiac Rehabilitation	-	-	1
		Family Care	-	-	16
		Home for the Aged	3	-	3
		Hospital	-	-	3
		Mental Health Homes	7	4	289
		Mental Health Hospital	-	-	1
		Nursing Home Facility	-	-	7
		Nursing Pool	-	-	3
		Ambulance and Fire Service Combined	1	-	21
		Ambulance Services, Air or Ground	-	-	1
		Fire Station	2	-	16
		Law Enforcement Locations	-	2	6
		Public Schools	2	-	61
		Non-Public Schools	3	-	23
		Emergency Operations Center	-	-	1
	Godwin	-	-	-	-
	Hope Mills	Home for the Aged	-	-	1

[22] North Carolina State Center for Health Statistics, & North Carolina Department of Health and Human Services Division of Facility Services. (2023). *Medical Facilities* [Shapefile]. NC OneMap. https://www.nconemap.gov/datasets/nconemap::medical-facilities/about
[23] State of North Carolina. (2023). *Emergency Medical Services* [Shapefile]. NC OneMap. https://www.nconemap.gov/datasets/nconemap::emergency-medical-services/about
[24] North Carolina Office of State Fire Marshal, & North Carolina Department of Insurance. (2025). *Fire Stations* [Geodatabase]. NC OneMap. https://www.nconemap.gov/datasets/6f4fe0c55b0d4cbb92877e461d698c29_0/about
[25] State of North Carolina. (2023). *Law Enforcement Locations* [Shapefile]. NC OneMap. https://www.nconemap.gov/datasets/nconemap::law-enforcement-locations/about
[26] North Carolina Department of Public Instruction. (2023). *Public Schools* [Shapefile]. NC OneMap. https://www.nconemap.gov/datasets/nconemap::public-schools/about
[27] NC State Property Office. (2025). *NC Non-Public Schools* (Latest Version) [Shapefile]. NC OneMap. https://www.nconemap.gov/datasets/ncdoa::nc-non-public-schools-latest-version/about

		Mental Health Homes	-	-	9
		Ambulance and Fire Service Combined	-	-	1
		Fire Station	-	-	1
		Law Enforcement Locations	-	-	1
		Public Schools	-	-	7
		Non-Public Schools	-	-	3
	Linden	Ambulance and Fire Service Combined	-	-	1
		Fire Station	-	-	1
	Spring Lake	Mental Health Homes	-	-	2
		Ambulance and Fire Service Combined	-	-	2
		Fire Station	-	-	1
		Law Enforcement Locations	-	-	1
		Public Schools	-	-	5
	Stedman	Ambulance and Fire Service Combined	-	-	1
		Fire Station	-	-	1
		Law Enforcement Locations	-	-	1
		Public Schools	-	-	2
	Wade	Ambulance and Fire Service Combined	-	-	1
		Fire Station	-	-	1
	Unincorporated Area	Family Care	-	-	2
		Home Care	1	-	1
		Home for the Aged	-	-	5
		Mental Health Homes	8	-	42
		Nursing Home Facility	-	-	1
		Ambulance and Fire Service Combined	-	-	8
		Fire Station	-	-	13
		Law Enforcement Locations	-	-	1
		Public Schools	-	-	20
		Non-Public Schools	-	-	4
Cumberland County Total			**27**	**6**	**601**
Hoke County	Raeford	Cardiac Rehabilitation	-	-	1
		Home Care	-	-	5
		Home for the Aged	-	-	1
		Hospice	-	-	1
		Mental Health Homes	-	-	10
		Nursing Home Facility	-	-	1
		Ambulance and Fire Service Combined	-	-	1
		Rescue Services, Medical	-	-	1
		Fire Station	-	-	1

		Law Enforcement Locations	-	-	3
		Public Schools	-	-	6
		Non-Public Schools	-	-	3
		Emergency Operations Center	-	-	1
	Unincorporated Area	Mental Health Home	-	-	32
		Ambulance and Fire Service Combined	-	-	7
		Fire and Rescue Service	-	-	1
		Fire Station	-	-	9
		Public Schools	-	-	7
		Non-Public Schools	-	-	7
Hoke County Total			**0**	**0**	**97**
Planning Area Total			**27**	**6**	**698**

Critical Facilities: Cumberland County

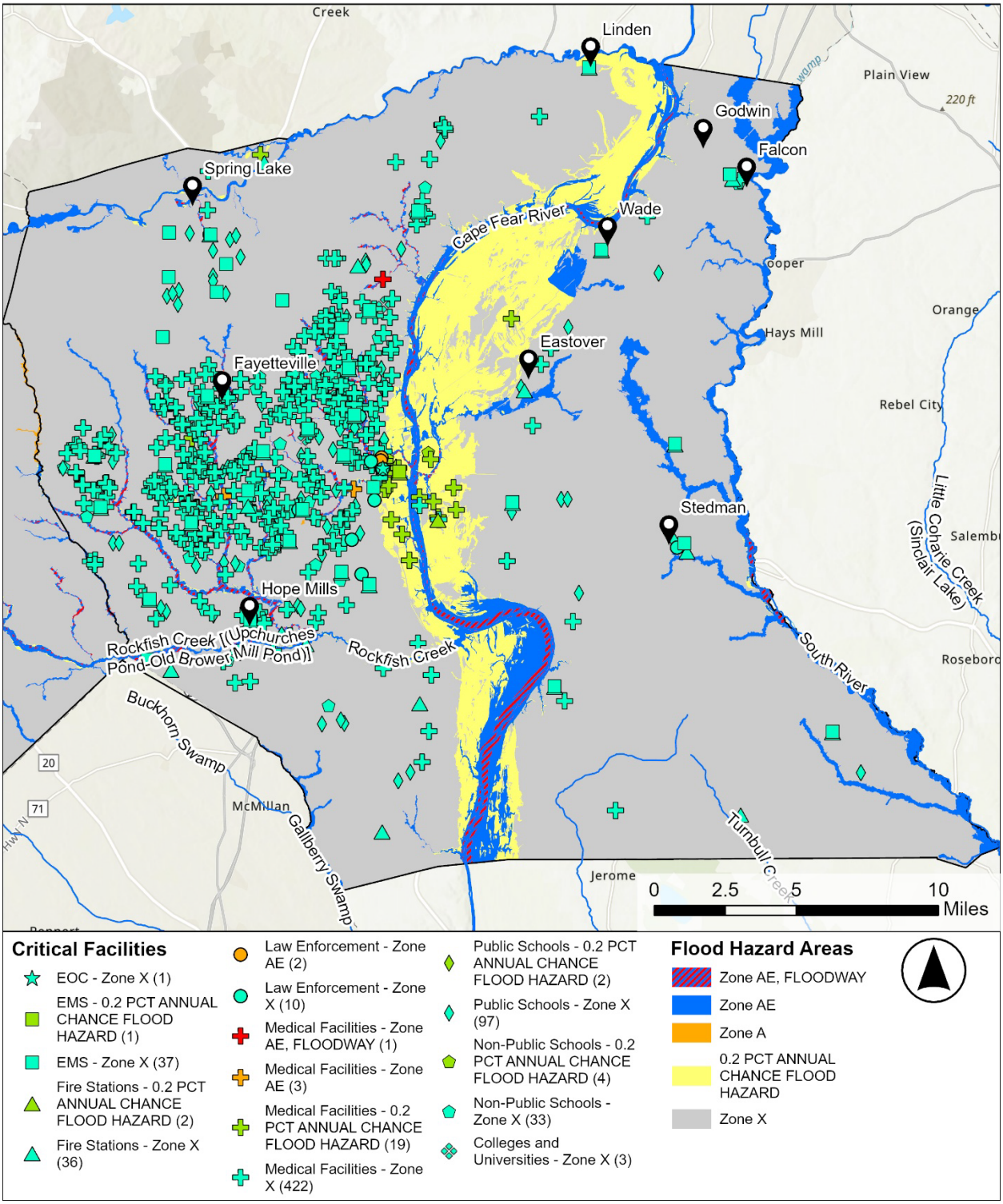


Figure 3-5: Critical Facilities - Cumberland County

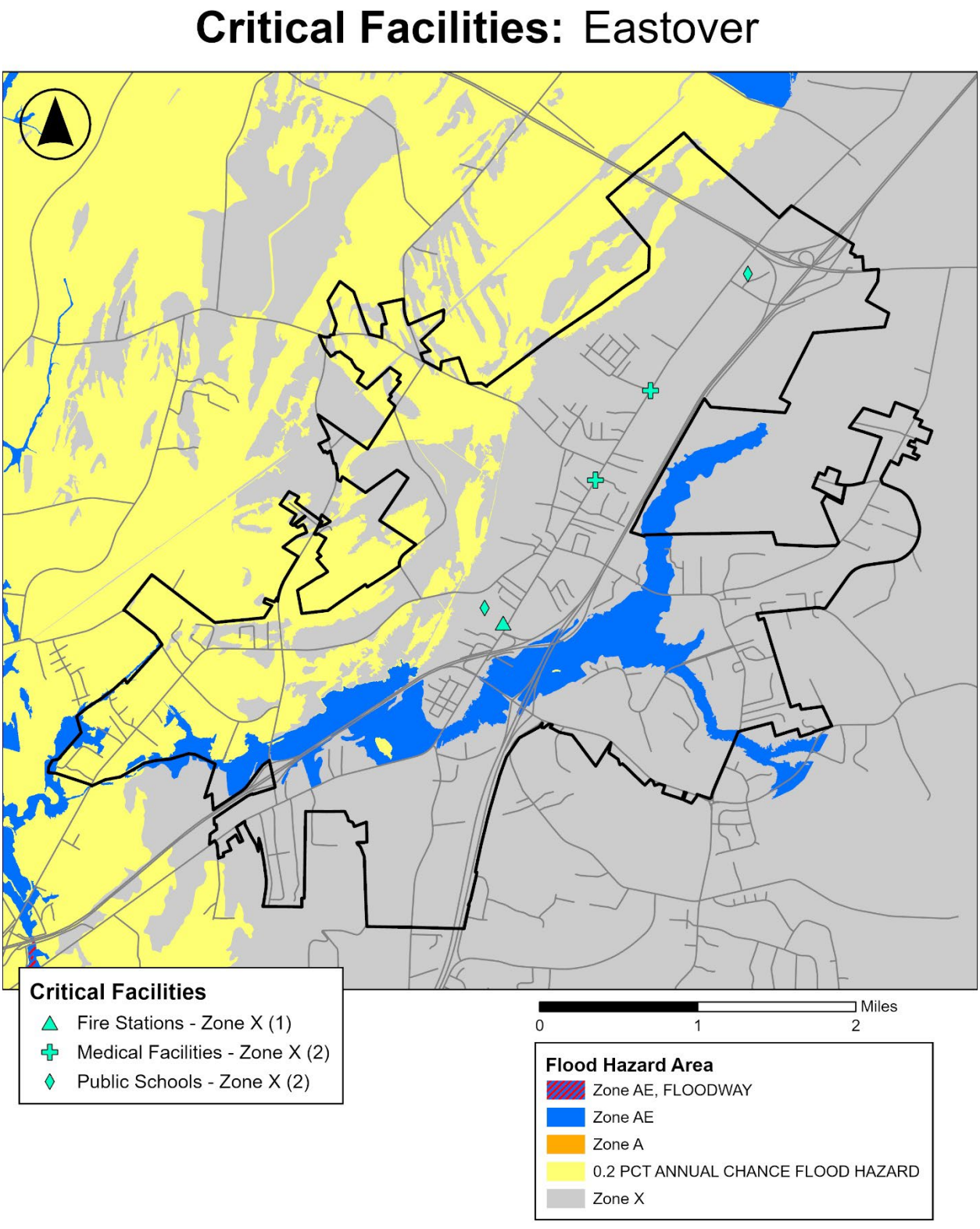


Figure 3-6: Critical Facilities - Eastover

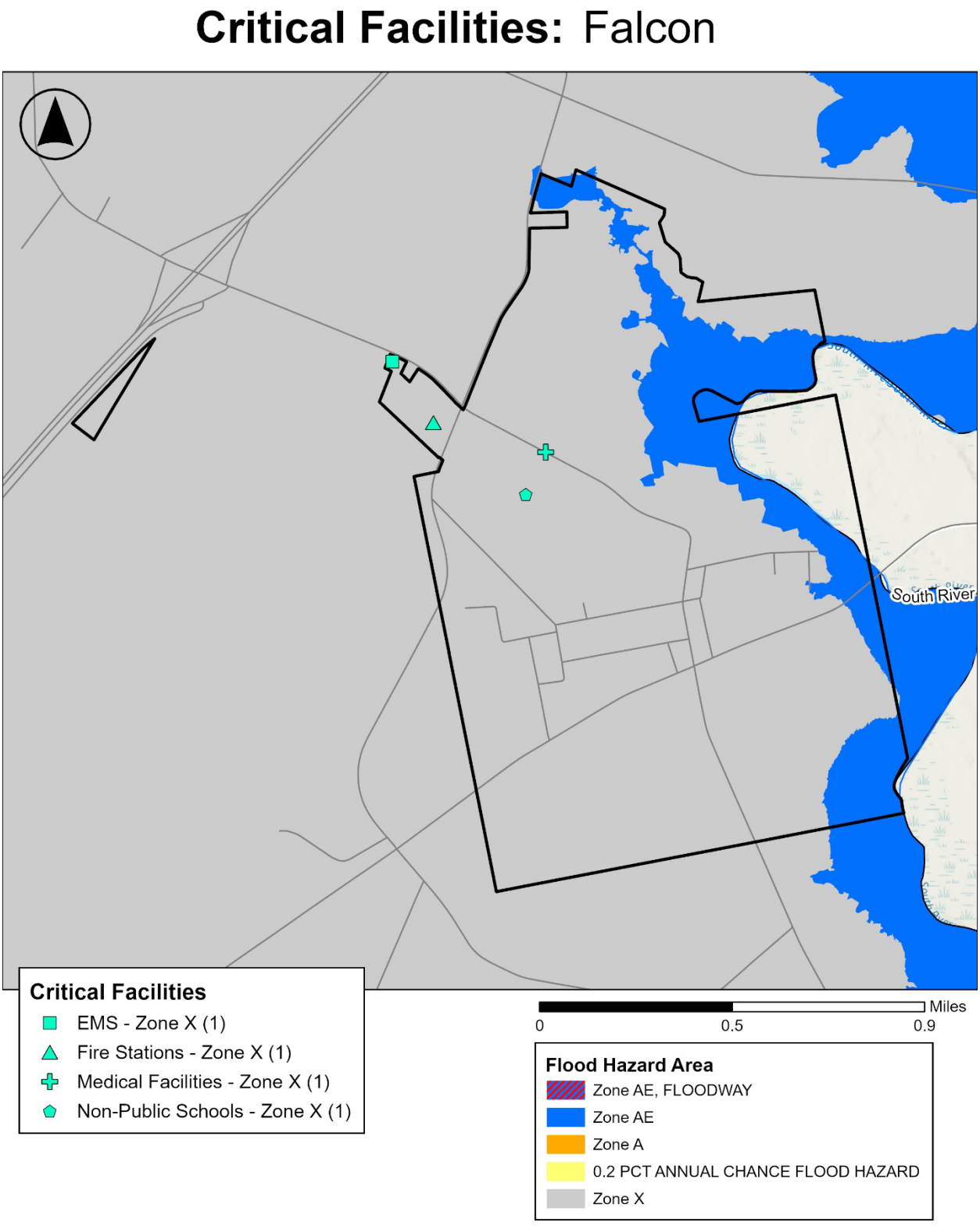


Figure 3-7: Critical Facilities - Falcon

Critical Facilities: Fayetteville

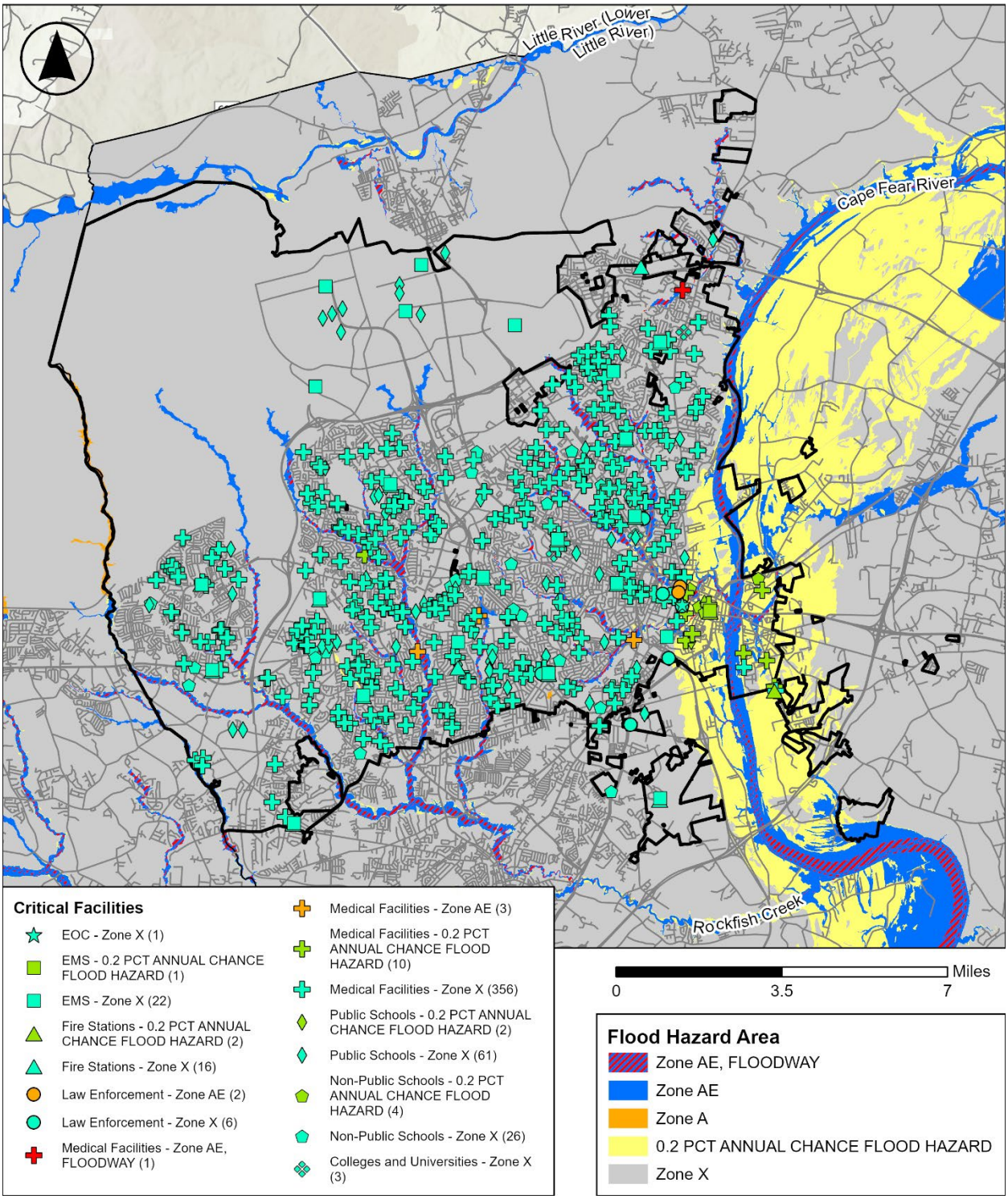


Figure 3-8: Critical Facilities - Fayetteville

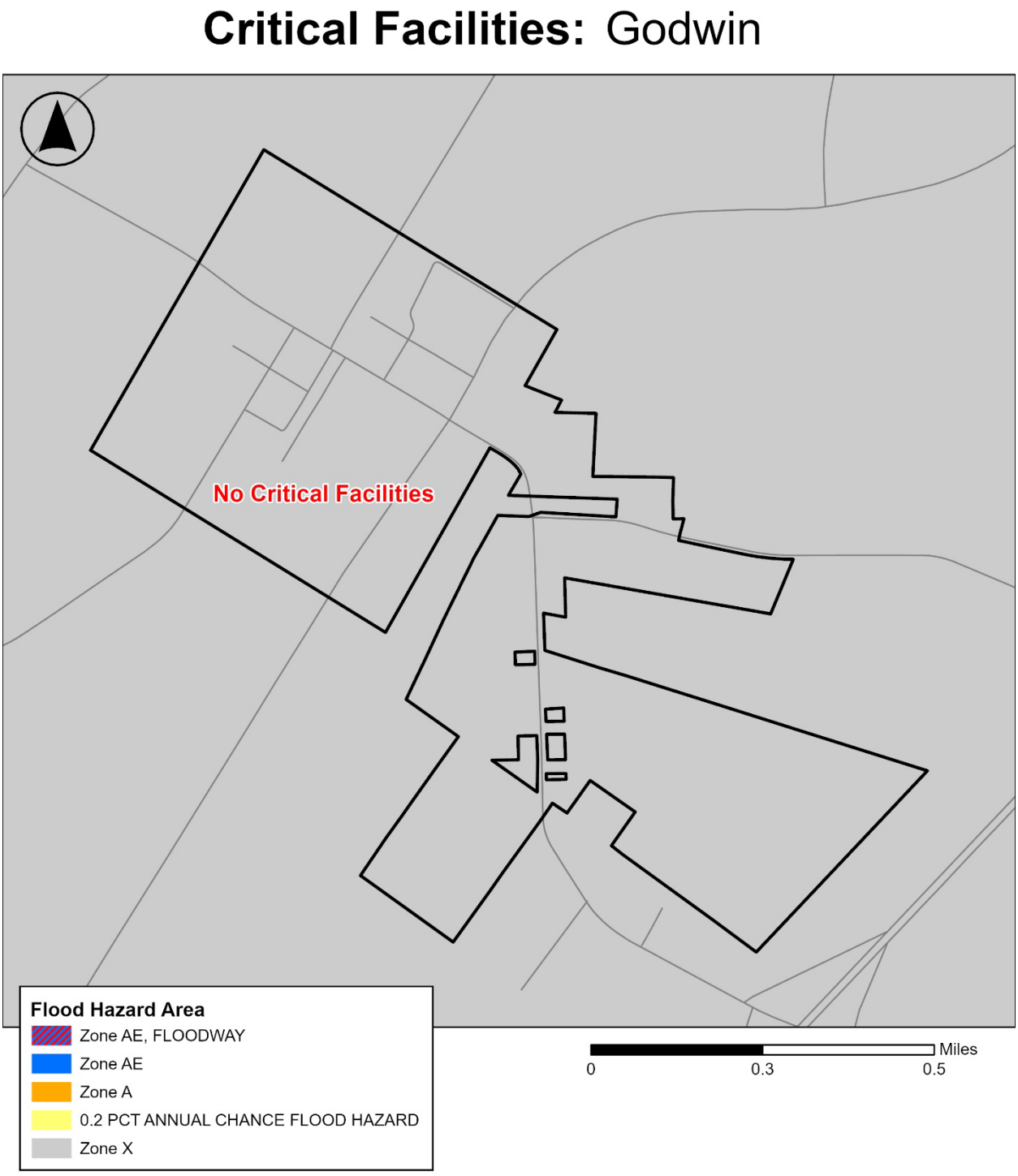


Figure 3-9: Critical Facilities - Godwin

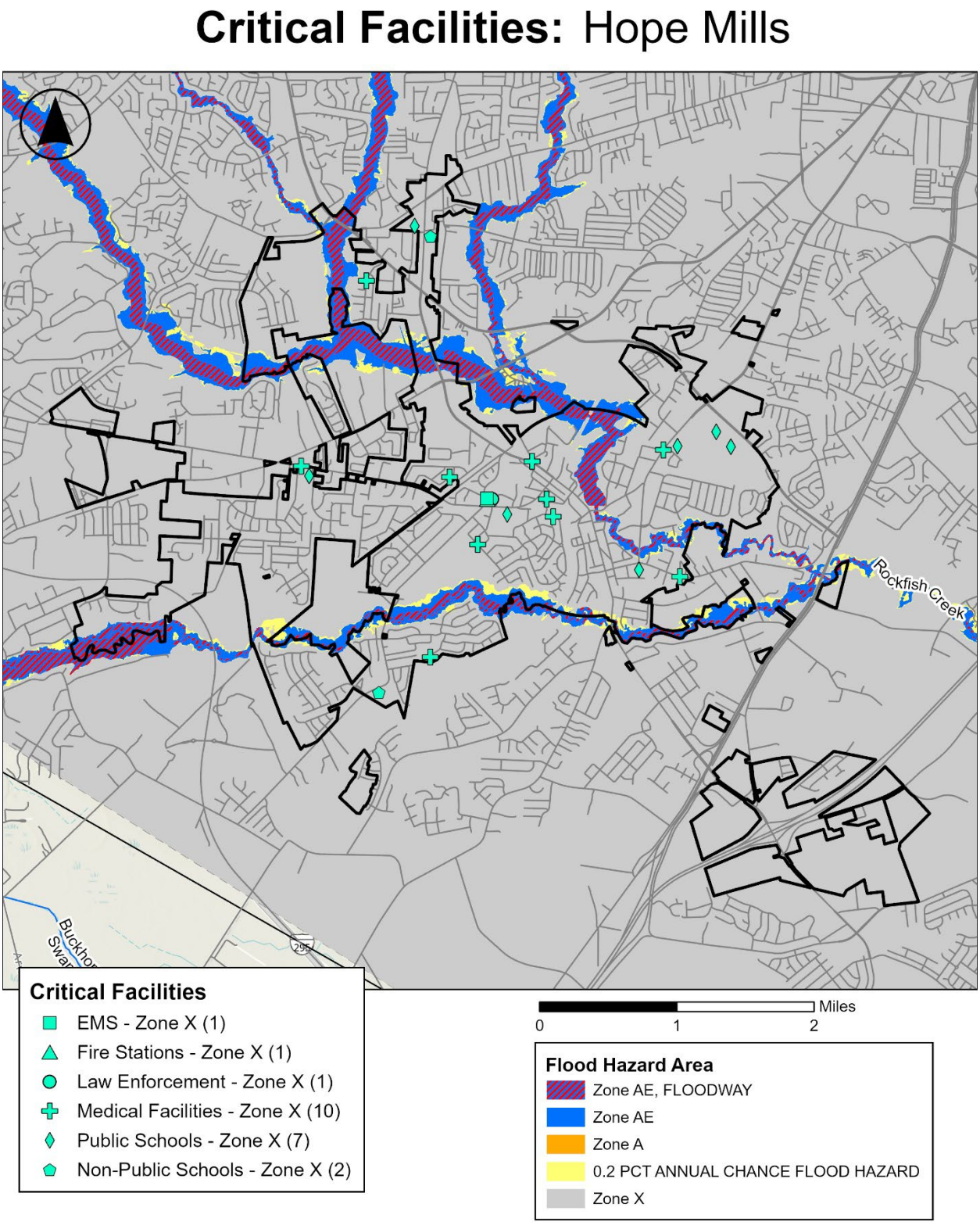


Figure 3-10: Critical Facilities - Hope Mills

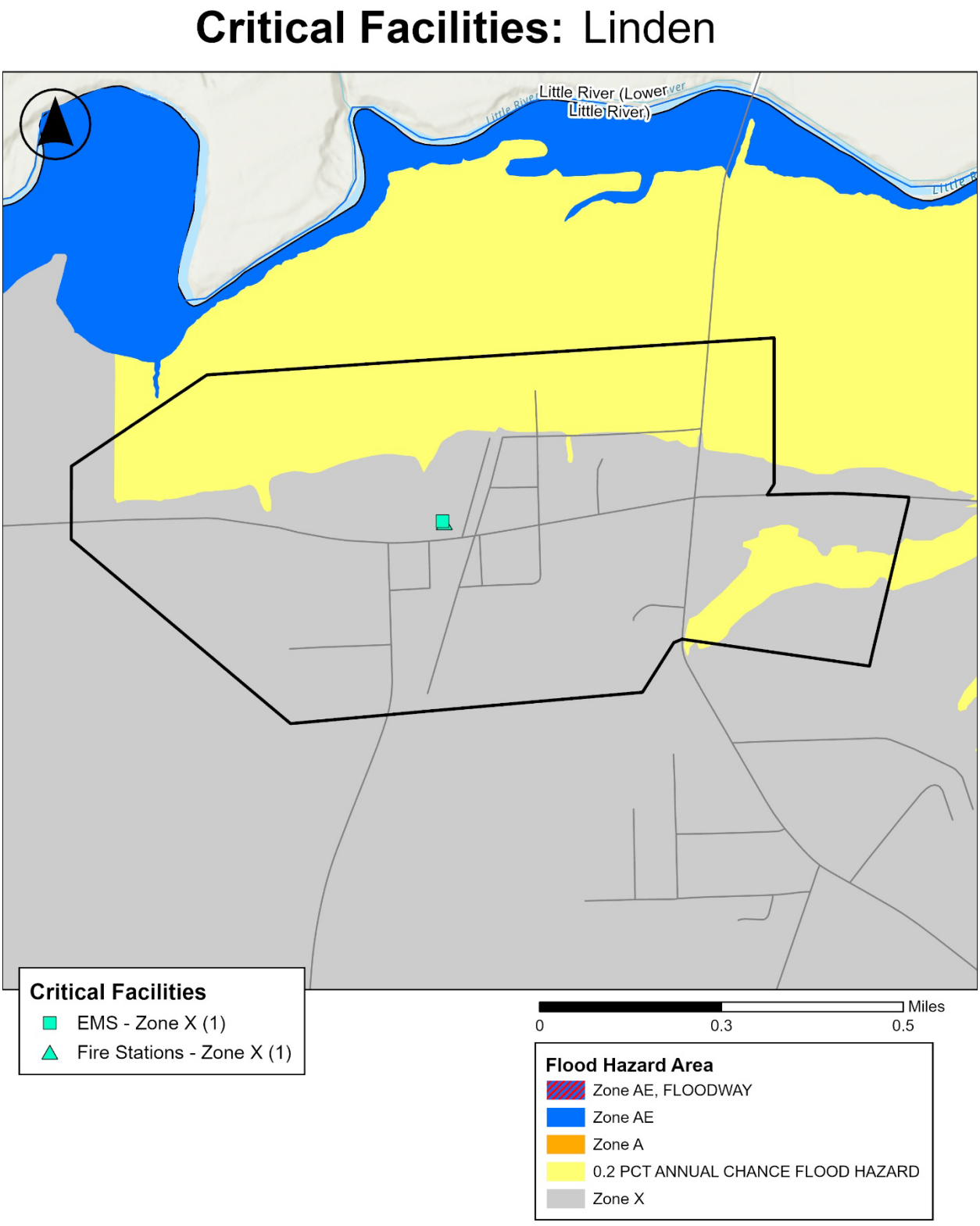


Figure 3-11: Critical Facilities - Linden

Critical Facilities: Spring Lake

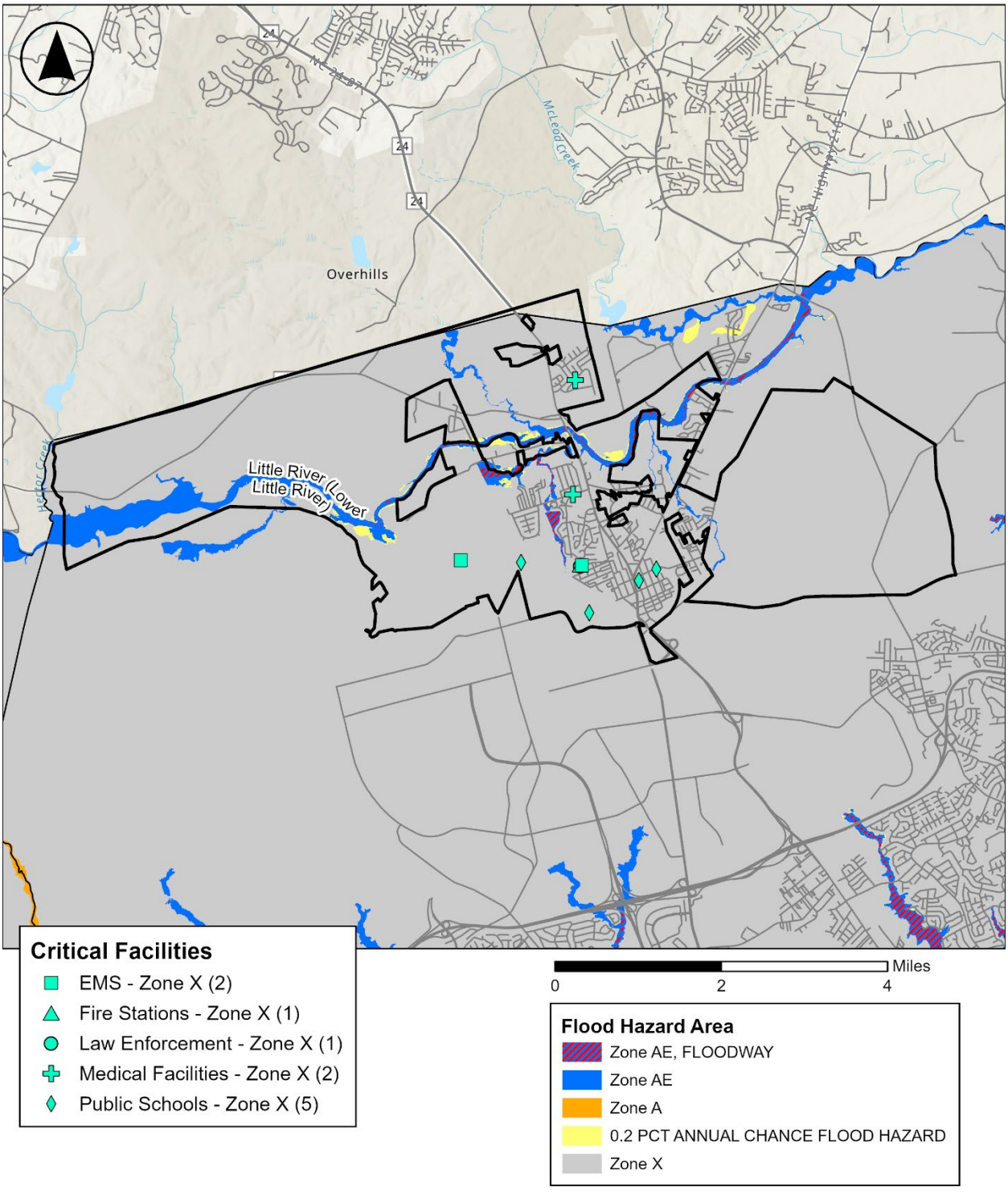


Figure 3-12: Critical Facilities - Spring Lake

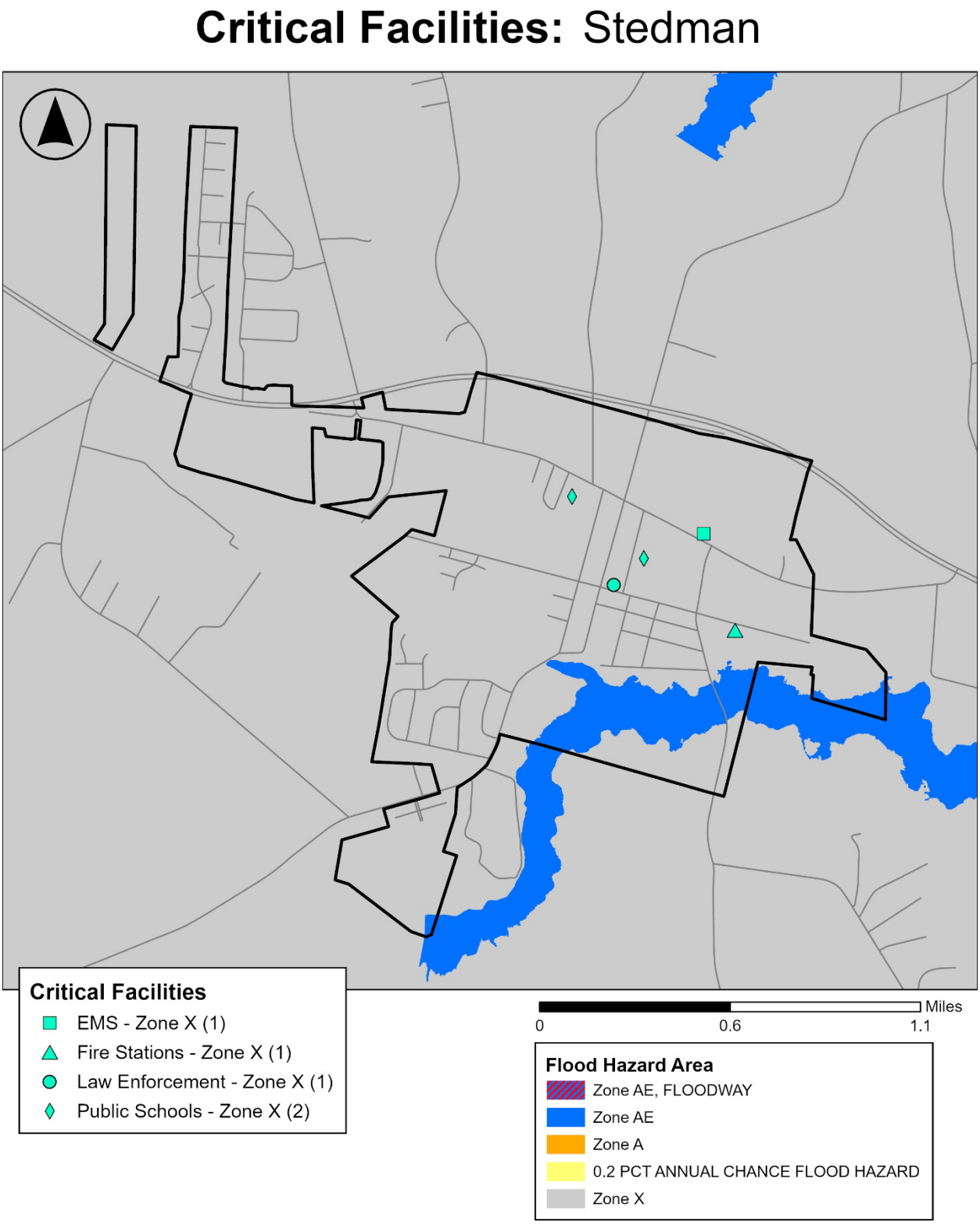


Figure 3-13: Critical Facilities - Stedman

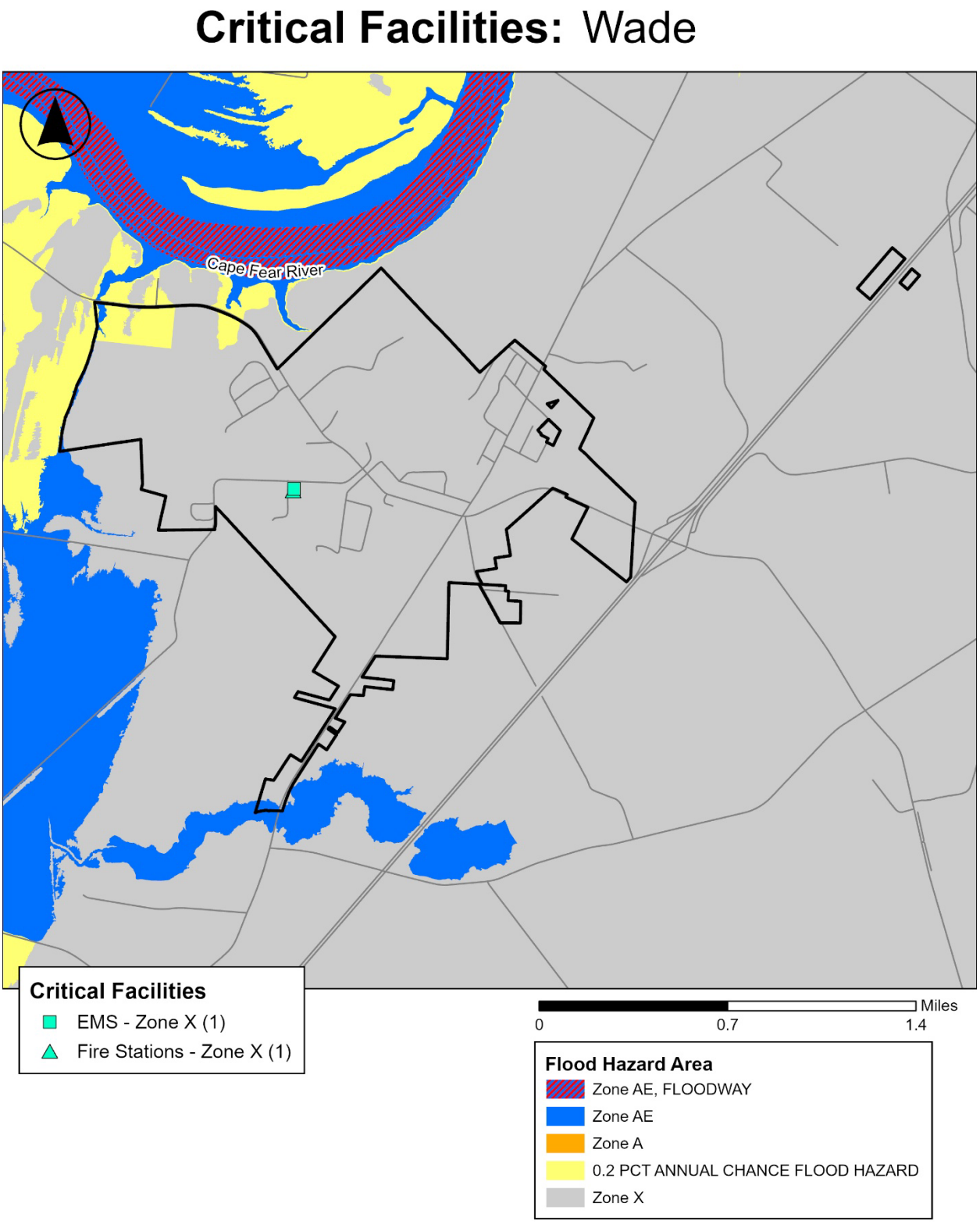


Figure 3-14: Critical Facilities - Wade

Critical Facilities: Hoke County

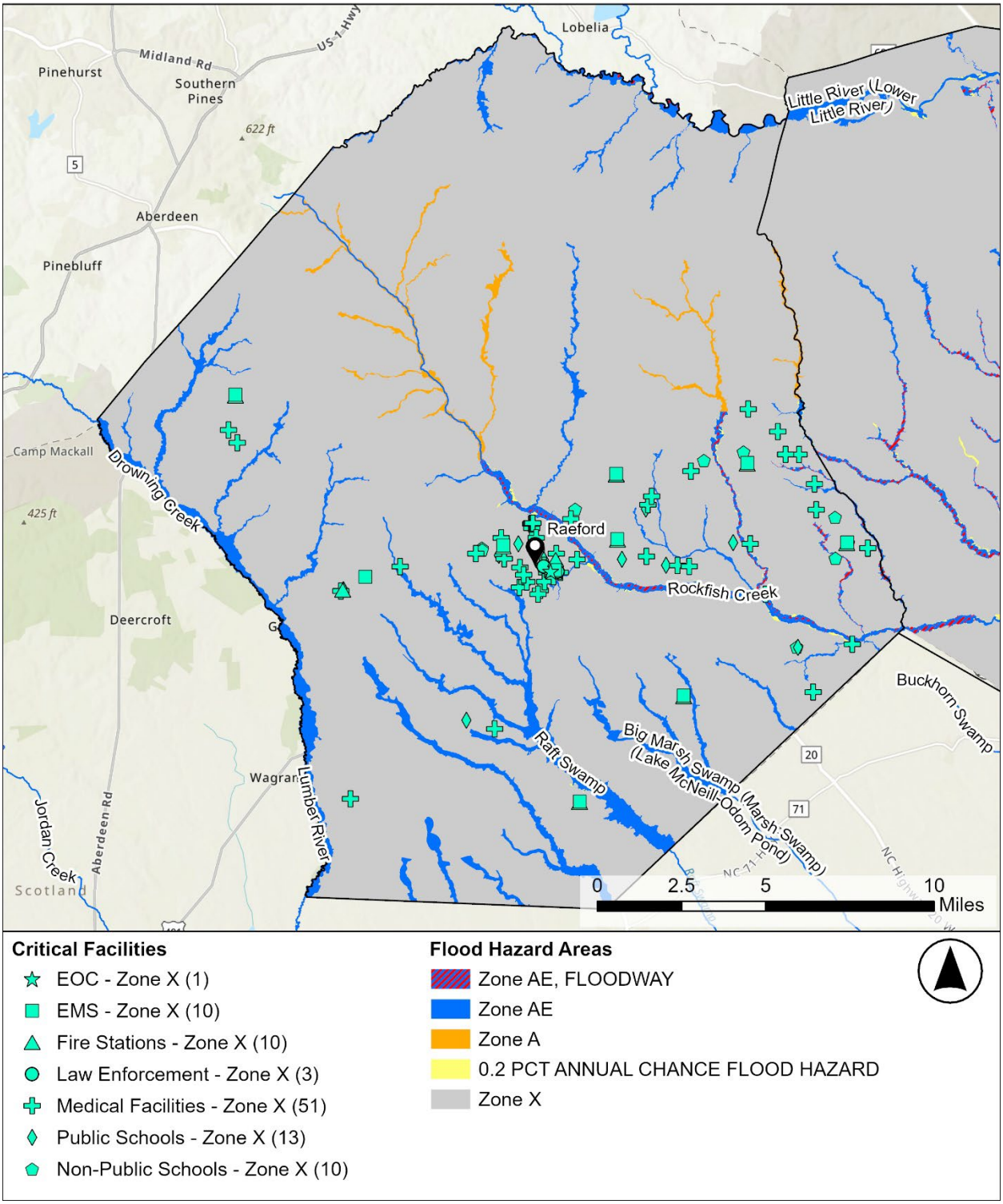


Figure 3-15: Critical Facilities - Hoke County

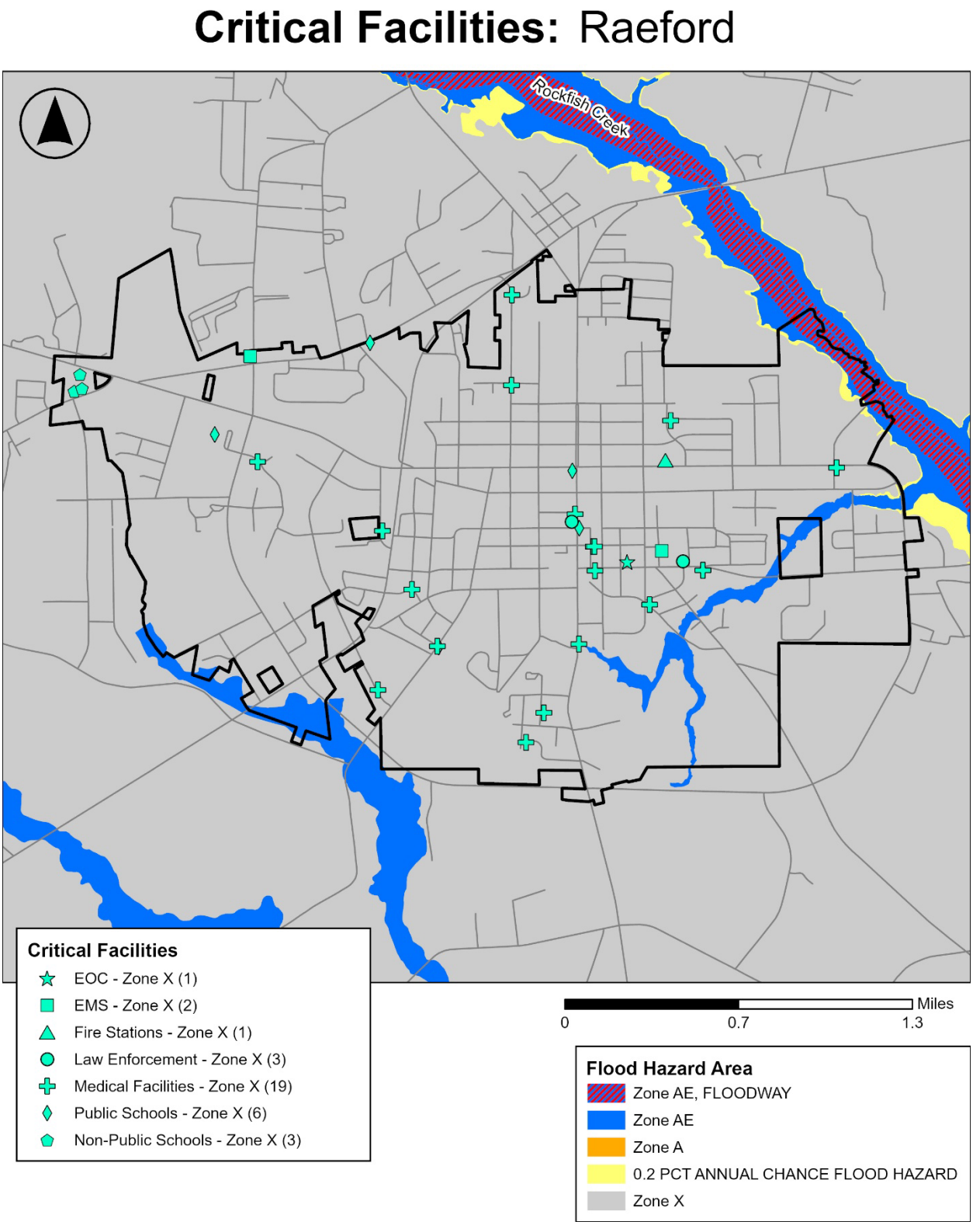


Figure 3-16: Critical Facilities - City of Raeford

3.5.6. Land Use

There is a robust land-use planning environment within Cumberland County and its jurisdictions. Table 3-11 depicts 14 land use plans that have been adopted by various jurisdictions and unincorporated areas of Cumberland County. The resulting land use classifications have been compiled by the County and made publicly available through a Geographic Information System (GIS) web portal, as well as depicted in Figure 3-17. In addition to these 14 plans, the City of Fayetteville, within Cumberland County, adopted its current Future Land Use Plan in June of 2020[28] and maintains its own publicly available GIS web portal to make its future land-use map accessible.[29] Fayetteville's future land use map can be reviewed in Figure 3-18. The City of Fayetteville also developed a standalone Resiliency Element for its 2017 Comprehensive Plan Update that considers natural hazards, economic development, and social equity resilience, including vulnerability and risk assessments and proposed strategies to enhance resilience.[30]

Table 3-11: Inventory of Land Use Plans Adopted in Cumberland County and Available on the County's Website[31]

Plan	Year
Hope Mills Area Land Use Plan	In Progress (2026)
Northeast Cumberland Land Use Plan	Adopted 10/20/2025
North Central Area Land Use Plan	Adopted 10/7/2024
Spring Lake Area Land Use Plan	Adopted 10/17/2022
Bethany Area Land Use Plan	Adopted 10/18/2021
Stedman Area Land Use Plan	Adopted 8/17/2020
Eastover Area Land Use Plan	Adopted 11/19/2018
Cumberland Road Business Street Plan	Adopted 8/20/2018
Vander Area Land Use Plan	Adopted 9/18/2017
Southeastern Cumberland Land Use Plan	Adopted 3/16/2017
South Central Land Use Plan	Adopted in March 2015
Southwest Cumberland Land Use Plan	Adopted 8/27/2013
2030 Growth Vision Plan	Adopted 3/27/2009
Cumberland County Land Use Policies Plan	Adopted 7/23/2009

[28] Fayetteville Department of Development Services. (2020). *Fayetteville Future Land Use Plan*. City of Fayetteville, NC. https://www.fayettevillenc.gov/files/sharedassets/main/v/1/development-services/documents/studies-and-plans/2040-comprehensive-plan-and-future-land-use-map.pdf

[29] City of Fayetteville, NC. (2020). *Official Future Land Use map* [ArcGIS Online]. City of Fayetteville, NC. https://fayetteville-gis.maps.arcgis.com/apps/instant/interactivelegend/index.html?appid=c12a44ce29af4a07a12d22e79d079825

[30] Fayetteville Department of Development Services. (2017). *City of Fayetteville Future Land Use Plan Resiliency Element*. City of Fayetteville, NC. https://www.fayettevillenc.gov/files/sharedassets/main/v/1/development-services/documents/studies-and-plans/resiliency-element-final.pdf

[31] Cumberland County Planning Department. (2026). *Comprehensive Planning*. Cumberland County; Cumberland County, NC. https://www.cumberlandcountync.gov/departments/planning-group/planning-and-inspections/planning/comprehensive-planning

Hoke County adopted its Land Use Plan in April of 2005, with an accompanying Future Land Use Map, see Figure 3-19, with the following goals:[32]

1. Protect property rights and preserve property values;
2. Grow in a fiscally responsible manner;
3. Preserve and protect the rural agricultural nature of the county;
4. Establish an urban service area with mixed-use/high-density land uses served by public water and sewer;
5. Encourage high-quality and aesthetically pleasing growth, while promoting sound land management.

The City of Raeford, within Hoke County, adopted its own 2030 Land Use Plan in September of 2008, with the following goals:[33]

1. Continue to improve the downtown (city center)
2. Encourage additional housing choices
3. Continue to grow, but maintain community charm and character – growing sustainably
4. Facilitate business and industry development
5. Enhance existing parks and identify new park locations
6. Develop a pedestrian and bicycle plan
7. Consider a detailed transportation study to evaluate city traffic patterns in conjunction with a pedestrian and bicycle plan
8. Consider ordinance changes to allow greater development options and promote development that keeps in character with the City of Raeford
9. Develop an inventory of existing streetlights and coverage areas
10. Continue to support intergovernmental coordination
11. Consider Extraterritorial Jurisdictions (ETJ) planning area expansion
12. Expand water & sewer service to meet future demand

[32] Hoke County. (2005). *County of Hoke Land Use Plan* [PDF]. Hoke County, NC. https://www.hokecounty.net/DocumentCenter/View/63/Hoke-County-Land-Use-Plan?bidId=
[33] City of Raeford. (2008). *City of Raeford 2030 Land Use Plan*. City of Raeford, NC. https://www.raefordcity.org/wp-content/uploads/2030-Land-Use-Plan-2.pdf

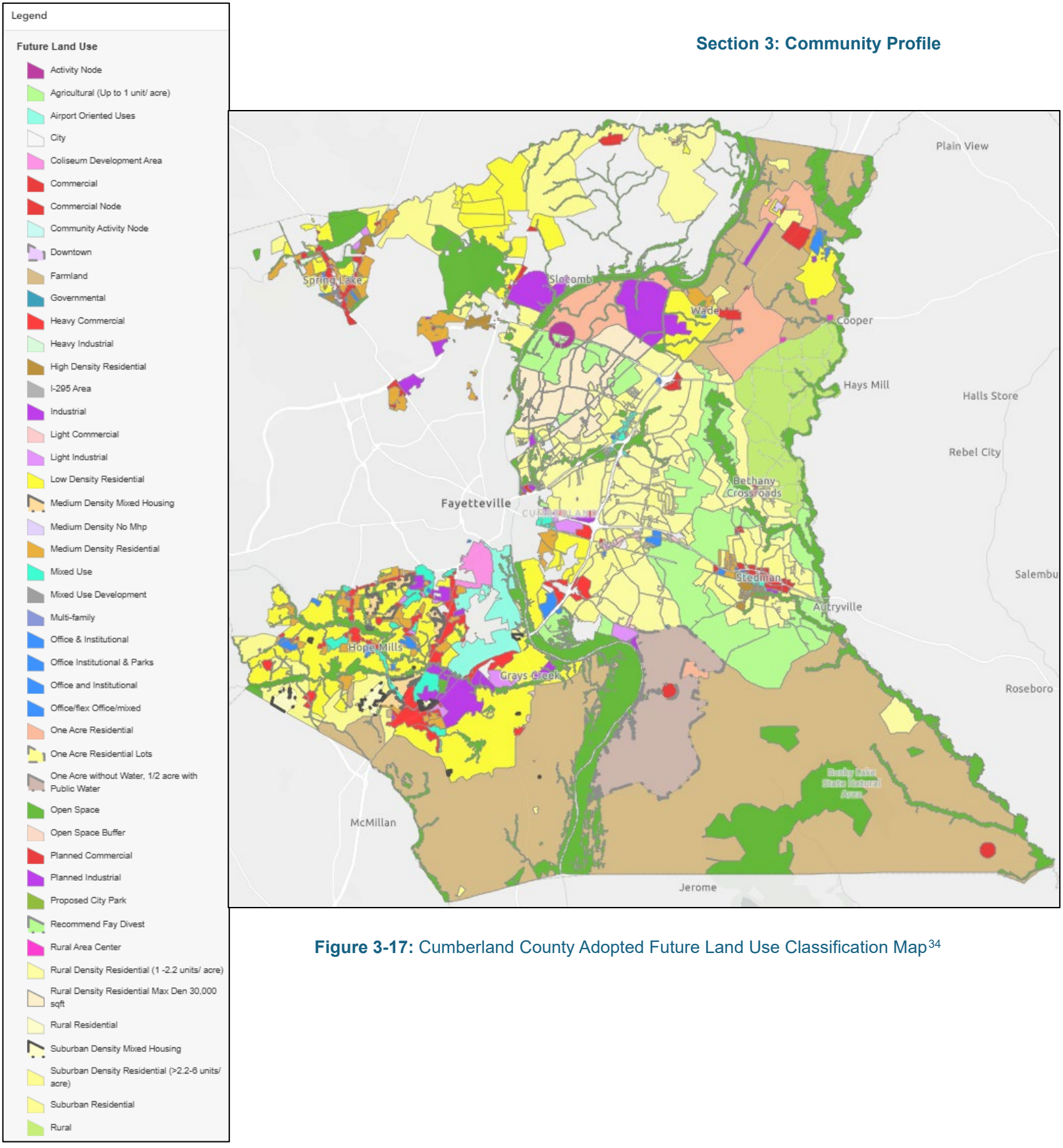


Figure 3-17: Cumberland County Adopted Future Land Use Classification Map[34]

[34] Cumberland County Department of Innovation and Technology Services. (2024). *Cumberland County Comprehensive Planning Adopted Future Land Use Plans* [Web Mapping Application]. Cumberland County, NC. https://cumberlandgis.maps.arcgis.com/home/item.html?id=3a973b9191a64e1db40a9488408ca0b7

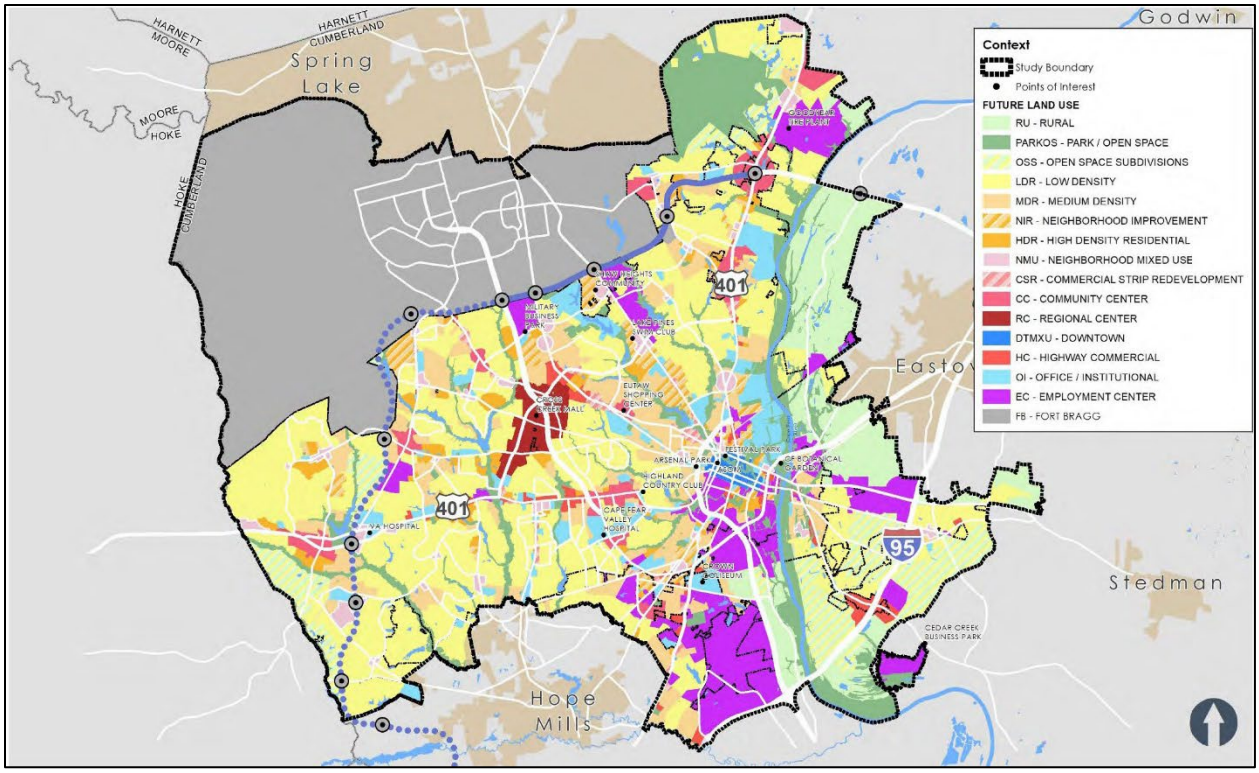


Figure 3-18: Fayetteville (Cumberland County) Future Land Use Map (2020)[35]

[35] Fayetteville Department of Development Services. (2020). *Fayetteville Future Land Use Map* [PDF]. City of Fayetteville, NC. https://www.fayettevillenc.gov/files/sharedassets/main/v/1/development-services/documents/studies-and-plans/2040-comprehensive-plan-and-future-land-use-map.pdf

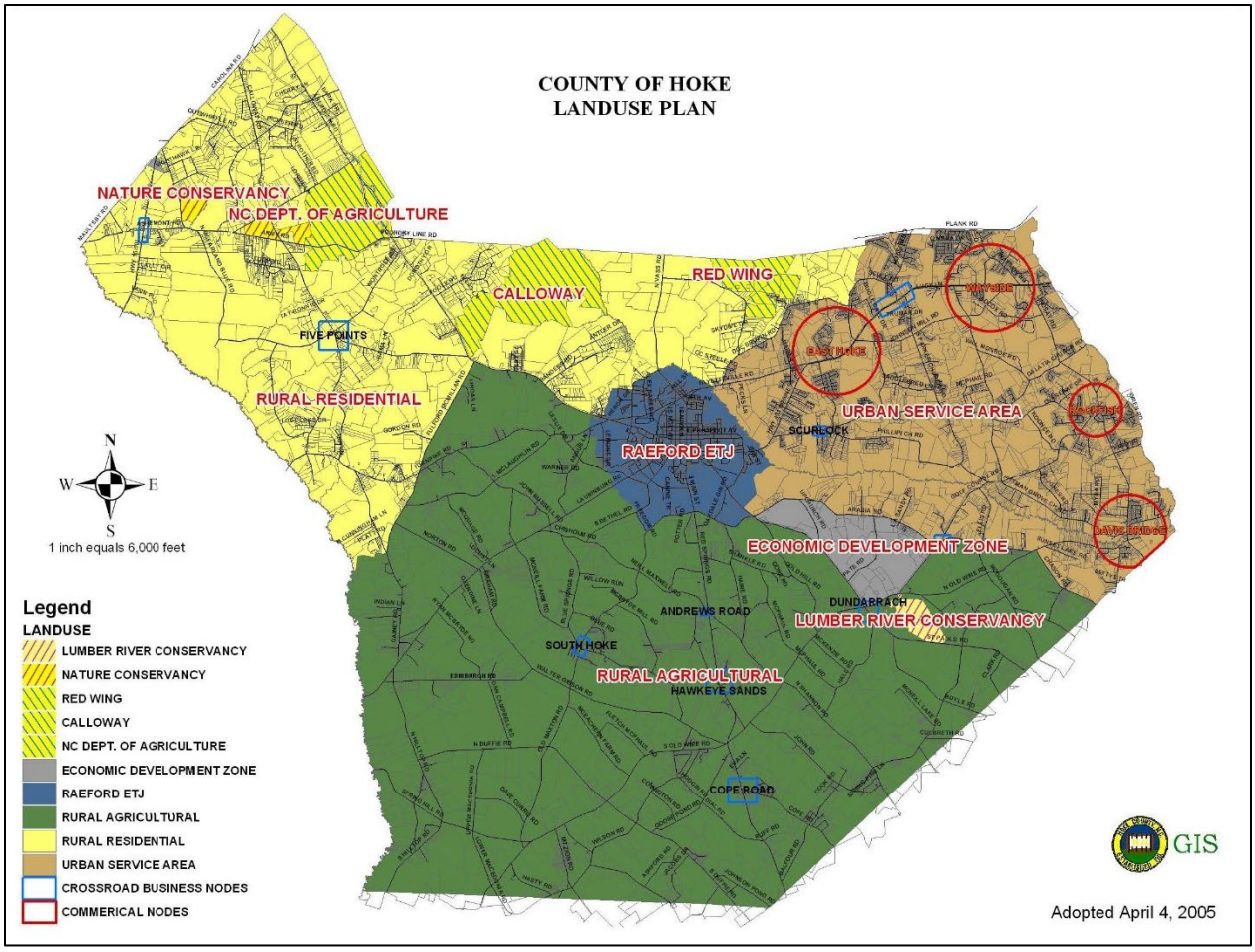


Figure 3-19: Hoke County Future Land Use Map (2005)[36]

[36] Hoke County. (2005). *County of Hoke Land Use Plan* [PDF]. Hoke County, NC. https://www.hokecounty.net/DocumentCenter/View/63/Hoke-County-Land-Use-Plan?bidId=

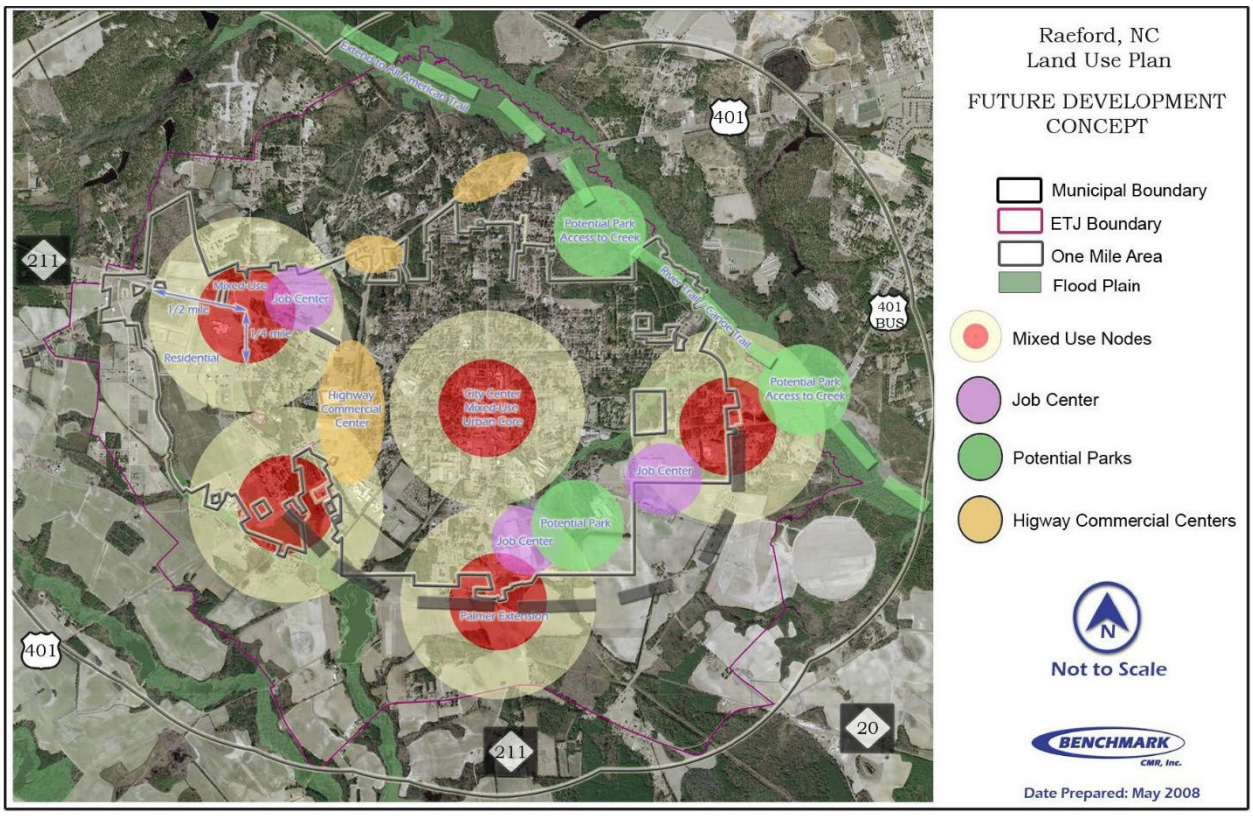


Figure 3-20: City of Raeford Future Development Concept Map[37]

3.6. Employment and Industry

3.6.1. Cumberland County

According to the 2023 ACS Employment Estimates, Cumberland County had an unemployment rate of 4.0% and approximately 125,217 employed residents. The jurisdictions with the lowest unemployment rates are estimated to be Falcon (0.0%) and Godwin (0.0%), followed by Stedman (1.6%) and Linden (2.2%). The jurisdictions with the largest numbers of employed residents are Fayetteville (75,506), Hope Mills (7,164), and Spring Lake (3,445). The overall median household income in Cumberland County was $58,780, and the per capita income was $31,206 as of 2023. The highest median household income was at Stedman at $105,491, and the highest per capita income was reported in Wade at $40,090.

According to the NC 2024 Quarterly Census of Employment and Wages Demand Driven Data Delivery, the largest industry in the County was Health Care and Social Assistance, accounting for 19.28% of employees, followed by Retail Trade (13.75%) and Accommodation and Food Services (12.03%). The largest employer in Cumberland County was the U.S. Military (1,000+).

[37] City of Raeford. (2008). *City of Raeford 2030 Land Use Map* [PDF]. City of Raeford, NC. https://www.raefordcity.org/wp-content/uploads/2030-Land-Use-Plan-2.pdf

3.6.2. Hoke County

According to the 2023 ACS Employment Estimates, Hoke County had an unemployment rate of 3.8% and approximately 19,174 employed residents. Raeford had an unemployment rate of 2.4% and 1,555 employed residents. The overall median household income in Hoke County was $60,095, and the per capita income was $29,575 as of 2023. Raeford had a median household income of $43,311 and a per capita income of $23,450.

According to the NC 2024 Quarterly Census of Employment and Wages Demand Driven Data Delivery, the largest industry in the County was Health Care and Social Assistance (21.37%), followed by Manufacturing (20.70%) and Educational Services (13.76%). The largest employer in Hoke County was the Hoke County Board of Education (1,000+)

Table 3-12: Rounded Regional Employment Data

Jurisdiction	ACS 2023 Employment Estimates[38]			
	Unemployment Rate	Employed	Median Household Income	Per Capita Income
Cumberland County	**4.0%**	**125,217**	**$58,780**	**$31,206**
Eastover	2.9%	1,489	$80,000	$38,063
Falcon	0.0%	32	$80,208	$17,241
Fayetteville	4.1%	75,506	$56,395	$31,467
Godwin	0.0%	79	-	$38,864
Hope Mills	4.5%	7,164	$60,671	$29,283
Linden	2.2%	46	$59,583	$27,996
Spring Lake	2.6%	3,445	$50,497	$23,923
Stedman	1.6%	740	$105,491	$38,281
Wade	10.3%	191	$67,574	$40,090
Hoke County	**3.8%**	**19,174**	**$60,095**	**$29,575**
Raeford	2.4%	1,555	$43,311	$23,450

Table 3-13: Percent of Employment in Different Employment Sectors in the Planning Area for 2024[39]

Employment Sectors	Cumberland County	Hoke County
Accommodation and Food Services	11.85%	6.05%
Administrative and Support and Waste Management and Remediation Services	4.94%	5.16%
Agriculture, Forestry, Fishing and Hunting	0.00%	0.00%
Arts, Entertainment, and Recreation	1.01%	0.99%
Construction	4.48%	5.16%
Educational Services	9.64%	0.00%
Finance and Insurance	1.57%	1.10%
Health Care and Social Assistance	19.99%	26.04%

[38] U.S. Census Bureau. (2023). *Selected Economic Characteristics* (No. ACSDP5Y2023.DP03; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP03
[39] North Carolina Department of Commerce. (2024). *Quarterly Census of Employment and Wages* (Tabular No. QCEW). Demand Driven Data Delivery (D4). https://d4.nccommerce.com/QCEWSelection.aspx

Information	0.57%	0.26%
Management of Companies and Enterprises	0.18%	0.00%
Manufacturing	4.92%	21.45%
Mining, Quarrying, and Oil and Gas Extraction	0.00%	0.00%
Other Services (except Public Administration)	3.01%	1.76%
Professional, Scientific, and Technical Services	5.42%	2.03%
Public Administration	11.14%	9.62%
Real Estate and Rental and Leasing	1.26%	1.20%
Retail Trade	13.39%	10.71%
Transportation and Warehousing	5.00%	6.01%
Unclassified	0.00%	0.00%
Utilities	0.30%	0.00%
Wholesale Trade	1.35%	2.43%

Table 3-14: Top 10 Industries and Employers for Each County in the Planning Area in 2024[40]

Employment Rank	Cumberland County			Hoke County		
	Employer	Industry	Range of Employees	Employer	Industry	Range of Employees
1	U.S. Military	Public Administration	1,000+	Hoke County Board of Education	Educational Services	1,000+
2	Cumberland County Bd Of Education	Educational Services	1,000+	Butterball LLC	Manufacturing	500-999
3	Cumberland County Hospital Systems	Health Care and Social Assistance	1,000+	County Of Hoke	Public Administration	500-999
4	Wal-Mart Associates Inc	Retail Trade	1,000+	Conopco Inc	Manufacturing	250-499
5	County Of Cumberland	Public Administration	1,000+	Cumberland County Hospital Systems	Health Care and Social Assistance	250-499
6	The Goodyear Tire	Manufacturing	1,000+	Firsthealth Of The Carolinas Inc	Health Care and Social Assistance	250-499

[40] North Carolina Department of Commerce. (2024). *Quarterly Census of Employment and Wages Largest Employers* (Tabular No. QCEW). Demand Driven Data Delivery (D4). https://d4.nccommerce.com/QCEWLargestEmployers.aspx

	& Rubber Co Inc					
7	Veterans Administration Va Ro318	Health Care and Social Assistance	1,000+	Burlington Industries V LLC	Manufacturing	250-499
8	City Of Fayetteville	Public Administration	1,000+	Wal-Mart Associates Inc	Retail Trade	250-499
9	Fayetteville Technical Community Co	Educational Services	1,000+	Serenity Therapeutic Services LLC	Health Care and Social Assistance	100-249
10	U S Postal Service	Transportation and Warehousing	1,000+	Select Genetics LLC	Manufacturing	100-249

SECTION 4: HAZARD IDENTIFICATION

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

The following sections describe the Hazard Identification process for developing the Regional Hazard Mitigation Plan (RHMP).

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

4.1. Overview

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

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



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

- **Section 4**: **Hazard Identification** identifies the natural and man-made hazards that threaten the planning area.

- **Section 5**: **Hazard Profiles** discusses the threat to the planning area and describes previous occurrences of hazard events and the likelihood of future occurrences.
- **Section 6: Capability Assessment** inventories existing mitigation activities and policies, regulations, and plans that pertain to mitigation and can affect net vulnerability.

The HMPC conducted a hazard identification study to determine the natural and man-made hazards that threaten the Region. Existing hazard data from the North Carolina Division of Emergency Management (NCEM), FEMA, the National Oceanic and Atmospheric Administration (NOAA), and other sources were examined to assess the significance of these hazards to the planning area. Significance was measured in general terms and focused on key criteria such as frequency and resulting damage, which includes deaths and injuries, as well as property and economic damage.

4.2. Description of the 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 state-level hazards, which served as the foundation for the Hazard Mitigation Planning Committee's (HMPC) evaluation of which hazards to prioritize in the Cumberland-Hoke planning area.

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

State of NC Enhanced HMP (2023) Hazard Identification	Description
Natural Hazards Identified	
Dam Failure	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

	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.
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.
Excessive Heat	Excessive heat is a dangerous and deadly occurrence in North Carolina. According to the National Weather Service (NWS), heat is one of the leading weather-related causes of loss of life in the United States. The Centers for 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 NC will increase over the coming decades, placing additional stress on populations, certain industries, infrastructure, and healthcare systems.
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.
Geological	In NC, 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.
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.
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 US 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 US and across NC. However, control systems can fail, and when people from outside the state come together, outbreaks can occur, even in the most modern of communities.
Severe Winter Weather	The winter storms that typically impact NC 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 NC but may also increase the likelihood of non-freezing storm events in the winter months.
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.
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.
Technological Hazards Identified	
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 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.

Hazardous Substances	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).

4.3. Disaster Declarations

To further focus on the list of identified hazards for this plan update, the HMPC researched past events that led to federal disaster declarations to identify known hazards. Table 4-2 presents a list of all major disaster declarations that have occurred in Cumberland and Hoke Counties, respectively, since 1953. These tables provide the foundation for identifying which hazards pose the greatest risk to the region.

Table 4-2: Major Disaster Declarations in the Cumberland-Hoke Region (1964-2026)[1]

Disaster #	Declaration Type*	Fiscal Year Declared	Event Details	Cumberland County	Hoke County
3637	EM	2026	Severe Winter Storm	X	X
3608	EM	2024	Tropical Storm Debby	X	X
3617	EM	2024	Hurricane Helene	X	X
3586	EM	2023	Hurricane Ian	X	X
4487	DR	2020	Covid-19 Pandemic	X	X
4465	DR	2020	Hurricane Dorian		X
3534	EM	2020	Hurricane Isaias	X	X

[1] Federal Emergency Management Agency. (2026). Disaster Declarations Summaries (Version V2) [CSV]. OpenFEMA. https://www.fema.gov/openfema-data-page/disaster-declarations-summaries-v2

3471	EM	2020	Covid-19	X	X
3423	EM	2019	Hurricane Dorian	X	X
4393	DR	2018	Hurricane Florence	X	X
3401	EM	2018	Hurricane Florence	X	X
4285	DR	2017	Hurricane Matthew	X	X
3380	EM	2017	Hurricane Matthew	X	X
2936	FM	2011	Simmons Road Fire	X	
1969	DR	2011	Severe Storms, Tornadoes, and Flooding	X	X
3254	EM	2005	Hurricane Ophelia	X	
3222	EM	2005	Hurricane Katrina Evacuation	X	X
1546	DR	2004	Tropical Storm Frances	X	X
1490	DR	2003	Hurricane Isabel	X	
1312	DR	2000	Severe Winter Storm		X
3146	EM	1999	Hurricane Floyd Emergency Declarations	X	X
1292	DR	1999	Hurricane Floyd Major Disaster Declarations	X	X
1240	DR	1998	Hurricane Bonnie	X	
1134	DR	1996	Hurricane Fran	X	X
699	DR	1984	Severe Storms & Tornadoes	X	

*EM = Emergency Declaration & DR = Major Disaster Declaration

4.4. Hazard Identification Results

Table 4-3 documents the decisions made by the HMPC as it relates to those hazards that were to be identified, analyzed, and addressed through the development of this regional plan. This table examines whether the hazard was included in the 2018 State of North Carolina Enhanced Hazard Mitigation Plan and the Cumberland-Hoke Regional Hazard Mitigation Plan. This table summarizes the hazards identified for inclusion, those not identified, and the reasoning for the decision.

Table 4-3: Summary of Hazard Identification and Prioritization

State of NC Enhanced HMP (2023) Hazard Identification	Prioritized Hazard for the Cumberland-Hoke Plan?	Why?
Natural Hazards		
Dam Failure	Yes	The HMPC identified notable vulnerabilities to this natural hazard in the region. The hazard can significantly impact the region, given its assessed frequency, severity, and extent.
Drought	Yes	The HMPC identified notable vulnerabilities to this natural hazard in the region. The hazard can significantly impact the region, given its assessed frequency, severity, and extent.
Earthquakes	Yes	The HMPC identified notable vulnerabilities to this natural hazard in the region. The hazard can significantly impact the region, given its assessed frequency, severity, and extent.
Excessive Heat	Yes	The HMPC identified notable vulnerabilities to this natural hazard in the region. The hazard can significantly impact

		the region, given its assessed frequency, severity, and extent. The Cumberland-Hoke RHMP specifically includes this hazard as “Extreme Heat.”
Flooding	Yes	The HMPC identified notable vulnerabilities to this natural hazard in the region. The hazard can significantly impact the region, given its assessed frequency, severity, and extent.
Geological	No	The HMPC decided not to include geological hazards in the Cumberland-Hoke RHMP because the region is in the inland, south-central Coastal Plain region of North Carolina, where landslides, sinkholes, coastal erosion, and other geology-related hazards are uncommon, have limited documented impacts, and do not present a significant risk relative to the other hazards evaluated in the planning area.
Hurricanes & Coastal Hazards	Yes	The HMPC identified notable vulnerabilities to this natural hazard in the region. The hazard can significantly impact the region, given its assessed frequency, severity, and extent. The Cumberland-Hoke RHMP specifically includes this hazard as “Hurricane/Tropical Storm.”
Infectious Disease	No	The HMPC decided not to include infectious disease as a natural hazard in the Cumberland-Hoke RHMP because monitoring, prevention, and response to communicable diseases in the region are primarily managed through established public health systems and agencies, and such events are typically addressed through public health planning and emergency response frameworks rather than through the hazard mitigation strategies evaluated in this plan.
Severe Winter Weather	Yes	The HMPC identified notable vulnerabilities to this natural hazard in the region. The hazard can significantly impact the region, given its assessed frequency, severity, and extent. The Cumberland-Hoke RHMP specifically includes this hazard as “Winter Storm (Winter Weather & Ice Storm).”
Tornadoes / Thunderstorms	Yes	The HMPC identified notable vulnerabilities to these natural hazards in the region. The hazards can significantly impact the region, given their assessed frequency, severity, and extent. The Cumberland-Hoke RHMP includes Tornadoes as a natural hazard and specifically incorporates thunderstorms into the “Severe Weather (Thunderstorm Wind, Lightning & Hail)” hazard.
Wildfire	Yes	The HMPC identified notable vulnerabilities to this natural hazard in the region. The hazard can significantly impact the region, given its assessed frequency, severity, and extent.
Technological Hazards		
Civil Disturbance	No	The HMPC decided not to include civil disturbance in the Cumberland-Hoke RHMP because the participating jurisdictions are predominantly rural, have relatively low population densities, and have a limited history of large-scale public disturbances or riots resulting in widespread property damage or long-term community impacts.
Cybersecurity	Yes	Cumberland County identified cyber threats as a priority hazard to address in this plan update. Cyberattacks can

		disable critical infrastructure systems, such as water, wastewater, emergency communications, power, transportation, and public services, creating cascading impacts comparable to physical hazards. Due to the distinct nature of this hazard and the fact that Cumberland County was the only jurisdiction to prioritize it, the vulnerability and risk assessments, along with related mitigation actions related to cybersecurity has been included as Appendix K – Cybersecurity.
Electromagnetic Pulse	No	The HMPC decided not to include electromagnetic pulse hazards in the Cumberland-Hoke RHMP because the probability of a significant EMP event affecting the region is considered extremely low.
Food Emergency	No	The HMPC decided not to include food emergencies in the Cumberland-Hoke RHMP because there is a limited documented history of large-scale food contamination or supply-disruption events affecting multiple jurisdictions across the region.
Hazardous Substances	No	The HMPC decided not to include hazardous substance incidents as a hazard in the Cumberland-Hoke RHMP because available records indicate that past releases in the region have generally been small-scale, localized, and not associated with widespread or long-term community impacts.
Radiological Emergencies	No	The HMPC decided not to include radiological emergencies in the Cumberland-Hoke RHMP because there are no nuclear power plants or major radiological facilities located in the region, and there is limited exposure to fixed radiological sources that could produce a region-wide incident. None of the participating jurisdictions are within the 10-mile Emergency Planning Zone of a nuclear facility.
Terrorism	No	The HMPC decided not to include terrorism as a hazard in the Cumberland-Hoke RHMP because the region contains relatively few high-profile or nationally significant targets and has no documented history of terrorist incidents with reported impacts.

The complete list of hazards for inclusion in this Regional Plan, as indicated in the table above, excluding non-prioritized hazards from the State's Plan, is as follows:

- Cybersecurity
- Dam Failure
- Drought
- Earthquakes
- Extreme Heat
- Flooding
- Hurricane/Tropical Storm
- Severe Weather (Thunderstorm Wind, Lightning & Hail)
- Tornado
- Wildfire
- Winter Storm (Winter Weather & Ice Storm)

SECTION 5: INTRODUCTION

The hazards identified in Section 4 - Hazard Identification are profiled individually in this section. It consists of the following subsections:

- 5.1 Overview
- 5.2 Dam Failure
- 5.3 Drought
- 5.4 Earthquake
- 5.5 Extreme Heat
- 5.6 Hurricane/Tropical Storm
- 5.7 Flooding
- 5.8 Severe Weather (Thunderstorm Wind, Lightning & Hail)
- 5.9 Tornado
- 5.10 Wildfire
- 5.11 Winter Storm (Winter Weather & Ice Storm)
- 5.12 Hazard Profile Summary

44 CFR Subsection D §201.6(c)(2)(i):
The risk assessment shall include a description of the type, location and extent of all natural hazards that can affect the jurisdiction. The plan shall include information on previous occurrences of hazard events and on the probability of future hazard events.

5.1. Overview

The Hazard Mitigation Planning Committee (HMPC) recognizes the need to continually capture and update the data in risk assessment as development and hazards occur in the participating jurisdictions. Additionally, in some cases, the data captured is at the county level; work will be done to capture more detailed data at the city level. As progress is being made to mitigate hazards, this section of the plan will also be reviewed and updated, as needed, along with any hazardous events. Information from the HMPC members has been integrated into this chapter, along with information from other data sources. Each hazard is profiled in the following format:

Hazard Description

This section provides a description of the hazard followed by details specific to the regional planning area.

Location and Spatial Extent

This section includes information on where a hazard is most likely to occur, i.e., the hazard's spatial extent. Location is the geographic area within the planning area that is affected by the hazard.

Extent

This section provides details on the extent of each hazard. Extent is the expected intensity range for each hazard. It answers, “How bad can it get?” Often, a scientific scale is used to help define the extent of hazard characteristics, for example, speed of onset/duration, magnitude, and any secondary effects.

Past Occurrences
This section contains information on historical events, including the extent or location of the hazard within or near the regional planning area.

Probability of Future Occurrence
This section gauges the likelihood of future occurrences based on past events and existing data. National Risk Index (NRI) data was used alongside other available data sources. This was to provide a wide range of vulnerability analyses and a standardized comparison across different communities in the United States to assess vulnerability levels. Because some hazards within this plan represent multiple types of precipitation or weather within an overall hazard category (e.g., winter storms and freezing events 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. This section gauges the likelihood of future occurrences based on past events and existing data. The definitions of each category differ by hazard to provide a more specific likelihood for each hazard.

Consequence and Impact Analysis
This section examines the effects of the hazard on people, first responders, continuity of operations, the built environment, the economy, and the natural environment.

Those hazards determined to be of high or medium significance were characterized as priority hazards that required further evaluation in this section. Significance was determined by the frequency of the hazard and resulting damage, including deaths/injuries, property, crops, and economic damage. Hazards occurring infrequently or having little to no impact on the regional planning area were determined to be of low significance and not considered a priority hazard. These criteria allowed the HMPC to prioritize hazards of greatest significance and focus resources where they are most needed.

5.1.1. Study Area

Cumberland County includes nine participating municipalities, and Hoke County includes one participating municipality. Table 5-1 provides a summary of the participating jurisdictions by County. Figure 5-1 provides a base map, for reference, of Cumberland and Hoke Counties and the participating municipalities.

Table 5-1: Participating Jurisdictions

Cumberland County	
Town of Eastover	Town of Linden
City of Fayetteville	Town of Spring Lake
Town of Falcon	Town of Stedman
Town of Godwin	Town of Wade
Town of Hope Mills	--
Hoke County	
City of Raeford	--

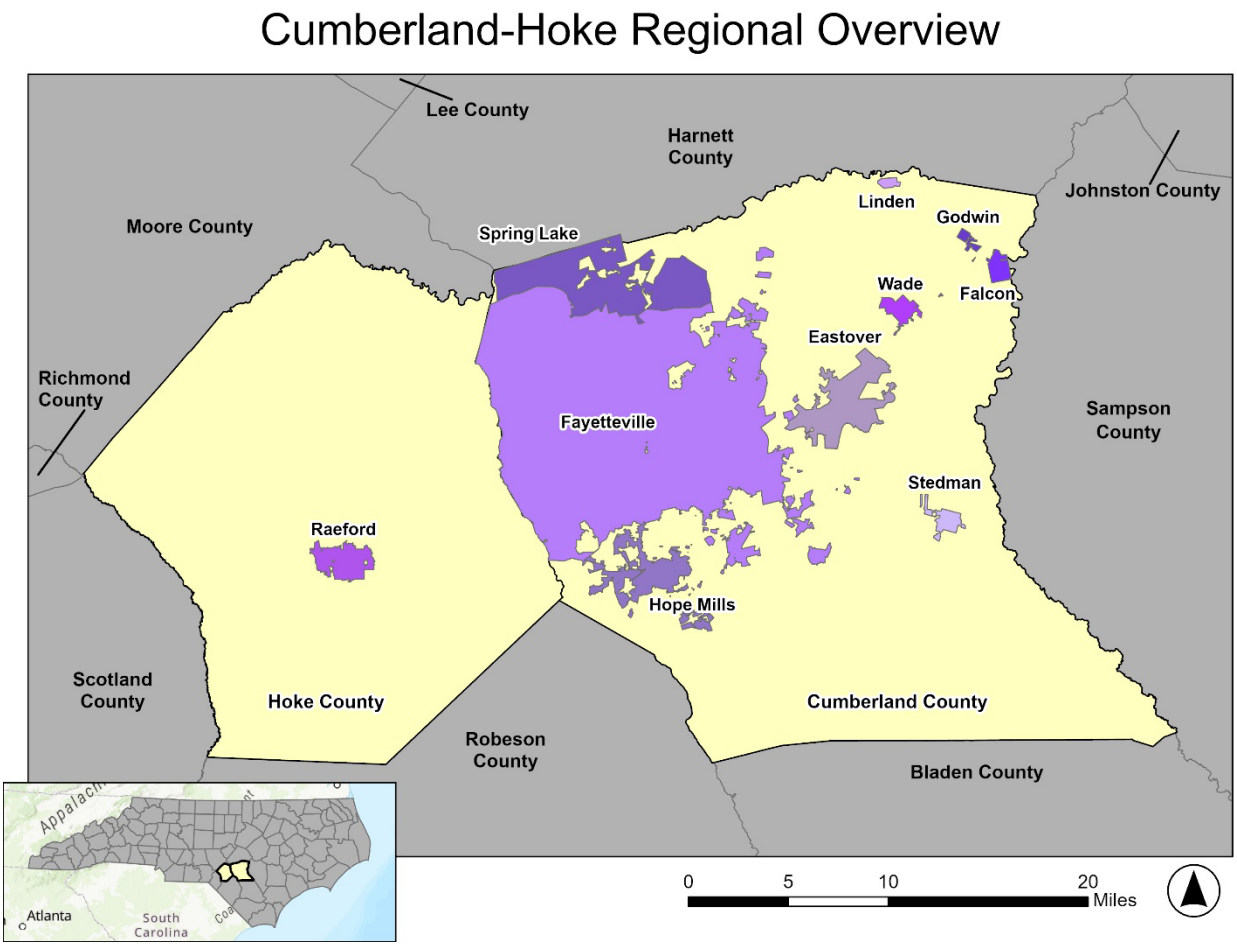


Figure 5-1: Cumberland and Hoke County Base Map

Climate Change

Climate change refers to a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties, and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or to external forcing, such as modulations of the solar cycle, volcanic eruptions, and persistent anthropogenic changes in atmospheric composition or land use. Climate change is a natural occurrence in which the Earth has warmed and cooled periodically

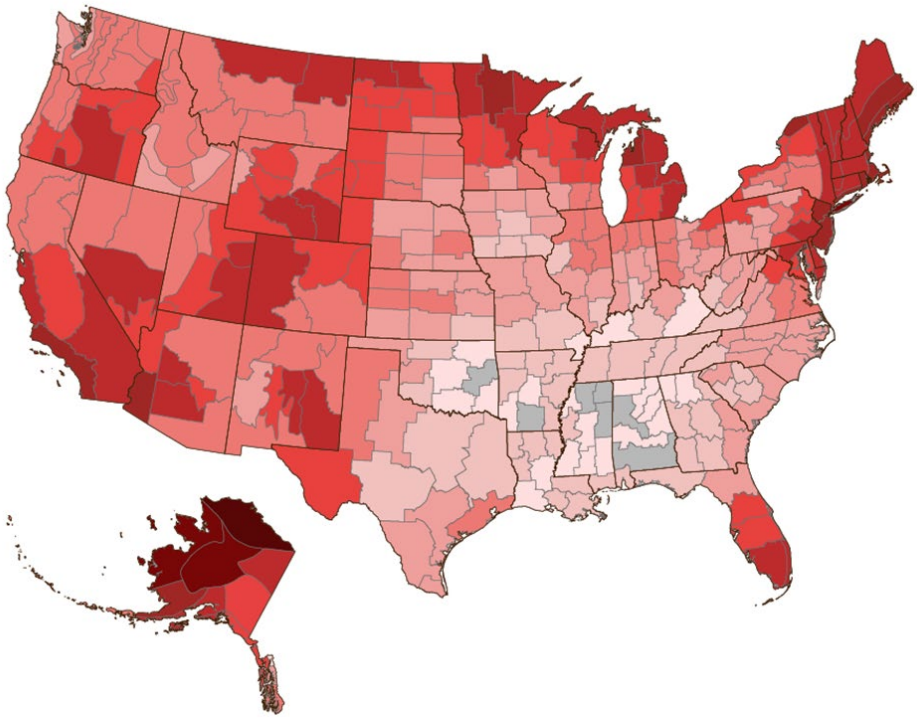
over geological time. The recent and rapid warming of the Earth over the past century has been cause for concern, as this warming is very likely due to the accumulation of human-caused greenhouse gases, such as Carbon Dioxide (CO_2), in the atmosphere. This warming is occurring almost everywhere in the world, suggesting a global cause rather than changes in localized weather patterns.

Since 1901, the average surface temperature across the contiguous 48 states has risen at an average rate of 0.14°F per decade (1.4°F per century). Average temperatures have risen more quickly since the late 1970s (0.36 to 0.55°F per decade). Seven of the top ten warmest years on record for the contiguous 48 states have occurred since 1998, and 2012 was the warmest year on record.

According to the North Carolina Climate Science Report[1] (NCCSR), the annual average temperature in NC has increased about 1°F since 1895, compared to the global increase of about 1.8°F during the same period. Average yearly temperatures in NC have also been consistently above normal since 1990. The temperatures from 2009 to 2018 were reported as the warmest 10-year period on record. The NCCSR reports that it is very likely that temperatures in NC will continue to increase substantially throughout all seasons.

The National Climate Assessment identifies the following climate risks projected to impact the Southeast U.S., including the Region: rising temperatures and more frequent extreme heat events; increasing frequency and intensity of severe weather events; more heavy rain events and flooding; and more frequent and prolonged drought. A discussion of the effect of climate risks on the individual hazards profiled below has been included in the Probability of Future Occurrence subsection for each hazard as applicable.

[1] Kunkel, K. E., Easterling, D. R., Ballinger, A., Bililign, S., Champion, S. M., Corbett, D. R., Dello, K. D., Dissen, J., Lackmann, G. M., Luettich Jr., R. A., Perry, L. B., Robinson, W. A., Stevens, L. E., Stewart, B. C., & Terando, A. J. (2020). *North Carolina Climate Science Report* (p. 233). North Carolina Institute for Climate Studies. https://ncics.org/programs/nccsr/



Alaska data start in 1925.

Data source: NOAA (National Oceanic and Atmospheric Administration). (2024). *Climate at a glance.* Retrieved March 25, 2024, from www.ncei.noaa.gov/access/monitoring/climate-at-a-glance

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

Figure 5-2: Rate of Temperature Change in the United States, 1901-2023

The Climate Change and Natural Hazards Vulnerability Assessments for the Mid-Carolina Region[2] and the Lumber River Region[3] were published in December of 2022 as a part of the Region's Innovating for Strong Economies and Environment's Regional Resilience Portfolio program, under the State Resilience Office. The Mid-Carolina Region Assessment, including Cumberland County and all incorporated municipalities participating in this plan, documents four primary hazards that have a significant impact on the region: 1) hurricane & storms; 2) flooding & heavy precipitation; 3) extreme temperatures; and 4) drought & wildfires. The Lumber River Region's Assessment, including Hoke County and Raeford, documents flooding, hurricanes &

[2] NCDEQ. (2022). *Climate Change and Natural Hazards Vulnerability Assessment for the Mid-Carolina Region*. North Carolina Department of Environmental Quality (NCDEQ). https://www.deq.nc.gov/energy-climate/resiliency/resilient-communities-program/regions-innovating-strong-economies-and-environment-program/regional-resilience-portfolios/mid-carolina-regional-resilience-portfolio

[3] NCDEQ. (2022). *Climate Change and Natural Hazards Vulnerability Assessment for the Lumber River Region*. North Carolina Department of Environmental Quality (NCDEQ). https://www.deq.nc.gov/energy-climate/resiliency/resilient-communities-program/regions-innovating-strong-economies-and-environment-program/regional-resilience-portfolios/lumber-river-regional-resilience-portfolio

tropical storms, and severe weather (heavy rainfall & winds) as the most prominent, high-impact climate hazards in the region. The Lumber River Region's Assessment also identifies extreme heat, drought, wildfire, and winter storms as hazards projected to occur more frequently by the 2050s and beyond. Discussion of the effects of this climate risk on the individual hazards profiled below has been included in the Probability of Future Occurrence and Consequence and Impact Analysis - Future Conditions subsections for each hazard as applicable, integrating information from the regional Climate Change and Natural Hazards Vulnerability Assessments (2022) and the North Carolina Climate Science Report (NCCSR) (2020).

5.1.2. NRI Overview

Each natural hazard included 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 describe 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 5-2. For more information about NRI Calculations and methodology, please refer to the NRI Technical Documentation.[4]

Table 5-2: 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), 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 (EAL)	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	

[4] *National Risk Index Data v1.20 Technical Documentation*. (2025). Federal Emergency Management Agency. https://www.fema.gov/sites/default/files/documents/fema_national-risk-index_technical-documentation.pdf

	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 in one of five qualitative categories that describe the community's component value in comparison to all the 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 5-3: NRI Risk Index Average EAL Score, Social Vulnerability Score, and Resiliency Score

Jurisdiction	Average EAL Score	Average of Social Vulnerability Score	Average Resilience Score
Cumberland County	**60.80**	**53.70**	**32.45**
Eastover	59.69	68.89	32.45
Falcon	58.63	64.93	19.39
Fayetteville	48.85	72.26	31.56
Godwin	71.44	80.25	32.45
Hope Mills	51.84	75.62	32.45
Linden	80.51	73.77	32.45
Spring Lake	40.87	63.44	31.61
Stedman	41.85	32.07	32.45
Wade	58.98	74.71	32.45
Hoke County	**42.92**	**79.14**	**16.85**
Raeford	63.95	86.37	16.85

Table 5-4: Census Tracts Used to Calculate NRI Data that Overlap Jurisdictional Boundaries

Jurisdiction	Overlapping Census Tracts
Cumberland County (Unincorporated Areas)	**37051003002, 37051003004**
Eastover	37051001401, 37051002600, 37051002701, 37051002702
Falcon	37051002701, 37163970303
Fayetteville	37051000200, 37051000500, 37051000600, 37051000701, 37051000702, 37051000800, 37051000900, 37051001000, 37051001100, 37051001200, 37051001401, 37051001402, 37051001500, 37051001603, 37051001604, 37051001701, 37051001702, 37051001800, 37051001902, 37051001903, 37051002001, 37051002002, 37051002100, 37051002200, 37051002301, 37051002302, 37051002401, 37051002402, 37051002501, 37051002503, 37051002504, 37051002505, 37051002506, 37051002600, 37051002702, 37051002801, 37051003102, 37051003203, 37051003205, 37051003206, 37051003207, 37051003208, 37051003209, 37051003302, 37051003304, 37051003307, 37051003310, 37051003311, 37051003312, 37051003313, 37051003314, 37051003315, 37051003316, 37051003317, 37051003318, 37051003401, 37051003403, 37051003404, 37051003408, 37051003409, 37051003410, 37051003502, 37051003700, 37051003800, 37051980100, 37051980200, 37093970105, 37093970106, 37093970108, 37093980100
Godwin	37051002600
Hope Mills	37051001603, 37051001604, 37051001605, 37051001606, 37051001702, 37051001901, 37051001902, 37051001903, 37051003003, 37051003102, 37051003103, 37051003105, 37051003106, 37051003203, 37051003207, 37051003209
Linden	37051003700
Spring Lake	37051002504, 37051003401, 37051003409, 37051003501, 37051003502, 37051003601, 37051003602, 37051003700, 37051980100, 37051980200, 37085071402
Stedman	37051002801, 37051002802
Wade	37051002600, 37051002701
Hoke County (Unincorporated Areas)	**37093970104, 37093970109, 37093970402**
Raeford	37093970107, 37093970201, 37093970202, 37093970300, 37093970401

The jurisdictional probability summary was developed by identifying census tracts (Table 5-5) that overlap with jurisdictional boundaries, as jurisdictional-level data is not available for NRI datasets.

Table 5-5: 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[5] 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 in Table 5-2	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 in Table 5-2

[5] North Carolina Department of Transportation. (2024). *Municipal Boundaries* (Version 2024 End of Year Release; Power Bill Fiscal Year 2023-2024) [Geodatabase]. Connect NCDOT. https://connect.ncdot.gov/resources/gis/Pages/GIS-Data-Layers.aspx

5.2. Dam Failure

5.2.1. Hazard Description

A dam is a barrier constructed across a watercourse that stores, controls, or diverts water. Dams are usually built from earth, rock, or concrete. The water impounded behind a dam is called a reservoir and is measured in acre-feet. One acre-foot is the volume of water that covers one acre of land to a depth of one foot. Dams can benefit farmland, provide recreational areas, generate electrical power, and help control erosion and flooding.

A dam failure is the collapse or breach of a dam that causes downstream flooding. Dam failures may be caused by natural or human events, or by a combination. Due to the lack of advance warning, failures resulting from natural events, such as hurricanes, earthquakes, or landslides, may be particularly severe. Prolonged rainfall and subsequent flooding are the most common causes of dam failure.

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

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

Water released from a failed dam can generate tremendous energy and cause a catastrophic flood. A catastrophic dam failure could challenge local response capabilities and require evacuations to save lives. Impacts to life safety will depend on the warning time and the resources available to notify and evacuate the public. Significant casualties and loss of life could result, as well as water quality and health issues. Potentially catastrophic effects on roads, bridges, and homes are also of major concern. Associated water quality and health concerns could also be issues. Factors that influence the potential severity of a full or partial dam failure

are the amount of water impounded, the density, type, and value of development and infrastructure located downstream, and the speed of failure.

Each state has definitions and methods for determining a dam's Hazard Potential. In North Carolina, dams are regulated by the state if they are 25 feet or more in height and impound 50 acre-feet or more.

Dams and impoundments smaller than that may fall under state regulation if it is determined that failure of the dam could result in loss of human life or significant damage to property below the dam. The height of a dam is from the highest point on the crest of the dam to the lowest point on the downstream toe, and the storage capacity is the volume impounded at the elevation of the highest point on the crest of the dam.

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

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

Table 5-6: Dam Hazard Classifications[6]

Hazard Classification	Description	Quantitative Guidelines
Low	Interruption of road service, low-volume roads	Less than 25 vehicles per day
	Economic damage	Less than $30,000
Intermediate	Damage to highways, interruption of service	25 to less than 250 vehicles per day
	Economic damage	$30,000 to less than $200,000
	Loss of human life	Probable loss of one or more human lives

[6] Kang, D. (2020). *Documents Related to Dam Hazard Classification*. North Carolina Dam Safety Program. https://files.nc.gov/ncdeq/Energy%20Mineral%20and%20Land%20Resources/Land%20Quality/Dam%20Safety/docs_HazardClassificationCriteria.pdf

High	Economic damage	More than $200,000
	Probable loss of human life due to a breached roadway or bridge on or below the dam	250 or more vehicles per day

5.2.2. Location and Spatial Extent

Table 5-7 provides details for 61 dams classified as high hazard in the North Carolina Dam Inventory that are located within Cumberland and Hoke Counties. The following figures reflect the location of the high-hazard dams within the Region. It should be noted that there are 81 additional low-hazard dams located in Cumberland County, as well as 25 additional low-hazard dams located in Hoke County.

Table 5-7: Counts of High Hazard and Intermediate Dams by Jurisdiction

Jurisdiction	High	Intermediate
Cumberland County		
Cumberland County (Unincorporated Area)	11	2
City of Fayetteville	38	2
Town of Eastover	-	-
Town of Falcon	-	-
Town of Godwin	-	-
Town of Hope Mills	1	-
Town of Linden	-	-
Town of Spring Lake	1	-
Town of Stedman	-	-
Town of Wade	-	-
Subtotal Cumberland	**51**	**4**
Hoke County		
Hoke County (Unincorporated Area)	8	-
City of Raeford	-	-
Subtotal Hoke	**8**	**0**
Total Plan	**59**	**4**

Source: North Carolina Dam Safety Program, North Carolina Department of Environmental Quality (NCDEQ)

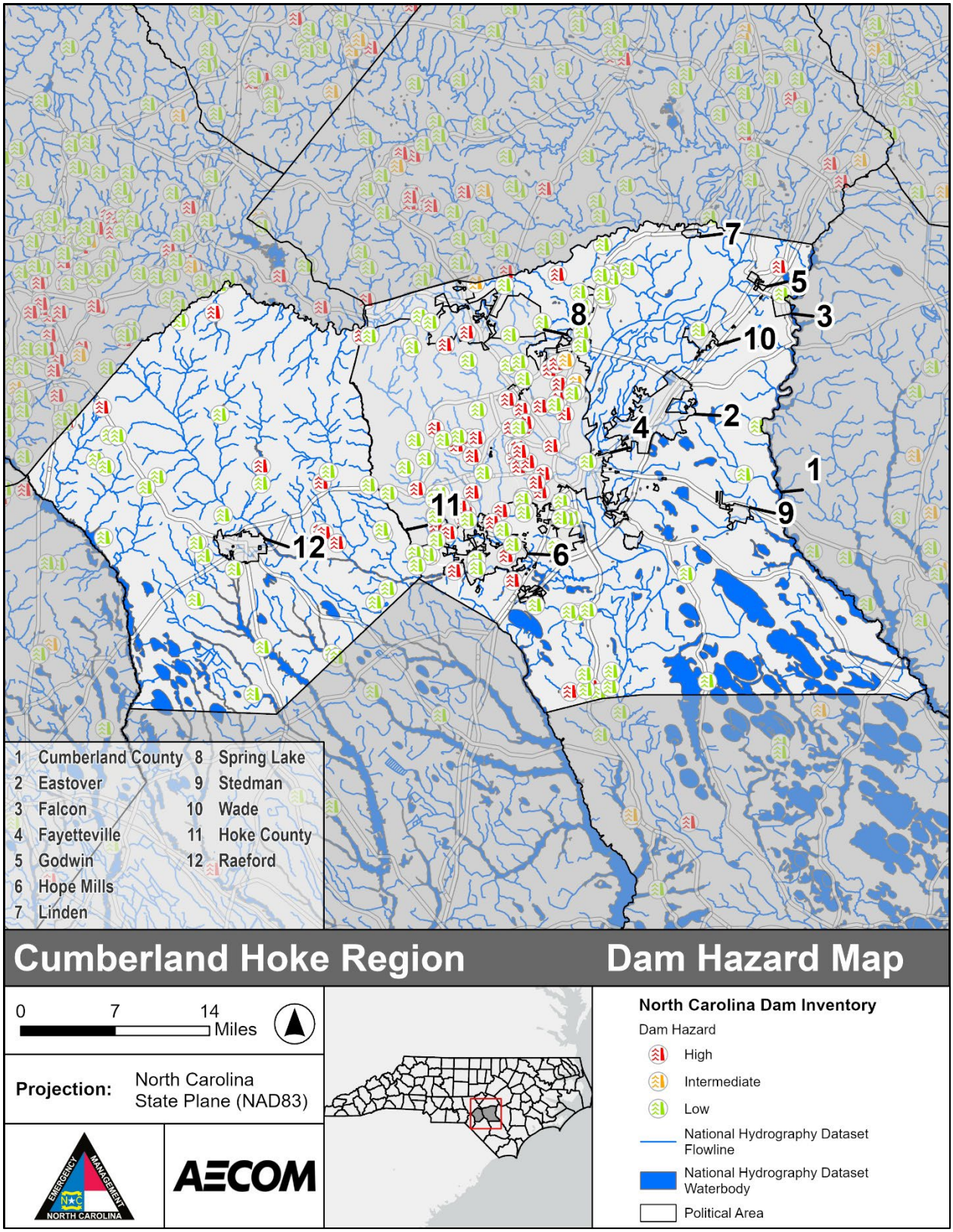


Figure 5-3: Cumberland-Hoke Regional Dam Hazard Map

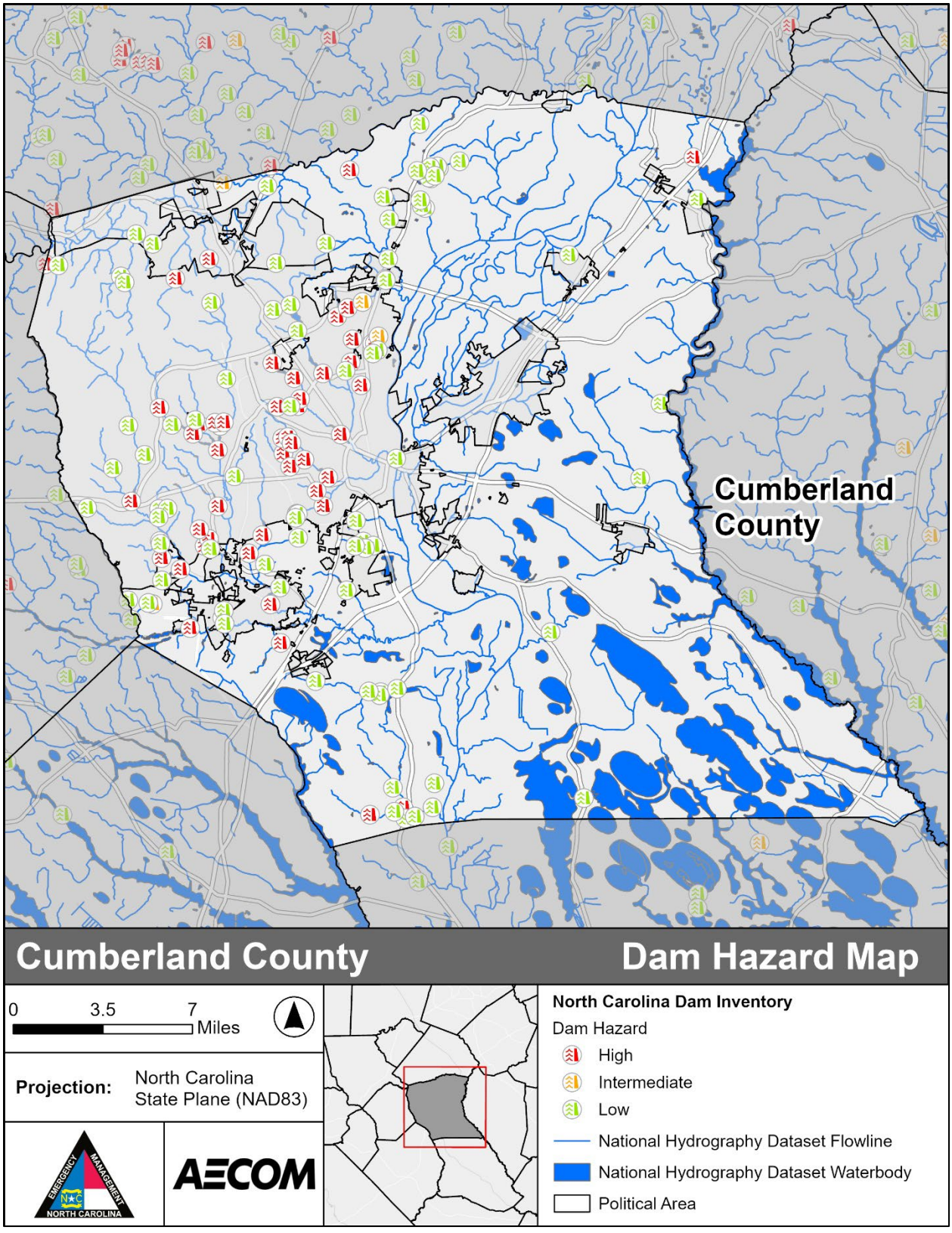


Figure 5-4: Cumberland County Dam Hazard Map

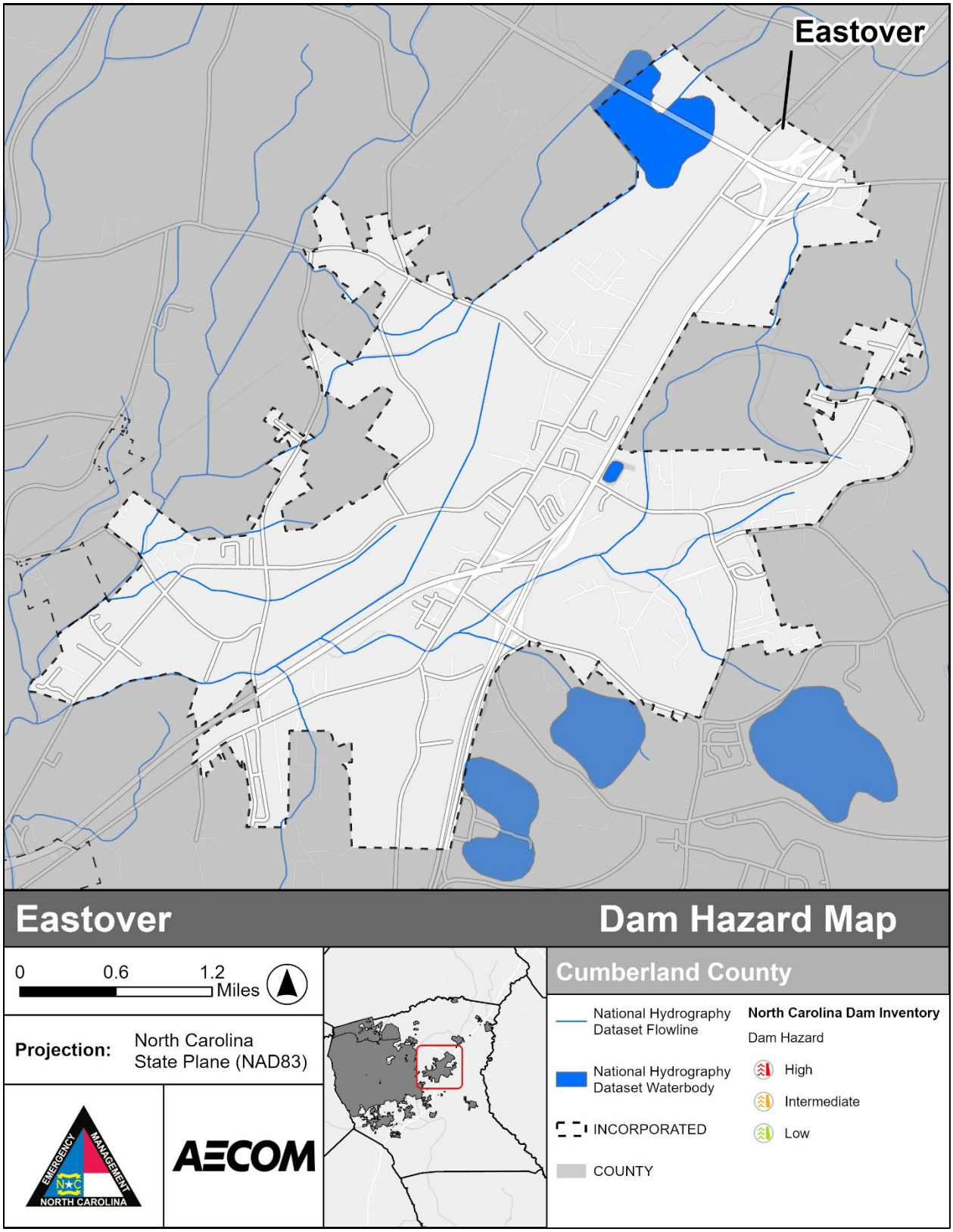


Figure 5-5: Town of Eastover Dam Hazard Map

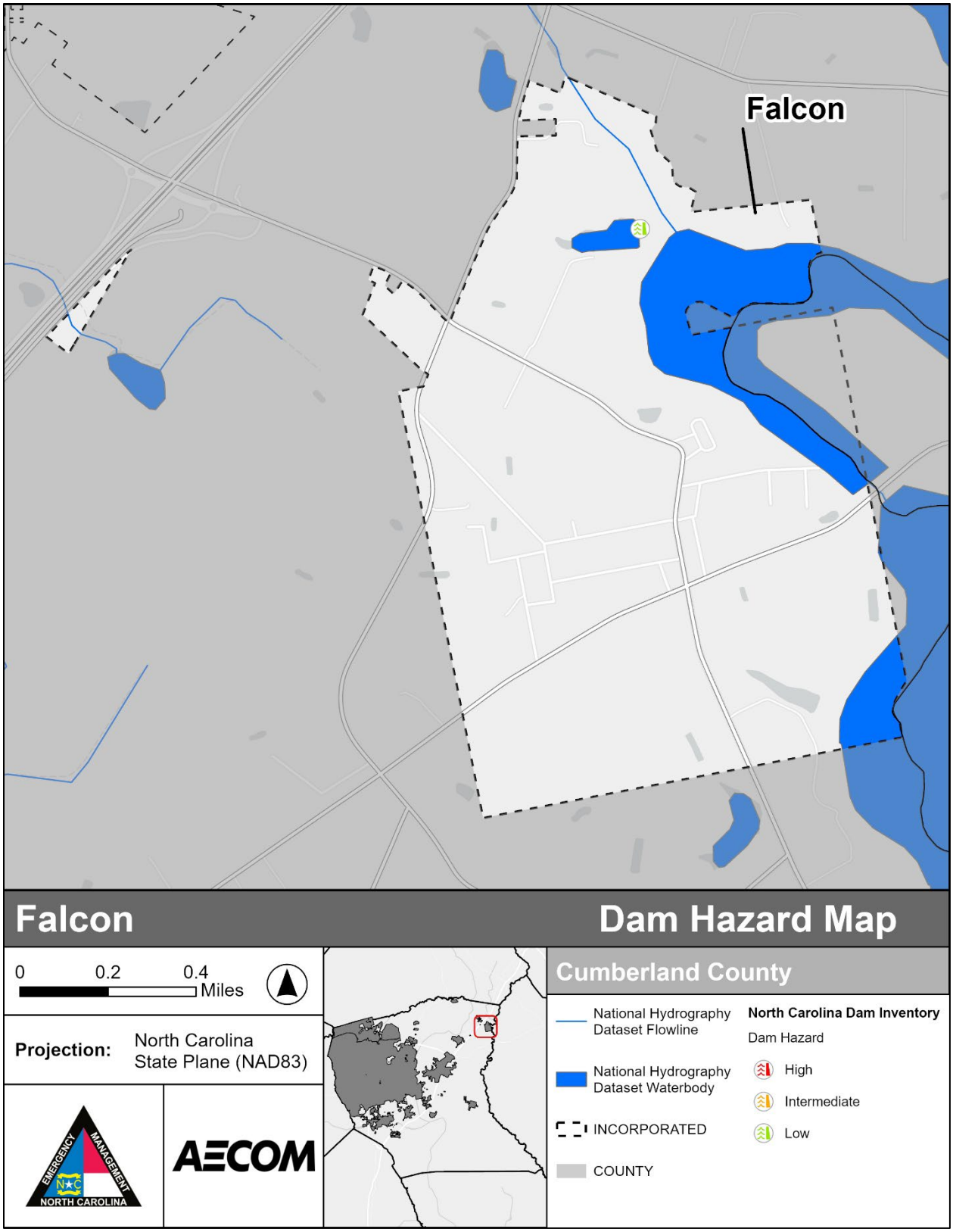


Figure 5-6: Town of Falcon Dam Hazard Map

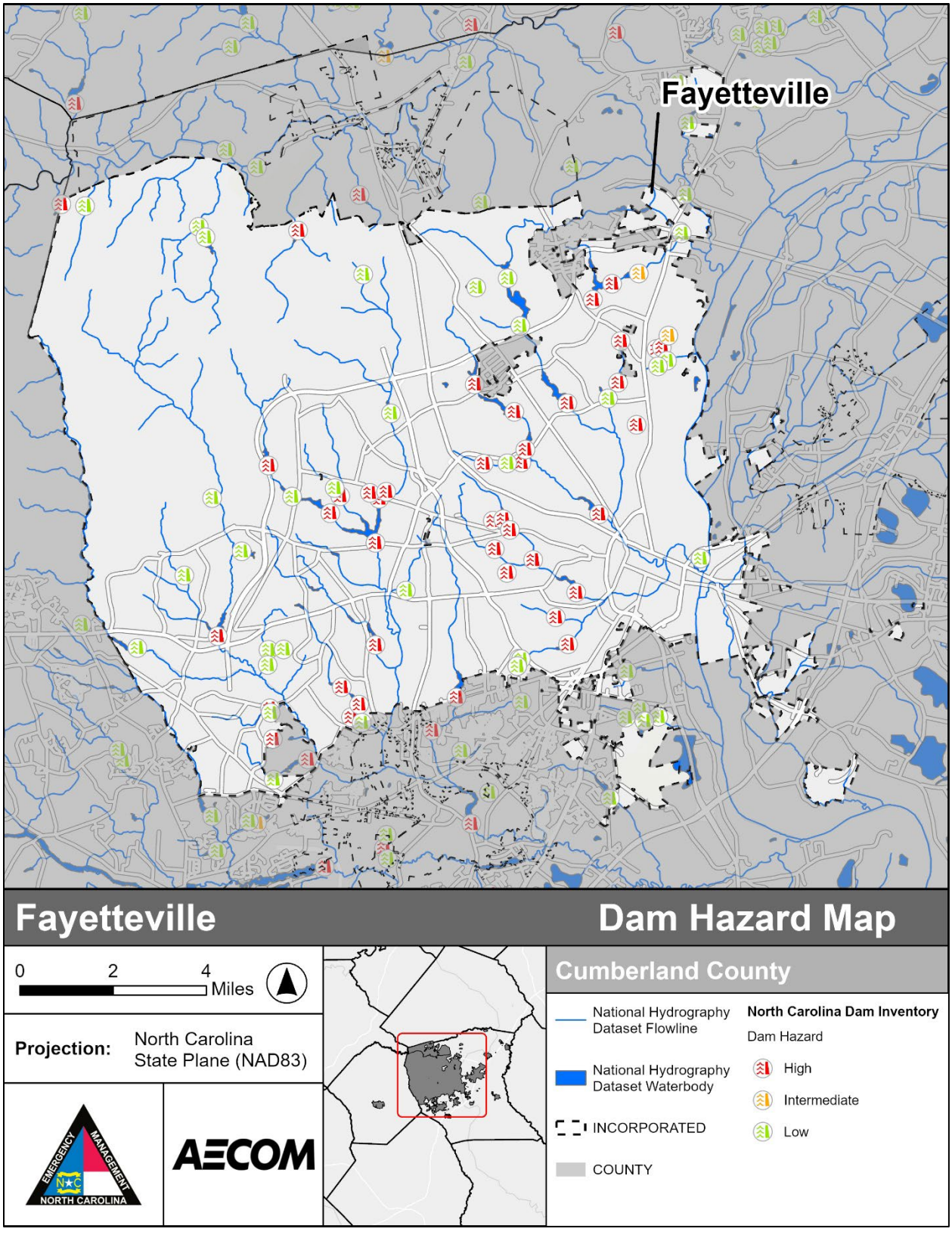


Figure 5-7: City of Fayetteville Dam Hazard Map

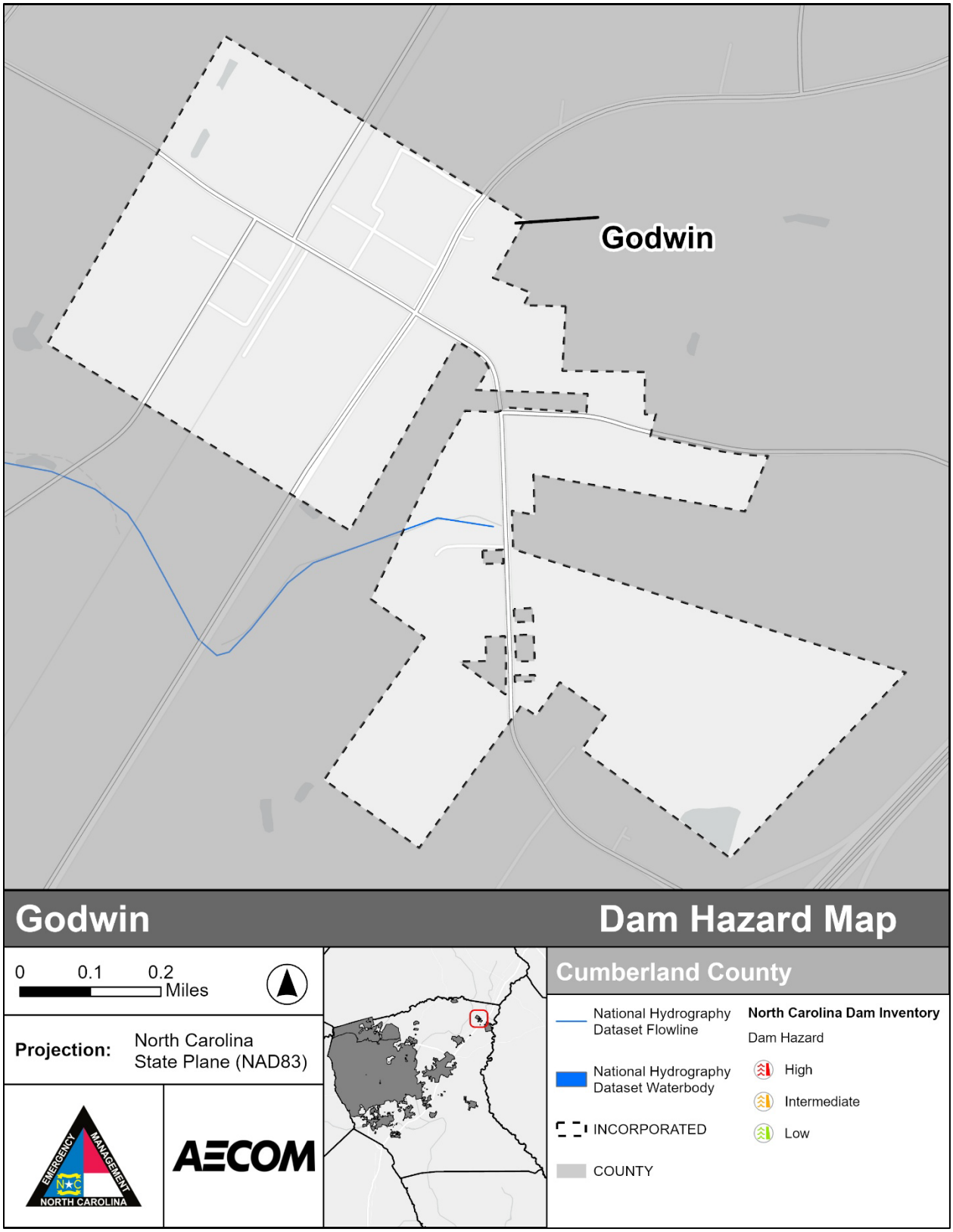


Figure 5-8: Town of Godwin Dam Hazard Map

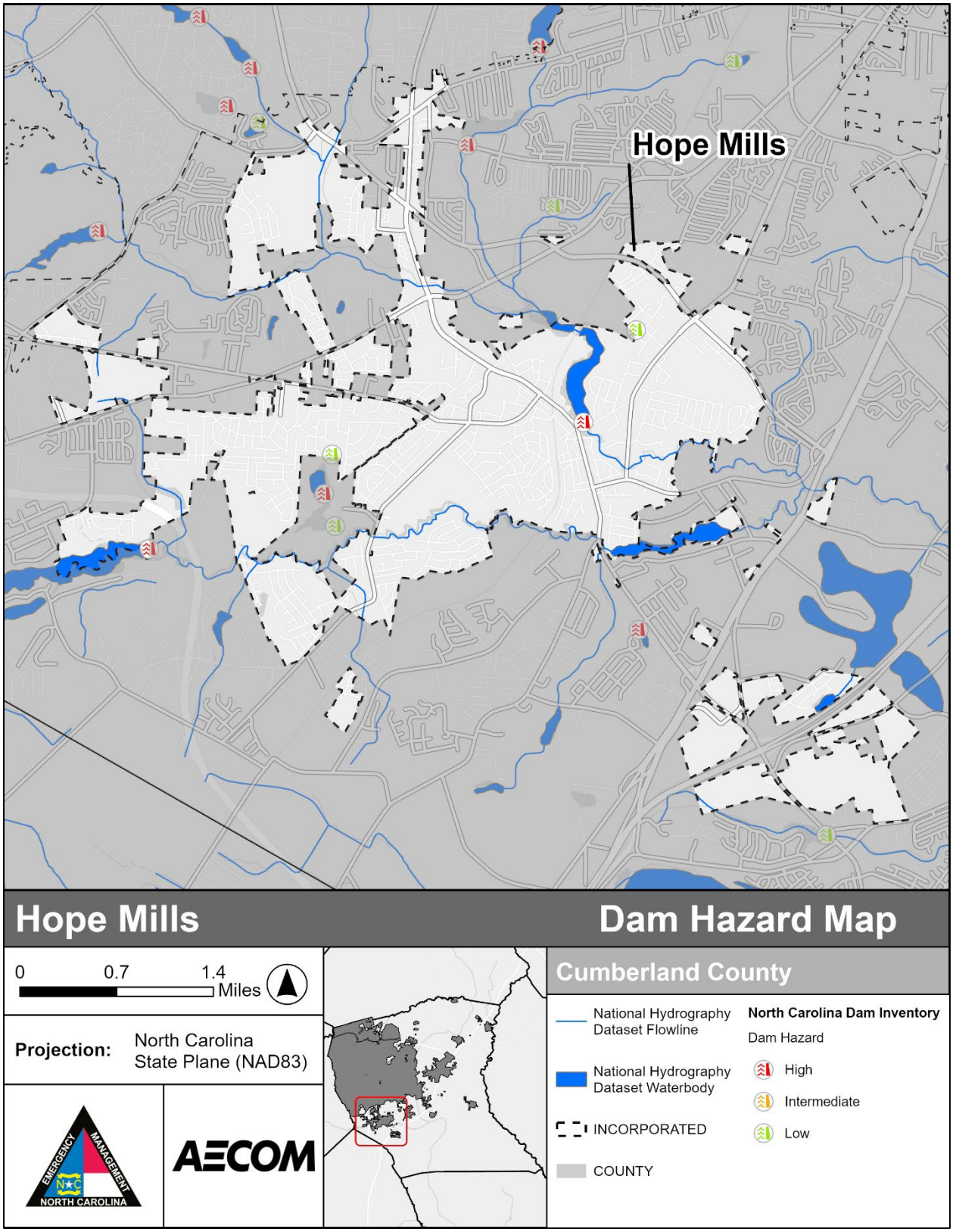


Figure 5-9: Town of Hope Mills Dam Hazard Map

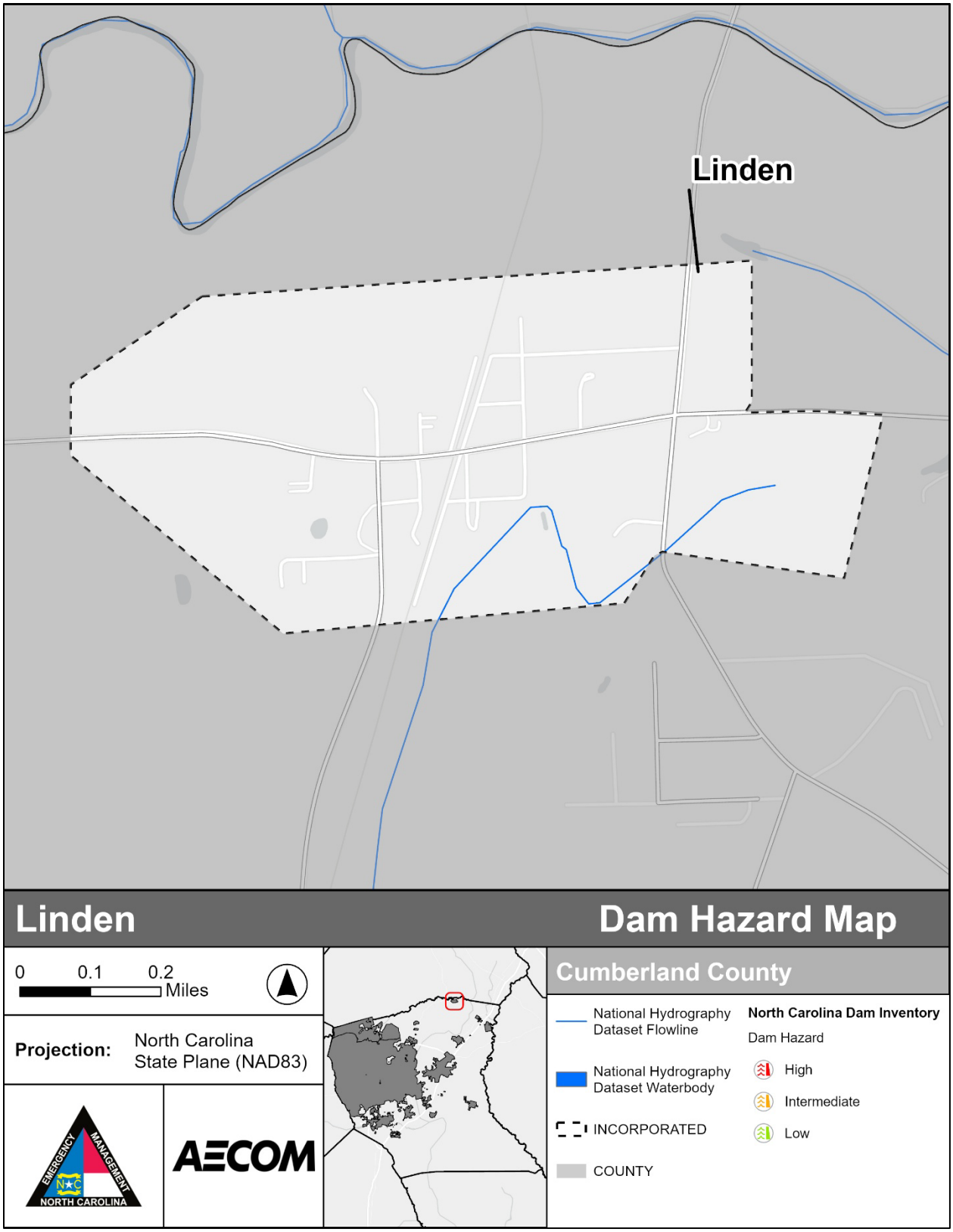


Figure 5-10: Town of Linden Dam Hazard Map

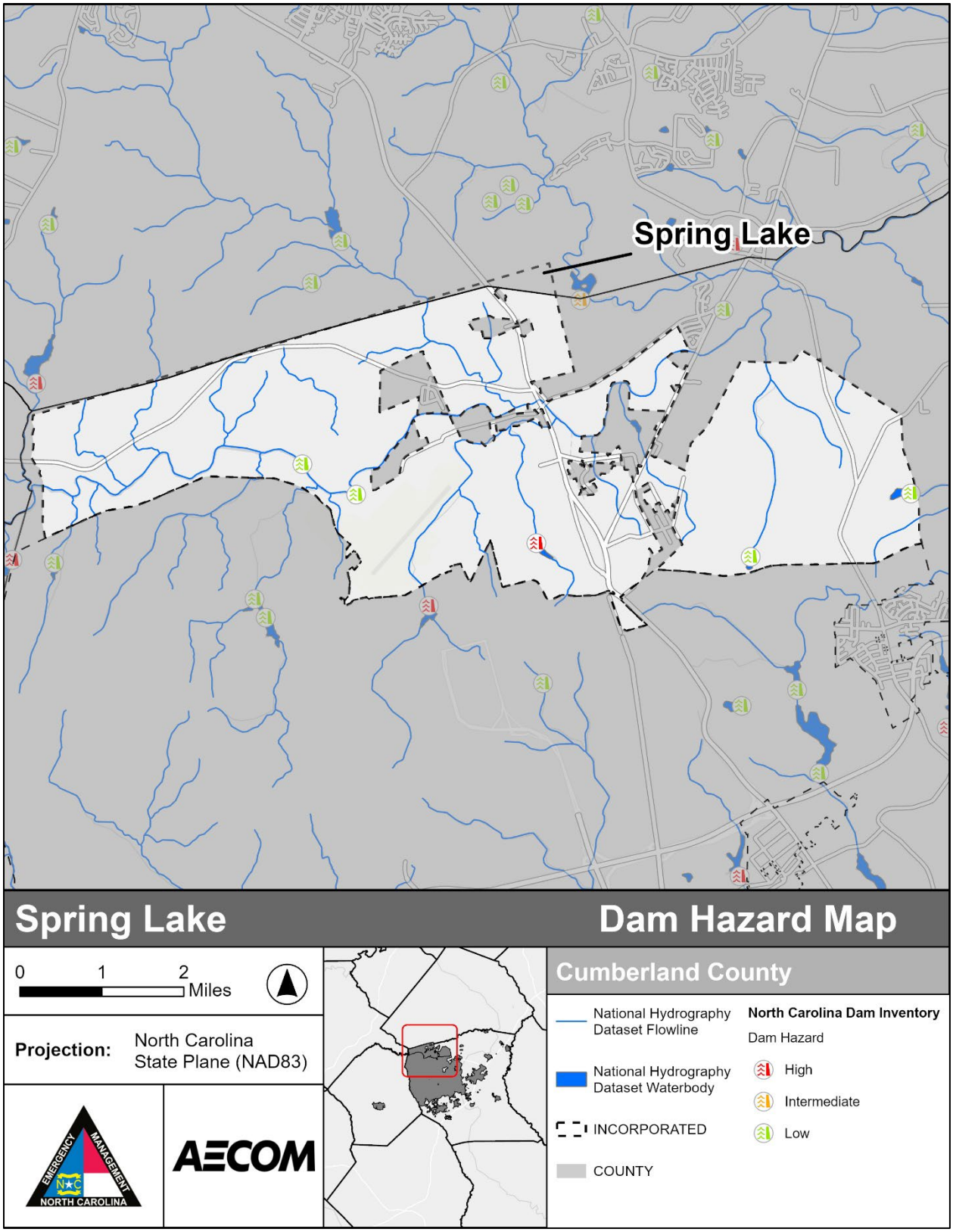


Figure 5-11: Town of Spring Lake Dam Hazard Map

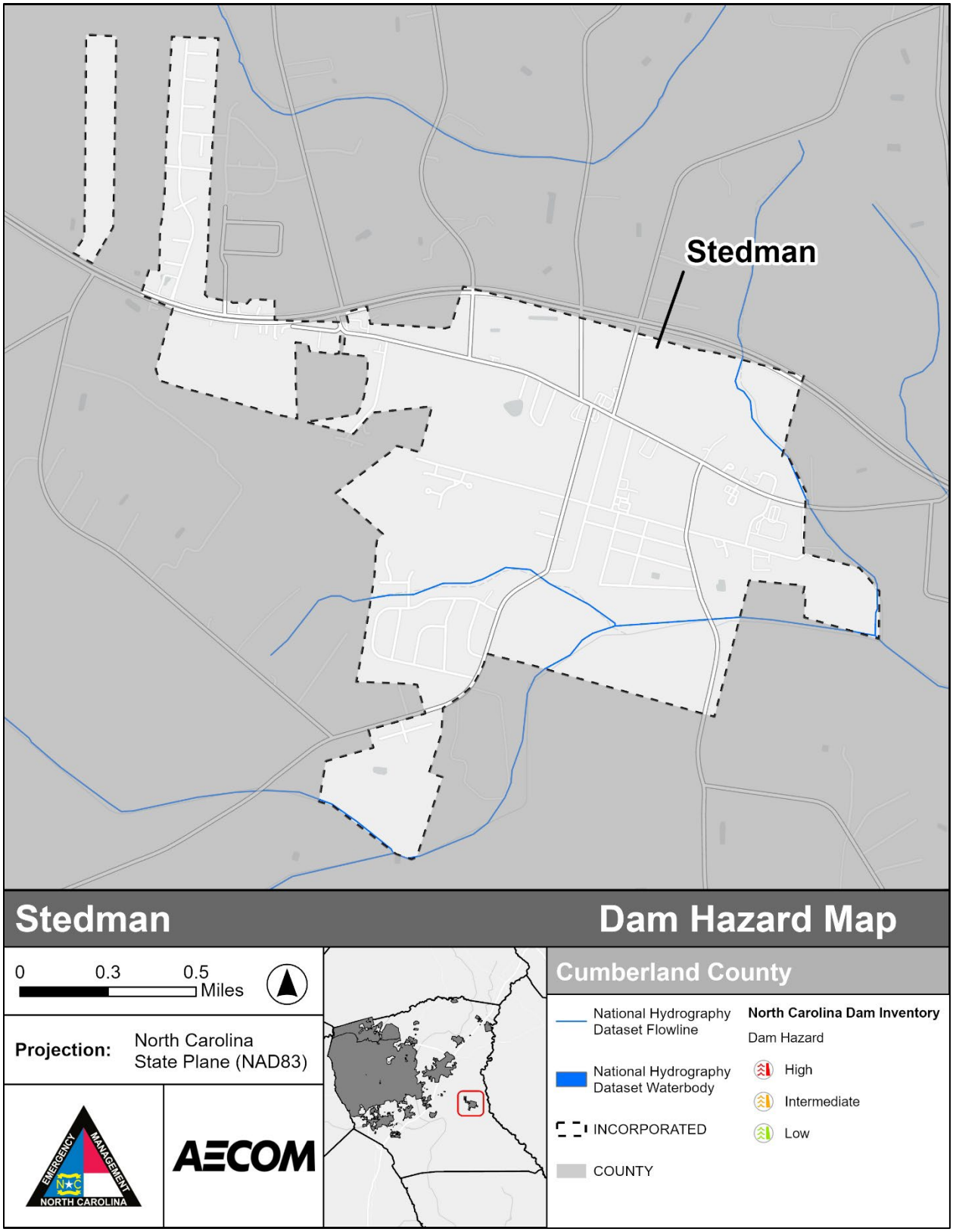


Figure 5-12: Town of Stedman Dam Hazard Map

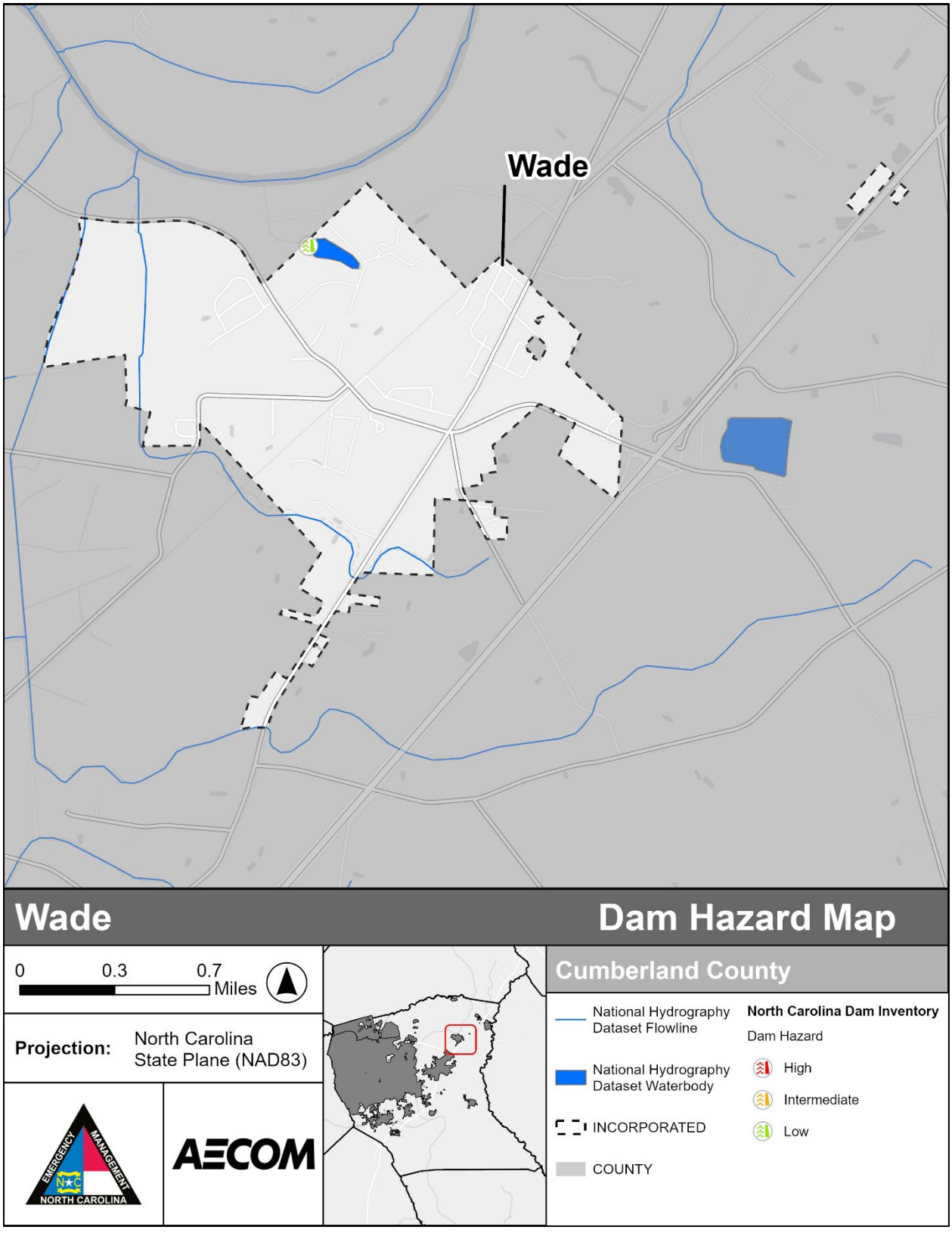


Figure 5-13: Town of Wade Dam Hazard Map

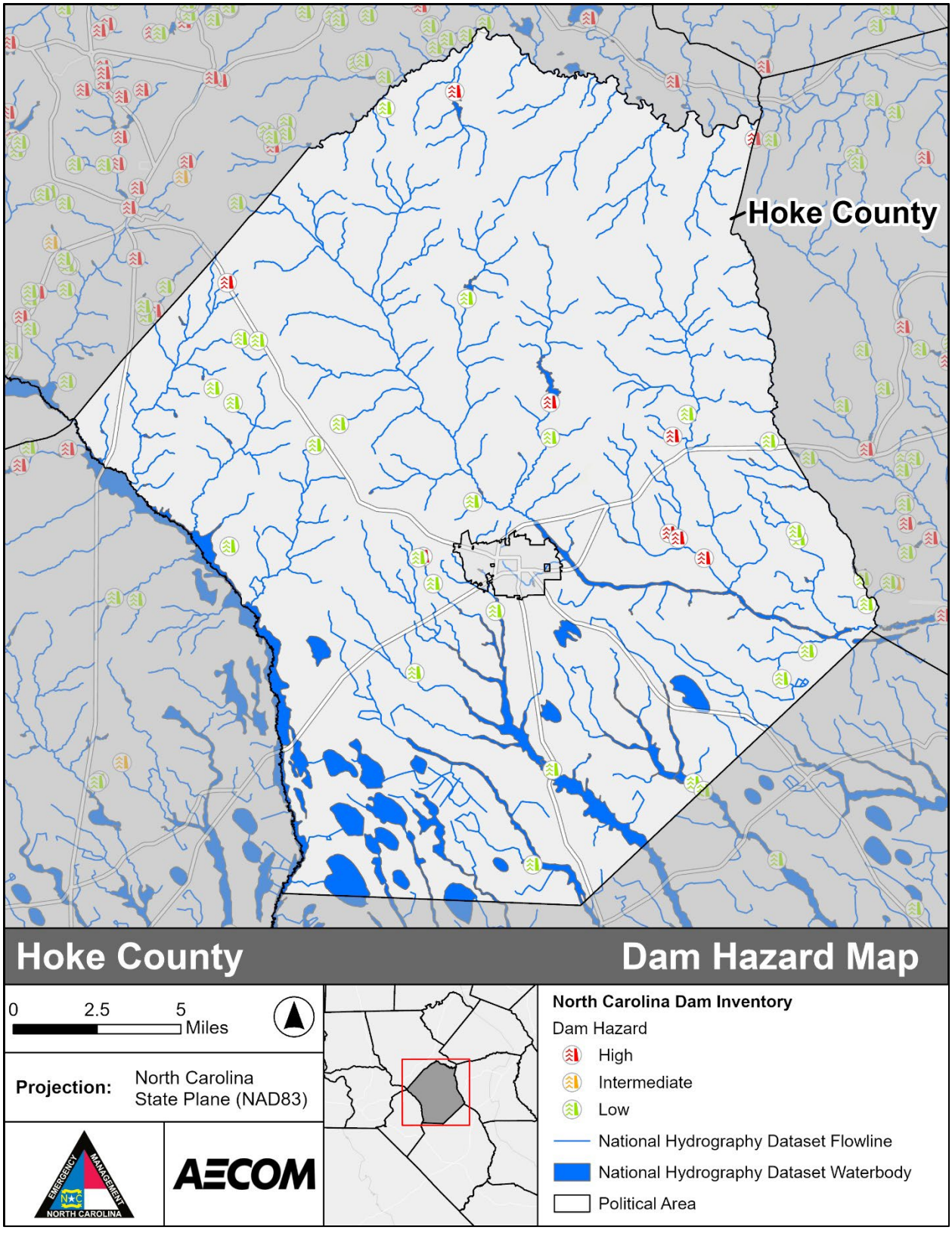


Figure 5-14: Hoke County Dam Hazard Map

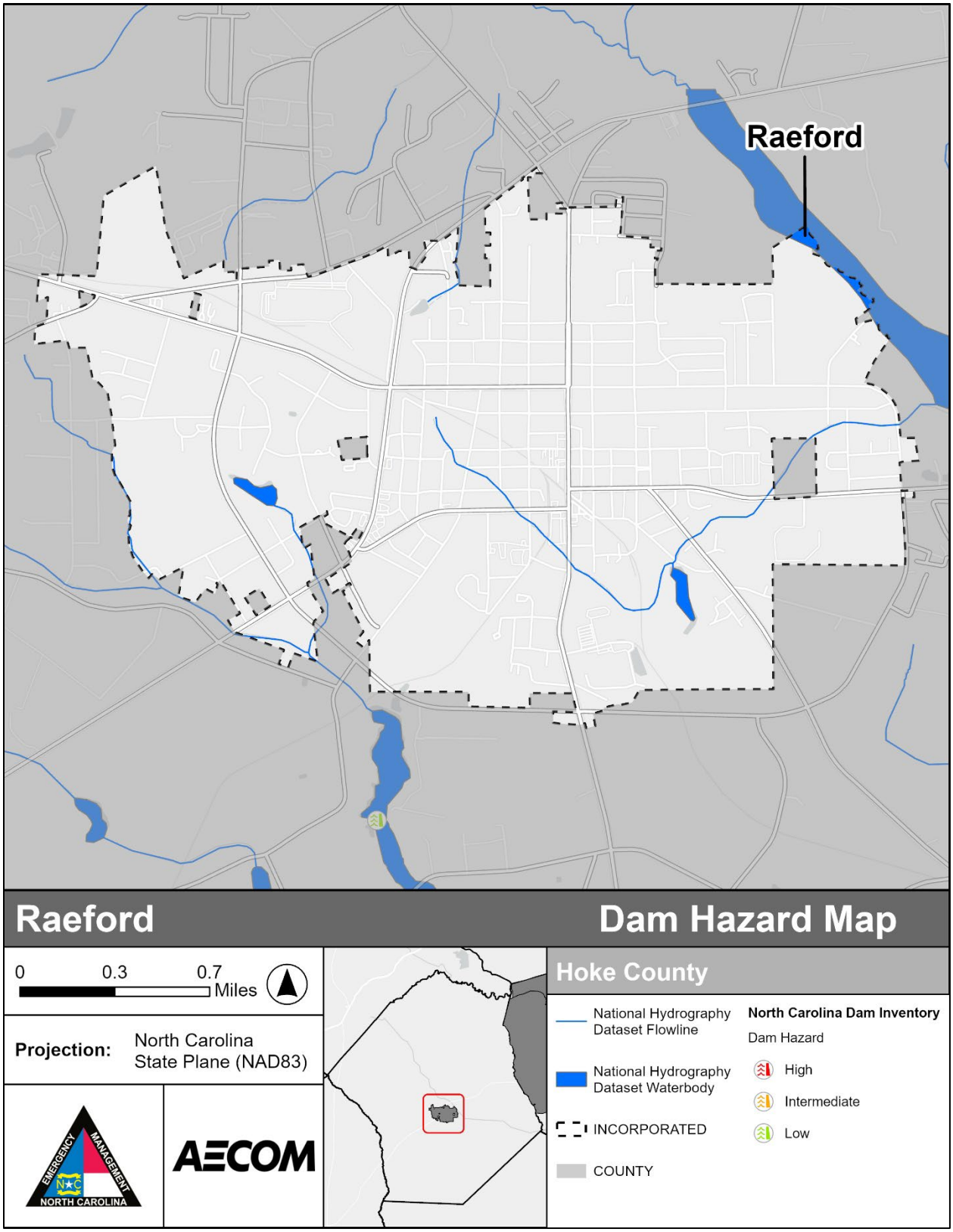


Figure 5-15: City of Raeford Dam Hazard Map

The National Levee Database (NLD), developed by the U.S. Army Corps of Engineers (USACE), contains inspection and evaluation information for the National Flood Insurance Program (NFIP) levee system. The NLD is a dynamic database that is continually adding levee data from federal agencies, states, and tribes. Currently, there are no levees located in Cumberland and Hoke Counties that are included in the USACE's NLD.

5.2.3. Extent

Two factors influence the potential severity of 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 the table above. It is important to note that these classifications are not based on the adequacy or structural integrity of existing dam structures. There have been ten reported dam failures in the Cumberland Hoke Region (Table 5-9). Dams in the planning area are reported in Table 5-8. A mitigation strategy for dam identification and mapping will be considered in future mitigation actions for the Region.

Table 5-8: Dams in the Cumberland-Hoke Planning Area[7]

State Dam ID	National Inventory of Dams (NID) ID	Name	County	Purpose	Hazard	Condition	Status	Last Inspection	New Inspection
CUMBE-081	NC02155	Pritchard Dam	Cumberland	Recreation	High	Fair	Jurisdictional	1/5/2023	1/5/2025
CUMBE-082	NC02156	Civitan Lake Dam	Cumberland	Recreation	High	Fair	Jurisdictional	12/23/2024	12/23/2026
CUMBE-085	NC02159	Moose Lodge Dam	Cumberland	Recreation	High	Not Rated	Exempt-approved breach	2/15/2022	2/15/2027
CUMBE-086	NC02160	Mt. Vernon Estates Dam	Cumberland	Recreation	High	Not Rated	Jurisdictional	9/30/2024	9/30/2026
CUMBE-087	NC02161	Charles Smith Dam	Cumberland	Recreation	High	Fair	Jurisdictional	1/30/2025	1/30/2027
CUMBE-088	NC04797	Devonwood Lower Dam	Cumberland	Recreation	High	Fair	Jurisdictional	2/11/2025	2/11/2027
CUMBE-090	NC04969	Monticello Pond Dam	Cumberland	Recreation	High	Not Rated	Exempt-approved breach	12/23/2024	12/23/2026
CUMBE-093	NC05024	Youngs Lake Dam	Cumberland	Recreation	High	--	Exempt-dod	2/5/1997	1/2/1998
CUMBE-101	NC05725	Chesapeake Dam	Cumberland	Recreation	High	Not Rated	Exempt-approved breach	4/7/2021	4/7/2026
CUMBE-108	NC05990	Strickland Bridge Dam	Cumberland	Fish and Wildlife Pond, Recreation	High	Poor	Jurisdictional	8/14/2025	2/14/2027
CUMBE-112	NC06087	Mildred White Crystal Lake Dam	Cumberland	Other	High	Fair	Jurisdictional	12/12/2024	12/12/2026
CUMBE-113	NC06126	Gables Drive Dam	Cumberland	Recreation	High	Not Rated	Jurisdictional	6/19/2024	6/19/2026
CUMBE-115	NC06143	Autry Pond Dam	Cumberland	Irrigation, Recreation	High	Fair	Jurisdictional	3/5/2025	3/5/2027
CUMBE-124	NC06954	Britt Lake Dam	Cumberland	Other	High	--	Pending	--	--
CUMBE-007	NC01229	Clark Pond Dam	Cumberland	Recreation	High	Fair	Jurisdictional	12/12/2024	12/12/2026
CUMBE-009	NC00025	Kiest Lake Dam	Cumberland	Recreation	High	--	Exempt-dod	--	--

[7] Smith, J. A. (2025). *North Carolina Dam Inventory* [Shapefile]. North Carolina Department of Environmental Quality Online GIS. https://data-ncdenr.opendata.arcgis.com/datasets/ncdenr::north-carolina-dam-inventory/about

State Dam ID	National Inventory of Dams (NID) ID	Name	County	Purpose	Hazard	Condition	Status	Last Inspection	New Inspection
CUMBE-012	NC00028	Lake Rim Dam	Cumberland	Other, Recreation	High	Fair	Jurisdictional	11/20/2024	11/20/2026
CUMBE-015	NC00031	McFayden Lake Dam	Cumberland	Recreation	High	Fair	Exempt-dod	9/28/2018	1/28/2019
CUMBE-016	NC00032	Hutaff Lake Dam	Cumberland	Recreation	High	--	Exempt-dod	3/5/2009	3/5/2014
CUMBE-020	NC00036	Gates Four Dam	Cumberland	Recreation	High	Fair	Jurisdictional	6/24/2024	6/24/2026
CUMBE-021	NC06618	The Lakes Dam	Cumberland	Other	High	Fair	Jurisdictional	7/30/2025	7/30/2027
CUMBE-022	NC04760	Murray Hill Lake Dam	Cumberland	Recreation	High	Not Rated	Exempt-approved breach	5/5/2021	5/5/2026
CUMBE-024	NC02136	Tallywood Dam	Cumberland	Recreation	High	Fair	Jurisdictional	3/26/2025	3/26/2027
CUMBE-025	NC02137	Loch Lomond Dam	Cumberland	Recreation	High	Not Rated	Jurisdictional	5/26/2022	5/26/2027
CUMBE-029	NC01121	Hope Mills Dam #1	Cumberland	Recreation	High	Fair	Jurisdictional	2/19/2025	2/19/2027
CUMBE-030	NC01122	Lake Charles Dam	Cumberland	Water Supply, Tailings	High	Poor	Exempt-approved breach	1/5/2023	1/5/2028
CUMBE-038	NC01130	Glenville Lake Dam	Cumberland	Water Supply	High	Fair	Jurisdictional	5/31/2024	5/31/2026
CUMBE-039	NC01131	Kornbow Lake Dam	Cumberland	Water Supply	High	Fair	Jurisdictional	5/31/2024	5/31/2026
CUMBE-040	NC01132	Mintz Lake Dam	Cumberland	Water Supply	High	Fair	Jurisdictional	5/31/2024	5/31/2026
CUMBE-041	NC01133	Forrest Lake Dam	Cumberland	Recreation	High	Fair	Jurisdictional	3/24/2025	3/24/2027
CUMBE-042	NC01134	Wallace Lake Dam	Cumberland	Recreation	High	Not Rated	Exempt-approved breach	12/8/2022	12/8/2027
CUMBE-043	NC01135	Cumberland Lake Dam	Cumberland	Recreation	High	Not Rated	Exempt-approved breach	8/21/2025	8/21/2030
CUMBE-051	NC01143	Beaver Creek Dam	Cumberland	Recreation	High	Fair	Jurisdictional	1/30/2025	1/30/2027
CUMBE-052	NC01144	Arran Lakes Dam	Cumberland	Recreation	High	Not Rated	Exempt-approved breach	12/7/2022	12/7/2027
CUMBE-053	NC01145	Rhodes Pond Dam	Cumberland	Recreation	High	Fair	Jurisdictional	2/11/2025	2/11/2027
CUMBE-054	NC01146	Bonnie Doone Lake Dam	Cumberland	Water Supply	High	Fair	Jurisdictional	5/31/2024	5/31/2026
CUMBE-059	NC01152	Rose Lake Dam	Cumberland	Recreation	High	Not Rated	Exempt-approved breach	3/7/2023	3/7/2028

State Dam ID	National Inventory of Dams (NID) ID	Name	County	Purpose	Hazard	Condition	Status	Last Inspection	New Inspection
CUMBE-061	NC01154	College Lake Dam	Cumberland	Recreation	High	Fair	Jurisdictional	6/19/2024	6/19/2026
CUMBE-062	NC01169	Lewis Lake Dam	Cumberland	Recreation	High	Fair	Jurisdictional	12/4/2024	12/4/2026
CUMBE-063	NC01202	Upchurch Lake Dam	Cumberland	Hydroelectric, Recreation	High	Not Rated	Exempt-ferc	1/27/2017	1/27/2018
CUMBE-066	NC02140	Edens Lake Dam	Cumberland	Recreation	High	Fair	Jurisdictional	1/30/2025	1/30/2027
CUMBE-067	NC02141	Aaran Lakes West Dam	Cumberland	Recreation	High	Fair	Jurisdictional	6/19/2024	6/19/2026
CUMBE-070	NC02144	Point East Dam	Cumberland	Recreation	High	Not Rated	Exempt-approved breach	9/30/2024	9/30/2026
CUMBE-073	NC02147	Harris Dam	Cumberland	Recreation	High	Fair	Jurisdictional	3/26/2025	3/26/2027
CUMBE-074	NC02148	Summertime Dam	Cumberland	Recreation	High	Fair	Jurisdictional	4/28/2025	4/28/2027
CUMBE-075	NC02149	Evans Lake Dam	Cumberland	Recreation	High	Fair	Jurisdictional	4/28/2025	4/28/2027
CUMBE-076	NC02150	North Lake Dam	Cumberland	Recreation	High	Fair	Jurisdictional	12/12/2024	12/12/2026
CUMBE-077	NC02151	Mirror Lake Dam	Cumberland	Recreation	High	Fair	Jurisdictional	10/21/2025	10/21/2027
CUMBE-078	NC02152	Lockwood Dam	Cumberland	Recreation	High	Not Rated	Exempt-approved breach	5/5/2021	5/5/2026
CUMBE-079	NC02153	Bailey Lake Dam	Cumberland	Recreation	High	Not Rated	Exempt-approved breach	3/17/2021	3/17/2026
CUMBE-080	NC02154	Lake Clair Dam	Cumberland	Recreation	High	Fair	Jurisdictional	5/15/2024	5/15/2026
HOKE-004	NC00039	Mott Lake Dam	Hoke	Recreation	High	--	Exempt-dod	--	--
HOKE-008	NC00044	Lake Mcarthur Dam	Hoke	Recreation	High	--	Exempt-dod	--	--
HOKE-016	NC03090	Wood Lake Dam	Hoke	Recreation	High	Fair	Jurisdictional	4/30/2024	4/2/2026
HOKE-024	NC05151	Lupo Lake Dam	Hoke	Recreation	High	Poor	Jurisdictional	9/17/2025	9/17/2027
HOKE-025	NC05199	Scull Lake Dam	Hoke	Recreation	High	Poor	Jurisdictional	9/17/2025	9/17/2027
HOKE-027	NC05213	Thomas Lake Dam #2	Hoke	Recreation	High	Fair	Jurisdictional	4/30/2024	4/30/2026
HOKE-030	NC05670	Price Pond Dam	Hoke	Recreation	High	Poor	Jurisdictional	3/22/2024	3/22/2025
HOKE-033	NC07695	Emma Cash Dam	Hoke	Other	High	--	Pending	--	--
CUMBE-004	NC00037	Barbour Pond Dam	Cumberland	Recreation	Intermediate	Poor	Exempt-hb_size	1/5/2023	1/5/2024

State Dam ID	National Inventory of Dams (NID) ID	Name	County	Purpose	Hazard	Condition	Status	Last Inspection	New Inspection
CUMBE-097	NC05582	Multipurpose Trail Dam	Cumberland	Recreation	Intermediate	--	Exempt	3/6/2008	3/6/2011
CUMBE-114	NC06141	Wooded Lake Dam	Cumberland	Irrigation, Recreation	Intermediate	Poor	Exempt-hb_size	2/17/2021	2/17/2022
CUMBE-034	NC01126	Long Valley Farm Lake Dam	Cumberland	Irrigation, Recreation	Intermediate	Not Rated	Exempt-hb_size	4/10/2019	4/10/2020
CUMBE-083	NC02157	Raynor Pond Dam	Cumberland	Recreation	Low	Not Rated	Exempt-hb_size	4/30/2012	1/1/2099
CUMBE-084	NC02158	Upper Clark Pond Dam	Cumberland	Recreation	Low	--	Exempt-approved breach	9/23/2008	2/4/2013
CUMBE-089	NC04916	Gainey Millpond Dam	Cumberland	Recreation	Low	Not Rated	Exempt-approved breach	1/22/2021	1/22/2026
CUMBE-091	NC04944	Jaycees Pond Dam	Cumberland	Recreation	Low	Fair	Exempt-approved breach	7/29/2013	2/17/2099
CUMBE-092	NC04911	Devenwood Upper Dam	Cumberland	Recreation	Low	Fair	Exempt-hb_size	5/21/2012	1/1/2099
CUMBE-094	NC05097	Gallberry Farm Pond	Cumberland	Recreation	Low	--	Exempt	5/6/2008	5/6/2013
CUMBE-001	NC02127	Lake Falcon Dam	Cumberland	Recreation	Low	--	Exempt	1/2/2008	1/2/2013
CUMBE-002	NC02128	Davis Pond Dam	Cumberland	Recreation	Low	--	Exempt	2/25/2008	2/25/2013
CUMBE-003	NC02129	Heron Lake Dam	Cumberland	Recreation	Low	Fair	Jurisdictional	11/30/2021	11/30/2026
CUMBE-095	NC05156	Maxwell Mill Pond Dam	Cumberland	Irrigation	Low	--	Exempt-approved breach	3/8/2008	3/8/2013
CUMBE-005	NC02131	Smith Pond Dam	Cumberland	Recreation	Low	--	Exempt-approved breach	4/28/2004	4/28/2009
CUMBE-096	NC05581	Dupont Lower Dam	Cumberland	Recreation	Low	Satisfactory	Exempt-hb_size	12/4/2012	12/4/2022
CUMBE-098	NC05604	Saddleridge Dam	Cumberland	Irrigation	Low	Fair	Exempt-approved breach	7/29/2013	1/2/2099
CUMBE-099	NC05621	Rayconda Upper Dam	Cumberland	Fire Protection / Stock Pond / Small Farm	Low	Not Rated	Exempt	2/2/2022	2/2/2027

State Dam ID	National Inventory of Dams (NID) ID	Name	County	Purpose	Hazard	Condition	Status	Last Inspection	New Inspection
				Pond, Recreation					
CUMBE-100	NC05676	DuPont DERC Pond #3 Dam	Cumberland	Fish and Wildlife Pond, Recreation	Low	--	Exempt-hb_size	2/27/2009	11/21/2014
CUMBE-102	NC05869	Upper Raynor Pond Dam	Cumberland	Recreation	Low	--	Exempt	--	--
CUMBE-103	NC05889	Cape Fear Botanical Gardens Dam	Cumberland	Recreation	Low	--	Exempt	3/12/2009	3/12/2014
CUMBE-104	NC05918	Hall Pond Upper Dam	Cumberland	Recreation	Low	--	Exempt	--	--
CUMBE-105	NC05928	Ryder Golf Course Dam	Cumberland	Recreation	Low	--	Exempt-dod	--	--
CUMBE-106	NC05932	Pond Site Zero Dam	Cumberland	Recreation	Low	--	Exempt-approved breach	--	--
CUMBE-107	NC05989	Ivey Dam	Cumberland	Fish and Wildlife Pond, Recreation	Low	Poor	Jurisdictional	12/17/2021	12/17/2026
CUMBE-109	NC06026	Tyner Dam	Cumberland	Recreation	Low	Fair	Exempt	8/23/2010	8/23/2015
CUMBE-110	NC06061	House Street Dam	Cumberland	Recreation	Low	Fair	Exempt	2/14/2019	2/14/2020
CUMBE-111	NC06079	Bullard Road Dam	Cumberland	Recreation	Low	Poor	Exempt	11/8/2011	1/1/9999
CUMBE-006	NC02132	Cottonade Dam	Cumberland	Recreation	Low	Fair	Exempt-hb_size	7/29/2013	2/19/2099
CUMBE-116	NC06382	K Farm Dam	Cumberland	Other	Low	--	Exempt	--	--
CUMBE-117	NC06550	Boundary Line Lake Dam	Cumberland	Recreation	Low	--	Exempt-dod	--	--
CUMBE-118	NC06551	Andrews Church Lake	Cumberland	Recreation	Low	--	Exempt-dod	--	--
CUMBE-119	NC06552	Upstream-Water Treatment Plant Dam	Cumberland	Water Supply	Low	--	Exempt-dod	--	--

State Dam ID	National Inventory of Dams (NID) ID	Name	County	Purpose	Hazard	Condition	Status	Last Inspection	New Inspection
CUMBE-120	NC06553	Water Treatment Plant Dam	Cumberland	Water Supply	Low	--	Exempt-dod	--	--
CUMBE-121	NC06611	Gillespie Farm Dam	Cumberland	Irrigation	Low	--	Exempt-hb_size	--	--
CUMBE-122	NC06615	Gillespie Farm Dam #2	Cumberland	Water Supply	Low	--	Exempt-hb_size	--	--
CUMBE-123	NC06885	Edwards Dam	Cumberland	Other	Low	--	Pending	--	--
CUMBE-125	NC06980	Croegaert Dam	Cumberland	Other	Low	--	Pending	--	--
CUMBE-126	NC07168	Davis Pond Dam #2	Cumberland	Other	Low	--	Pending	--	--
CUMBE-127	NC07169	Davis Pond Dam #3	Cumberland	Other	Low	--	Pending	--	--
CUMBE-128	NC07222	Jones Pond Dam	Cumberland	Other	Low	--	Pending	--	--
CUMBE-129	NC07223	Cain Pond Dam	Cumberland	Other	Low	--	Pending	--	--
CUMBE-130	NC07224	Faykus Pond Dam	Cumberland	Other	Low	--	Pending	--	--
CUMBE-131	NC07225	Faykus Pond Dam #2	Cumberland	Other	Low	--	Pending	--	--
CUMBE-132	NC07226	Bland Pond Dam	Cumberland	Other	Low	--	Pending	--	--
CUMBE-133	NC07398	Wyatt Lake Dam	Cumberland	Recreation	Low	--	Exempt-dod	--	--
CUMBE-134	NC07474	Birchwood Farm Dam #1	Cumberland	Other	Low	--	Pending	--	--
CUMBE-135	NC07475	Birchwood Farm Dam #2	Cumberland	Other	Low	--	Pending	--	--
CUMBE-136	NC07830	Streit-Glindeman Dam	Cumberland	Other	Low	--	Pending	--	--
CUMBE-008	NC02134	Hall Pond Dam	Cumberland	Recreation	Low	Not Rated	Exempt-hb_size	4/24/2012	1/1/2099
CUMBE-010	NC00026	King Lake Dam	Cumberland	Irrigation, Recreation, Water Supply	Low	--	Exempt	2/15/1990	2/15/1995
CUMBE-011	NC00027	Lake Williams Dam	Cumberland	Recreation	Low	Satisfactory	Exempt-approved breach	11/18/2013	11/17/2018
CUMBE-013	NC00029	Mckellar Lake Dam Lower	Cumberland	Recreation	Low	--	Exempt-dod	3/13/2001	3/13/2006

State Dam ID	National Inventory of Dams (NID) ID	Name	County	Purpose	Hazard	Condition	Status	Last Inspection	New Inspection
CUMBE-014	NC00030	Mckellar Lake Dam Upper	Cumberland	Recreation	Low	--	Exempt-dod	3/13/2001	3/13/2006
CUMBE-017	NC00033	Loraine Lake Dam	Cumberland	Recreation	Low	--	Exempt	2/19/2008	2/19/2013
CUMBE-018	NC00034	Sanders Lake Dam	Cumberland	Recreation	Low	Fair	Jurisdictional	11/30/2021	11/30/2026
CUMBE-019	NC00035	Rayconda Lake Lower Dam	Cumberland	Recreation	Low	Fair	Exempt	2/15/2012	11/17/2017
CUMBE-023	NC02135	Maxwell Dam	Cumberland	Recreation	Low	Fair	Jurisdictional	2/29/2024	2/28/2029
CUMBE-026	NC01093	Lake Walter Dam	Cumberland	Recreation	Low	--	Exempt	2/15/1990	2/15/1995
CUMBE-027	NC01119	Cypress Lake Dam	Cumberland	Recreation	Low	--	Exempt	2/12/2008	2/12/2013
CUMBE-028	NC01120	Permastone Lake Dam	Cumberland	Recreation	Low	--	Exempt	2/15/1990	2/15/1995
CUMBE-031	NC01123	Warren Lake Dam	Cumberland	Recreation	Low	--	Exempt	3/5/2008	3/5/2014
CUMBE-032	NC01124	Watson Lake Dam	Cumberland	Recreation	Low	--	Exempt	3/5/2008	3/5/2013
CUMBE-033	NC01125	Wilson Lake Dam	Cumberland	Recreation	Low	--	Exempt-approved breach	2/17/2009	2/17/2014
CUMBE-035	NC01127	Simmons Lake Dam	Cumberland	Recreation	Low	--	Exempt-dod	--	--
CUMBE-036	NC01128	Texas Lake Dam	Cumberland	Recreation	Low	--	Exempt-dod	--	--
CUMBE-037	NC01129	Smith Lake Dam	Cumberland	Recreation	Low	--	Exempt-dod	3/13/2001	3/13/2006
CUMBE-044	NC01136	Fann Lake Dam	Cumberland	Recreation	Low	Not Rated	Exempt-hb_size	7/1/2010	12/3/2015
CUMBE-045	NC01137	Lake Lynn Dam	Cumberland	Recreation	Low	--	Exempt	5/1/2008	5/1/2013
CUMBE-046	NC01138	Marsh Wood Lake Dam	Cumberland	Recreation	Low	Fair	Jurisdictional	12/7/2021	12/7/2026
CUMBE-047	NC01139	Verdery Lake Dam	Cumberland	Recreation	Low	--	Exempt	2/12/2008	2/12/2013
CUMBE-048	NC01140	Rainbow Lake Dam	Cumberland	Recreation	Low	--	Exempt-approved breach	2/12/2008	2/12/2013
CUMBE-049	NC01141	Dudley Lake Dam	Cumberland	Recreation	Low	Fair	Exempt-approved breach	7/13/2011	8/16/2011
CUMBE-050	NC01142	Smith Lake Dam	Cumberland	Recreation	Low	Satisfactory	Exempt	11/16/2017	11/16/2018
CUMBE-055	NC01148	Smith Lake Dam	Cumberland	Other	Low	--	Exempt	2/25/2008	2/25/2013
CUMBE-056	NC01149	Clark Lake Dam	Cumberland	Recreation	Low	--	Exempt	4/9/2008	4/9/2013

State Dam ID	National Inventory of Dams (NID) ID	Name	County	Purpose	Hazard	Condition	Status	Last Inspection	New Inspection
CUMBE-057	NC01150	Barnes Lake Dam	Cumberland	Recreation	Low	Satisfactory	Exempt-hb_size	4/19/2012	1/1/2999
CUMBE-058	NC01151	Currin Lake Dam	Cumberland	Recreation	Low	--	Exempt	2/25/2008	2/25/2013
CUMBE-060	NC01153	Country Club Lake Dam	Cumberland	Recreation	Low	Fair	Exempt-approved breach	7/29/2013	2/19/2099
CUMBE-064	NC02138	Heriot Wilkins Dam	Cumberland	Recreation	Low	Poor	Jurisdictional	3/18/2021	3/18/2022
CUMBE-065	NC02139	Hulon Lake Dam	Cumberland	Recreation	Low	Fair	Jurisdictional	2/26/2021	2/26/2026
CUMBE-068	NC02142	Holt Pond Dam	Cumberland	Recreation	Low	Satisfactory	Exempt-hb_size	11/28/2012	11/21/2022
CUMBE-069	NC02143	Pinewood Lakes Dam	Cumberland	Recreation	Low	Fair	Exempt-hb_size	7/29/2013	1/15/2099
CUMBE-071	NC02145	Purlator Products Dam	Cumberland	Recreation	Low	Fair	Jurisdictional	12/17/2021	12/17/2026
CUMBE-072	NC02146	Cindy St. Dam	Cumberland	Recreation	Low	--	Exempt	3/5/2008	3/5/2013
HOKE-001	NC03086	Crouch Pond Dam	Hoke	Recreation	Low	Satisfactory	Exempt-hb_size	11/29/2012	11/29/2022
HOKE-002	NC03087	Cameron Pond Dam	Hoke	Irrigation, Recreation	Low	Fair	Exempt-hb_size	2/6/2013	2/6/2023
HOKE-003	NC03088	Rorie Pond Dam	Hoke	Recreation	Low	Fair	Exempt-hb_size	2/6/2013	2/6/2023
HOKE-005	NC00040	Mcneil Lake Dam	Hoke	Other, Recreation	Low	--	Exempt	1/15/2008	1/2/2013
HOKE-006	NC00041	Hodgins Lake Dam	Hoke	Other, Recreation	Low	Poor	Exempt-approved breach	12/8/2010	12/8/2015
HOKE-007	NC00042	Williamson Lake Dam	Hoke	Irrigation, Recreation	Low	Fair	Exempt	12/8/2010	12/8/2015
HOKE-009	NC00045	Holland Lake Dam	Hoke	Recreation	Low	--	Exempt-dod	--	--
HOKE-010	NC00046	Mckiethan Lake Dam	Hoke	Recreation	Low	--	Exempt-dod	9/9/9999	9/9/9999
HOKE-011	NC00047	Wright Lake Dam	Hoke	Irrigation, Recreation	Low	Satisfactory	Exempt-hb_size	12/18/2012	12/18/2022
HOKE-012	NC00048	Hendrix Lake Dam	Hoke	Irrigation, Recreation	Low	Satisfactory	Exempt-hb_size	12/18/2012	12/18/2022
HOKE-013	NC00054	Mcgougan Lake Dam	Hoke	Irrigation, Recreation	Low	Not Rated	Exempt-hb_size	5/24/2013	5/24/2023

State Dam ID	National Inventory of Dams (NID) ID	Name	County	Purpose	Hazard	Condition	Status	Last Inspection	New Inspection
HOKE-014	NC00089	Mcneil Lake Dam	Hoke	Recreation	Low	Fair	Exempt	2/2/2011	2/2/2016
HOKE-015	NC03089	Twelve Oaks Pond Dam	Hoke	Recreation	Low	Fair	Exempt-hb_size	12/18/2012	12/18/2022
HOKE-017	NC03091	Wright Pond Dam	Hoke	Recreation	Low	Satisfactory	Exempt-hb_size	11/29/2012	11/29/2022
HOKE-018	NC03092	Chuchacz Pond Dam	Hoke	Recreation	Low	--	Exempt-hb_size	1/14/2008	1/14/2013
HOKE-019	NC03093	John King Dam	Hoke	Irrigation	Low	Fair	Exempt-hb_size	2/6/2013	2/6/2023
HOKE-020	NC03094	Upchurch Milling Co. Dam	Hoke	Recreation	Low	Fair	Exempt	7/15/2011	7/15/2016
HOKE-021	NC03095	Fred Booth Pond Dam	Hoke	Recreation	Low	Not Rated	Exempt-hb_size	5/24/2013	5/24/2023
HOKE-022	NC03096	C. Atkins Pond Dam	Hoke	Irrigation, Recreation	Low	Fair	Exempt-hb_size	2/6/2013	2/6/2023
HOKE-023	NC04812	Kaco-English Dam	Hoke	Recreation	Low	Not Rated	Exempt	9/19/2018	9/19/2018
HOKE-026	NC05212	Thomas Lake Dam #1	Hoke	Recreation	Low	Not Rated	Exempt-approved breach	2/9/2023	2/9/2028
HOKE-028	NC05301	Sunset Lake Dam	Hoke	Recreation	Low	Unsatisfactory	Exempt-approved breach	2/3/2023	2/3/2024
HOKE-029	NC05660	Lindsay Farms Pond Dam	Hoke	Flood Control or Stormwater Management, Recreation	Low	Satisfactory	Exempt-hb_size	12/5/2012	12/5/2022
HOKE-031	NC06189	McLauchlin Dam	Hoke	Recreation	Low	--	Exempt	--	--
HOKE-034	NC07840	Lake Bunce Dam	Hoke	Other	Low	--	Pending	--	--

**In the Dam Status (Current) field, Jurisdictional indicates that a dam meets the criteria set by the North Carolina Dam Safety Law of 1967 and subsequent amendments, which means the dam is subject to regulatory requirements. Exempt indicates that the dam does not fall under the state's Dam Safety Law requirements and therefore is not subject to the regulatory jurisdiction of the Dam Safety Program. Pending indicates a dam has not yet received a final jurisdictional determination by the North Carolina Dam Safety Program, typically due to ongoing review or incomplete information needed to classify it as jurisdictional or exempt.*

5.2.4. Past Occurrences

According to the Association of State Dam Safety Officials' Dam Incident Database, there have been 11 reported dam overtopping incidents in the planning region. An earthen section of the Rhodes Pond Dam overtopped on June 8th, 2013, due to remnants of Tropical Storm Andrea, causing little to no economic damage. The same Rhodes Pond Dam overtopped one week prior to Hurricane Matthew on September 25th, 2016, causing an estimated $5 - $10 million in economic damages, and during the subsequent hurricane, it breached in five places. The remaining nine dam incidents occurred during Hurricane Matthew on October 8th, 2016. Six of the dams were completely breached, while three were overtopped and partially breached, collectively causing an estimated $8.1 - $40.5 million in economic damage.

Table 5-9: Association of State Dam Safety Officials Dam Incidents in the Cumberland-Hoke Planning Area[8]

State Dam ID	NID ID	Incident Date	Dam Name	Dam Status*	Dam Hazard	Incident Type	Incident Cause	Incident Mechanism	Economic Damage
CUMBE-053	NC01145	2013-06-08	Rhodes Pond Dam	Jurisdictional	High	Non-Failure	Hydrologic / Flooding	Overtopping	None
			The earthen section of the dam overtopped, adjacent to the concrete spillway wall. Sandbags were installed to prevent overtopping.						
CUMBE-053	NC01145	2016-09-25	Rhodes Pond Dam	Jurisdictional	High	Failure	Hydrologic / Flooding	Overtopping	$5 million to $10 million
			The dam failed the week before Hurricane Matthew and was breached in 5 places during the hurricane.						
CUMBE-025	NC02137	2016-10-08	Loch Lomond Dam	Jurisdictional	High	Failure	Hydrologic / Flooding	Overtopping	$1 million to $5 million
			Breached completely, and the lake drained.						
CUMBE-034	NC01126	2016-10-08	Long Valley Farm Lake Dam	Exempt-hb_size	Intermediate	Failure	Hydrologic / Flooding	Overtopping	$1 million to $5 million
			Breached, deep scour holes on the crest, downstream slope, and toe of the dam near the principal spillway.						
CUMBE-050	NC01142	2016-10-08	Smith Lake Dam	Exempt	Low	Failure	Hydrologic / Flooding	Overtopping	$1 million to $5 million
			Breached with large scour holes on the downstream slope and the toe of the dam.						
CUMBE-052	NC01144	2016-10-08	Arran Lakes Dam	Exempt-approved breach	High	Failure	Hydrologic / Flooding	Overtopping	$1 million to $5 million

[8] Ogden, M. (2025). *Dam Incident Database* [Tabular]. Association of State Dam Safety Officials. https://damsafety.org/incidents

State Dam ID	NID ID	Incident Date	Dam Name	Dam Status*	Dam Hazard	Incident Type	Incident Cause	Incident Mechanism	Economic Damage
				Breached; the roadway collapsed.					
CUMBE-050	NC01148	2016-10-08	Smith Lake Dam	Exempt	Low	Failure	Hydrologic / Flooding	Overtopping	$1 million to $5 million
			Breached						
CUMBE-077	NC02151	2016-10-08	Mirror Lake Dam	Jurisdictional	High	Failure	Hydrologic / Flooding	Overtopping	$1 million to $5 million
				Dam overtopped and partially breached. Mirror Lake Drive was severely damaged, and the downstream face of the dam was destroyed.					
CUMBE-086	NC02160	2016-10-08	Mt. Vernon Estates	Jurisdictional	High	Failure	Hydrologic / Flooding	Overtopping	$1 million to $5 million
			Dam overtopped and partially breached, head cut scarp.						
CUMBE-088	NC04797	2016-10-08	Devonwood Lower Dam	Jurisdictional	High	Failure	Hydrologic / Flooding	Overtopping	$100,000 to $500,000
			The dam overtopped and partially breached, with the roadway down to one lane.						
CUMBE-099	NC05621	2016-10-08	Rayconda Upper Dam	Exempt	Low	Failure	Hydrologic / Flooding	Overtopping	$1 million to $5 million
			Breached						

**In the Dam Status (Current) field, Jurisdictional indicates that a dam meets the criteria set by the North Carolina Dam Safety Law of 1967 and subsequent amendments, which means the dam is subject to regulatory requirements. Exempt indicates the dam does not fall under the state's Dam Safety Law requirements and therefore is not subject to the regulatory jurisdiction of the Dam Safety Program.*

5.2.5. 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%). However, as has been demonstrated in the past, regular monitoring is necessary to prevent these events.

5.2.6. Consequence and Impact Analysis

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 people 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.

A large population is vulnerable to the loss of lake use upstream of the dam following failure. Several uses are minor, such as aesthetics or recreational use. However, some lakes serve as drinking water supplies, and the loss of the lake could create a public health crisis if the drinking water supply is disrupted. Cumberland County and the City of Fayetteville are most vulnerable to dam breaches, given past incidents, and the fact that these jurisdictions contain the largest number of high-hazard dams in the planning area.

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, floating structures, or water intake structures, may be damaged by the rapid reduction in water level during the failure.

Economy

The economic impact of small dams is generally small and is often limited to the dam owner and the cost of first-responder activities. Significant 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.

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's sediment layers.

First Responders

For dams that fail slowly, first responders will be impacted similarly to other events with advance warning. For dams that fail without warning, the impact is rapid and severe, requiring a rapid response. Although the response is generally restricted to the stream below the dam, the impact location moves rapidly downstream, requiring multiple response locations.

Future Conditions

Changes in the climate are expected to increase the frequency of severe precipitation events, thereby increasing the future risk of dam overtopping, damage, failures, or breaches.

5.3. Drought

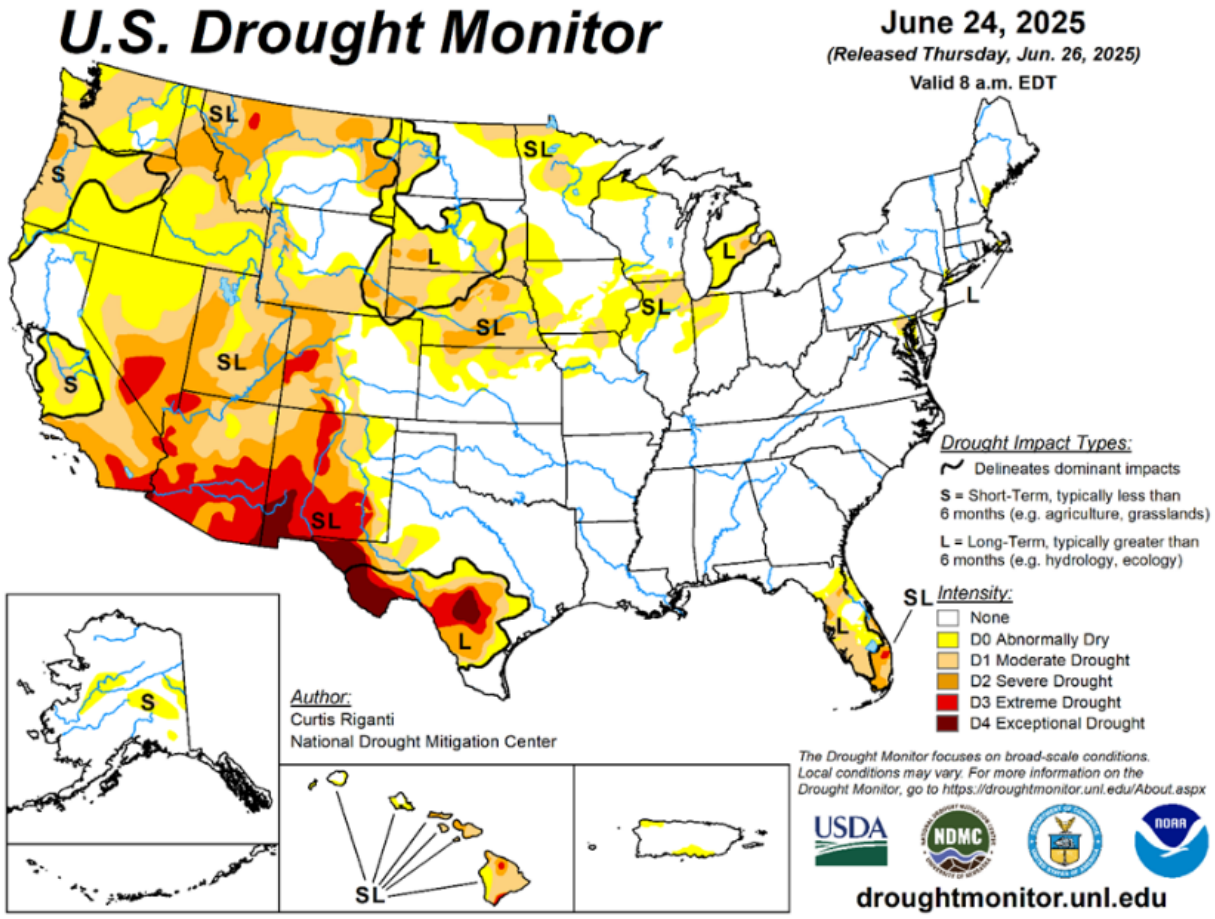
5.3.1. Hazard Description

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

Table 5-10: Drought Classification Definitions

Meteorological Drought	The degree of dryness or departure of actual precipitation from an expected average/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 water demand exceeding the supply is due to a weather-related supply shortfall.

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 5-16, the PDSI Summary Map for the United States shows that drought affects most areas but is less severe in the Eastern United States.



Source: National Drought Mitigation Center

Figure 5-16: Palmer Drought Severity Index Summary Map for the United States[9]

The wide variety of disciplines affected by drought, its diverse geographical and temporal distribution, and the many scales on which it operates make it challenging to develop both a definition of drought and an index to measure it. Many quantitative measures of drought have been developed in the United States, depending on the discipline, the region, and the application. Several indices developed by Wayne Palmer, along with the Standardized Precipitation Index, help describe drought at multiple scales.

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

The Standardized Precipitation Index (SPI) is a drought index that differs from the Palmer Drought Index (PDI). Like the PDI, this index is negative for drought, and positive for wet

[9] Brian, F. (2025). *U.S. Drought Monitor Intensity and Impacts* [PDF]. U.S. Drought Monitor. https://droughtmonitor.unl.edu/CurrentMap.aspx

conditions. But the SPI is a probability index that considers only precipitation, whereas Palmer's indices are water-balance indices that account for water supply (precipitation), demand (evapotranspiration), and loss (runoff).

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

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, eastern North Carolina has a relatively low drought risk. 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 Region would be uniformly exposed to drought, potentially resulting in widespread spatial extent. It is also notable that drought conditions typically do not cause significant damage to the built environment. Data from the North Carolina Drought Management Advisory Council and the National Climatic Data Center (NCDC) were used to ascertain historical drought events in the Region. The North Carolina Drought Management Advisory Council reports drought data for North Carolina from 2000 to 2019 through the North Carolina Drought Monitor. It classifies drought conditions by county on a scale of D0 to D4 (which are depicted below):

Table 5-11: Drought Categories and Impact Description

Drought Category		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
		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, and 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 areas with sufficient water levels; mandatory restrictions become more severe, and fines are given to violators; stream levels are extremely low

Drought Category		Impact
D4	Exceptional Drought	Producers sell cattle; hay shortages and crop loss occur; farmers are stressed
		Daily life is affected for 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 reports drought occurrences weekly 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 and the NRI EAL total, by census tract, to represent the expected risk and losses associated with drought events.

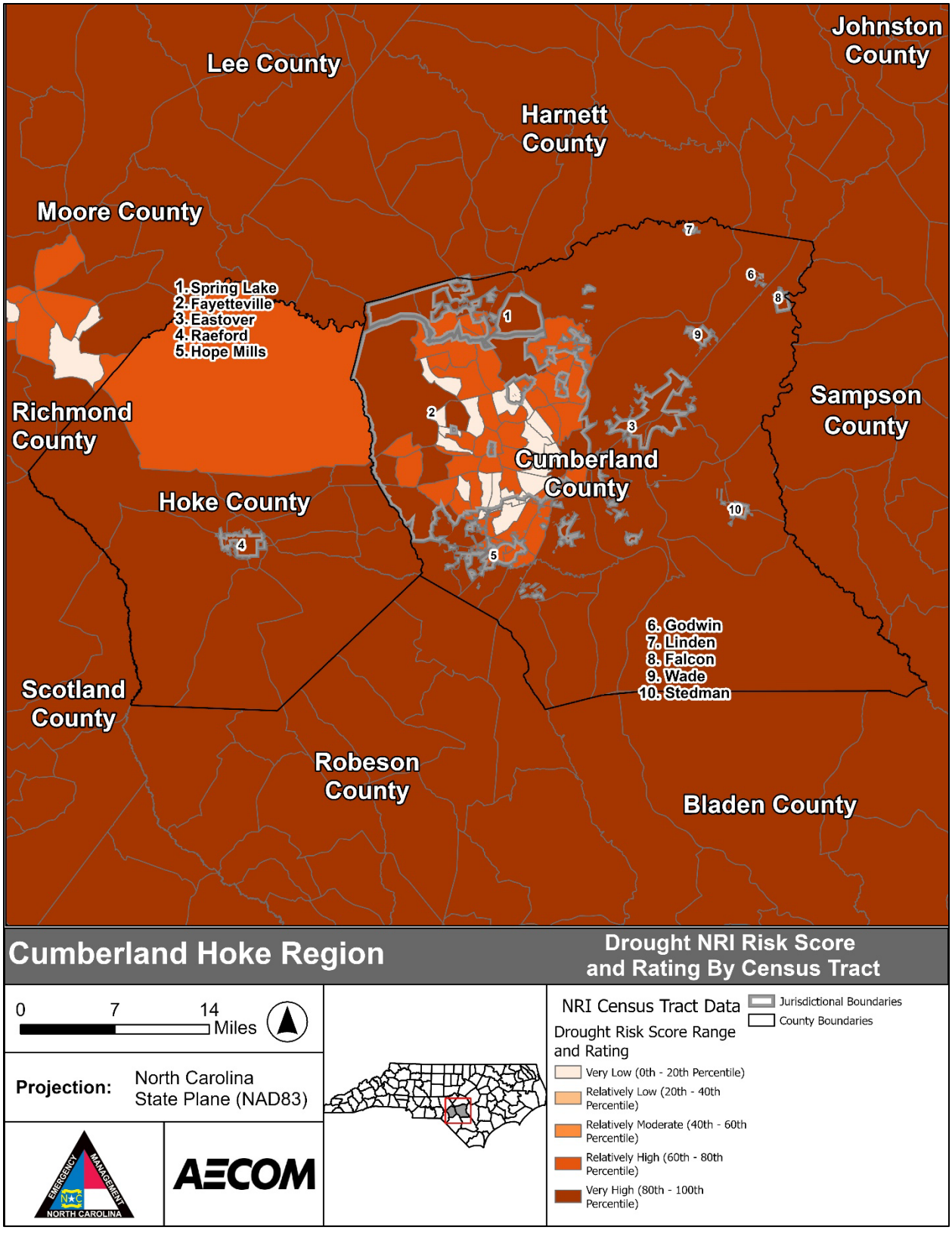


Figure 5-17: NRI Drought Risk Rating and EAL Total by Census Tract for the Cumberland-Hoke Region

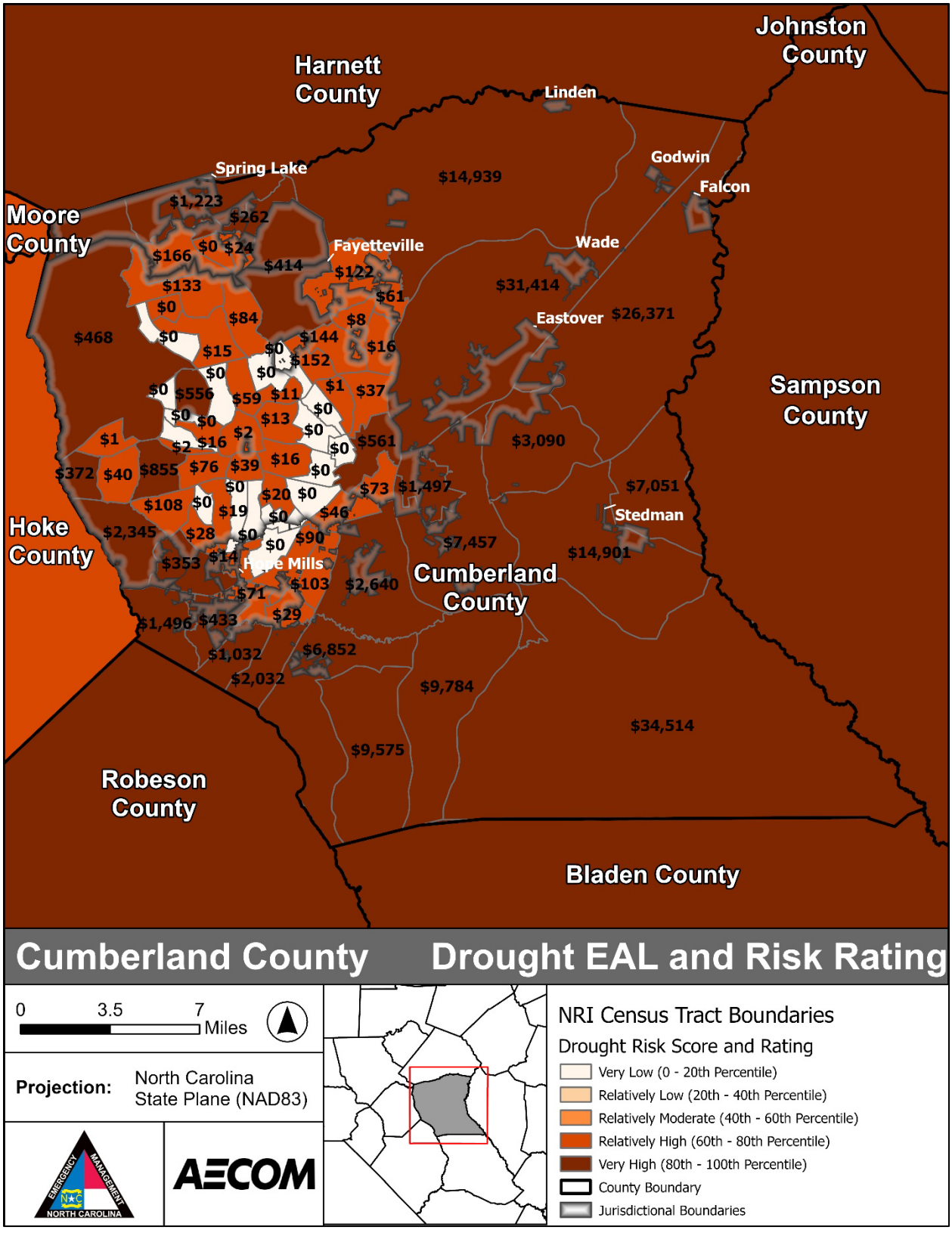


Figure 5-18: NRI Drought Risk Rating and EAL Total by Census Tract for Cumberland County

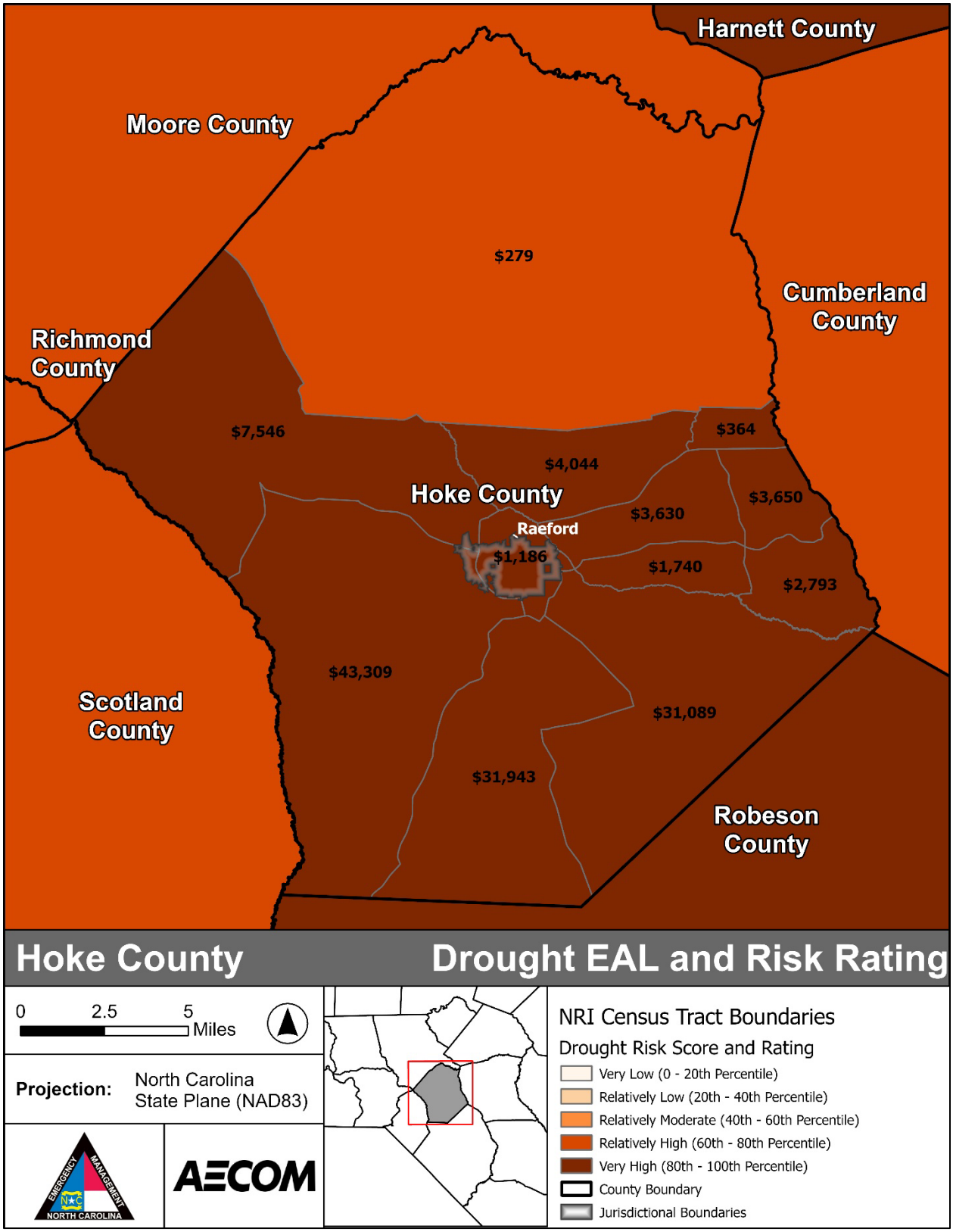


Figure 5-19: NRI Drought Risk Rating and EAL Total by Census Tract for Hoke County

5.3.3. Extent

According to the North Carolina Drought Monitor, both Cumberland and Hoke Counties experienced drought conditions (including abnormally dry) over the last 20 years (2005-2025) (Figure 5-20 and Figure 5-21). 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 most of the county may be in a less severe condition.

Table 5-12: Percentage of Days in Drought in North Carolina Where the Majority Percent Land Area was in the Highest Level of Reported Drought Category from 1/1/2015 to 12/31/2025[10]

Highest Level of Drought	Total Days of Days
D0	2028
D1	984
D2	204
D3	3684
D4	0
None	0
Grand Total	**6900**

Table 5-13: Percentage of Days Where the Drought Classification Was at or Above the Drought Class in the Cumberland-Hoke Region from 1/1/2015 to 12/31/2025[10]

County	D0	D1	D2	D3	D4	None
Cumberland County	27.65%	14.78%	4.17%	0.00%	0.00%	53.39%
Hoke County	31.13%	13.74%	1.74%	0.00%	0.00%	53.39%

5.3.4. Past Occurrences

According to the North Carolina Drought Monitor, Cumberland and Hoke Counties have experienced drought conditions every year since 2000, except 2020. Figure 5-20 and Figure 5-21 show the most severe classification for each year and County.

[10] Fuchs, B. (2025). *Comprehensive Statistics* [Tabular]. U.S. Drought Monitor. https://droughtmonitor.unl.edu/DmData/DataDownload/ComprehensiveStatistics.aspx

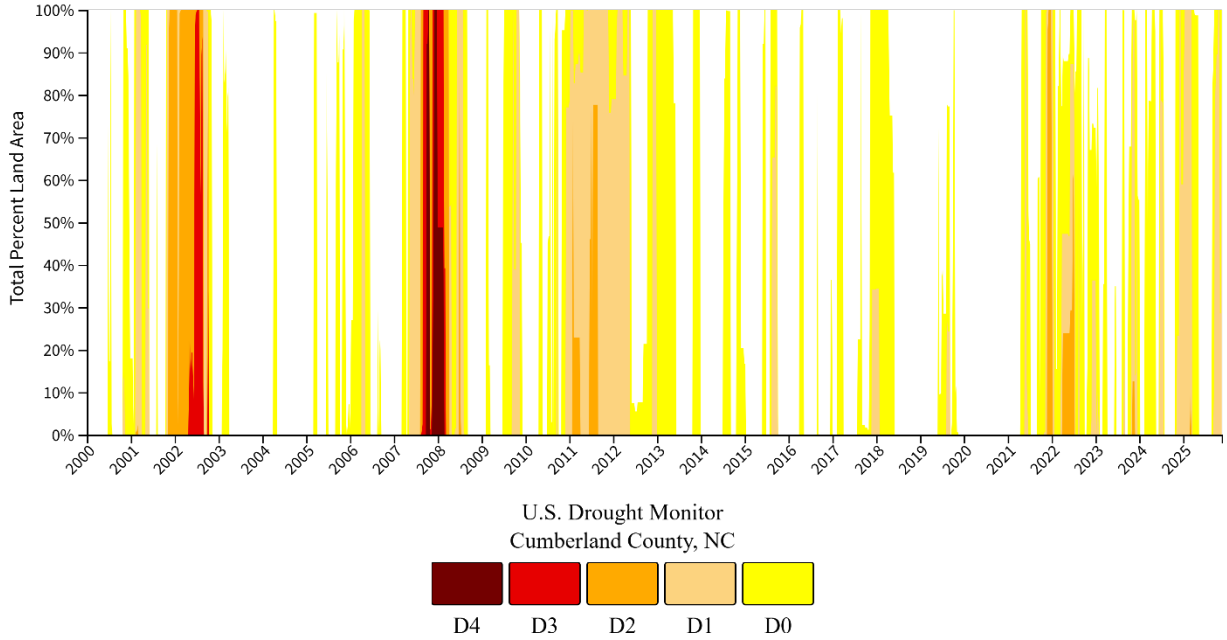


Figure 5-20: Historical Drought Occurrences in Cumberland County[11]

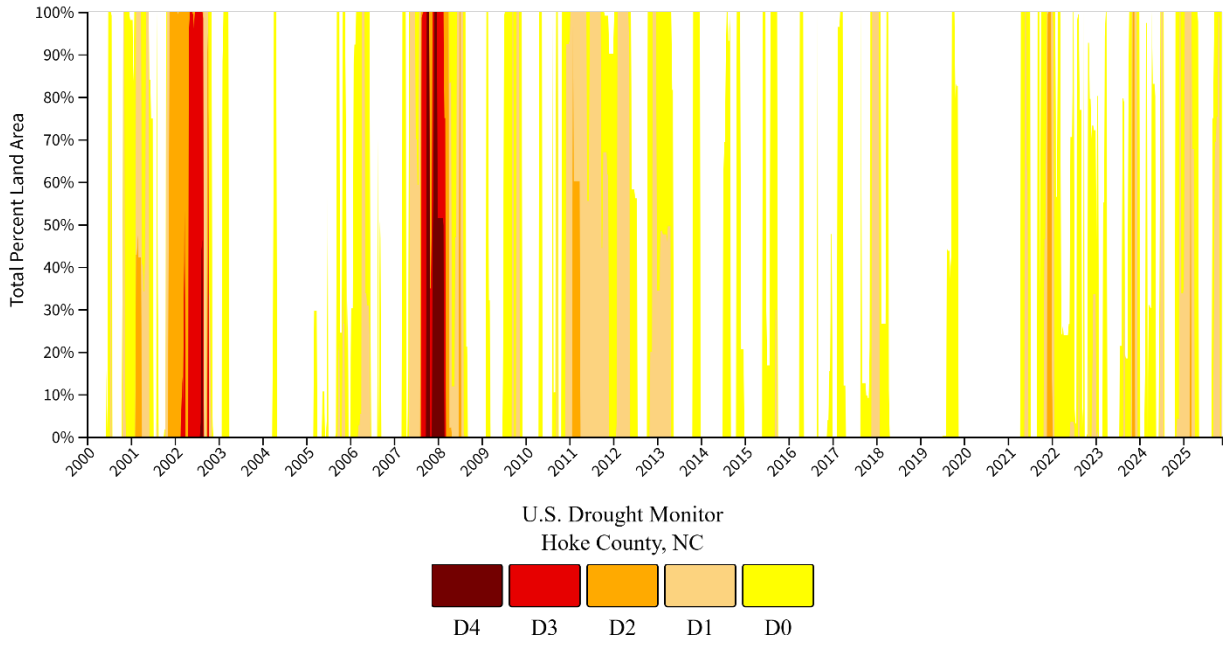


Figure 5-21: Historical Drought Occurrences in Hoke County[11]

[11] *Time Series*. (2025). [Chart]. U.S. Drought Monitor. https://droughtmonitor.unl.edu/DmData/TimeSeries.aspx

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.

Cumberland County has a total drought EAL of $184,324.18, 665.13 Mi^2 of impacted area, an annualized frequency of 11.3 events, and EAL and Hazard Risk Index Scores considered Relatively High. Cumberland County has an EAL rating of 76.52 and a Hazard Risk Index Score of 77.51. Census tracts that overlap Fayetteville, Falcon, and Eastover have the highest total EAL of $92,168, $75,457, and $68,332, respectively. Fayetteville has a 59.44 EAL Score and 59.7 Hazard Risk Index Score, considered Relatively Moderate. The unincorporated census tracts of Cumberland County have an EAL of $19,358, an impacted area of 41.35 Mi^2, and a Very High average EAL score and Risk Index Rating.

Hoke County has a total drought EAL of $131,571.49, an impacted area of 395.63 Mi^2, an annualized frequency of 15.85, and a Relatively High EAL Score and Risk Index Score. Raeford has 176.14 Mi^2 of impacted area, with a similar annualized frequency of 15.85 in Hoke County. The unincorporated census tracts of Hoke County have average EAL scores of 90.4 and Hazard Risk Index Scores of 91.18.

Table 5-14: NRI Drought Sum of Impacted Area, Annualized Frequency, EAL Total, EAL Rate, and Hazard Risk Rating

Jurisdiction	Sum of Impacted Area (Mi^2)	Drought Annualized Frequency	Drought EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Cumberland County (Unincorporated Area)	**41.35**	**10.02**	**$19,359**	**92.19**	**Very High**	**92.29**	**Very High**
Eastover	142.40	10.66	$68,332	92.58	Very High	93.01	Very High
Falcon	71.23	10.82	$75,457	95.90	Very High	96.18	Very High
Fayetteville	554.58	11.96	$92,168	59.44	Relatively Moderate	59.70	Relatively Moderate
Godwin	57.33	11.14	$31,414	95.61	Very High	96.18	Very High
Hope Mills	62.83	10.60	$12,551	64.49	Relatively High	64.83	Relatively High
Linden	64.53	12.73	$14,939	93.53	Very High	94.05	Very High
Spring Lake	194.40	13.91	$24,692	80.69	Very High	80.93	Very High
Stedman	42.98	9.86	$21,952	92.33	Very High	91.89	Very High
Wade	105.13	11.14	$57,785	95.36	Very High	95.82	Very High
Cumberland County Total	**665.13**	**11.30**	**$184,324**	**76.52**	**Relatively High**	**77.51**	**Relatively High**
Hoke County (Unincorporated Area)	**58.58**	**15.06**	**$37,727**	**90.40**	**Very High**	**91.18**	**Very High**
Raeford	176.14	15.59	$86,759	91.42	Very High	92.43	Very High
Hoke County Total	**395.63**	**15.85**	**$131,571**	**72.21**	**Relatively High**	**75.56**	**Relatively High**

5.3.6. Consequence and Impact Analysis

People

Drought can affect people's health and safety. Examples of its impacts on society include anxiety or depression over economic losses, conflicts over water scarcity, reduced incomes, fewer recreational activities, increased heat-stroke incidents, and even loss of human life. All jurisdictions in the Region are susceptible to this impact.

Changes in Development

Drought can affect water supplies 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.

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, such as those that make tractors and food, may lose business when drought damages crops or livestock. Extreme drought can also affect local businesses, including landscaping, recreation and tourism, and public utilities. Boat and fishing equipment sellers may be unable to sell some of their goods because drought has dried up lakes and other water sources. The jurisdictions of Falcon, Stedman, and Wade are most vulnerable due to their high levels of agricultural income.

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 substantially increase wildfire risk. As plants and trees wither and die from a lack of precipitation, increased insect infestations, and drought-related diseases, they become fuel for wildfires. Long periods of drought can lead to more wildfires, including more intense ones, which affect the economy, the environment, and society in many ways, such as by destroying neighborhoods, crops, and habitats.

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.

Future Conditions

Drought is anticipated to increase in frequency and intensity during the summer months under projected climate change scenarios.[12] The spring and summer seasons in the Cumberland-

[12] Kunkel, K. E., Easterling, D. R., Ballinger, A., Bililign, S., Champion, S. M., Corbett, D. R., Dello, K. D., Dissen, J., Lackmann, G. M., Luettich Jr., R. A., Perry, L. B., Robinson, W. A., Stevens, L. E., Stewart, B. C., & Terando, A. J. (2020). *North Carolina Climate Science Report* (p. 233). North Carolina Institute for Climate Studies. https://ncics.org/programs/nccsr/

Hoke region are projected to see a 0-10% decrease in precipitation, while the fall and winter seasons may see a 0-10% increase.[12] The HMPC expressed concern that prolonged droughts could place significant strain on reservoirs and the drinking water supply, as further discussed in this section of the Plan.

5.4. Earthquake

5.4.1. Hazard Description

An earthquake is a movement or shaking of the ground. Most earthquakes are caused by the release of stresses accumulated because of the rupture of rocks along opposing fault planes in the Earth's outer crust. These fault planes are typically found along the borders of the Earth's 10 tectonic plates. The areas of greatest tectonic instability occur at the perimeters of slowly moving plates, where they are subjected to the greatest strains from plates moving in opposite directions 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 snaps, releasing the stored energy and producing seismic waves that generate an earthquake.

Earthquakes are measured in terms of their magnitude and intensity. Magnitude is calculated using the Richter Scale, an open-ended logarithmic scale that describes the energy release of an earthquake by measuring the amplitude of the seismic wave. A detailed description of the Richter Scale is given in Table 5-15.

Table 5-15: Richter Scale

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

Source: FEMA

Table 5-16: Earthquake Magnitude Types Applicable to the Planning Region[13]

Magnitude Type	Magnitude Range	Distance Range	Description
Short-Period Surface Wave (mb_lg or mlg)	~3.5 to ~7.0	150 to 1,110 km (10 degrees)	A magnitude for regional earthquakes based on the amplitude of the Lg surface waves as recorded on short-period instruments. Only authoritative for smaller events in the central and eastern United States, typically <4.0 for which there is no mb or moment magnitude.
Duration (md)	~4.0 or smaller	0 to 400 km	Based on the duration of shaking as measured by the time decay of the amplitude of the seismogram. Sometimes the only magnitude available for very small events, but often used (especially in the past) to compute magnitude from seismograms with "clipped" waveforms due to the limited dynamic recording range of analog instrumentation, which makes it impossible to measure peak amplitudes. Computed by NEIC but only published when there is no other magnitude available.
Intensity Magnitude (mint)	Any	Any	A magnitude estimated from the maximum reported intensity, typically for earthquakes occurring before seismic instruments were in general use. This has been used for events where the felt reports were from too few places to use a magnitude determined from a felt area.

Table 5-17: 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 people at rest, especially on the upper floors of buildings.	< 4.2
III	Weak	Felt quite noticeably by people indoors, especially on upper floors of buildings. Many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibrations similar to the passing of a truck. Duration estimated.	-
IV	Light	Felt indoors by many, outdoors by few during the day. At night, some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.	-
V	Moderate	Felt by nearly everyone; many awakened. Some dishes, windows broken. Unstable objects overturned. Pendulum clocks may stop.	< 4.8

[13] *Magnitude Types*. (n.d.). U.S. Geological Survey; Earthquake Hazards Program. https://www.usgs.gov/programs/earthquake-hazards/magnitude-types

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 negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures; considerable damage in poorly built or badly designed structures; some chimneys broken.	< 6.1
VIII	Severe	Damage slight in specially designed structure; considerable damage in ordinary substantial buildings with partial collapse. Damage great in poorly built structures. Fall of chimneys, factory stacks, columns, monuments, and walls. Heavy furniture overturned.	-
IX	Violent	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb. Great damage in substantial buildings, with partial collapse. Buildings shifted off foundations.	< 6.9
X	Extreme	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations. Rails bent.	< 7.3
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 upper floors of buildings.	> 8.1

Source: Federal Emergency Management Agency

5.4.2. Location and Spatial Extent

Approximately two-thirds of North Carolina are 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 faults have generated earthquakes exceeding 8.0 on the Richter Scale in the last 200 years. In addition, there are several smaller fault lines throughout North Carolina. Figure 5-22 depicts peak ground accelerations having a two percent probability of being exceeded in 50 years, for a firm rock site. The map is based on the most recent United States Geological Survey (USGS) models for the conterminous U.S. (2018), Hawaii (1998), and Alaska (2007). It is also based on seismicity and fault-slip rates, considering the frequency of earthquakes of various magnitudes. Locally, the hazard may be greater than shown because site geology may amplify ground motions.

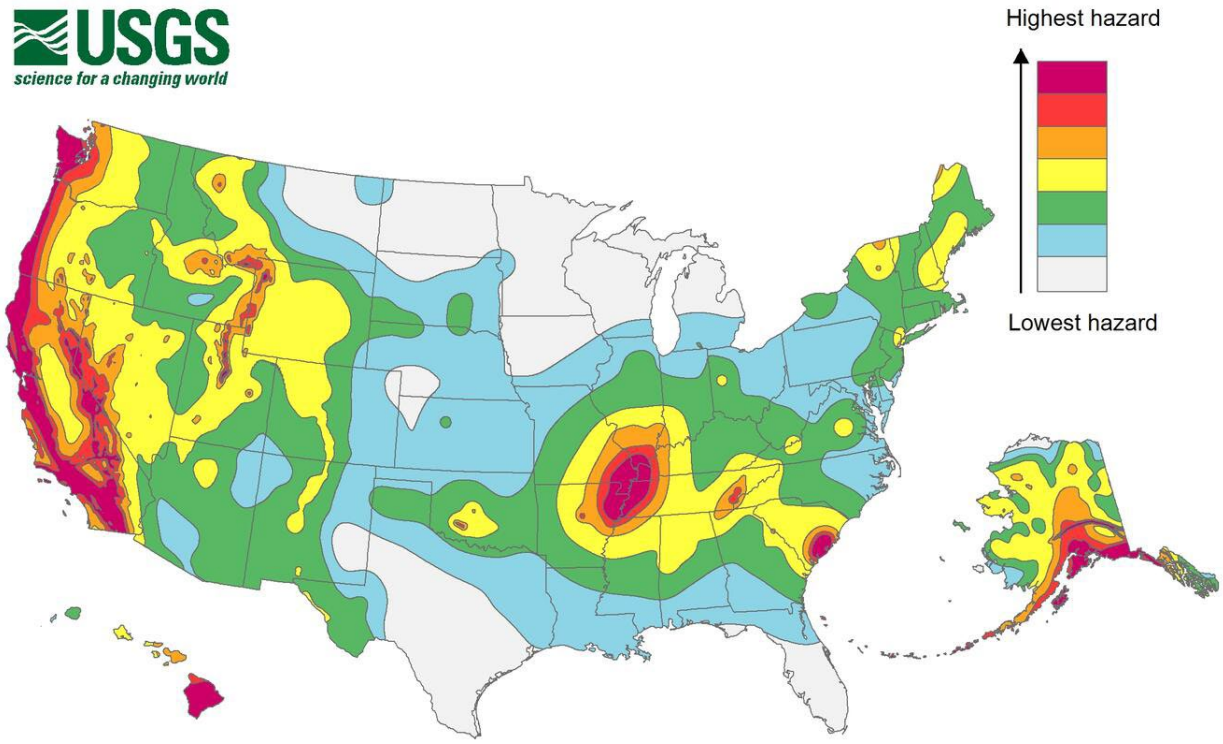


Figure 5-22: USGS Long-Term National Seismic Hazard Map[14]

The following maps use the Global Earthquake Model (GEM) Global Seismic Hazard Map (Version 2023.1)[15] to depict the Predicted Ground Acceleration (PGA), or the fraction of acceleration of gravity with the probability of being exceeded in 50 years. These maps also include the known geological faults described by the Database of Geological Maps of North America[16] and the earthquake occurrences recorded by the USGS Earthquake Catalog.[17]

[14] *2018 Long-term National Seismic Hazard Map*. (2022). [Map]. United States Geological Survey. https://www.usgs.gov/media/images/2018-long-term-national-seismic-hazard-map
[15] 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
[16] 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
[17] 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/

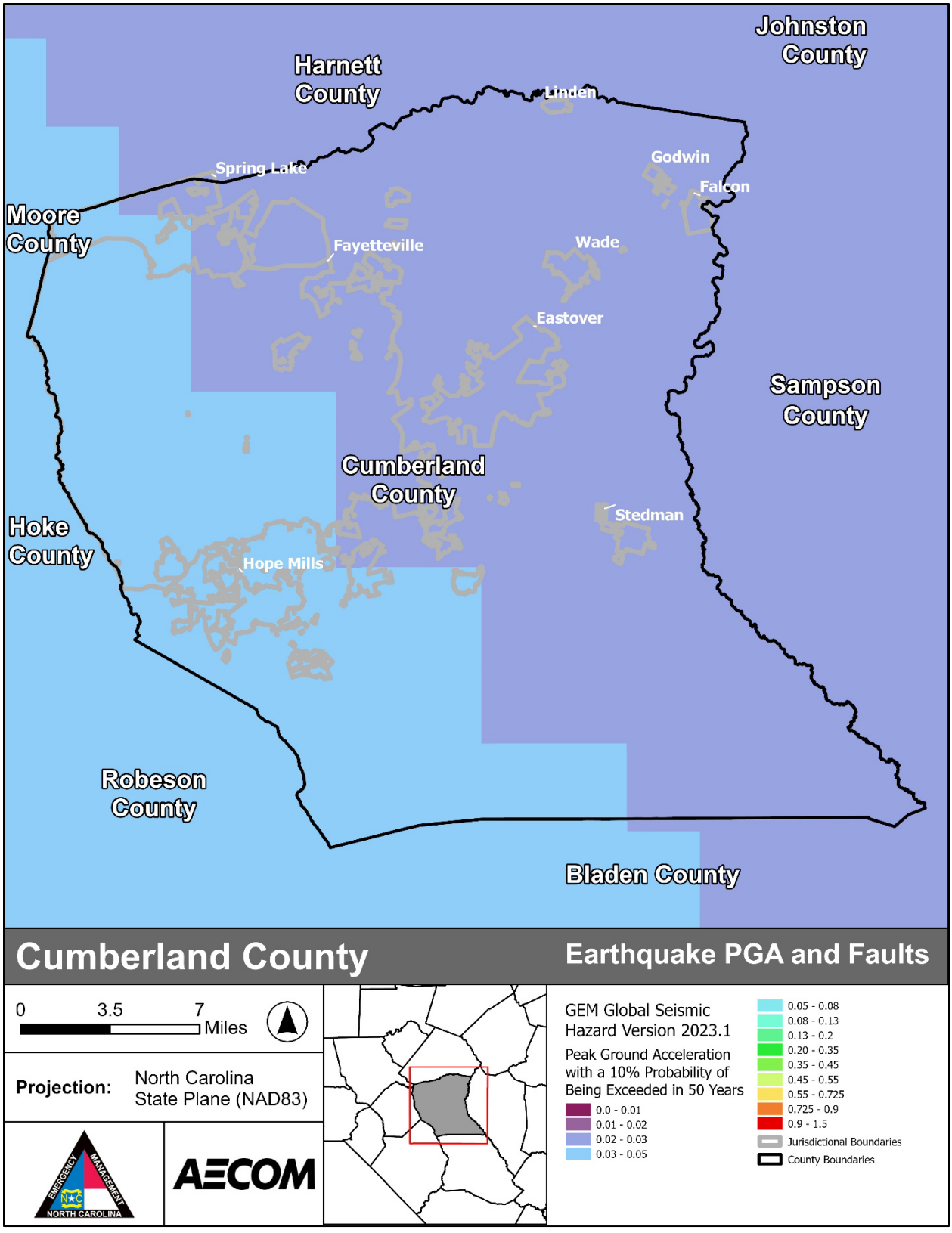


Figure 5-23: Cumberland County Earthquake Hazard Map

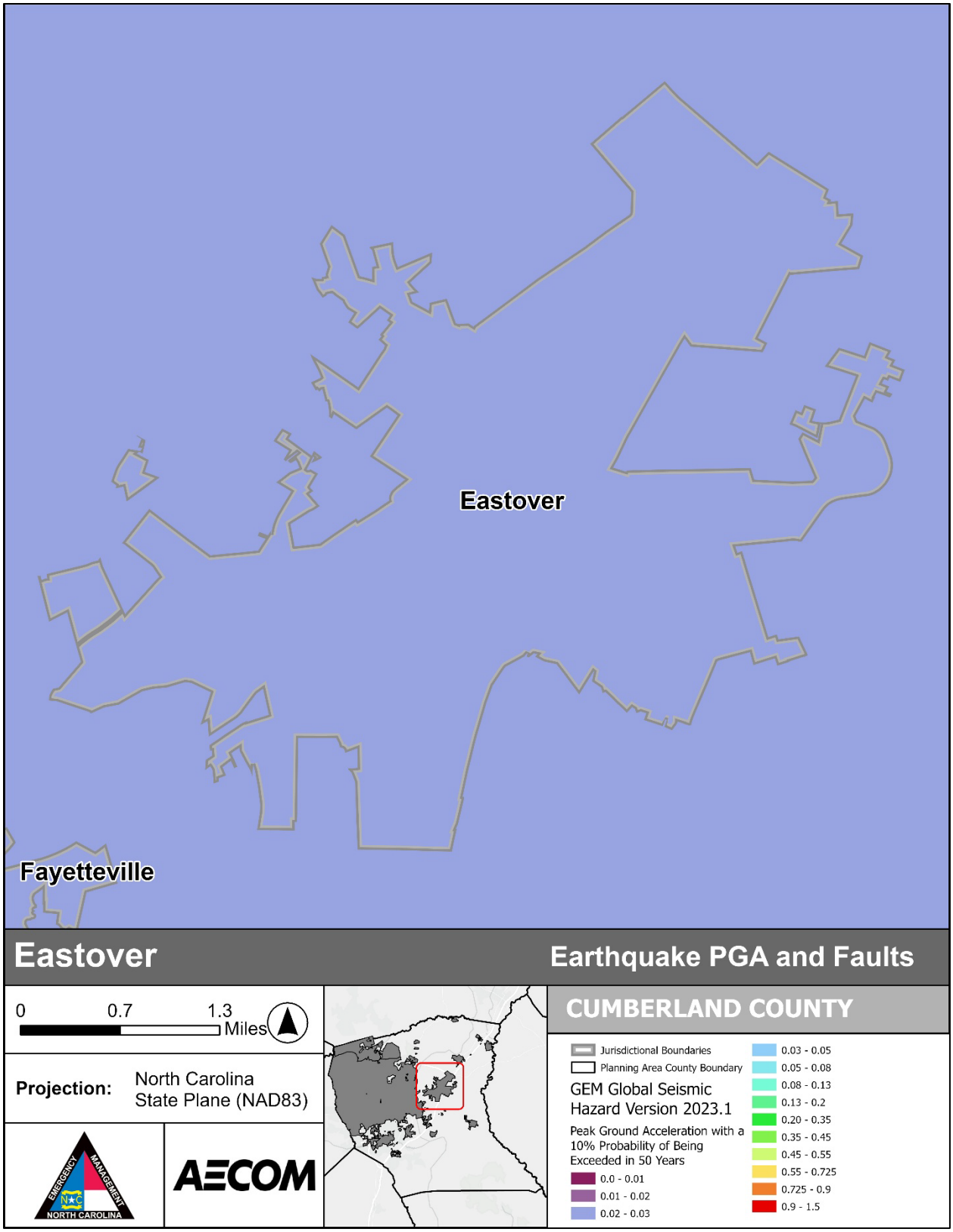


Figure 5-24: Town of Eastover Earthquake Hazard Map

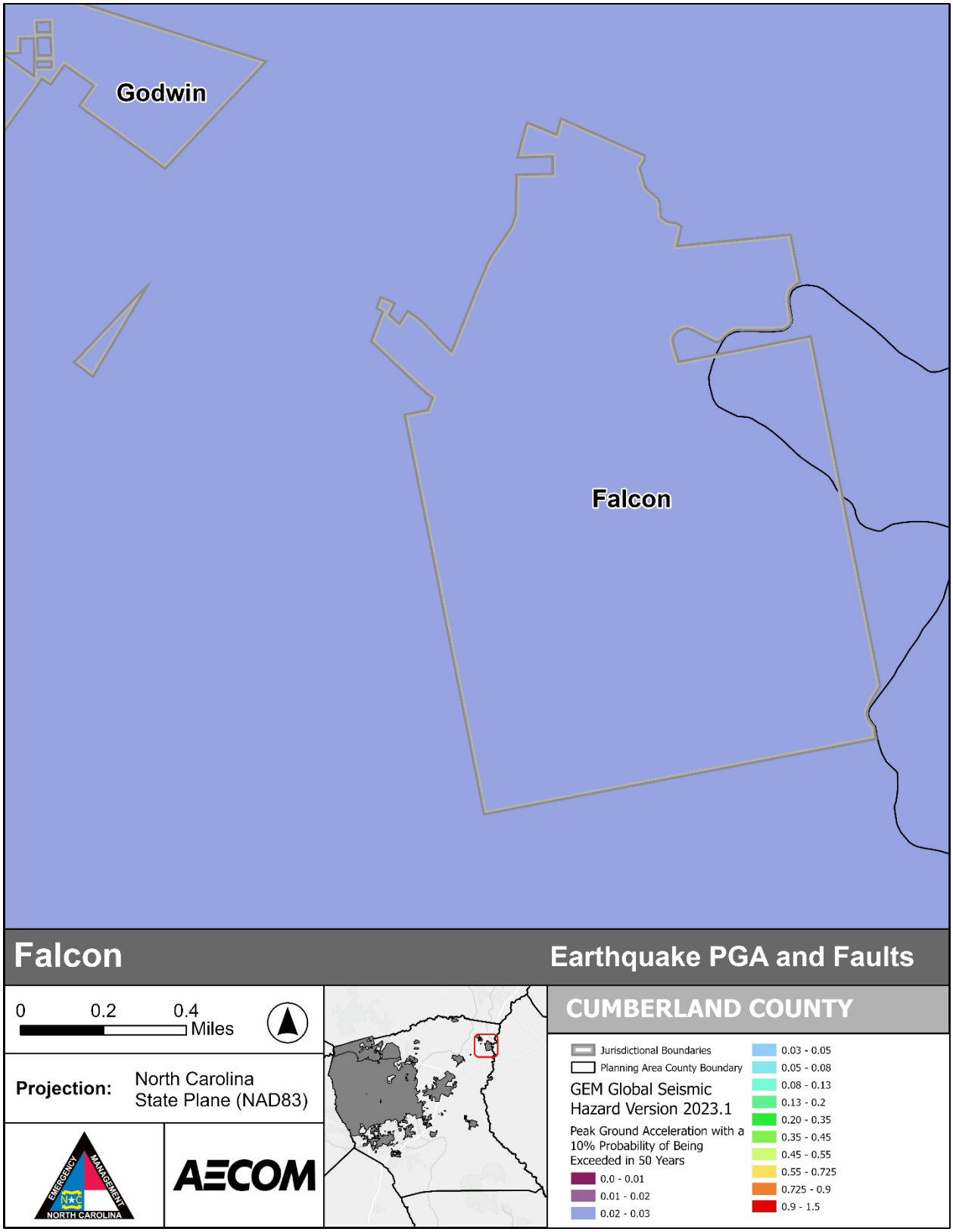


Figure 5-25: Town of Falcon Earthquake Hazard Map

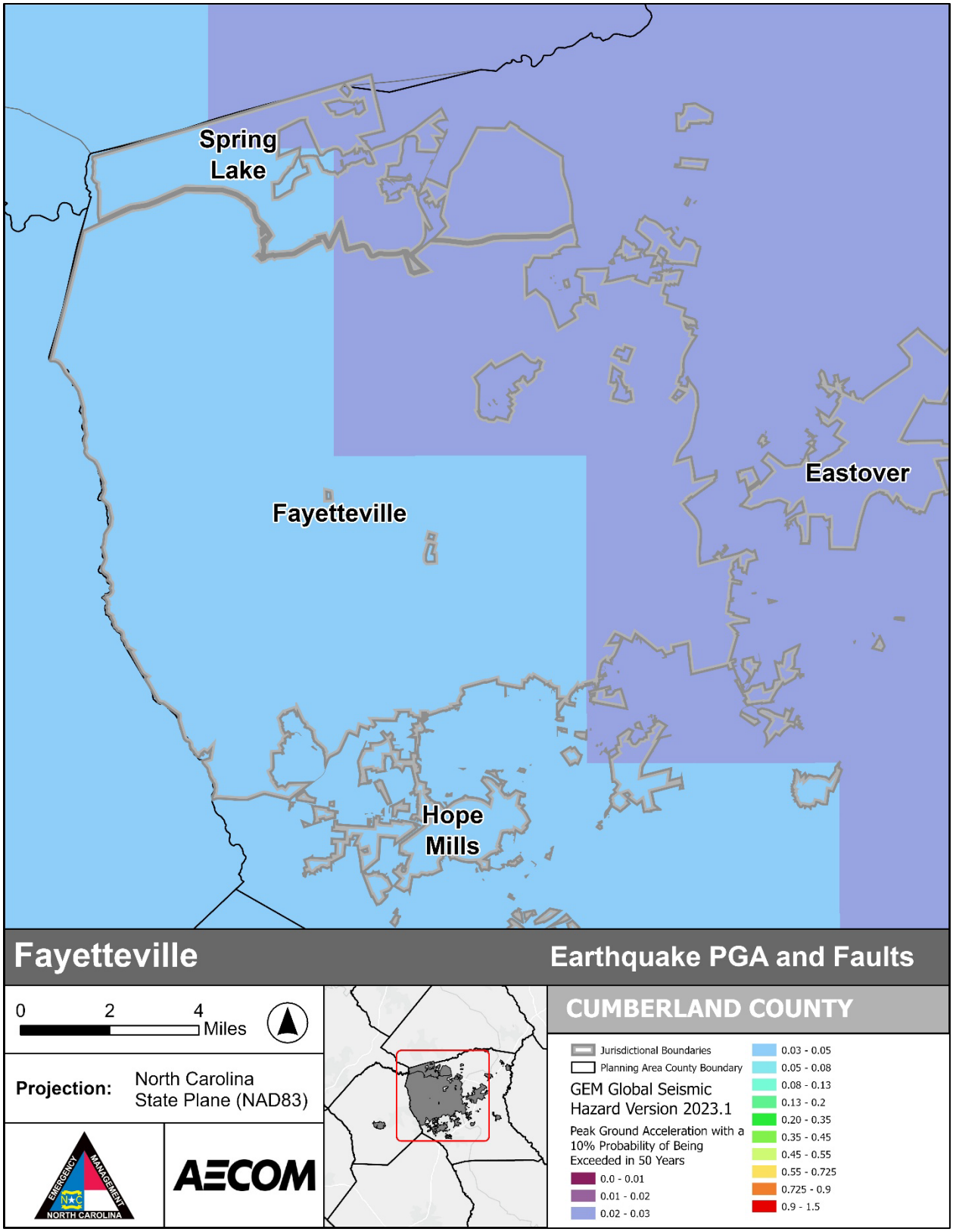


Figure 5-26: City of Fayetteville Dam Hazard Map

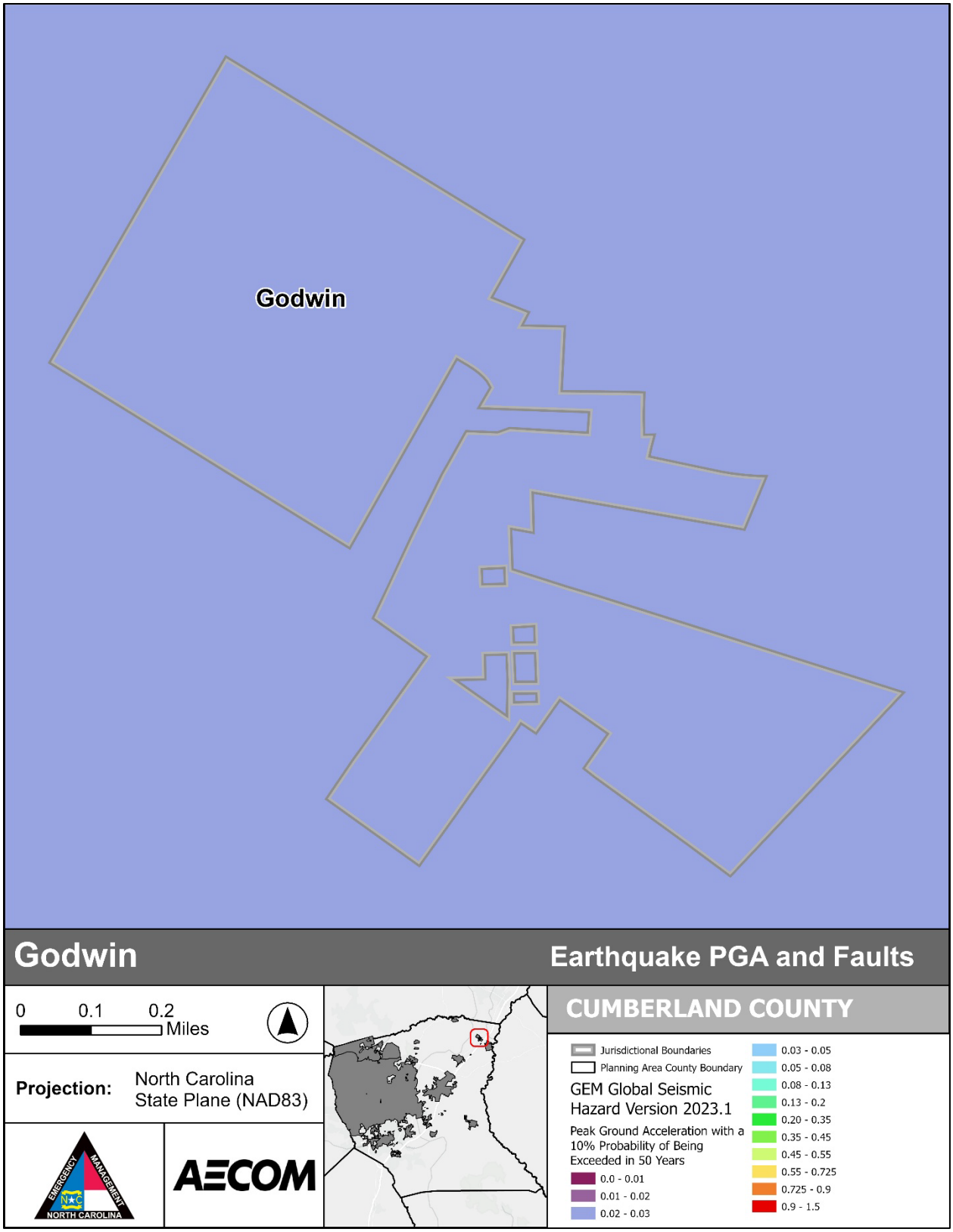


Figure 5-27: Town of Godwin Earthquake Hazard Map

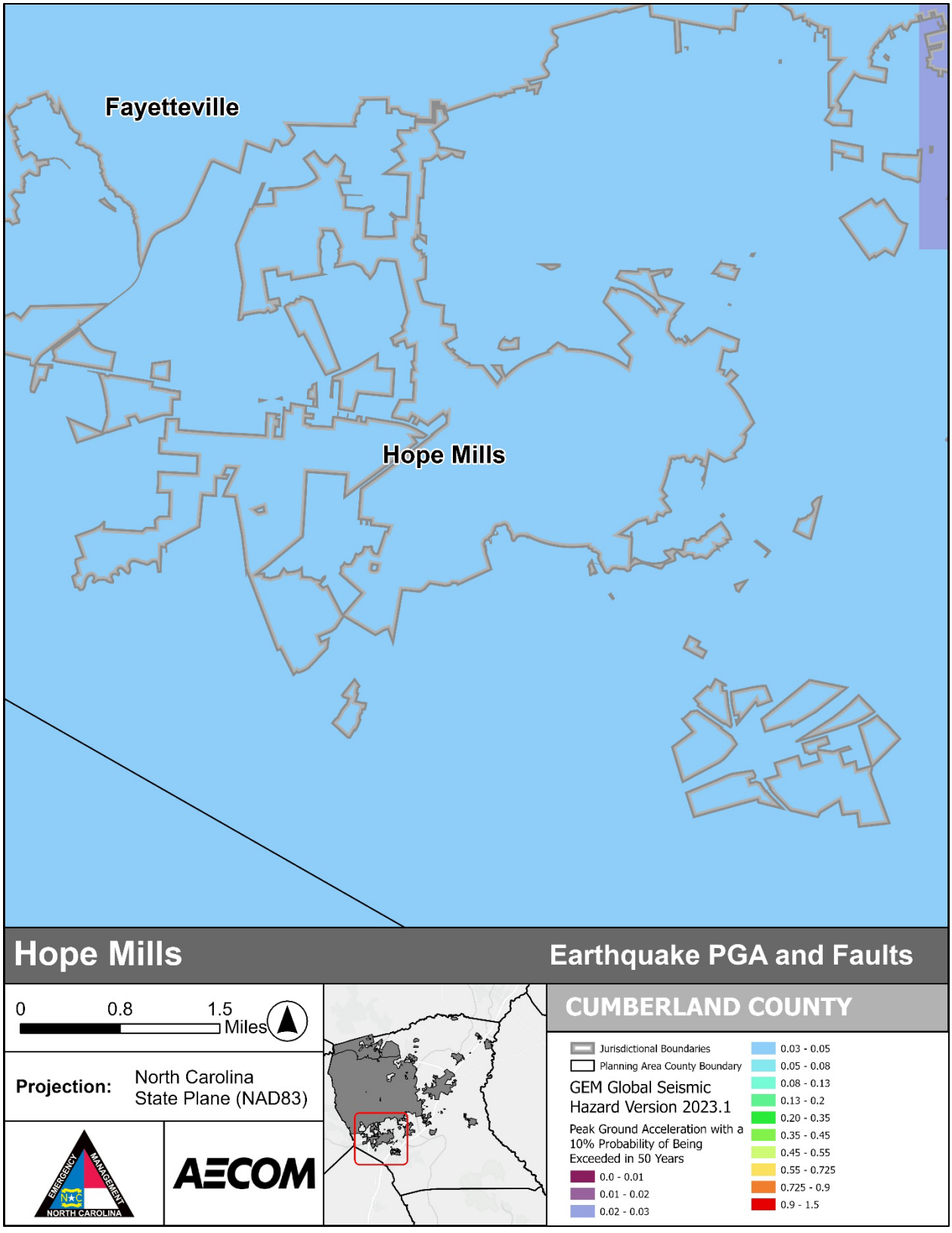


Figure 5-28: Town of Hope Mills Earthquake Hazard Map

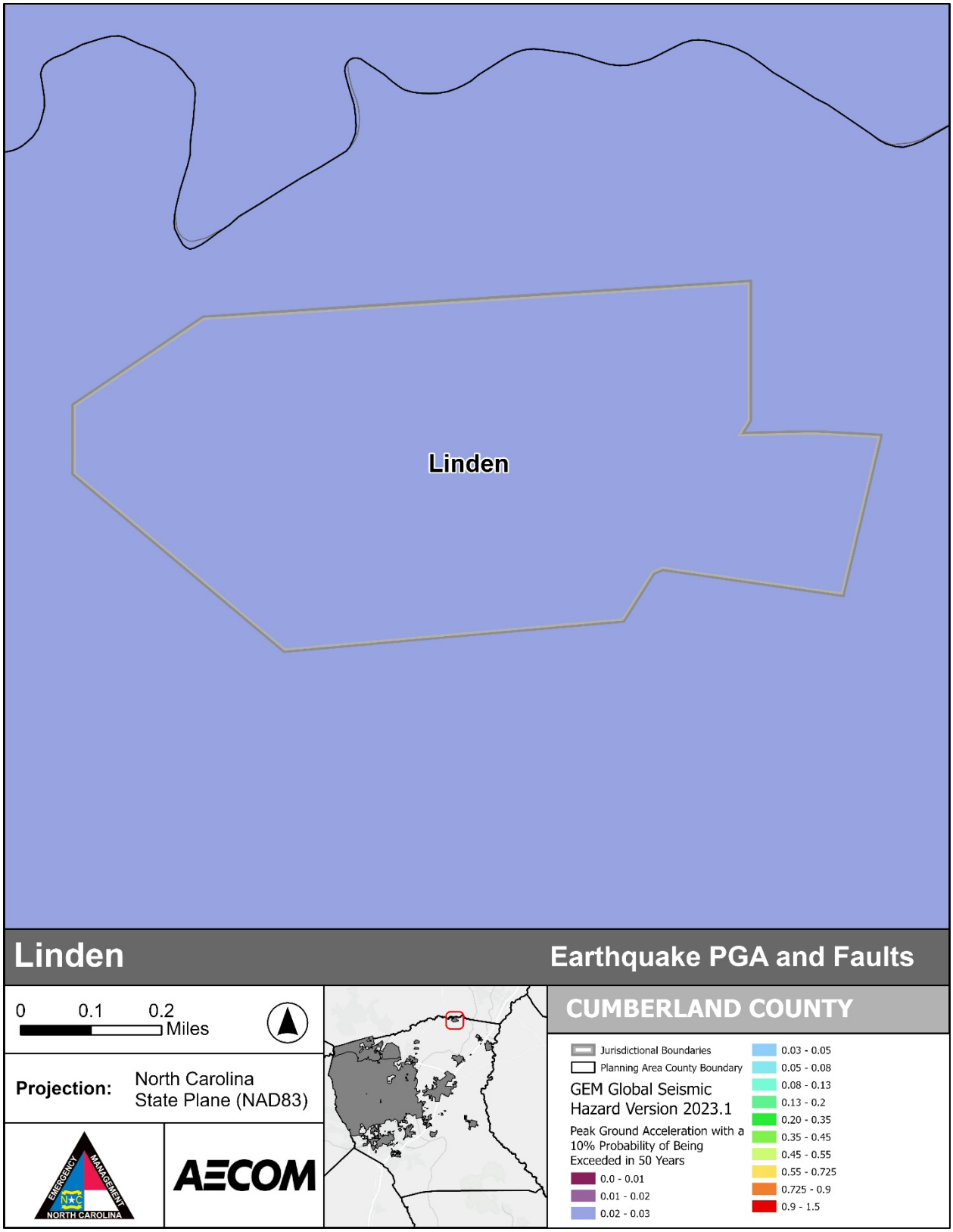


Figure 5-29: Town of Linden Earthquake Hazard Map

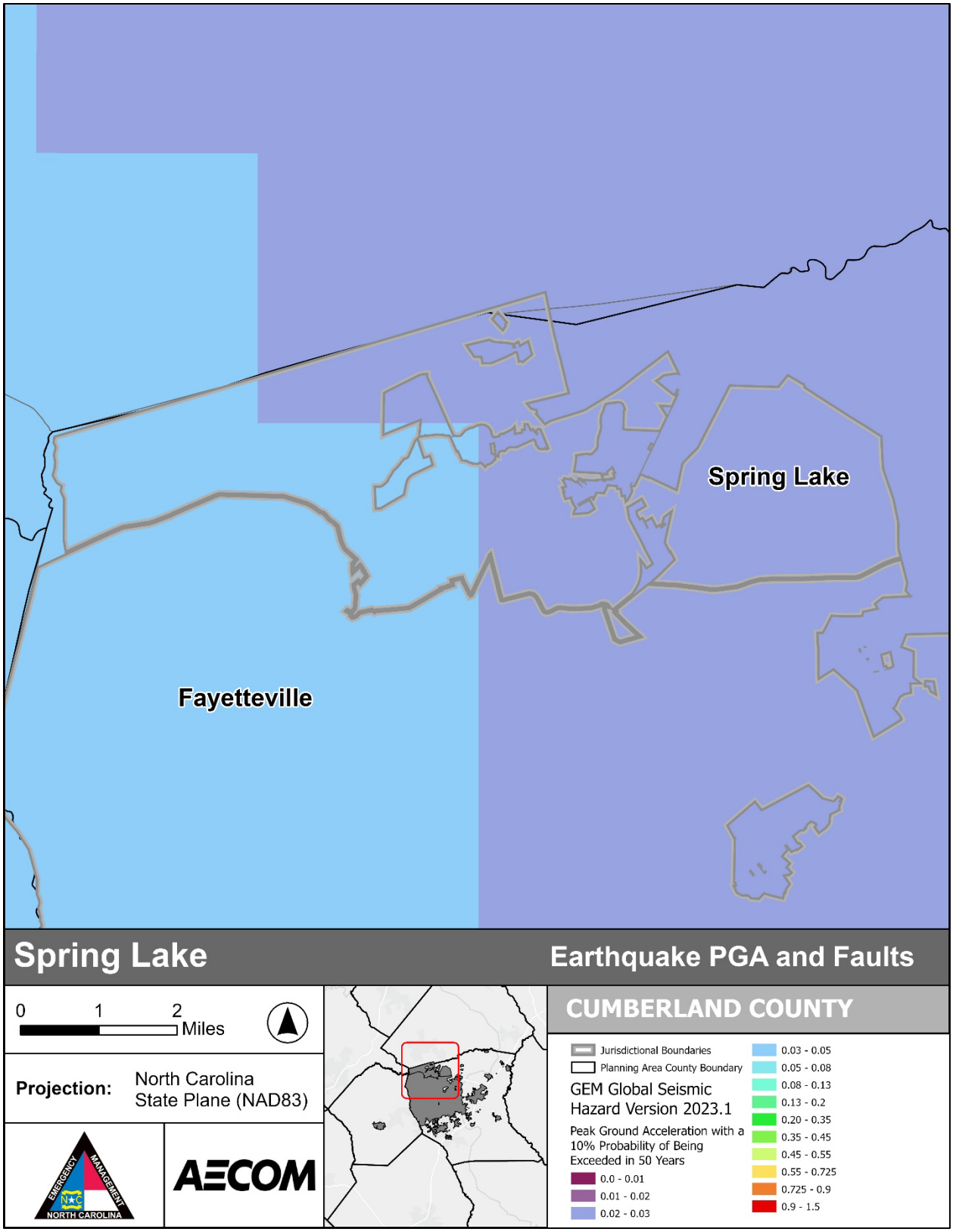


Figure 5-30: Town of Spring Lake Earthquake Hazard Map

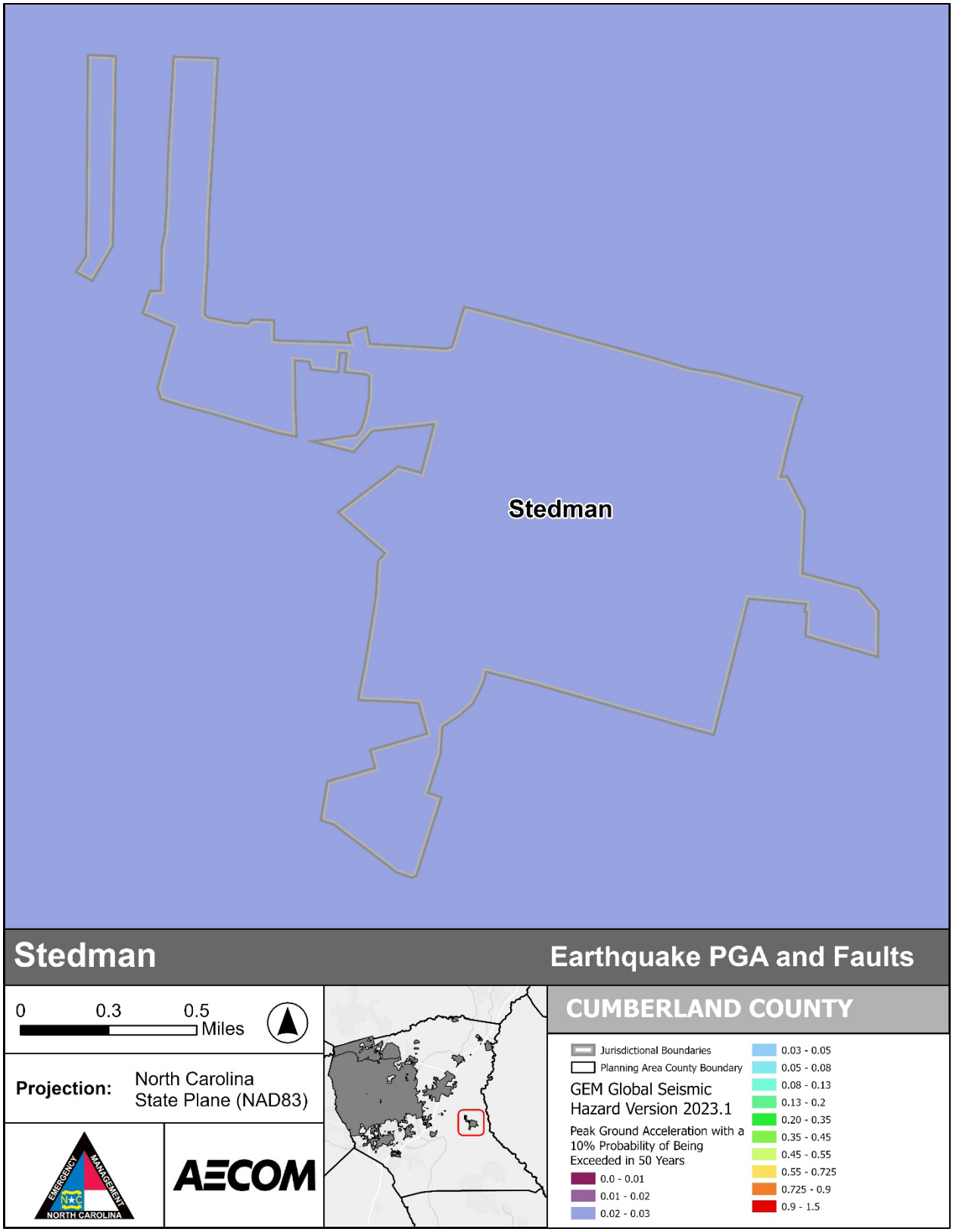


Figure 5-31: Town of Stedman Earthquake Hazard Map

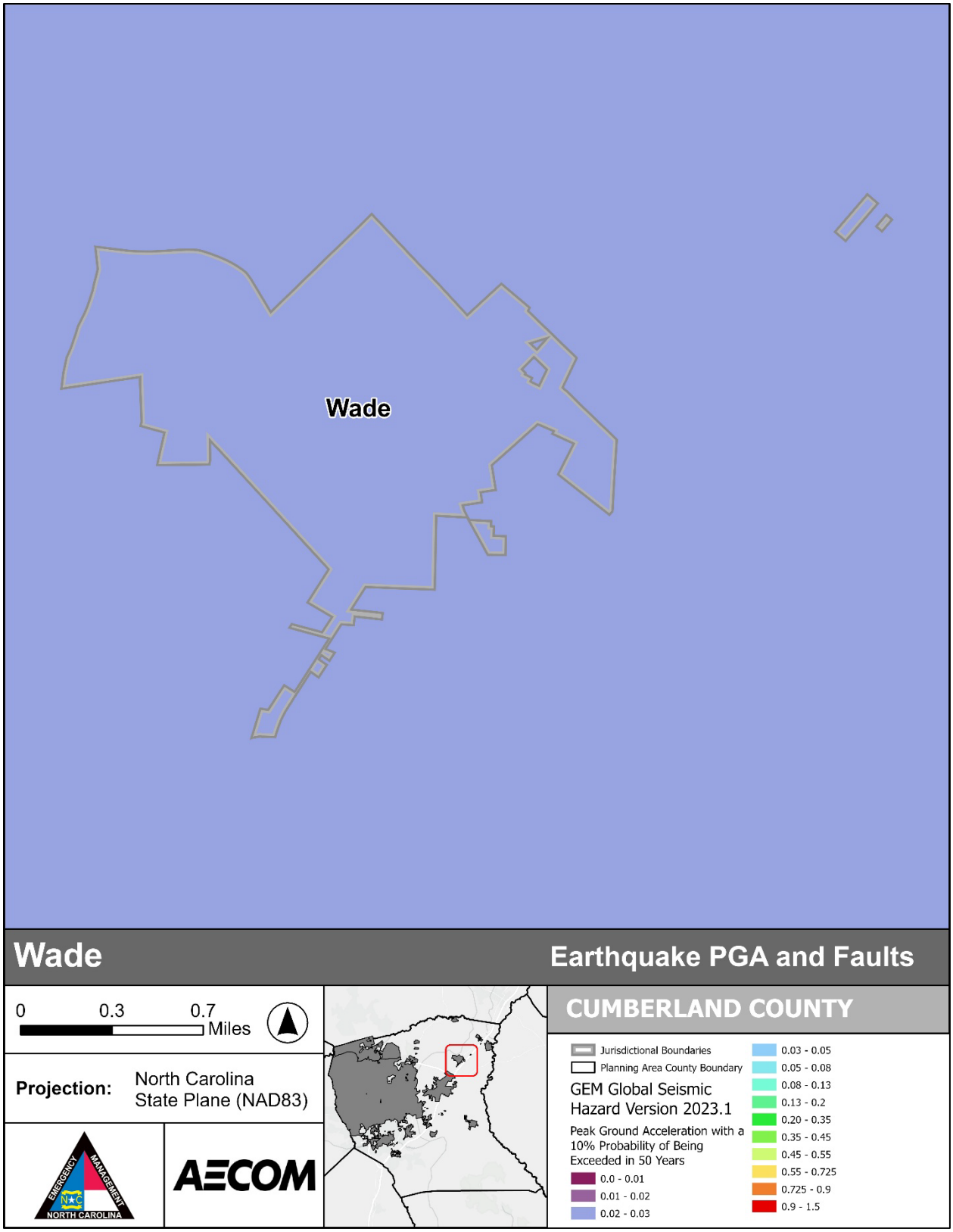


Figure 5-32: Town of Wade Earthquake Hazard Map

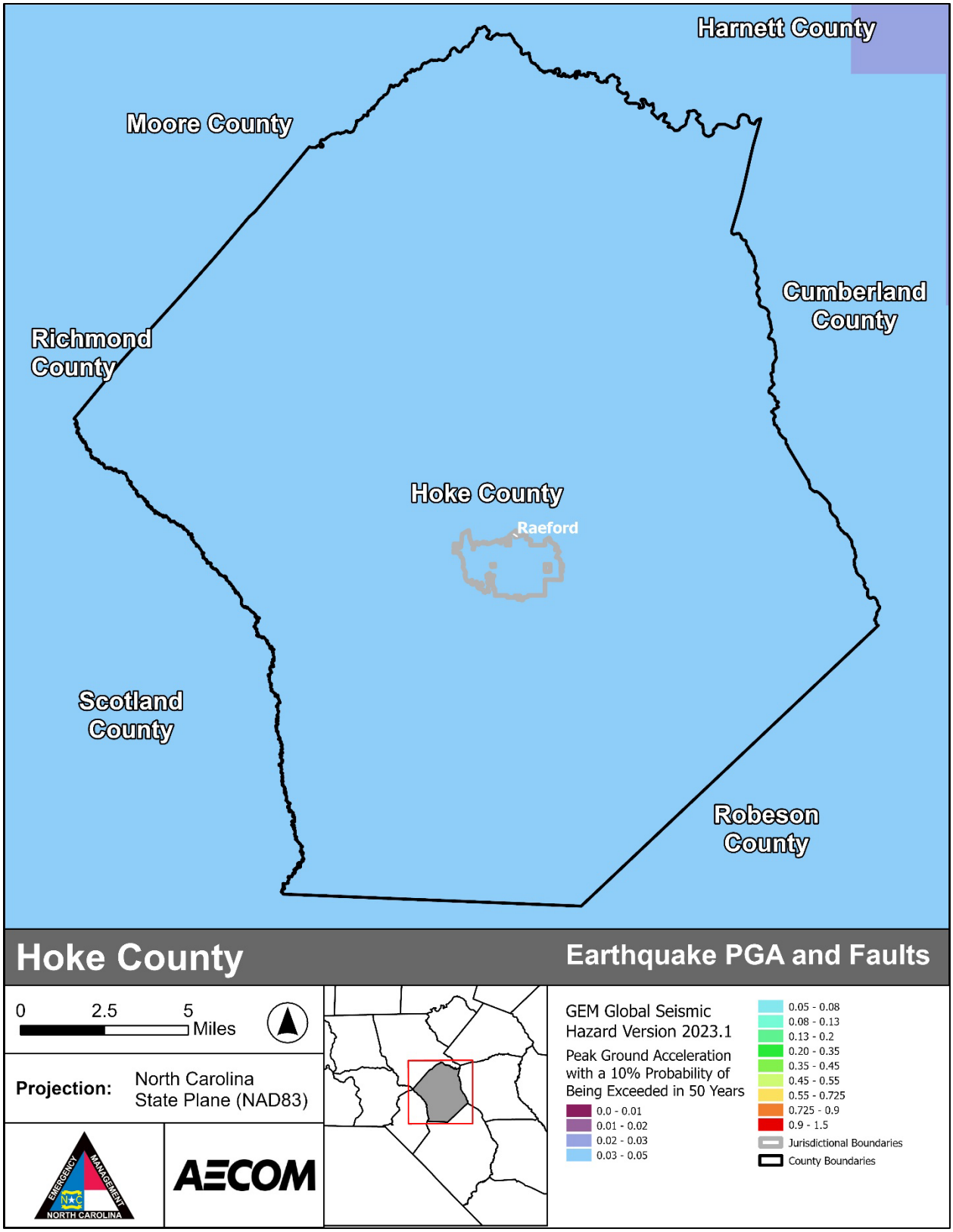


Figure 5-33: Hoke County Earthquake Hazard Map

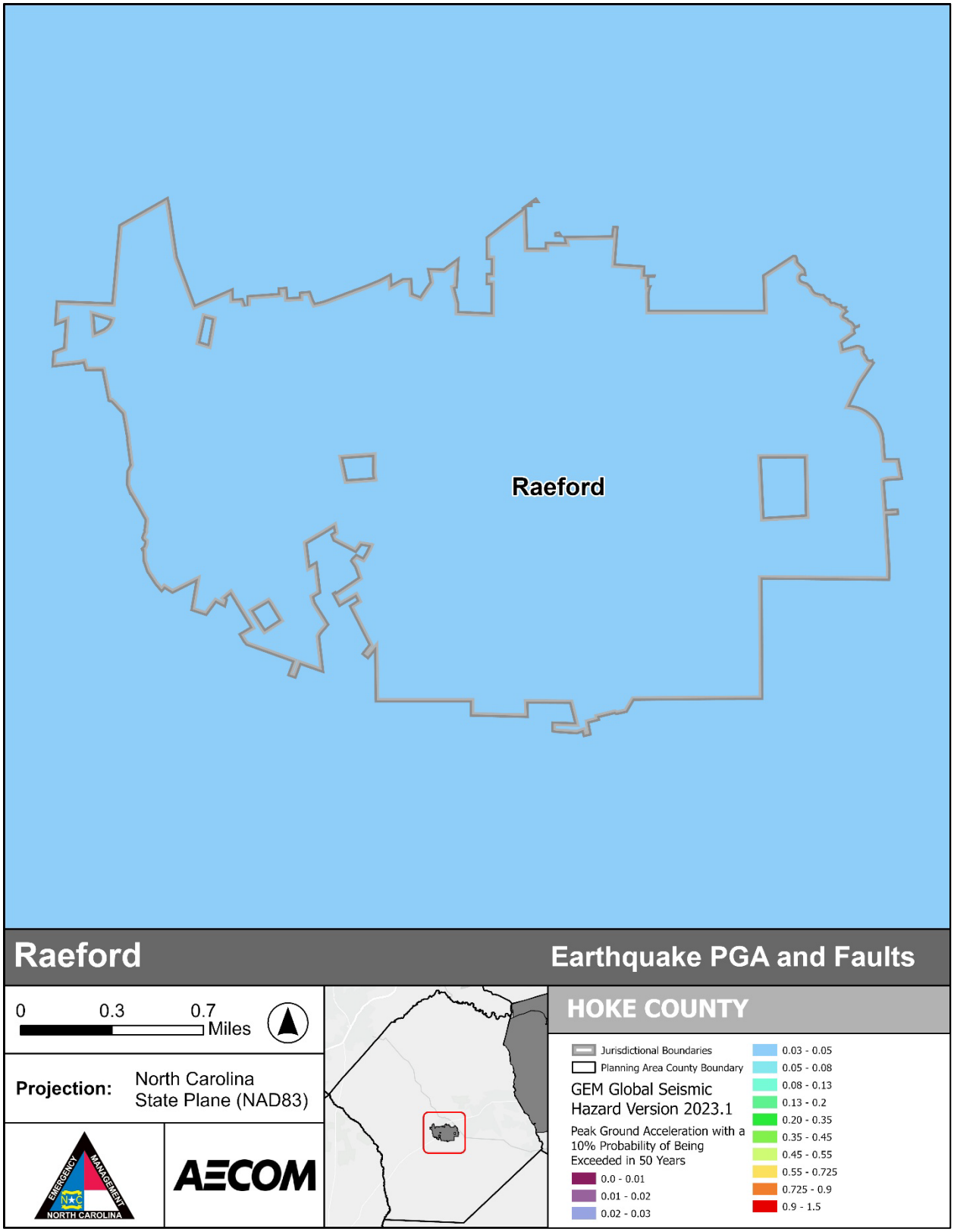


Figure 5-34: City of Raeford Earthquake Hazard Map

5.4.3. Extent

Figure 5-35 shows the intensity level associated with the Cumberland-Hoke 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, Cumberland County is split between an approximate 0.03 – 0.05 and 0.02 – 0.03 zone of peak ground acceleration, while Hoke County lies entirely within a the 0.03 – 0.05 zone, which means that, in the event of a significant earthquake, the ground would be expected to experience shaking forces that are equivalent to 3% to 5% or 2% to 3% of the force of gravity.

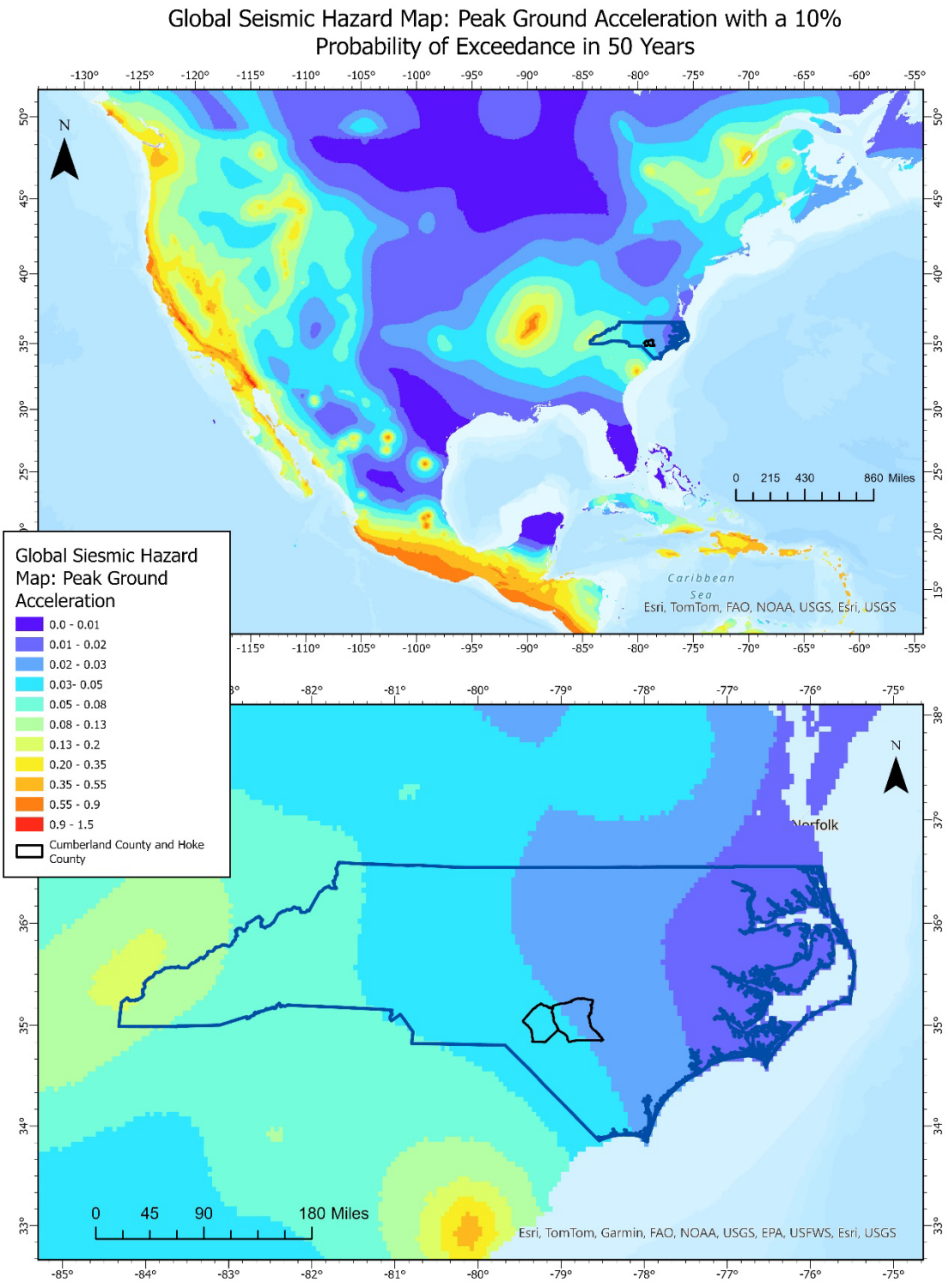


Figure 5-35: Peak Acceleration with 10 Percent Probability of Exceedance in 50 Years[18]

[18] 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) [Dataset]. Zenodo. https://doi.org/10.5281/zenodo.8409647

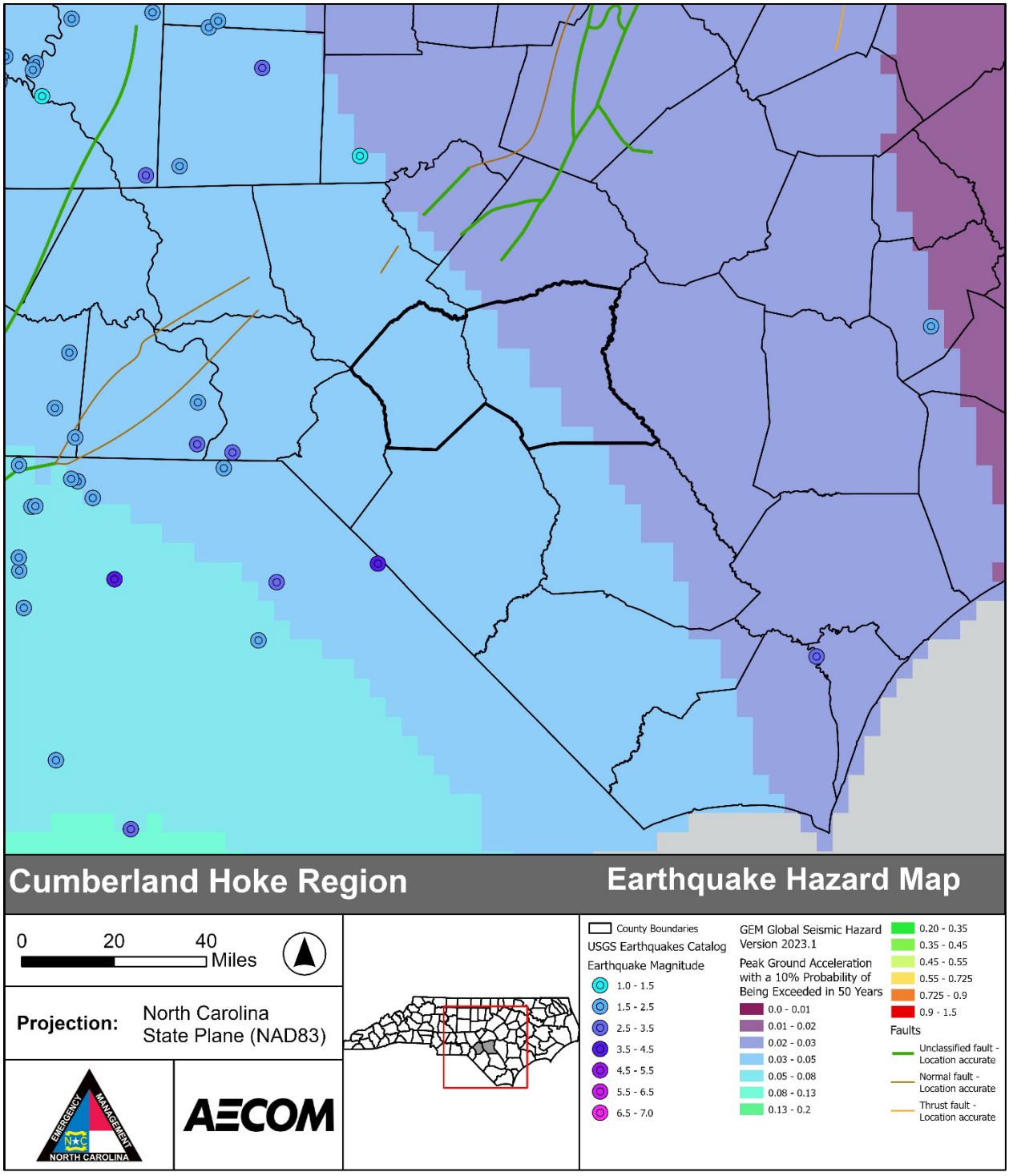


Figure 5-36: Earthquakes near the planning area from the USGS Earthquake Catalog[19] with Faults[20], and PGA from the 2023 Global Seismic Hazard Model[21]

[19] 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/
[20] 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

5.4.4. Past Occurrences

Historical seismicity is an indicator of where earthquakes have happened. Paleo-seismicity (the study of earthquake-induced ground failures during prehistoric times) provides further evidence on the size and frequency of earthquakes. Since 1735, North Carolina has experienced 23 earthquakes, each of which caused at least architectural damage. Based on historical data, scientists from the USGS and several university research centers have produced maps that project expected ground motion for various return periods. The last recorded damaging earthquake with an epicenter in NC occurred near Hendersonville in 1981. The epicenter of the most recent damaging event recorded in the state was Mineral Springs, Virginia, in 2011. A list of earthquakes that have caused damage in NC is presented in Table 5-19 below.

Table 5-18: USGS Earthquake Catalog: Closest Earthquake Near the Planning Area[22]

Date	Magnitude	Magnitude Type*	Distance to Closest Jurisdiction (Miles)	Closest Jurisdiction	Closest County
1/18/1884	3.5	mint	62.1	Stedman	Cumberland
4/9/1980	2.8	md	39.9	Raeford	Hoke
3/4/1981	2.8	mb_lg	55.9	Spring Lake	Cumberland
10/3/1981	1.1	md	33.1	Spring Lake	Cumberland
12/4/1983	1.6	md	56.8	Spring Lake	Cumberland
3/21/2011	2.9	md	34.3	Raeford	Hoke
11/15/2015	2.58	md	60.7	Raeford	Hoke
2/2/2022	1.77	md	38.6	Raeford	Hoke

*See Table 5-16 for magnitude type definitions relevant to the planning area

Table 5-19: Major Earthquakes Affecting North Carolina

Date	Location	Richter Scale
12/16/1811	NE Arkansas	8.5
12/16/1811	NE Arkansas	8.0
12/16/1811	NE Arkansas	8.0
01/23/1812	New Madrid, MO	8.4
02/07/1812	New Madrid, MO	8.7
04/29/1852	Wytheville, VA	5.0
08/31/1861	Wilkesboro, NC	5.1
12/23/1875	Central Virginia	5.0
08/31/1886	Charleston, SC	7.3
05/31/1897	Giles County, VA	5.8
01/01/1913	Union County, SC	4.8
02/21/1916	Asheville, NC	5.5
07/08/1926	Mitchell County, NC	5.2
11/03/1928	Newport, TN	4.5
05/13/1957	McDowell County, NC	4.1

[21] Johnson, K., Villani, M., Bayliss, K., Brooks, C., Chandrasekhar, S., Chartier, T., Chen, Y., Garcia-Pelaez, J., Gee, R., Styron, R., Rood, A., Simionato, M., & Pagani, M. (2023). Global Seismic Hazard Map [Dataset]. In Zenodo (CERN European Organization for Nuclear Research). https://doi.org/10.5281/zenodo.8409647

[22] 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/

07/02/1957	Buncombe County, NC	3.7
11/24/1957	Jackson County, NC	4.0
10/27/1959	Chesterfield, SC	4.0
07/13/1971	Newry, SC	3.8
11/30/1973	Alcoa, TN	4.6
09/13/1976	Southwest Virginia	4.1
05/05/1981	Henderson County, NC	3.5
8/23/2011	Mineral Bluff, VA	5.8

Source: North Carolina State Hazard Mitigation Plan 2018; Southeast US Seismic Network, USGS

5.4.5. Probability of Future Occurrences

The NRI calculates earthquake risk based on the USGS 100-year probability of minor earthquake shaking. Cumberland County has an earthquake annualized frequency of approximately 0.00057, a $1,300,592 EAL, an 81.74 EAL Rating, and an 85.97 Hazard Risk Rating. The jurisdiction with the highest EAL across overlapping census tracts is Fayetteville, with $1,147,496, followed by Hope Mills ($252,138) and Spring Lake ($119,933). The unincorporated census tracts of Cumberland County have an approximate annualized frequency of 0.00068, a total EAL of $38,485, an average EAL Score of 54.74, and an average Hazard Risk Index Score of 57.19.

Hoke County has an average annualized frequency of 0.00054 and an EAL of $181,891.15, an EAL score of 55.02, and a Hazard Risk Index Score of 61.15. The census tracts that overlap Raeford have an average annualized frequency of 0.00059, EAL of $111,263.82, an average EAL score of 58.90, and an average Hazard Risk Index Score of 65.14.

Table 5-20: NRI Earthquake Risk, EAL Total and Annualized Frequency

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Cumberland County (Unincorporated Area)	**0.00068**	**$38,486**	**54.74**	**Relatively Moderate**	**57.19**	**Relatively Moderate**
Eastover	0.00059	$61,745	54.14	Relatively Moderate	57.73	Relatively Moderate
Falcon	0.00055	$13,388	37.04	Relatively Low	41.39	Relatively Moderate
Fayetteville	0.00055	$1,147,497	51.19	Relatively Moderate	55.45	Relatively Moderate
Godwin	0.00057	$19,348	60.27	Relatively High	65.19	Relatively High
Hope Mills	0.00062	$252,139	53.56	Relatively Moderate	58.59	Relatively Moderate
Linden	0.00054	$32,188	67.55	Relatively High	70.87	Relatively High
Spring Lake	0.00036	$119,933	39.40	Relatively Low	41.76	Relatively Moderate

Stedman	0.00057	$26,569	48.47	Relatively Moderate	46.98	Relatively Moderate
Wade	0.00057	$27,714	51.41	Relatively Moderate	56.26	Relatively Moderate
Cumberland County Total	**0.00057**	**$1,300,592**	**81.74**	**Very High**	**85.97**	**Very High**
Hoke County (Unincorporated Area)	**0.00063**	**$28,671**	**45.31**	**Relatively Moderate**	**52.17**	**Relatively Moderate**
Raeford	0.00059	$111,264	58.90	Relatively Moderate	65.14	Relatively High
Hoke County Total	**0.00054**	**$181,891**	**55.03**	**Relatively Moderate**	**61.15**	**Relatively High**

5.4.6. Consequence and Impact Analysis

People

Earthquakes in the region generally are not high-impact events that cause injury or death. The public may typically experience some shaking during these events, and the greatest health and well-being threat is often from objects falling from shelves. All jurisdictions in the Region are equally vulnerable to this impact.

Changes in Development

Buildings can be damaged by the shaking itself or by the ground beneath them settling to a lower level than it was before the earthquake (subsidence). Buildings can even sink into the ground if soil liquefaction occurs. If a structure (a building, road, etc.) is built across a fault, the ground displacement during an earthquake could seriously damage that structure. An earthquake can also break dams along a river. The water from the river or the reservoir would then flood the area, damage buildings, and possibly drown 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.

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 related to earthquakes in the Region.

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.

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.

Future Conditions

There are no expected impacts on earthquake vulnerability in the planning area related to climate change.

5.5. Extreme Heat

5.5.1. Hazard Description

Extreme heat, like drought, poses little risk to property. However, extreme heat can have devastating effects on health. Extreme heat is often called a “heat wave.” According to the National Weather Service, there is no universal definition of a heat wave. Still, the standard U.S. definition is any event lasting at least 3 days in which temperatures reach 90 degrees Fahrenheit or higher. However, it may also be defined as an event lasting at least 3 days during which temperatures in the affected area are 10 degrees above normal. 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[23] and 248 hospitalizations for heat-related illness (HRI) in NC in 2022.[24]

The National Weather Service (NWS) developed the Heat Index to better inform the public about heat dangers. The Heat Index Chart, shown in Figure 5-37, uses air temperature and humidity to determine the heat index or apparent temperature. Table 5-21 shows the dangers associated with different heat index temperatures. Some populations, such as the elderly and young, are more susceptible to heat-related dangers than others.

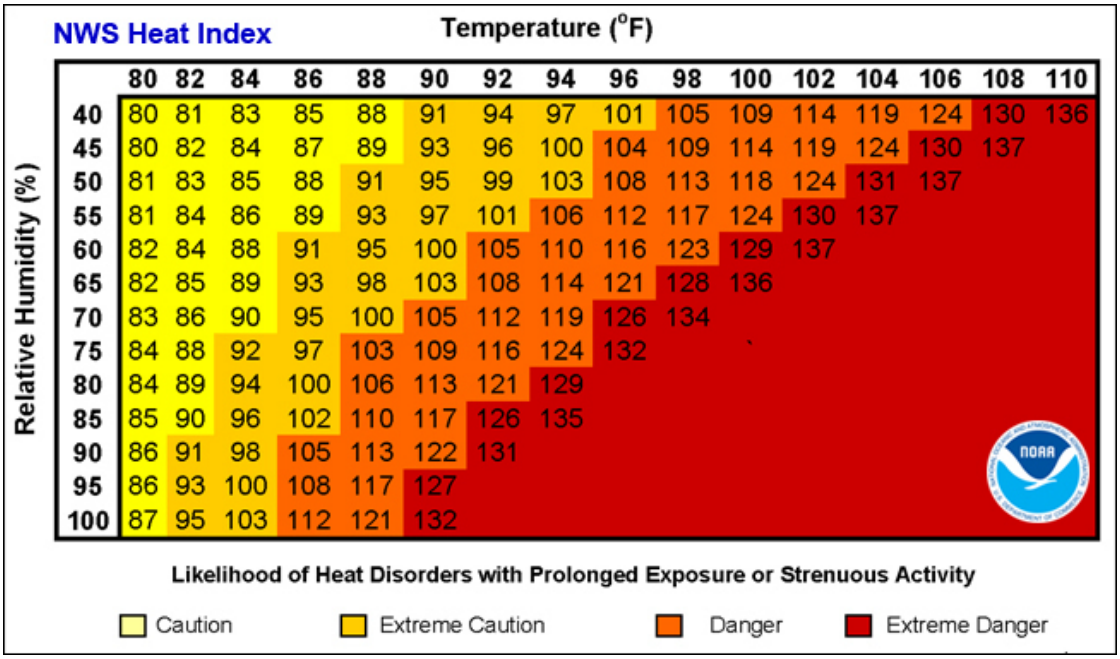


Figure 5-37: Heat Index Chart[25]

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

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

[25] National Oceanic and Atmospheric Administration. (2025). *What is the heat index?* National Weather Service. https://www.weather.gov/ama/heatindex

Table 5-21: Heat Disorders Associated with Heat Index Temperatures[26]

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

In addition, the National Oceanic and Atmospheric Association (NOAA) has 17 metropolitan areas participating in the Heat HealthWatch/Warning System to better inform and warn the public about 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 conditions are occurring, are imminent, or are highly likely to occur. Urban areas participate in the Heat Health Watch/Warning System because they are at greater risk of heat-related effects. Stagnant atmospheric conditions trap pollutants, creating unhealthy air alongside excessively hot temperatures. In addition, the “urban heat island effect” can produce significantly higher nighttime temperatures because asphalt and concrete (which store heat longer) gradually release heat at night.

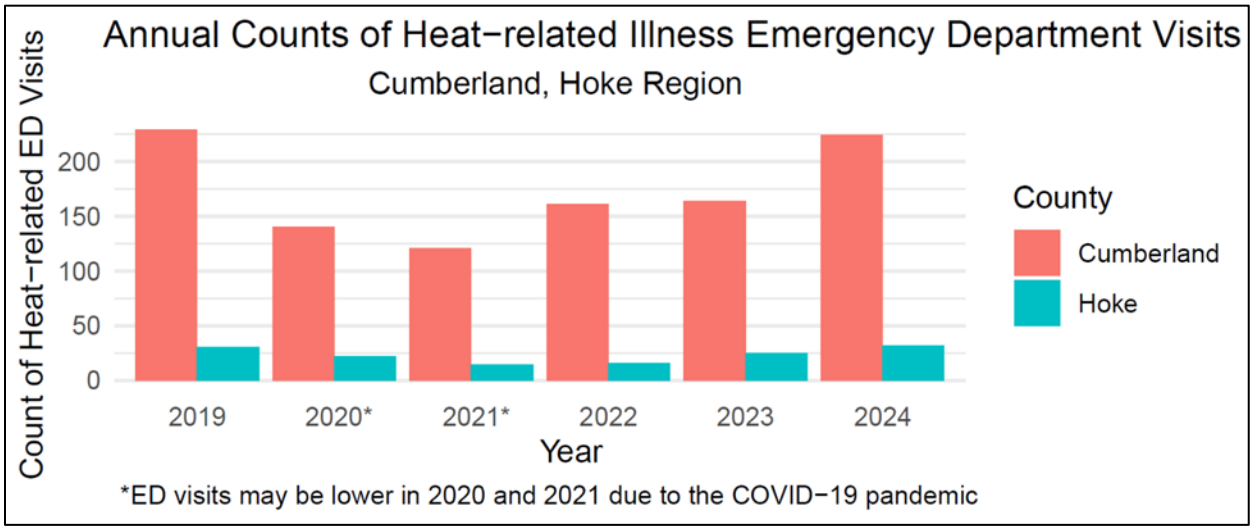


Figure 5-38: Heat Related Illnesses in the Cumberland-Hoke region were obtained from the NC Detect public health syndromic surveillance system data. Annual counts of emergency department visits for heat-related illness in Cumberland County ranged from 121 in 2021 to 229 in 2019, and in Hoke County, from 14 in 2021 to 32 in 2024.

[26] Centers for Disease Control and Prevention (CDC). (2016). *Extreme Heat Can Impact Our Health in Many Ways*. U.S. Department of Health and Human Services. https://www.cdc.gov/climate-health/media/pdfs/EXTREME-HEAT-Final_508.pdf

5.5.2. Location and Spatial Extent

Excessive heat typically impacts a large area and cannot be confined to any geographic or political boundaries. The entire Cumberland-Hoke 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 NWS weather forecast office defines a heat wave event.[27] The following maps represent the risk rating and EAL total of heat wave events in the planning area by census tract:

[27] *National Risk Index Data v1.20 Technical Documentation*. (2025). Federal Emergency Management Agency. https://www.fema.gov/sites/default/files/documents/fema_national-risk-index_technical-documentation.pdf

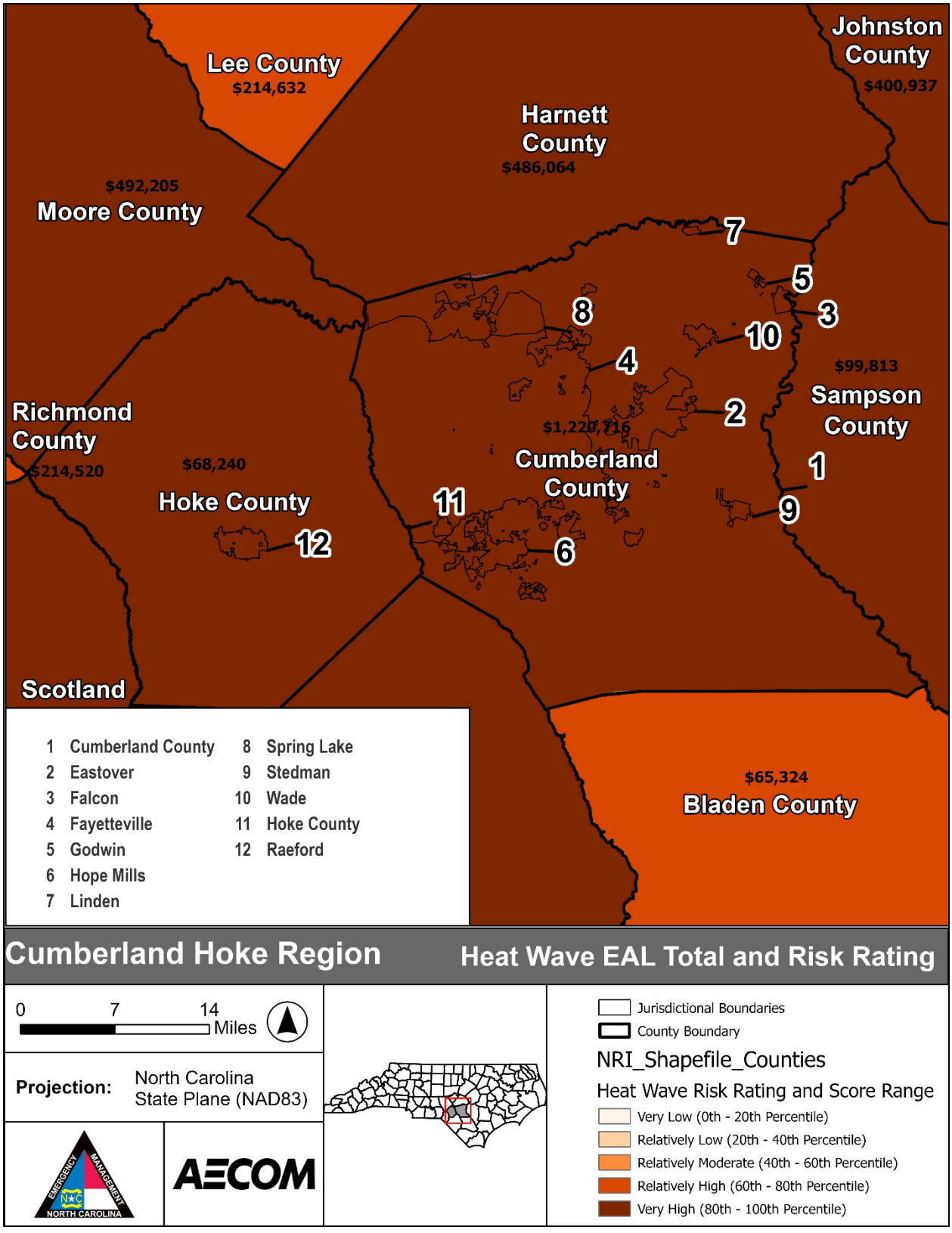


Figure 5-39: NRI Heat Wave Risk Rating and EAL Total for the Cumberland-Hoke Region

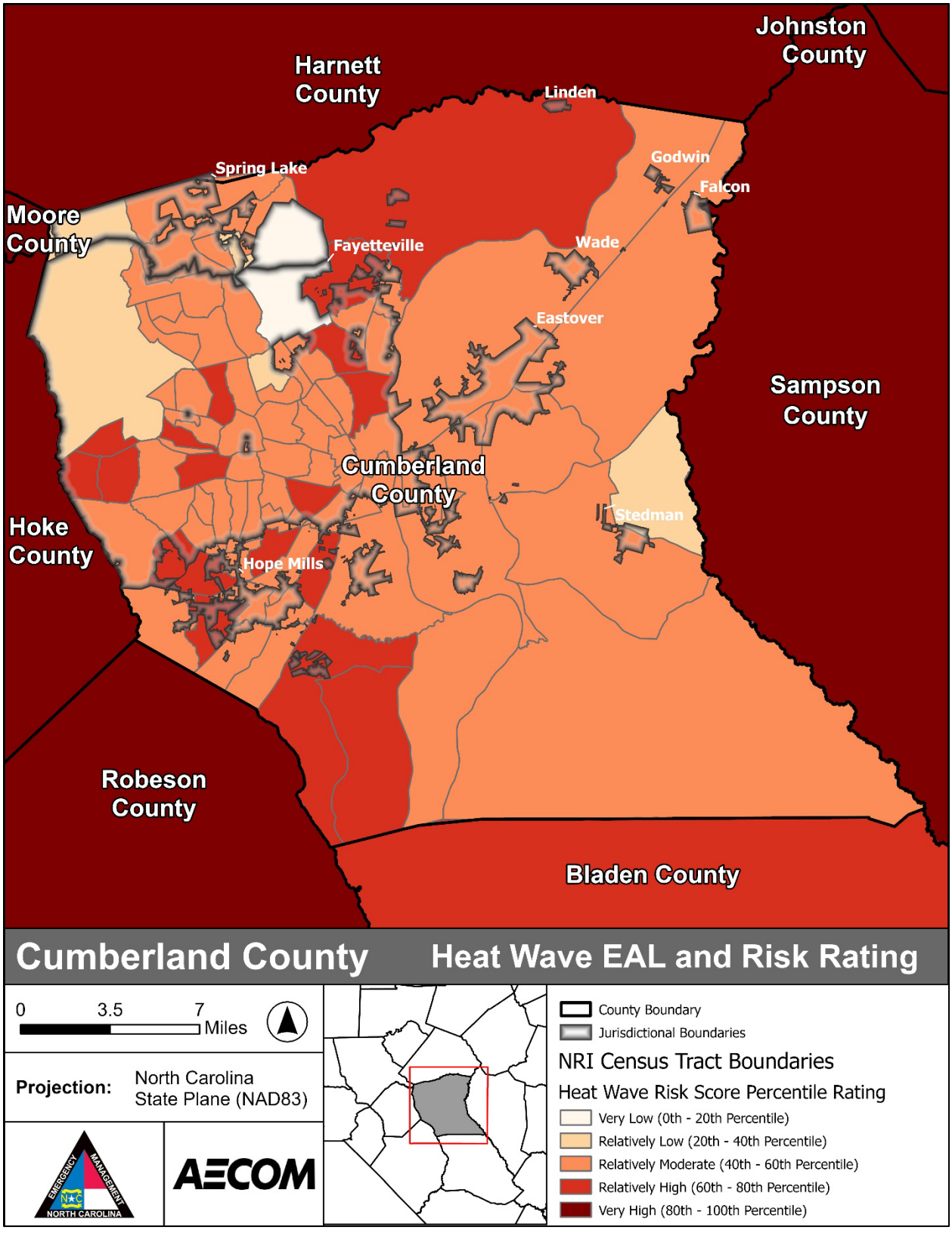


Figure 5-40: NRI Heat Wave Risk Rating and EAL Total for Cumberland County

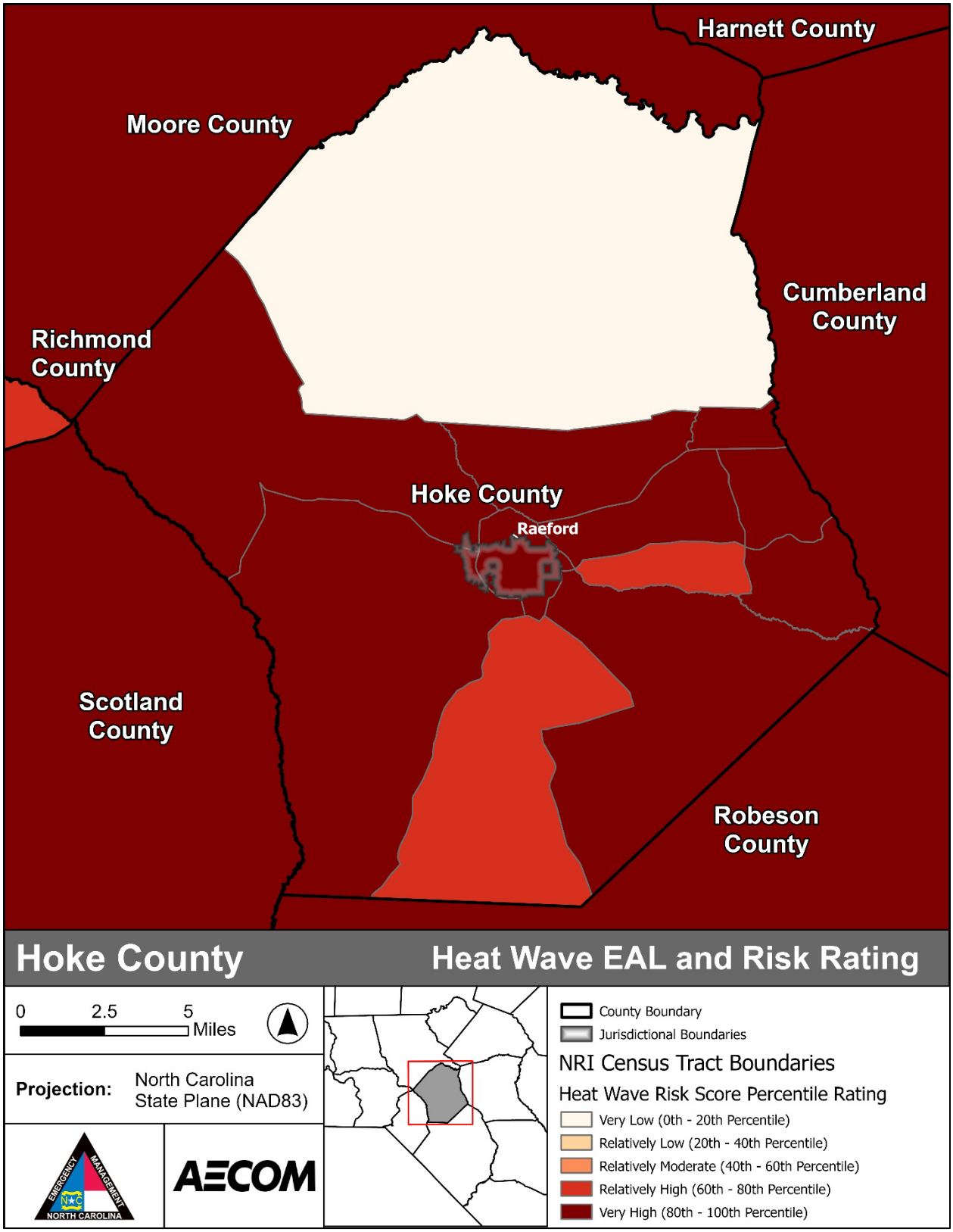


Figure 5-41: NRI Heat Wave Risk Rating and EAL Total for Hoke County

5.5.3. Extent

The extent of extreme heat can be defined by the maximum temperature reached. Extreme Heat occurrences are recorded by the NC State University (NCSU) Climate Office and summarized based on the maximum heat index temperatures. The tables below represent the highest reported temperature in Cumberland and Hoke Counties, as well as the number of days between 2015 and 2025 that fell within different heat index ranges.

Table 5-22: Highest Reported Temperature in Cumberland and Hoke Counties from NCSU Climatology Office Cardinal Data Interface from 2015 to 2025 Based on All Available Records[28]

Station Name	Station Location	Highest Temperature (°F)	Date
Fayette Regional/Grannis Field Airport (KFAY)	Fayetteville, Cumberland County	102	2015-06-16 & 2019-05-30 & 2019-07-03
Fort Bragg (FBRN7)	Fayetteville, Cumberland County (Closest station to Hoke County)	105	2015-06-16 & 2015-06-22

Table 5-23: Number of Days Where the Maximum Recorded Heat Index Was Within the Heat Index Range from the NCSU Climatology Office Cardinal Data Interface from 2015 to 2025[28]

Station Name	Station Location	Heat Index Range	100-104	105-109	110-114	≥115	Days Equal to or Over 100
Fayette Regional / Grannis Field Airport (KFAY)	Fayetteville, Cumberland County	**Number of Days**	212	64	9	3	288
		% of Total Days	5.3%	1.6%	0.2%	0.1%	7.2%
Fort Bragg (FBRN7)	Fayetteville, Cumberland County (Closest station to Hoke County)	**Number of Days**	221	145	48	6	420
		% of Total Days	5.5%	3.6%	1.2%	0.1%	10.5%

5.5.4. Past Occurrences

The National Centers for Environmental Information (NCEI) Storm Events Database shows five records of excessive heat and heat events in the planning area; however, no injuries, deaths, property damage, or crop damage have been reported as a result of these events.

[28] *My Cardinal Requests*. (2025). North Carolina State Climate Office (NCSCO). https://products.climate.ncsu.edu/cardinal/user/

Table 5-24: Extreme Heat Events Reported by the NCEI Storm Events Database (all reported occurrences in 2025)[29]

Area Reported	Event Date	Direct Deaths	Direct Injuries	Event Narrative
Cumberland County	6/24/2025	0	0	Heat indices ranged from 108 to 110 degrees. An anomalously strong high over the southern Appalachians produced very hot, humid conditions during the day, prompting an extreme heat warning. Heat indices reached 115 degrees across the eastern Piedmont, Coastal Plain, and Sandhills of central North Carolina.
Cumberland County	6/25/2025	0	0	Heat indices ranged from 110 to 112 degrees. An anomalously strong high over eastern Tennessee produced very hot, humid conditions during the day, prompting an extreme heat warning. Heat indices reached 115 degrees across the eastern Piedmont, Coastal Plain, and Sandhills of central North Carolina.
Cumberland County	7/26/2025	0	0	Heat indices ranged from 108 to 112 degrees. An anomalously strong high over the southeastern United States produced very hot, humid conditions during the day, with an extreme heat warning in eastern sections of central North Carolina. Heat indices reached 115 degrees across the eastern Piedmont, Coastal Plain, and Sandhills of central North Carolina.
Hoke County				
Cumberland County	7/27/2025	0	0	Heat indices ranged from 109 to 112 degrees. An anomalously strong high over the southeastern United States produced very hot, humid conditions during the day, with an extreme heat warning in eastern sections of central North Carolina. Heat indices reached 110 to 115 degrees across the eastern Piedmont, Coastal Plain, and Sandhills of central North Carolina.
Hoke County				
Cumberland County	7/28/2025	0	0	Heat indices ranged from 108 to 112 degrees. An anomalously strong high over the deep South of the United States produced very hot, humid conditions during the day, with an extreme heat warning in eastern sections of central North Carolina. Heat indices ranged from 110 to 115 degrees across the eastern Piedmont, Coastal Plain, and Sandhills of central North Carolina.

5.5.5. 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

[29] National Center for Environmental Information (NCEI). (2025). *Storm Events Database* [Tabular]. National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/stormevents/

defines a heat wave event.[30] 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. Cumberland County and all census tracts overlapping its jurisdiction had an annualized frequency of 1.24. Cumberland County had a total EAL of $653,334, an EAL score of 86.01, and a Hazard Risk Index Score of 87.56. Hoke County has an EAL of $400,147, an annualized frequency of 1.11, an EAL Score of 78.09, and a Hazard Risk Index Score of 81.04 attributed to Heat Wave events.

Table 5-25: NRI Heat Wave Annualized Frequency, EAL, EAL Rate Percentile, 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
Cumberland County (Unincorporated Area)	**1.24**	**$20,503**	**52.92**	**Relatively Moderate**	**53.16**	**Relatively Moderate**
Eastover	1.24	$32,992	49.93	Relatively Moderate	53.02	Relatively Moderate
Falcon	1.21	$29,812	58.01	Relatively Moderate	60.43	Relatively High
Fayetteville	1.23	$671,178	49.75	Relatively Moderate	53.28	Relatively Moderate
Godwin	1.24	$9,496	52.93	Relatively Moderate	57.96	Relatively Moderate
Hope Mills	1.24	$155,682	52.56	Relatively Moderate	56.68	Relatively Moderate
Linden	1.24	$15,004	62.58	Relatively High	66.26	Relatively High
Spring Lake	1.23	$128,513	46.60	Relatively Moderate	47.70	Relatively Moderate
Stedman	1.24	$13,731	46.59	Relatively Moderate	44.41	Relatively Moderate
Wade	1.24	$15,258	48.51	Relatively Moderate	52.41	Relatively Moderate
Cumberland County Total	**1.24**	**$653,334**	**86.01**	**Very High**	**87.56**	**Very High**
Hoke County (Unincorporated Area)	**1.11**	**$82,616**	**74.11**	**Relatively High**	**78.81**	**Relatively High**
Raeford	1.11	$184,950	79.30	Relatively High	84.61	Very High
Hoke County Total	**1.11**	**$400,147**	**78.09**	**Relatively High**	**81.04**	**Very High**

[30] *National Risk Index Data v1.20 Technical Documentation*. (2025). Federal Emergency Management Agency. https://www.fema.gov/sites/default/files/documents/fema_national-risk-index_technical-documentation.pdf

5.5.6. Consequence and Impact Analysis

People

Extreme heat can affect people's health, leading to increased heatstroke cases and even loss of life. Staying hydrated and avoiding strenuous outdoor exercise during extreme heat can help reduce the risk of adverse health effects. Individuals with underlying health issues or those located in rural areas may be vulnerable due to medical access issues. Individuals with disabilities (16.9% in Cumberland County and 18.2% in Hoke County[31]) and individuals with an independent living difficulty (7.3% in Cumberland County and 8.3% in Hoke County[31]) 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 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 lose the ability to adequately power cooling devices. As the planning area's population increases (5.4% in Cumberland County and 13.1% in Hoke County between 2010[32] and 2023[33]), there may be increased strain on power during extreme heat events and on emergency services during HRI responses.

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 (0.9% of housing units in Cumberland County and 1.3% in Hoke County, estimated in 2023[34]). 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[35] (6.1% of housing units in Cumberland County and 8.6% in Hoke County, estimated in 2023[34]) in their household, and not have an internet subscription[35] (10.2% of housing units in Cumberland County and 11.1% in Hoke County in 2023[34]) in their household. Additionally, a significant number of households are estimated to be "Limited English-Speaking Households" (1.9% in Cumberland County and 2% in Hoke County[36]). 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

[31] U.S. Census Bureau. (2023). *Disability Characteristics* (No. ACSST5Y2023.S1810; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S1810
[32] U.S. Census Bureau. (2010). *Total Population* (No. DECENNIALSF12010.P1; Version Decennial Census) [Dataset]. data.census.gov. https://data.census.gov/table/DECENNIALSF12010.P1
[33] U.S. Census Bureau. (2023). *ACS Demographic and Housing Estimates* (No. ACSDP5Y2023.DP05; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP05
[34] U.S. Census Bureau. (2023). *Selected Housing Characteristics* (No. ACSDP5Y2023.DP04; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP04
[35] U.S. Census Bureau. (2023). *Types of Computers and Internet Subscriptions* (No. ACSDP5Y2023.S2801; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S2801
[36] U.S. Census Bureau. (2023). *Limited English Speaking Households* (No. ACSST5Y2023.S1602; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S1602

information about cooling centers, preventing negative health impacts, and preparedness for extreme heat events to reduce the disproportionate impacts on vulnerable populations.

- 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.

Changes in Development

All counties in the planning area have experienced an increase in housing units between 2013 and 2023, with Cumberland County up 3.49%, Hoke County up 10.31%, and the planning area up 4.3% 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 absorbs 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.

- 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.

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

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 the wooded regions) can

mitigate heat islands, reducing local air temperatures by up to 9°F.[37] As development increases in the planning area, the natural environment and the urban heat island effect are likely to be affected.

First Responders

Extreme heat events may lead to increased wildfire occurrence, which could impact first responders in the planning area by increasing wildfire incidents and increasing their risk of HRI.

Future Conditions

According to the NCCSR[38], the years between 2009 and 2018 were the warmest 10-year period in NC, with an average of 0.6°F warmer than the warmest decade of the 20th century, 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 (in the higher scenario) and 2-6°F (in the 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 possible 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.

[37] Centers for Disease Control and Prevention (CDC). (2016). *Extreme Heat Can Impact Our Health in Many Ways*. U.S. Department of Health and Human Services. https://www.cdc.gov/climate-health/media/pdfs/EXTREME-HEAT-Final_508.pdf

[38] Kunkel, K. E., Easterling, D. R., Ballinger, A., Bililign, S., Champion, S. M., Corbett, D. R., Dello, K. D., Dissen, J., Lackmann, G. M., Luettich Jr., R. A., Perry, L. B., Robinson, W. A., Stevens, L. E., Stewart, B. C., & Terando, A. J. (2020). *North Carolina Climate Science Report* (p. 233). North Carolina Institute for Climate Studies. https://ncics.org/programs/nccsr/

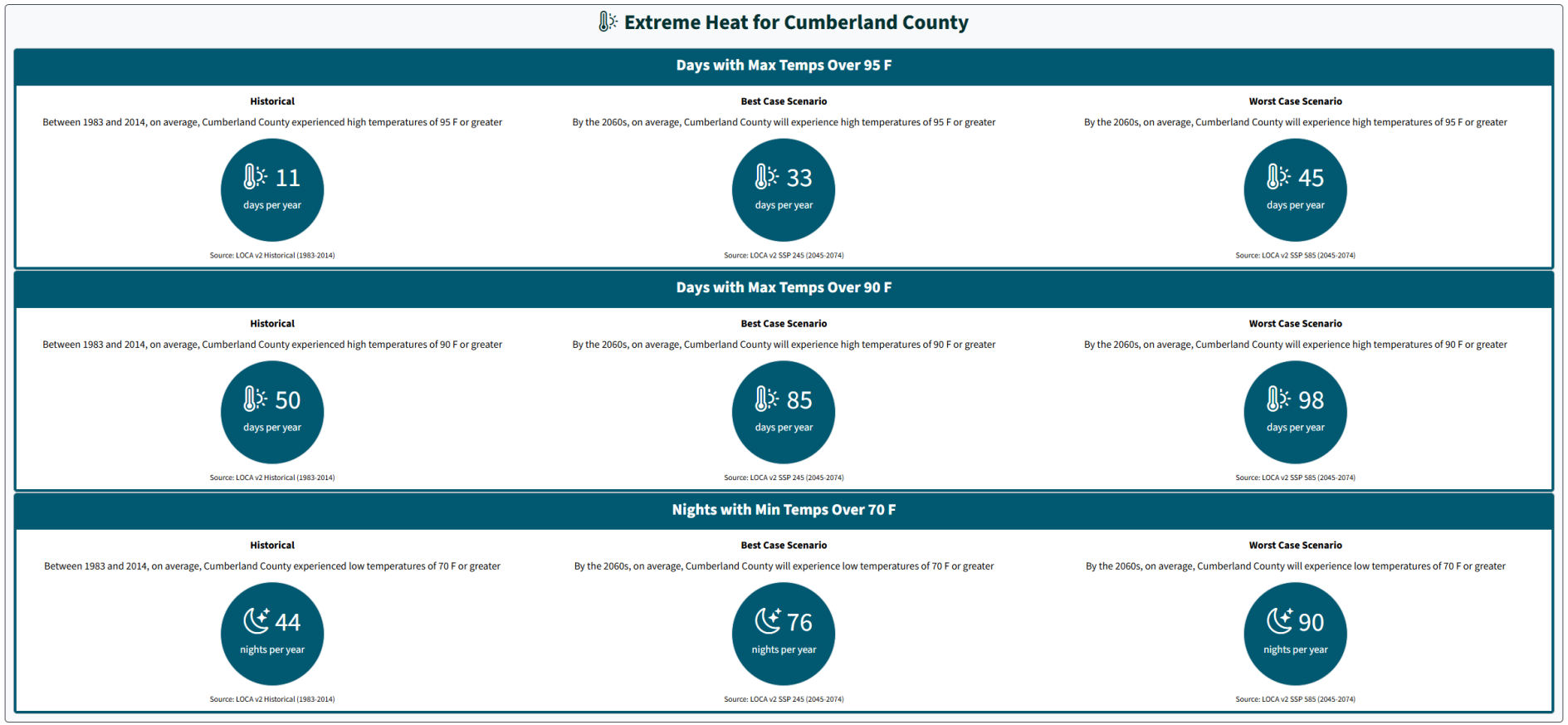


Figure 5-42: Extreme Heat Climate Projections for Cumberland County[39]

[39] NC State Resilience Office. (2026). *Climate Projections*. NC Resilience Exchange. https://www.resilienceexchange.nc.gov/understand-your-vulnerabilities/climate-observations-and-projections

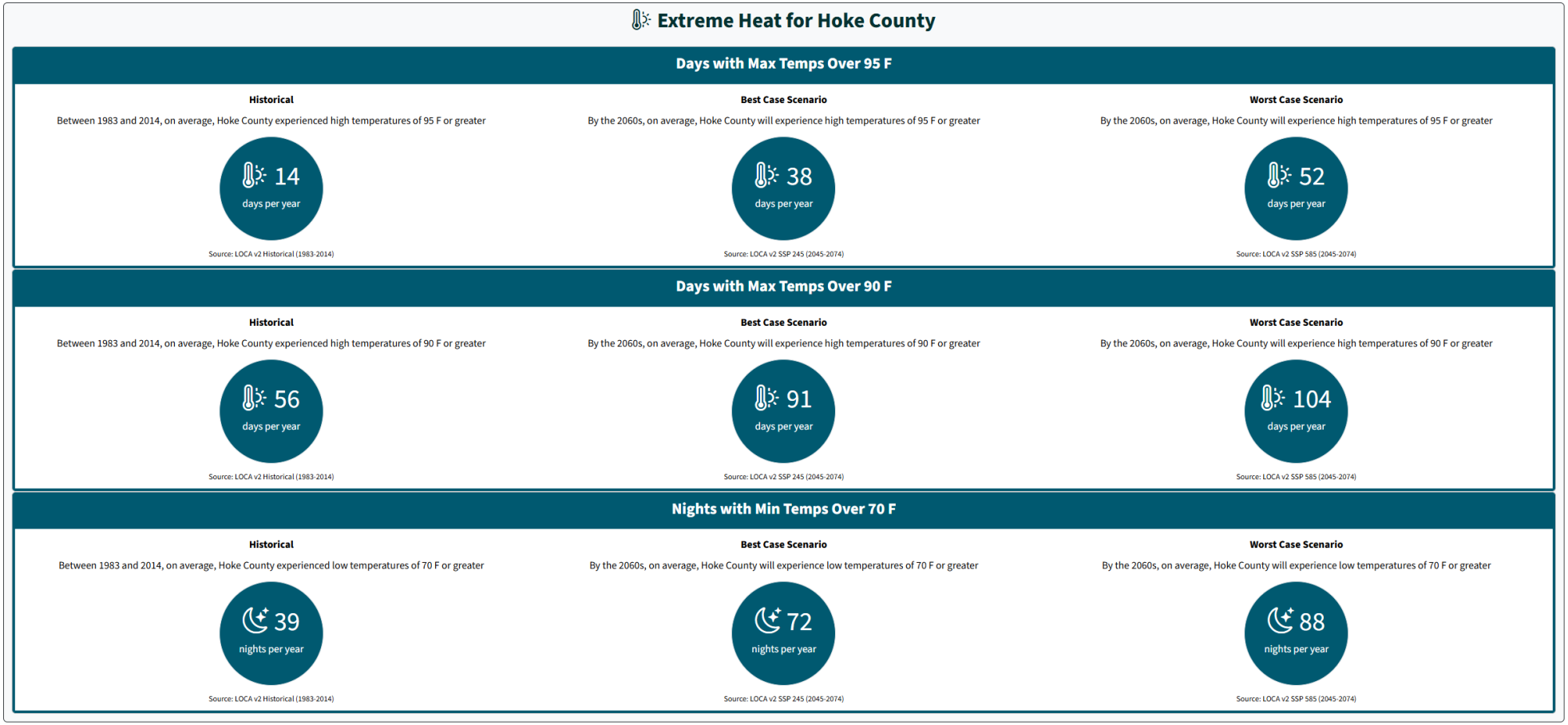


Figure 5-43: Extreme Heat Climate Projections for Hoke County[39]

5.6. Hurricane/Tropical Storm

5.6.1. Hazard Description

A hurricane is a type of tropical cyclone or severe tropical storm that forms in the southern Atlantic Ocean, Caribbean Sea, Gulf of Mexico, and the eastern Pacific Ocean. All Atlantic and Gulf of Mexico coastal areas are subject to hurricanes. The Atlantic hurricane season runs from June to November, with peak activity from mid-August to late October.

While hurricanes pose the greatest threat to life and property, tropical storms and depressions also can be devastating. A tropical disturbance can intensify as sustained wind speeds increase. The progression of a tropical disturbance is described below.

- **Tropical Depression:** A tropical cyclone with maximum sustained winds of 38 mph (33 knots) or less.
- **Tropical Storm:** A tropical cyclone with maximum sustained winds of 39 to 73 mph (34 to 63 knots).
- **Hurricane:** A tropical cyclone with maximum sustained winds of 74 mph (64 knots) or higher. In the western North Pacific, hurricanes are called typhoons; similar storms in the Indian Ocean and South Pacific Ocean are called cyclones.
- **Major Hurricane:** A tropical cyclone with maximum sustained winds of 111 mph (96 knots) or higher, corresponding to a Category 3, 4, or 5 on the Saffir-Simpson Hurricane Wind Scale.

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 function 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 and given a name. The National Hurricane

Center (NHC) in Miami, Florida, closely monitors it. 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, which rates intensity from 1 to 5, with 5 being the most intense.

The Saffir-Simpson Hurricane Wind Scale classifies hurricanes by intensity into one of five categories, as shown in Table 5-26. This scale estimates potential property damage. Hurricanes reaching Category 3 or higher are considered major hurricanes due to their potential for significant loss of life and damage. Category 1 and 2 storms are still dangerous and require preventive measures.

Table 5-26: Saffir-Simpson Scale

Category	Maximum Sustained Wind Speed (MPH)
-1*	≤39
0*	40–73
1	74–95
2	96–110
3	111–129
4	130–156
5	157 +

*-1 = Tropical Depression & 0 = Tropical Storm
Source: National Hurricane Center (2012)

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 5-27 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 5-27: Hurricane Damage Classifications

Storm Category	Damage Level	Description of Damages	Typical Minimum Surface Pressure (Millibars)	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.	Greater than 980	
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.	979–965	
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	964–945	

		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.	944–920	
5	Catastrophic	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.	Less than 920	

Source: National Hurricane Center; Federal Emergency Management Agency

5.6.2. Location and Spatial Extent

All Atlantic and Gulf of Mexico coastal areas are subject to hurricanes. While coastal areas are most directly exposed to landfalling hurricanes and tropical storms, their impact can be felt hundreds of miles inland. The entire Region is equally susceptible to hurricanes and tropical storms. The maps below show all past hurricane paths through the Region.

The following hurricane hazard maps represent the NRI EAL. The NRI utilizes NOAA's National Centers for Environmental Prediction HURDAT2 Best Track Data Archive[40] 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),[41] which represent the location, intensity, and path of tropical cyclones from the 1840s to the present, at 3-hour intervals when available. Other data parameters may also be included in the records, depending on the source data agency.

[40] National Oceanic and Atmospheric Association. (2024). *Best Track Data (HURDAT2)* [Tabular]. National Hurricane Center Data Archive. https://www.nhc.noaa.gov/data/#hurdat

[41] Knapp, K. R., Kruk, M. C., Diamond, H. J., Gahtan, J., Schreck, C. J., & Kossin, J. P. (2025). *The International Best Track Archive for Climate Stewardship (IBTrACS)* (Tabular No. (DSI) 9637). National Centers for Environmental Information. https://www.ncei.noaa.gov/products/international-best-track-archive

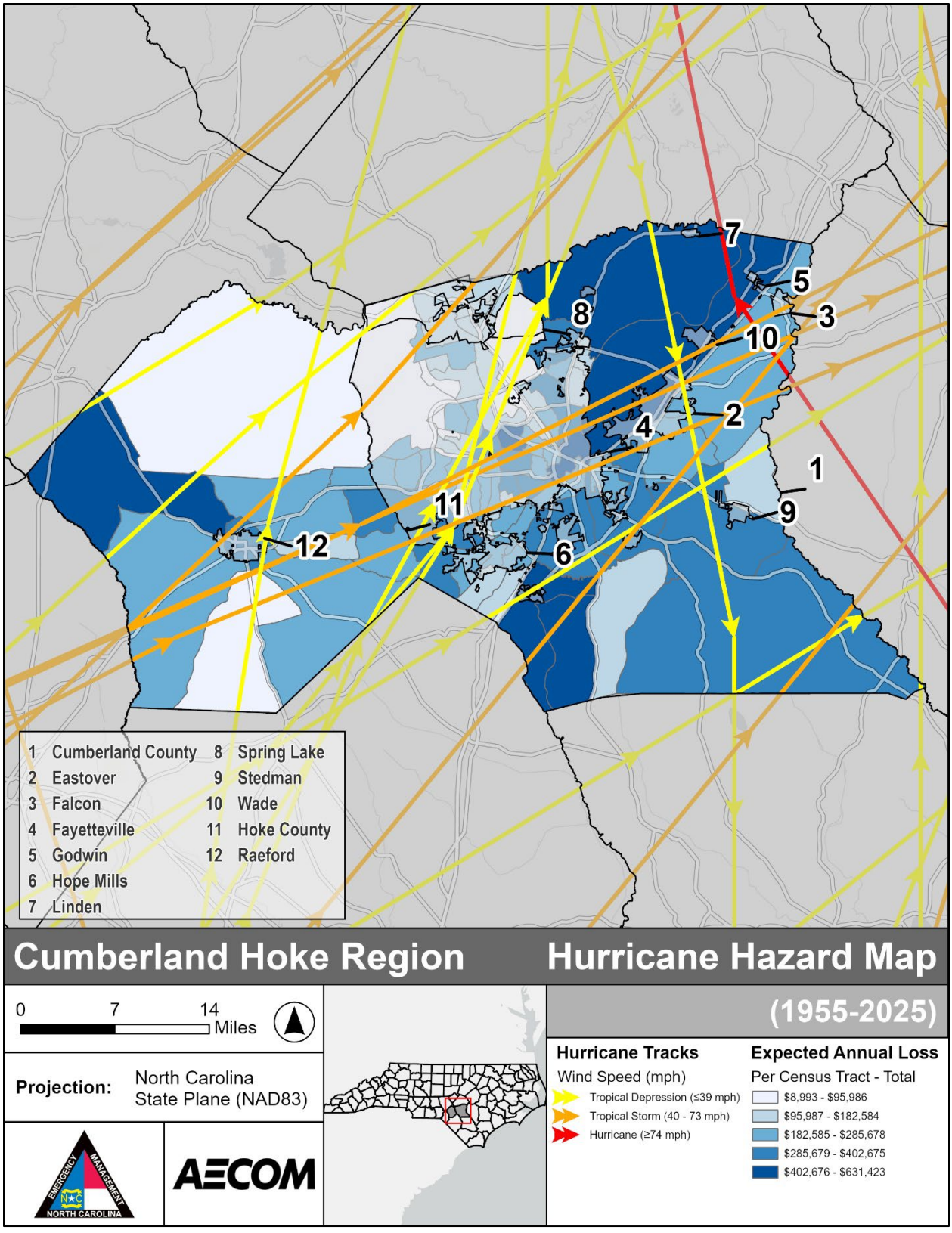


Figure 5-44: Cumberland-Hoke Regional Hurricane Hazard Map

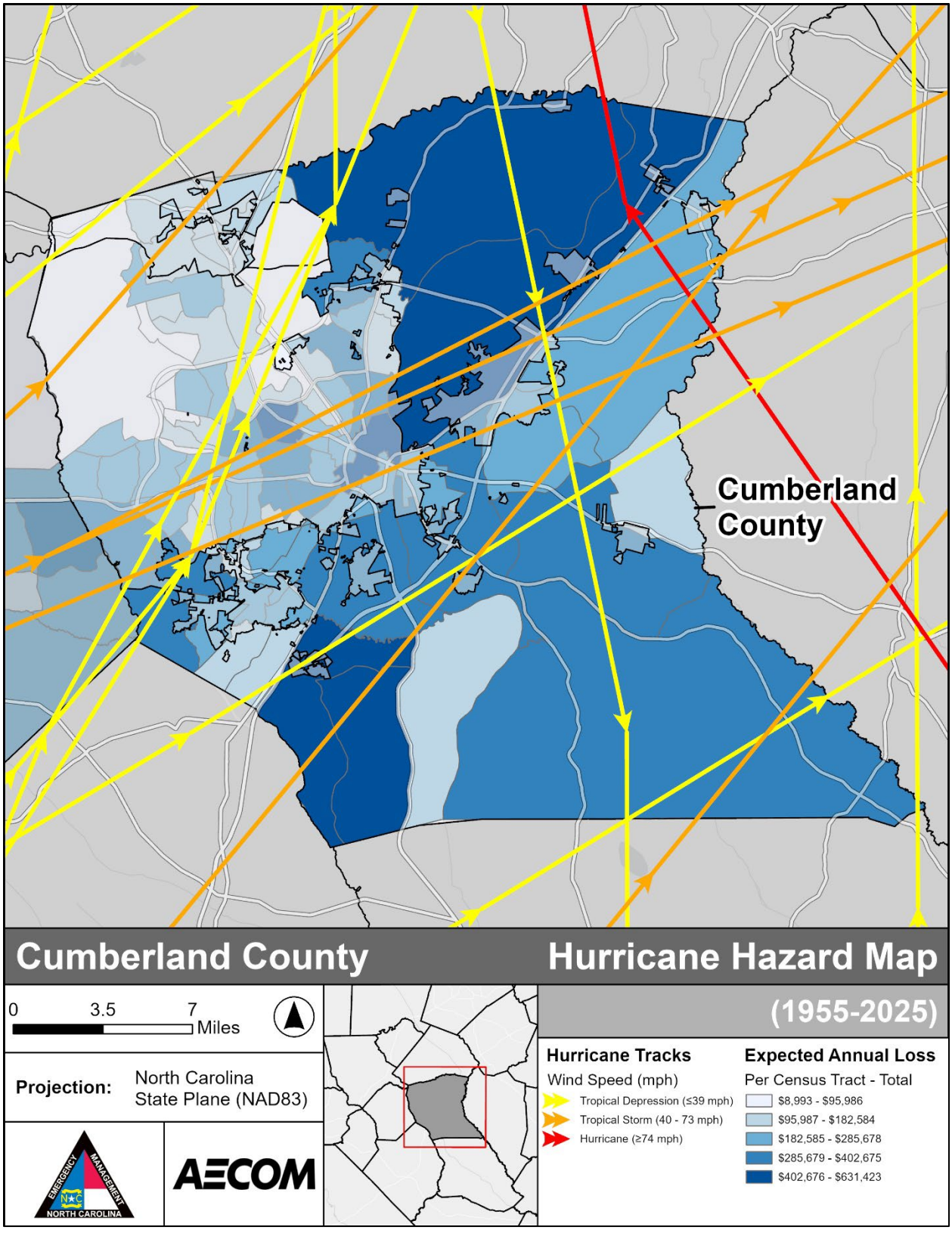


Figure 5-45: Cumberland County Hurricane Hazard Map

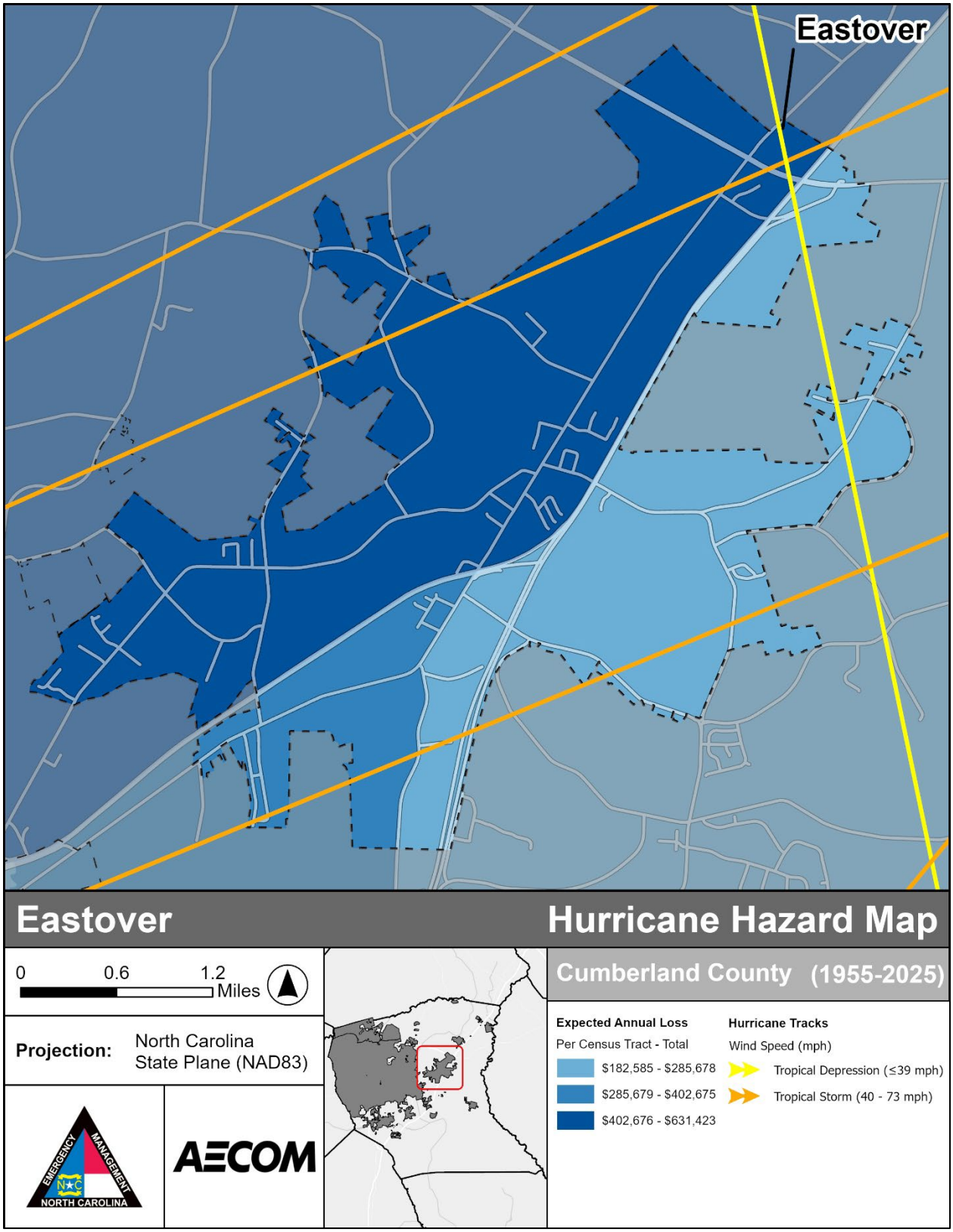


Figure 5-46: Town of Eastover Hurricane Hazard Map

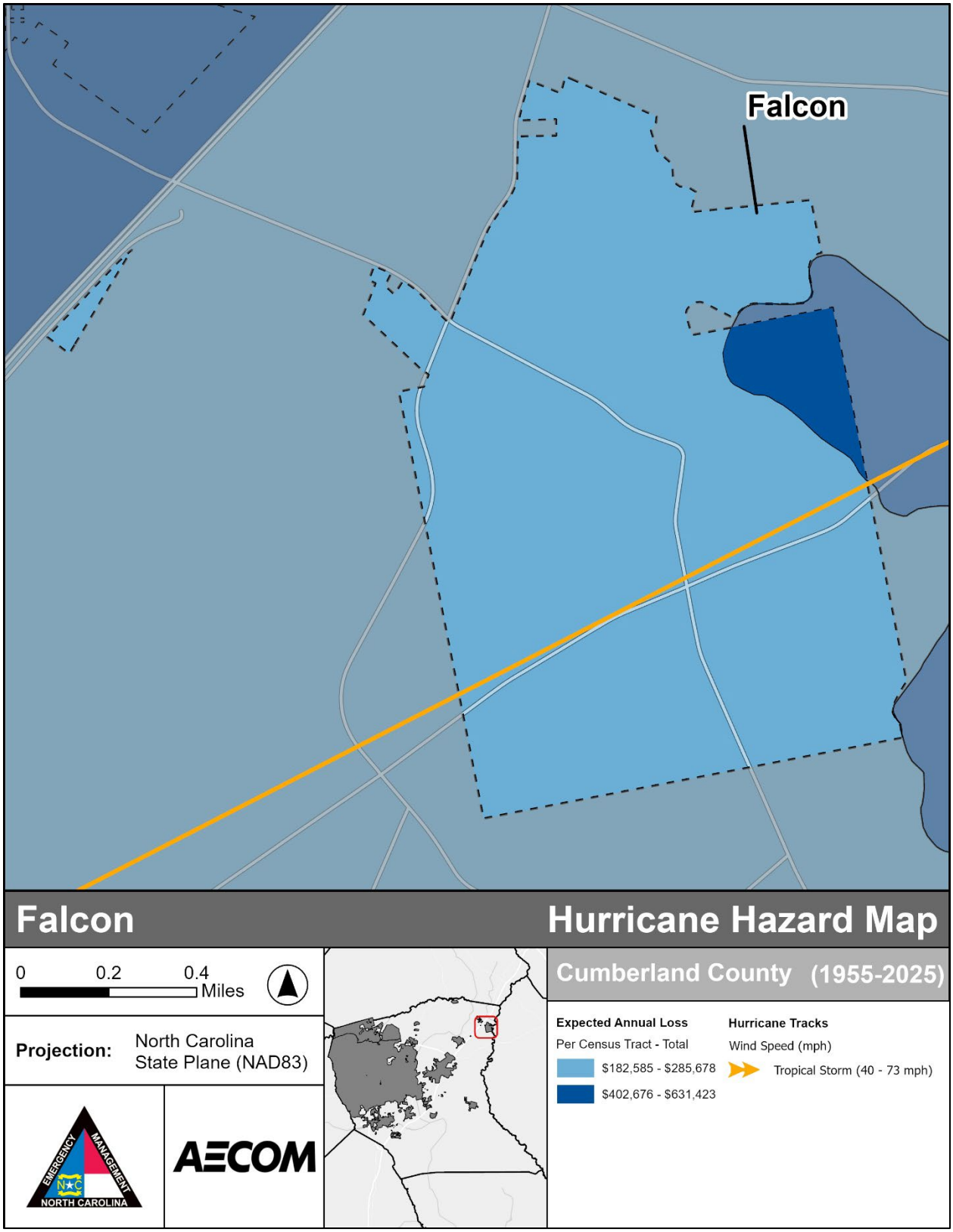


Figure 5-47: Town of Falcon Hurricane Hazard Map

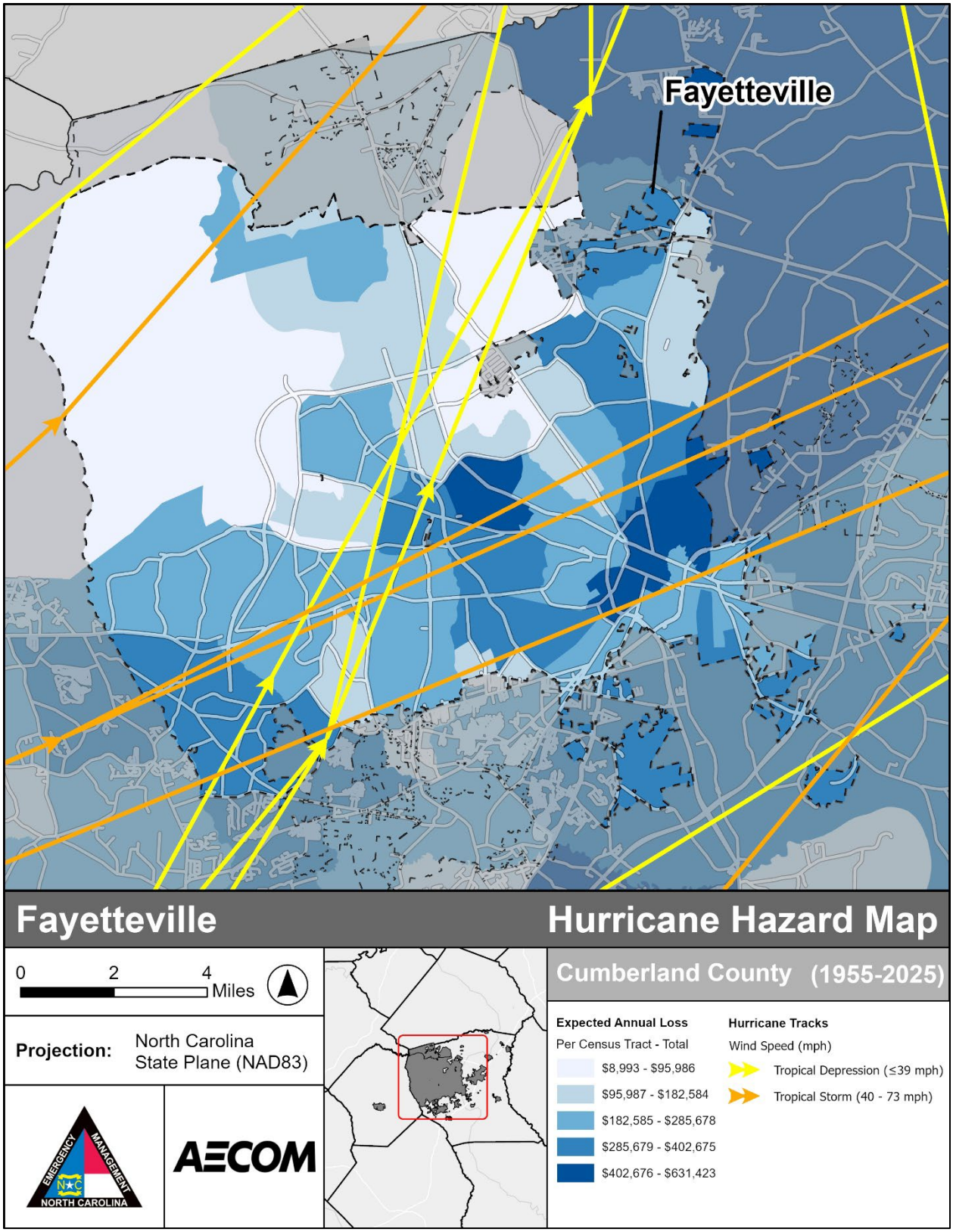


Figure 5-48: City of Fayetteville Hurricane Hazard Map

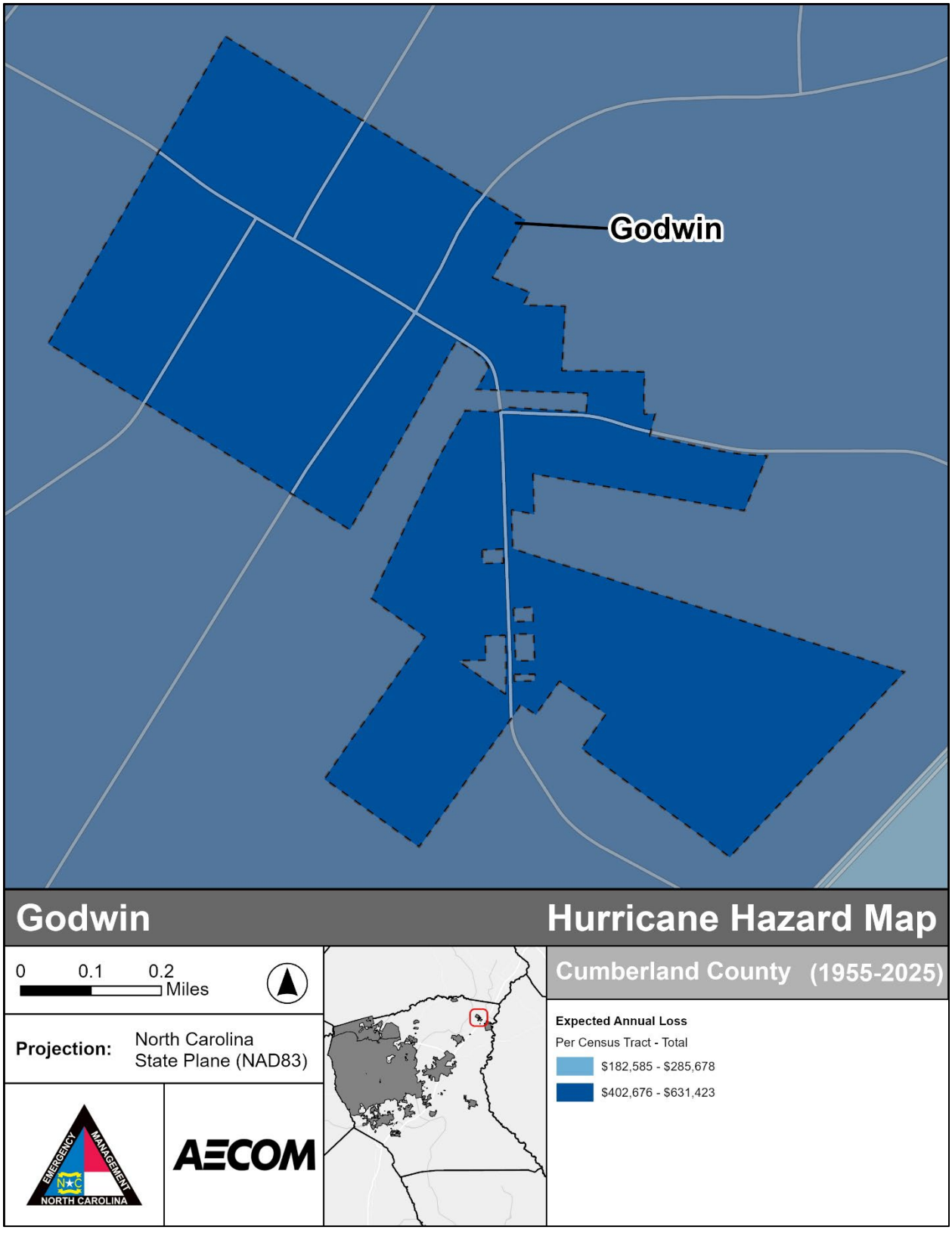


Figure 5-49: Town of Godwin Hurricane Hazard Map

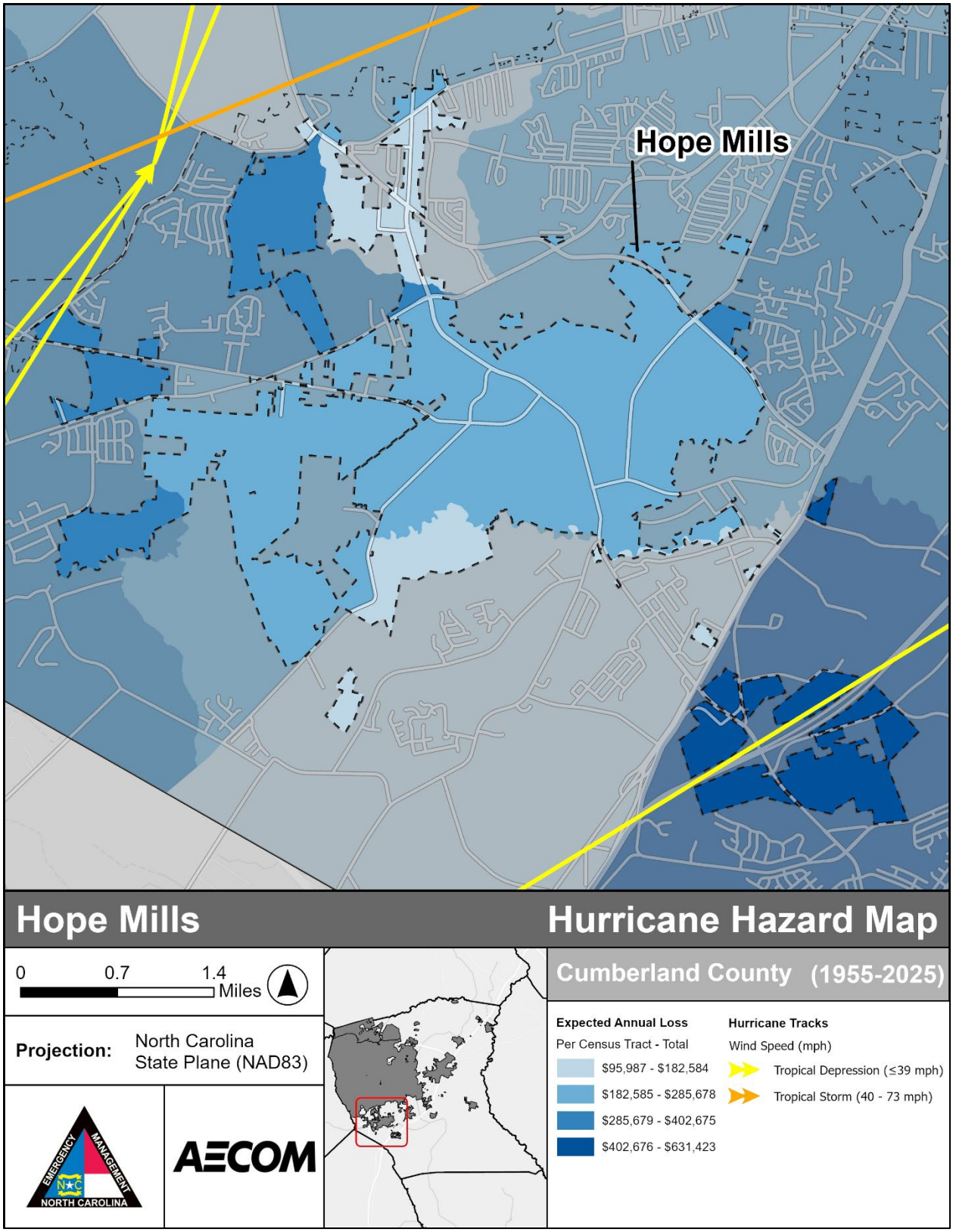


Figure 5-50: Town of Hope Mills Hurricane Hazard Map

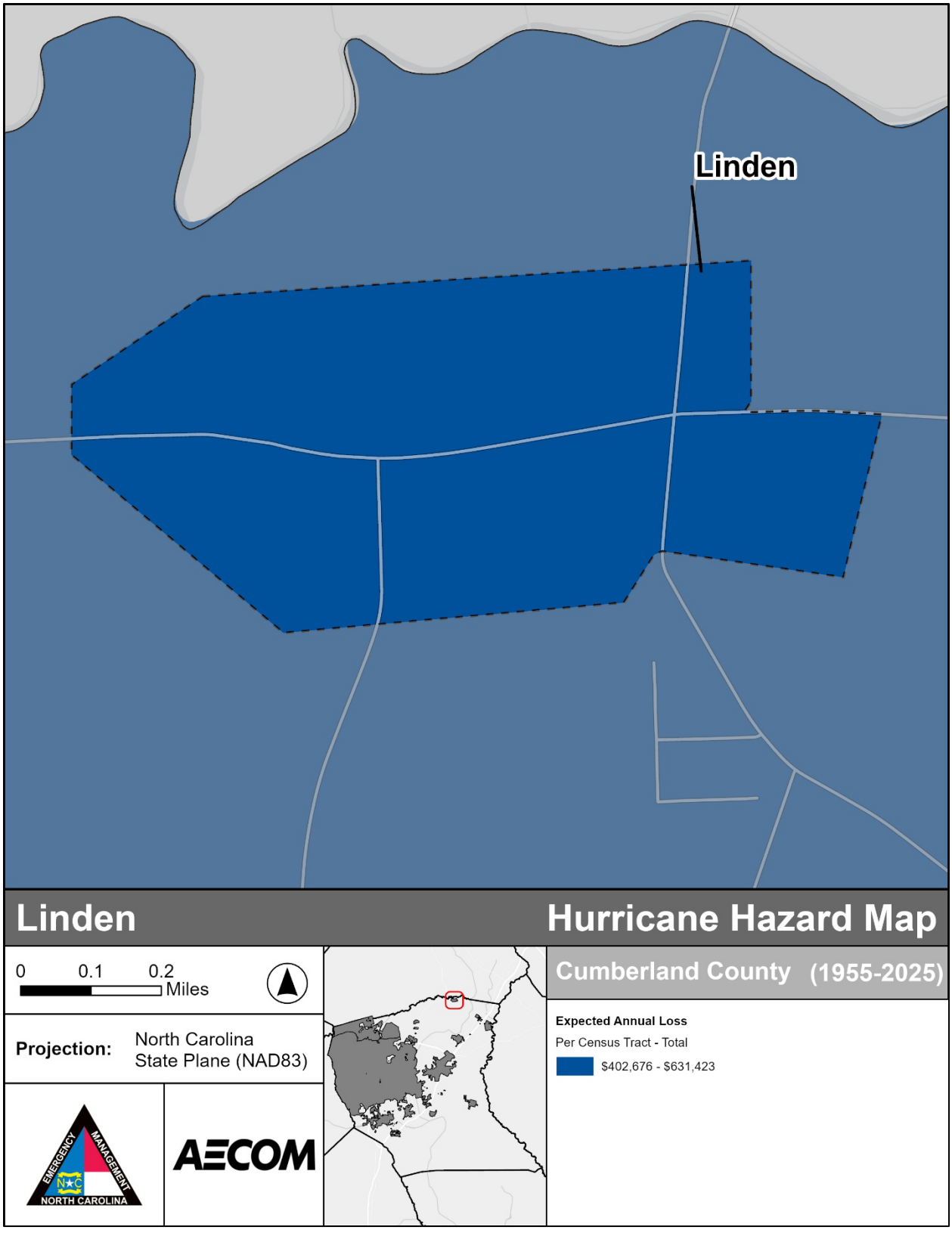


Figure 5-51: Town of Linden Hurricane Hazard Map

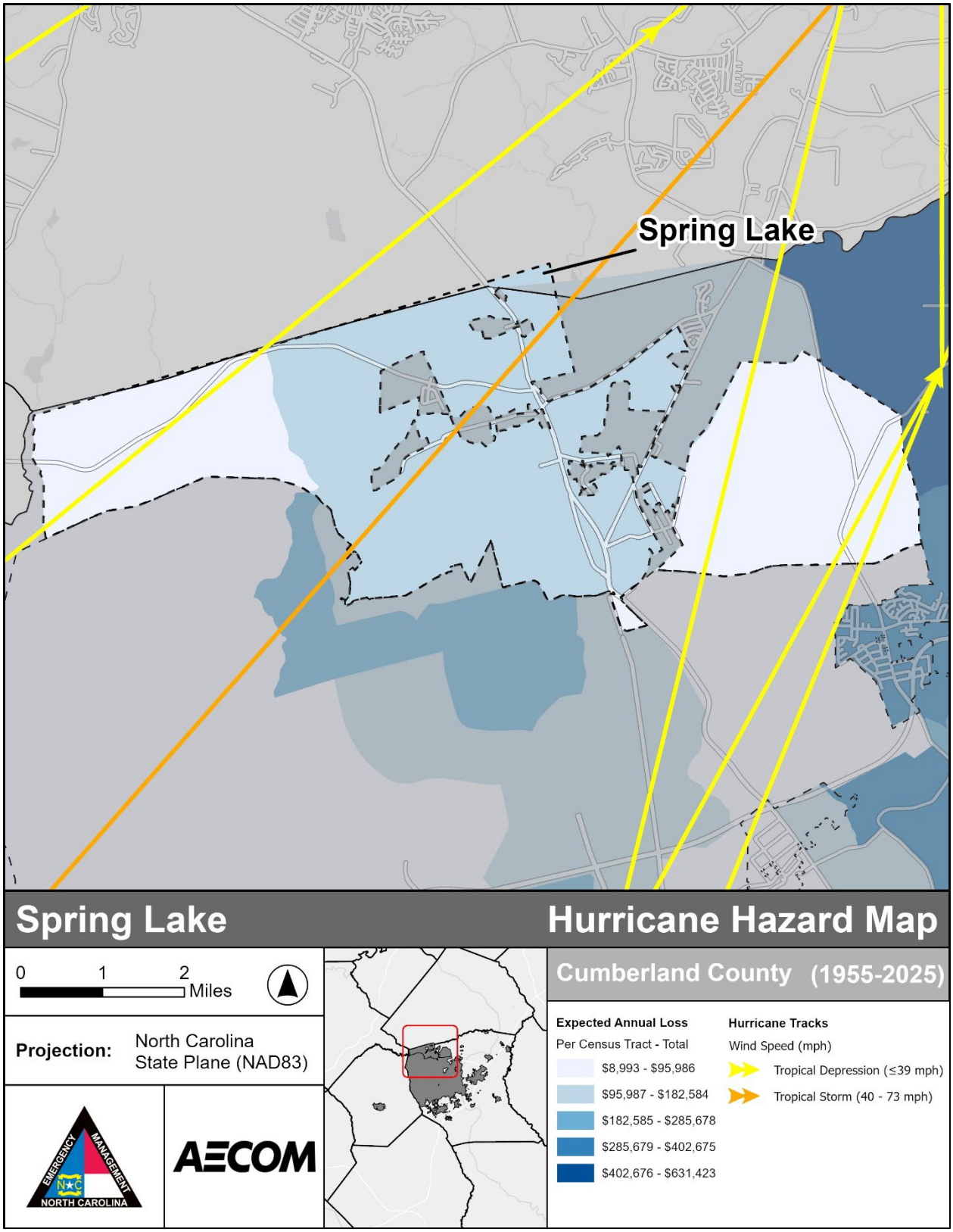


Figure 5-52: Town of Spring Lake Hurricane Hazard Map

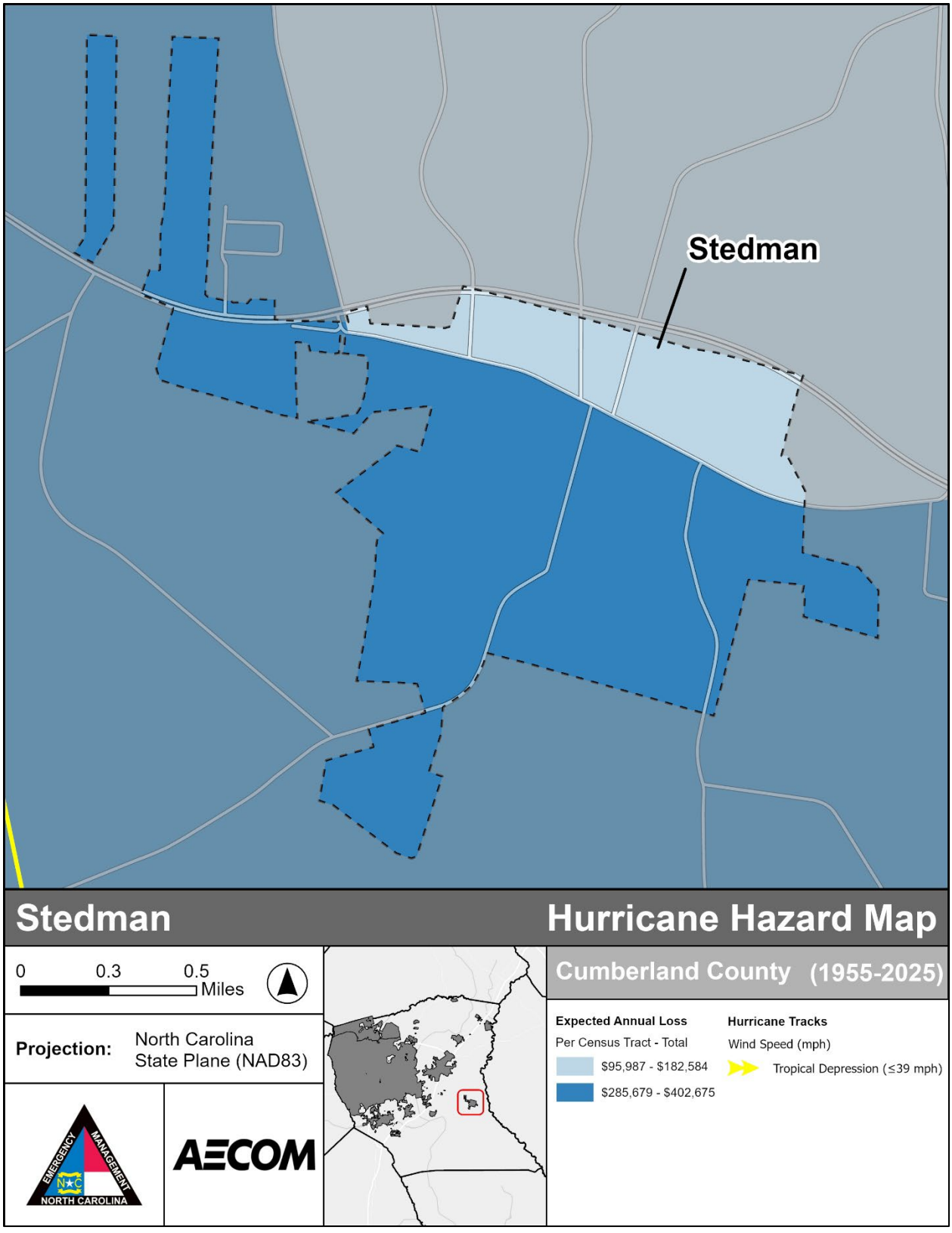


Figure 5-53: Town of Stedman Hurricane Hazard Map

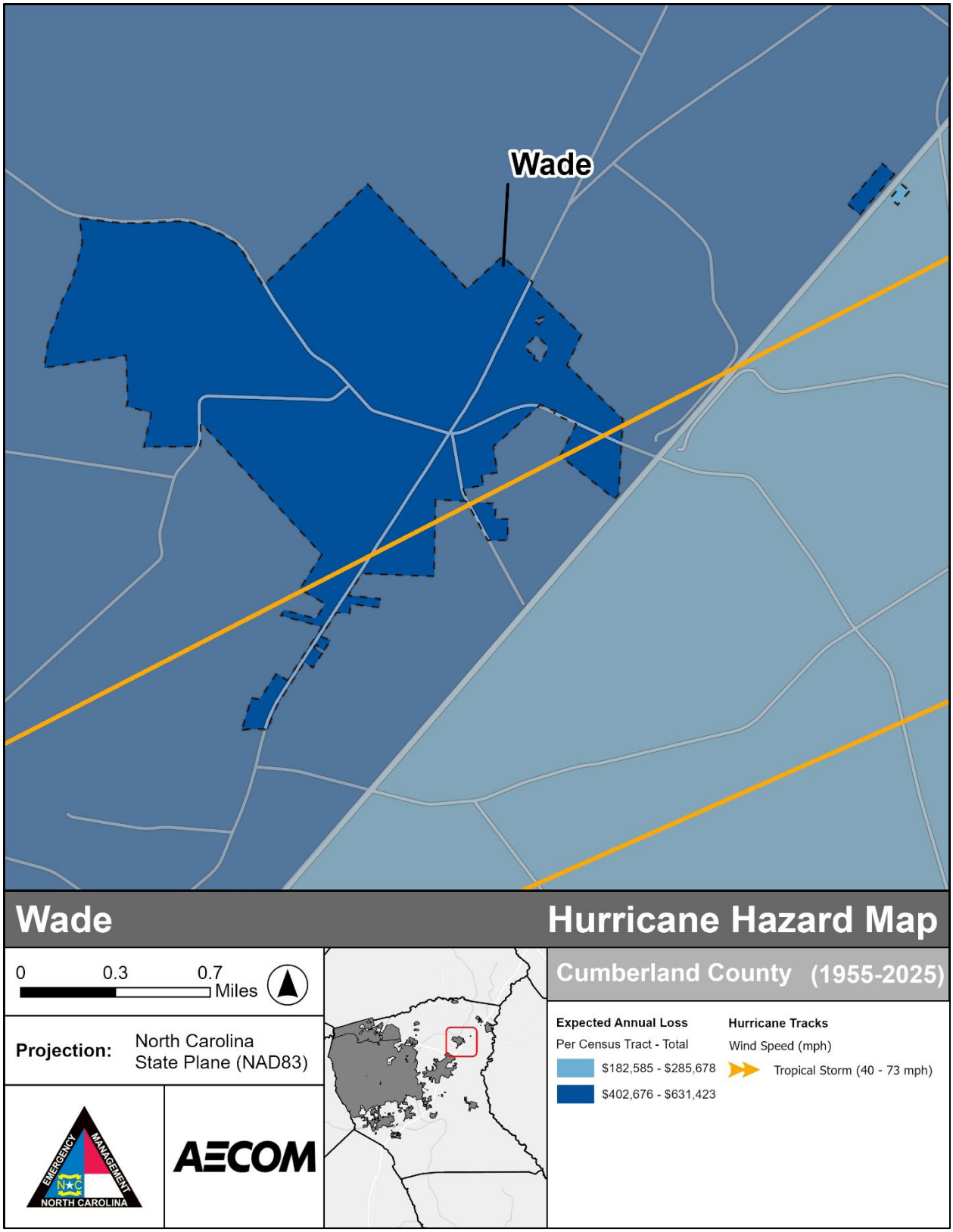


Figure 5-54: Town of Wade Hurricane Hazard Map

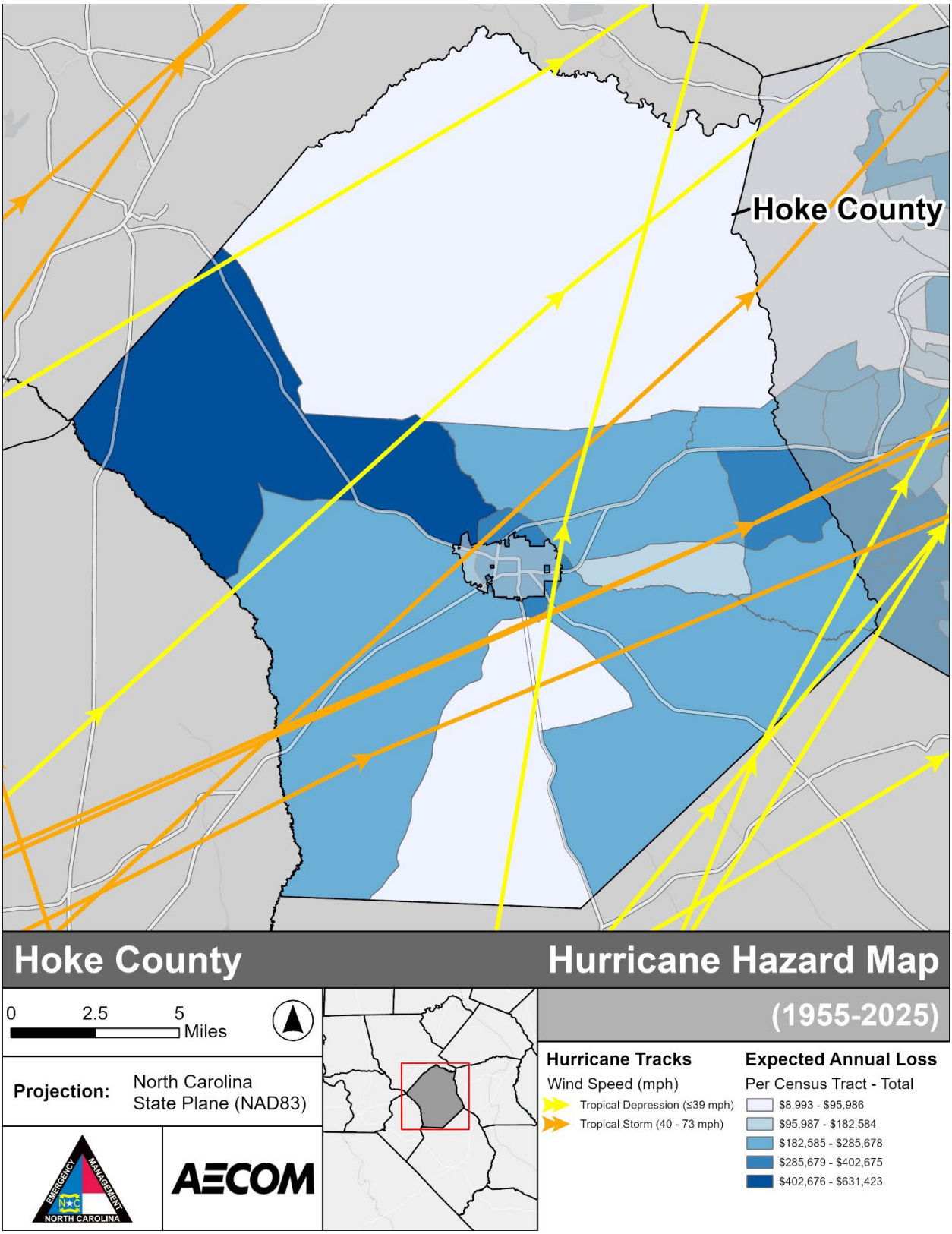


Figure 5-55: Hoke County Hurricane Hazard Map

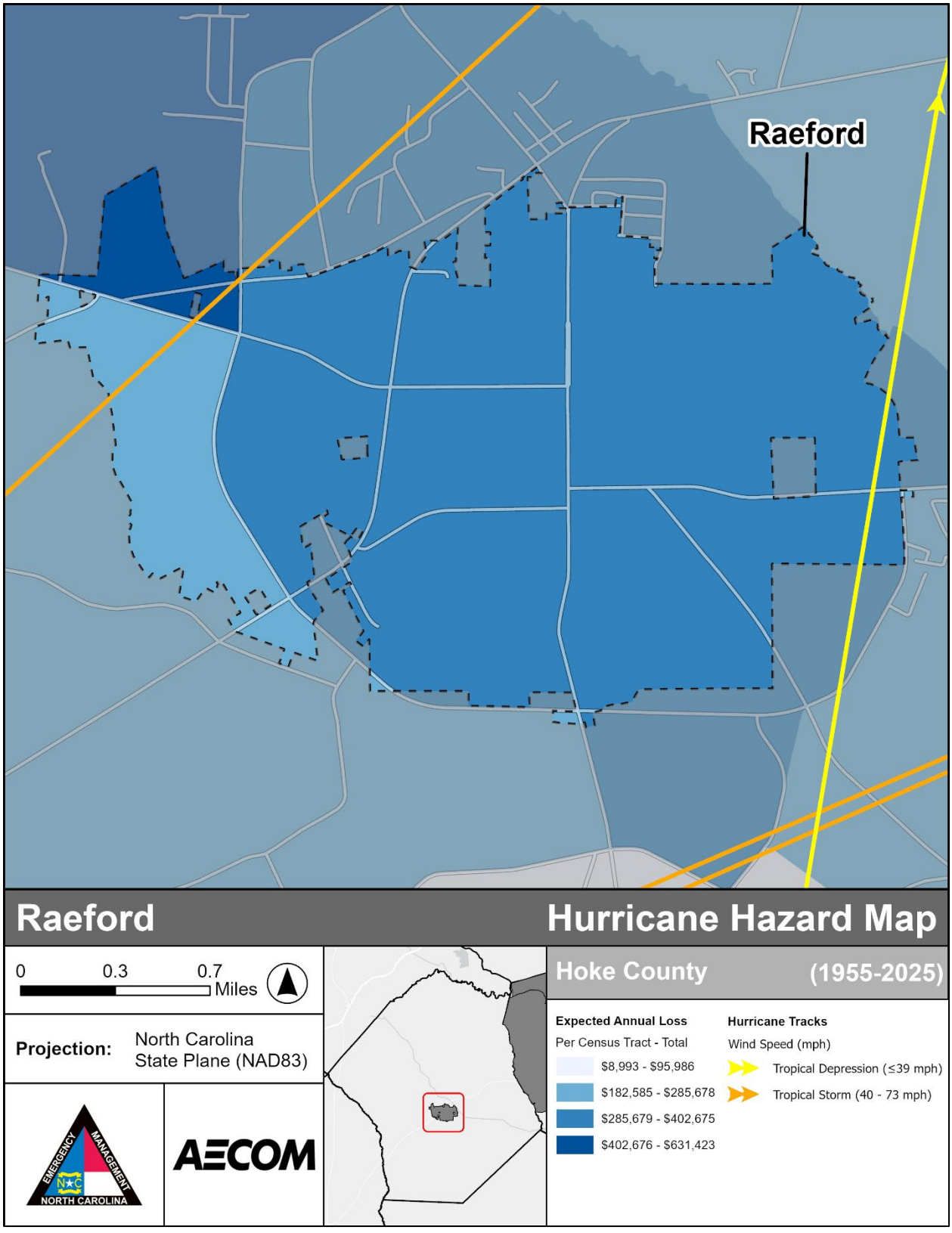


Figure 5-56: City of Raeford Hurricane Hazard Map

5.6.3. Extent

Hurricane extent is defined by the Saffir-Simpson Scale, which classifies hurricanes into Categories 1 through 5. The most significant hurricane impact the Region has experienced was an unnamed storm in 1893, which was classified as a Category 3 hurricane before crossing Cumberland County as a Category 1, carrying tropical-force winds of 80 knots upon arrival in the Region. The following list is the greatest extent of hurricane winds to pass through the area, though it should be noted that stronger storms could impact the region without a direct hit:

Table 5-28: Most Intense Hurricane by Maximum One-Minute Mean Sustained Wind Speed (Knots) in Each County of the Cumberland–Hoke Region[41]

	Cumberland	Hoke
Storm Name	Unnamed	Hurricane Nestor
Date	1893-10-13	2019-10-20
Max Wind Speed in County (1-min. mean in knots)	80	40
Saffir-Simpson Hurricane Scale* at Time of County Impact	Category 1	Post Tropical

*Post Tropical: A cyclone that no longer possesses sufficient tropical characteristics to be considered a tropical cyclone. Post-tropical cyclones can continue to carry heavy rains and high winds. Note: former tropical cyclones that become extratropical and remnant lows are two specific classes of post-tropical cyclones.[42]

5.6.4. Past Occurrences

Flooding and high winds are both hazards of concern during hurricane and tropical storm events in the Region, as evidenced by the differences in impacts from Hurricanes Florence (2018) and Ian (2022). Whereas Florence's effects were primarily due to flooding, Ian's high winds caused damage throughout the county in conjunction with flooding impacts. Some anecdotal information is available about the major storms that have impacted the area, as found below:

Hurricane Florence: September 18, 2018

According to the Fayetteville Observer, Florence brought 10.27 inches of rain to the Fayetteville Regional Airport, with other reports topping 18-20 inches, 23 inches in Lumberton, and 20.5 inches in Hope Mills and Dunn[43]. There were reports that three deaths occurred in Cumberland County, nearly 1,500 people were in shelters, preliminary reports of 1,400 damaged structures, and thousands of residents were left without power for days after the event.[44] According to the NCEI Storm Events Database, $1.5 Million in damage was reported in Cumberland County and $1 million in damage in Hoke County. There were three deaths as a direct result and 6 indirect deaths because of Florence, according to NCEI reports.

[42] National Oceanic and Atmospheric Administration. (n.d.). *Tropical Definitions*. National Weather Service. https://www.weather.gov/mob/tropical_definitions
[43] Jacobs, C. (2019, May 7). Final report on Hurricane Florence's record-smashing destruction. The Fayetteville Observer. https://www.fayobserver.com/story/weather/columns/weather-permitting/2019/05/06/final-report-on-hurricane-florences-record-smashing-destruction/5237358007/
[44] Barnes, G. (2018, September 22). *Hurricane Florence could have been far worse*. https://www.fayobserver.com/story/news/2018/09/22/how-fayetteville-escaped-another-matthew/10364345007/



Figure 5-57: Cars sitting in floodwater on Clinton Street on September 19, 2018[45]



Figure 5-58: High Water Marks Visible in Spring Lake, NC, on September 19, 2018, from the Little River[45]

[45] *Fayetteville area begins flood recovery*. (2018, September 20). https://www.citizen-times.com/picture-gallery/news/local/2018/09/17/waters-continue-rise-fayetteville/1340498002/



Figure 5-59: Damage to the Starlite Motel in Spring Lake[46]



Figure 5-60: Water flowing over Hope Mills Dam on September 18, 2018, in Hope Mills[46]

[46] *Fayetteville area begins flood recovery*. (2018, September 20). https://www.citizen-times.com/picture-gallery/news/local/2018/09/17/waters-continue-rise-fayetteville/1340498002/



Figure 5-61: Flooded house in Spring Lake from September 18, 2018[47]



Figure 5-62: Cape Fear River flooding outside of Fayetteville after September 18, 2018, stands inches below 60 feet[47]

[47] *Fayetteville area begins flood recovery*. (2018, September 20). https://www.citizen-times.com/picture-gallery/news/local/2018/09/17/waters-continue-rise-fayetteville/1340498002/



Figure 5-63: Downed Power Lines along St. Paul's Road in Raeford on September 14, 2018[48]

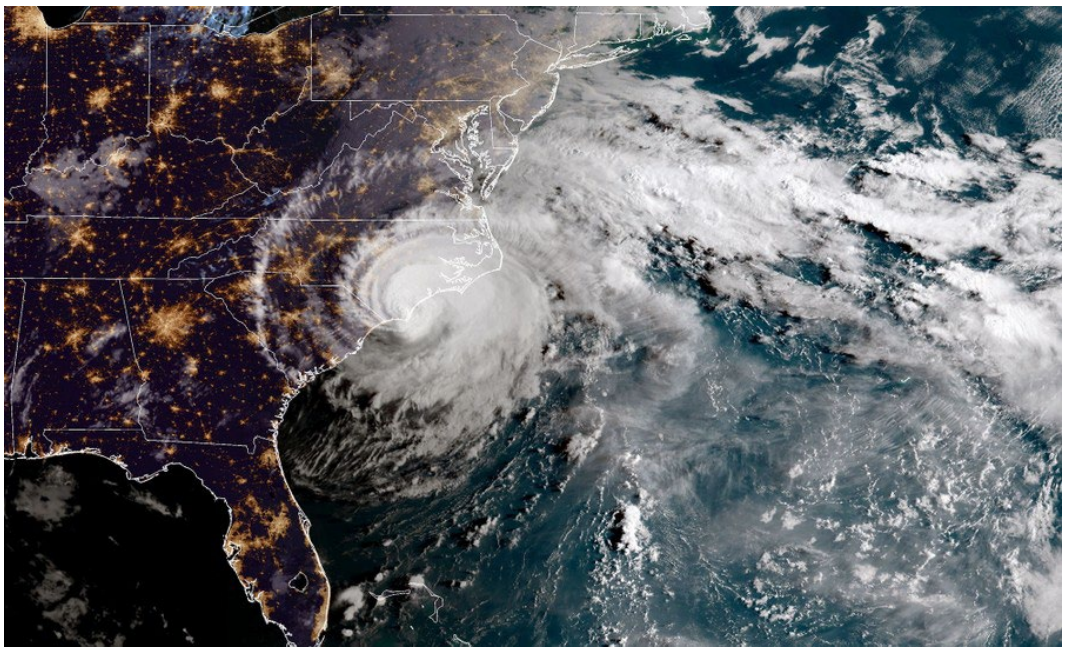


Figure 5-64: Hurricane Florence Making Landfall on September 14, 2018[49]

[48] *PHOTOS: Hurricane Florence makes landfall*. (2018, September 14). The Fayetteville Observer. https://www.fayobserver.com/picture-gallery/news/2018/09/14/photos-hurricane-florence-makes-landfall/69341582007/

[49] How does the ocean affect hurricanes? (2012, September 21). *NOAA Ocean Exploration*. https://oceanexplorer.noaa.gov/ocean-fact/hurricanes/

Hurricane Michael – October 11, 2018

According to the NCEI Storm Events Database summary, Hurricane Michael became a Tropic Storm and moved through NC on October 11, 2018. The storm blew down multiple trees and power lines across Cumberland and Hoke counties, causing minor damage to homes. Rains from 3-6 inches created minor flash flooding throughout the state with wind gusts ranging from 40-60mph. $100,000 of damage was reported in Cumberland County, and $25,000 of damage was reported in Hoke County.

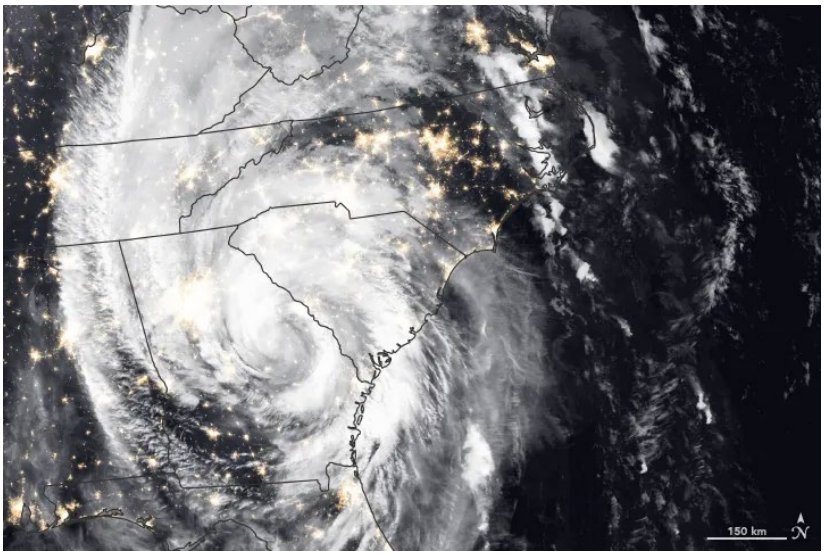


Figure 5-65: Hurricane Michael Satellite Imagery[50]

[50] *Hurricane Michael Reaches North Carolina*. (2018, October 11). NASA Earth Observatory; NASA Science. https://science.nasa.gov/earth/earth-observatory/hurricane-michael-reaches-north-carolina-92873/

Hurricane Dorian: September 6, 2019

According to the NCEI Storm Events Database, Hurricane Dorian moved north near the NC coast on September 5-6, making landfall the morning of September 6th. Heavy rains, ranging from 3-7 inches, and damaging winds spread inland across central NC, producing flash flooding along the Coastal Plain and the east I-95 corridor. Damaging winds between 35 and 55mph were reported across central NC, resulting in power outages, downed trees, and several weak tornadoes. In Cumberland County, $1 million in damage was reported, and in Hoke County, $500,000 in damage was reported due to Hurricane Dorian.



Figure 5-66: Hurricane Dorian Satellite Imagery from NOAA September 6, 2019[51]

Hurricane Isaias: August 3rd, 2020

Frequent wind gusts of 30 to 45 mph resulted in scattered trees and power lines down across Cumberland County, including some on homes. Numerous customers lost power in Cumberland County because 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 northward through the state, accompanied by gusty winds of 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.

[51] *GOES East Sees Dorian Moments Before Making Landfall Over Cape Hatteras, NC*. (2025, December 22). National Environmental Satellite, Data, and Information Service. https://www.nesdis.noaa.gov/news/goes-east-sees-dorian-moments-making-landfall-over-cape-hatteras-nc

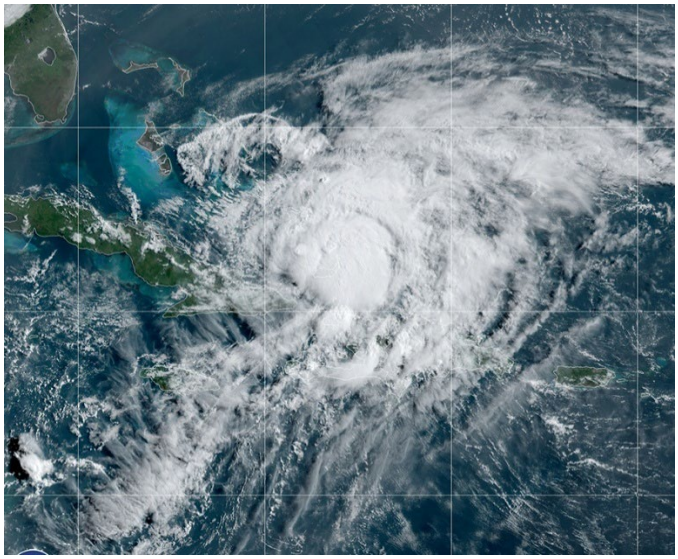


Figure 5-67: Hurricane Isaias Satellite Imagery from NOAA[52]

Hurricane Ian: September 28th, 2022

According to the NCSU Climate Office summary[53], Hurricane Ian moved from east to west multiple times in a zig-zag pattern before eventually moving up the coast and inland. Hurricane Ian was diverted to Florida's west coast as a Category 4-strength storm, with wind gusts up to 140mph. After moving across Florida and the Gulf Stream, Ian regained strength and made landfall near Georgetown, SC, as a Category 1 hurricane, with its track moving to the northwest, sending storm remnants across NC. In NC alone, more than 360,000 customers experienced power outages.

According to NCEI Storm Event Database Reports, Cumberland County had $1 million in damages, and Hoke County had $750,000 in damages associated with Hurricane Ian. Frequent wind gusts of 40-60mph were reported, along with numerous trees and power lines downed across the planning area. Thousands of customers reportedly lost power across NC, which included residents of the planning area.

[52] *Isaias*. (2020, August 4). National Oceanic and Atmospheric Administration; National Oceanic and Atmospheric Administration. https://www.noaa.gov/isaias

[53] Davis, C. (2022, October 3). Rapid Reaction: Windy, Wet Ian Sweeps Through North Carolina—North Carolina State Climate Office [North Carolina State Climate Office]. *Climate Blog*. https://climate.ncsu.edu/blog/2022/10/rapid-reaction-windy-wet-ian-sweeps-through-north-carolina/



Figure 5-68: Hurricane Ian at 9 am on September 30, 2022, from satellite imagery from NOAA[53]

Table 5-29: Hurricanes and Tropical Storms Reported from 1996 to 2025 by the NCEI Storm Events Database[54]

County	Date	Event Name	Property Damage	Event Narrative	Episode Narrative
Cumberland County Hoke County	7/12/1996	Hurricane Bertha	$0	Hurricane Bertha moved along the edge of the National Weather Service Forecast Office (NWSFO) Raleigh county warning area. Three counties sustained substantial crop damage: Wayne, $12 million; Wilson, $7 million; and Johnston, $2 million. Structural damage was light and was primarily caused by trees on homes and cars. The hardest hit county was Wayne, where property damage was estimated at $500,000. Power outages were widespread in the eastern counties as trees took down power lines. Two F0 tornadoes occurred: one in Wake and one in Wilson County. No injuries or deaths were reported. The highest wind recorded was 60 mph at Seymour Johnson AFB near Goldsboro. The greatest rainfall was four inches, also at the AFB.	
Cumberland County Hoke County	9/5/1996	Hurricane Fran	$0	Hurricane FRAN was the worst natural economic disaster to occur in North Carolina's history. In the RAH county warning area, damage exceeded $ 2 billion. Damage to crops, livestock, farm equipment/buildings was over 400 million. The agricultural damage was the greatest in Sampson, Johnston, and Wayne counties. Several hundred thousand trees were uprooted or broken. Tens of thousands of homes were damaged by falling trees. In the path of the storm's center, almost every neighborhood was affected. The copious rainfall produced many severe flash and river floods. The flooding on the Haw River at the town of Haw River, the Neuse River at Smithfield and Goldsboro, and the Tar River at Louisburg and Rocky Mount, all neared or exceeded the highest flood on record. Many homes in the floodplain had to be evacuated. The most massive evacuation occurred in Goldsboro, where residents of 550 homes had to be moved to public shelters. Hundreds of cars in Goldsboro were damaged by water, many of which were underwater with only their radio antenna showing. Many homes and businesses incurred heavy losses. Along the Crabtree Creek in Raleigh, which crested at its highest since 1973, hundreds of new cars from local dealerships floated in 6 feet of water. Scores of businesses reported heavy damage at the area's largest shopping center. The bare necessities of life were missing for several days: milk, bread, drinking water, power, and telephone service. It took more than 10 days for power to be restored in many areas. Schools were closed for a week in the hardest-hit counties. Automobile travel was hazardous for days after the storm due to fallen and falling trees. A full twelve days after the event, 150 secondary roads were still closed.	

[54] National Center for Environmental Information (NCEI). (2025). *Storm Events Database* [Tabular]. National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/stormevents/

Cumberland County Hoke County	8/27/1998	Hurricane Bonnie	$0	Hurricane Bonnie made landfall along the southern coast of North Carolina. Only fringe effects were felt in the state's central sections. Rainbands associated with Bonnie spread inland as far west as Louisburg...Raleigh...Raven Rock...Fort Bragg...and Fayetteville. Torrential rains and strong gusty winds accompanied the rainbands through the night on the 27th and into the daylight hours on the 28th. The strongest winds were recorded over Sampson and Wayne Counties, where gusts over 50 mph occurred. Elsewhere, gusts to 40 mph occurred with the rainbands. Damage was sporadic and confined to the southeast portions of central North Carolina. About 20 roads were blocked for several hours in Harnett County, and numerous trees were blown down across Sampson, Wayne, Johnston, Wilson, Harnett, and Cumberland counties. About 10,000 people lost power in these areas at some point during the storm. Tobacco losses were extensive. The estimated total value of the tobacco crop lost due to Bonnie ranged from $25 to $50 million. Rainfall amounts averaged 2 to 4 inches over the eastern Piedmont and Sandhills, with amounts dropping rapidly west of Raleigh and Fayetteville. For example, downtown Raleigh recorded around 2 inches of rain while Raleigh/Durham Airport, 10 miles west of downtown, recorded only 1/3 of an inch. Elsewhere, some of the higher amounts included: Wilson, 4.94 inches; Clinton, 4.45 inches; Goldsboro, 3.74 inches; Erwin, 2.80 inches; Clayton, 2.76 inches; Rocky Mount, 2.74 inches; and Fayetteville, 2.17 inches.
Cumberland County Hoke County	9/4/1999	Hurricane Dennis	$0	After meandering off the coast and ruining the Labor Day weekend for millions, the remnants of Dennis finally moved inland across the central portion of the state. Its main impact was to end the drought in the eastern half of the state. The Triangle received from 6 to 8 inches of rain, with Chapel Hill peaking out at 12 inches. The I-40 corridor of counties also got dumped on with totals in the 6-to-10-inch range. This water caused considerable urban and lowland flooding. Several main stem rivers also went into flood. The winds with the remnants of Dennis were generally not a significant problem. Many old, larger trees were uprooted, and widespread limb damage was reported. However, the wind and rain caused considerable crop damage.
Cumberland County	9/15/1999	Hurricane Floyd	$0	Hurricane Floyd produced more human misery and environmental impact in North Carolina than any disaster in memory. The 15-20 inches of rain that fell across the eastern half of the state caused every river and stream to flood. Many rivers set new flood records. Whole communities were underwater for days, even weeks, in some areas. Thousands of homes were lost. Crop damage was extensive. The infrastructure of the eastern counties, mainly roads, bridges, water plants, etc., was heavily damaged. By

Hoke County				the end of 1999, $1.5 billion had already been spent, with estimates that the cost would reach $3-4 billion. The counties within the Raleigh warning area likely accounted for more than half of the state's total. Even worse was the loss of life, mainly due to flooding. Many Carolinians did not heed the call to evacuate, and many more drove into flooded streams and rivers. In the central part of the state, 21 people lost their lives. Also, livestock losses were significant, mainly swine and poultry. Floyd will indeed go down in history.	
Cumberland County	9/18/2003	Hurricane Isabel	$28,000	Hurricane Isabel made landfall along the Outer Banks just north of Cape Lookout around 1 pm on September 18, 2003. The eye of the storm tracked northeast, passing over eastern Halifax County. Winds gusting near Hurricane force were recorded over Halifax County. Many locations across the Coastal Plain and even back into the Triangle received wind gusts between 50 to 70 mph late in the afternoon until early evening. Many trees were uprooted, falling on vehicles and homes across the area. One person was killed in Franklin County when their vehicle struck a downed tree. Up to 6 inches of rain fell across Edgecombe, Halifax, and Wilson Counties, resulting in flooding of several roads.	
Cumberland County	9/1/2006	Tropical Storm Ernesto	$0	Tropical Storm Ernesto produced flooding and high winds across the county. Emergency officials reported approximately several numerous reports of downed trees and large limbs. There were also numerous reports of road flooding from rainfall amounts of 2 to 3 inches.	
Cumberland County	9/2/2016	Tropical Storm Hermine	$10,000	Trees and power lines were reported down throughout 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, numerous reports of downed trees and wind damage led to power outages.
Hoke County			$10,000	Multiple trees were reported down across the county.	

Cumberland County	9/13/2018	Hurricane Florence (Tropical Storm)	$1,500,000	Frequent wind gusts of 50 to 70 mph resulted in numerous trees down across Cumberland County, including on homes, cars, power lines, and damage to structures. Numerous customers lost power in Cumberland County as a result of the tropical storm-force winds. A husband and wife died (indirectly) in a house fire. The couple was using candles and lanterns because of a power outage.	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 flooding, with large stretches of I-40 and I-95 remaining impassable for days after the storm. The storm also spawned tornadoes across its path. There were three direct and six indirect deaths attributed to the storm within the WFO RAH CWA.
Hoke County			$1,000,000	Frequent wind gusts of 50 to 70 mph resulted in numerous trees down across Hoke County, including on homes, cars, power lines, and damage to structures. Numerous customers lost power in Hoke County as a result of the tropical storm-force winds.	
Cumberland County	10/11/2018	Tropical Storm Michael	$100,000	Tropical storm wind gusts downed multiple trees, caused scattered power outages, and produced minor damage to homes throughout the county.	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, it was the high wind gusts of 40 to 60 mph that caused the most significant problems, knocking down a score of trees, blocking roadways, and leaving thousands without power.
Hoke County			$25,000	Scotland County: Tropical storm wind gusts downed multiple trees, caused minor wind damage, and scattered power outages.	

Cumberland County	9/5/2019	Hurricane Dorian (Tropical Storm)	$1,000,000	Frequent wind gusts of 35 to 55 mph resulted in scattered to numerous trees and power lines down across Cumberland County, including some on homes. Numerous customers lost power in Cumberland County because of the tropical storm-force winds.	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.
Hoke County			$500,000	Frequent wind gusts of 35 to 55 mph resulted in scattered to numerous trees and power lines down across Hoke County, including some on homes. Numerous customers lost power in Hoke County because of the tropical storm-force winds.	
Cumberland County	8/3/2020	Hurricane Isaias (Tropical Storm)	$500,000	Frequent wind gusts of 30 to 45 mph resulted in scattered trees and power lines down across Cumberland County, including some on homes. Numerous customers lost power in Cumberland County because 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 northward through the state, accompanied by gusty winds of 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.
Cumberland County	9/30/2022	Hurricane Ian (Tropical Storm)	$1,000,000	Frequent wind gusts of 40 to 60 mph resulted in scattered to numerous trees and power lines down across Cumberland County, including some on homes. Numerous customers lost power in Cumberland County because of the tropical storm-force wind gusts.	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

Hoke County			$750,000	Frequent wind gusts of 40 to 60 mph resulted in scattered to numerous trees and power lines down across Hoke County, including some on homes. Numerous customers lost power in Hoke County because of the tropical storm-force wind gusts.	reports of wind damage and power outages due to the storm.

5.6.5. 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, Cumberland County has an annualized frequency of 0.24 hurricane events per year, an EAL of $22,520,732, an EAL Score of 92.13, and a Hazard Risk Index Score of 93.99. The census tracts that overlap Fayetteville, Hope Mills, and Spring Lake have the highest total EAL, with Census Tract total EALs of $19,473,839.52, $4,676,935, and $2,939,915, respectively. The unincorporated census tracts in Cumberland County have an annualized frequency of 0.257, an EAL total of $749,292, an average EAL score of 78.61, and an average Hazard Risk Index Score of 80.81.

Hoke County has an annualized frequency of 0.21, an EAL total of $2,916,165, an EAL Score of 75.96, and a Hazard Risk Index Score of 80.62. Census tracts that overlap the jurisdictional boundaries of Raeford have a total EAL of $1,629,966, an average EAL Score of 78.05, and an average Hazard Risk Index Score of 83.04. The census tracts that overlap with unincorporated Hoke County areas have an average annualized frequency of 0.217, a total EAL of $448,934, an average EAL Score of 78.05, and an average Hazard Risk Score of 83.04.

Table 5-30: NRI Risk, EAL, and Annualized Frequency for Hurricanes in the Planning Area

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Cumberland County (Unincorporated Area)	**0.257**	**$749,293**	**78.61**	**Relatively High**	**80.81**	**Very High**
Eastover	0.233	$1,410,826	79.17	Relatively High	82.27	Very High
Falcon	0.228	$962,753	81.36	Very High	84.05	Very High
Fayetteville	0.238	$19,473,840	74.21	Relatively High	77.81	Relatively High
Godwin	0.228	$503,213	83.27	Very High	86.26	Very High
Hope Mills	0.257	$4,676,936	76.36	Relatively High	80.45	Very High
Linden	0.228	$730,976	86.63	Very High	88.82	Very High
Spring Lake	0.224	$2,939,916	70.16	Relatively High	72.51	Relatively High
Stedman	0.238	$503,471	73.57	Relatively High	73.19	Relatively High
Wade	0.228	$773,217	79.93	Relatively High	83.31	Very High
Cumberland County Total	**0.24**	**$22,520,734**	**92.13**	**Very High**	**93.99**	**Very High**
Hoke County (Unincorporated Area)	**0.217**	**$448,935**	**67.85**	**Relatively High**	**73.01**	**Relatively High**
Raeford	0.217	$1,629,967	78.05	Relatively High	83.04	Very High
Hoke County Total	**0.21**	**$2,916,166**	**75.96**	**Relatively High**	**80.62**	**Very High**

5.6.6. Consequence and Impact Analysis

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. 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 (6.6% in Cumberland County and 5.3% in Hoke County[55]), have a disability (16.9% in Cumberland County and 5.3% in Hoke County), or have an independent living difficulty (7.3% in Cumberland County and 8.3% in Hoke County).[56] 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 online. While it is increasingly common to issue public safety alerts and preparedness information through online resources, many residents lack access to computers. Approximately 6.1% of housing units in Cumberland County and 8.6% in Hoke County lack computing devices, further limiting residents' access to public awareness information.[57] Additionally, an estimated 10.2% of households in Cumberland County and 11.1% in Hoke County lack internet subscriptions, limiting residents' ability to access a wide range of publicly available preparedness materials online.[57] 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, flyers, and newspapers.

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 (0.9% of Housing Units in Cumberland County and 1.3% in Hoke County), which means these residents may not have access to critical, time-sensitive emergency alerts.[55]

- Develop a plan to ensure that all residents have a method for receiving emergency alerts and inform residents about the different ways they can receive them.
- Ensure that all residents have an evacuation plan and that individuals who require extra assistance can be assisted during an evacuation.

Changes in Development

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. The most likely impact from a

[55] U.S. Census Bureau. (2023). *Selected Housing Characteristics* (No. ACSDP5Y2023.DP04; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP04
[56] U.S. Census Bureau. (2023). *Disability Characteristics* (No. ACSST5Y2023.S1810; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S1810
[57] U.S. Census Bureau. (2023). *Types of Computers and Internet Subscriptions* (No. ACSDP5Y2023.S2801; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S2801

Category 1 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. Loss of electric power, potable water, telecommunications, wastewater, and other critical utilities are very possible during a hurricane. Some damage can be so severe that it may take days to weeks to restore.

Housing units such as mobile homes (7.48% of housing units in Cumberland County and 20.96% of housing units in Hoke County) or Boats, RVs, and Vans (0.08% of housing units in Cumberland County and 0% of housing units in Hoke County) may be at a higher risk of damage during hurricanes and tropical storms.[58] Residents of these types of housing units may be at disproportionate risk of injury, loss, or death during a hurricane or tropical storm.

- Given the large number of housing units that are more susceptible to damage than traditionally built homes, such as mobile homes and 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.

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 includes roads, water, power, and municipal buildings, and all jurisdictions in the Region are vulnerable to this impact. Hurricanes and tropical storms can create a financial burden on those impacted in the planning area, including repair, replacement, and displacement costs, as well as the disruption of day-to-day activities.

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.

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 from 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 impact a large area, thereby increasing the number of emergency responses required.

[58] U.S. Census Bureau. (2023). *Selected Housing Characteristics* (No. ACSDP5Y2023.DP04; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP04

Future Conditions

According to the NCCSR, it is very likely that in the future, extreme or heavy precipitation associated with hurricanes will increase, along with the potential for flooding.[59] This means that an increase in climate change impacts will likely be associated with a rise in the frequency and/or severity of hurricanes and tropical storm events in the future.

[59] Kunkel, K. E., Easterling, D. R., Ballinger, A., Bililign, S., Champion, S. M., Corbett, D. R., Dello, K. D., Dissen, J., Lackmann, G. M., Luettich Jr., R. A., Perry, L. B., Robinson, W. A., Stevens, L. E., Stewart, B. C., & Terando, A. J. (2020). *North Carolina Climate Science Report* (p. 233). North Carolina Institute for Climate Studies. https://ncics.org/programs/nccsr/

5.7. Flooding

5.7.1. Hazard Description

Flooding is defined by the rising and overflowing of a body of water onto normally dry land. As defined by FEMA, a flood is a general and temporary condition of partial or complete inundation of 2 or more acres of normally dry land area or of 2 or more properties. Flooding can result from an overflow of inland waters or an unusual accumulation or runoff of surface waters from any source.

Sources and Types of Flooding

Flooding within the Region can be attributed to two sources: 1) flash flooding resulting from heavy rainfall that overburdens the drainage system within the community; and 2) riverine flooding resulting from heavy and prolonged rainfall over a given watershed, which causes the capacity of the main channel to be exceeded. Flooding on the larger streams results primarily from hurricanes, tropical storms, and other major weather fronts, while flooding on the smaller streams is due mainly to localized thunderstorms.

- **Riverine Flooding:** The Region has numerous streams and tributaries running throughout its jurisdiction that are susceptible to overflowing their banks during and following excessive precipitation events. While flash flooding from surface water runoff is common in the region, riverine flood events (such as the “100-year flood”) will cause significantly more damage and economic disruption.
- **Flash or Rapid Flooding:** Flash flooding is the result of heavy, localized rainfall, possibly from slow-moving intense thunderstorms that cause small streams and drainage systems to overflow. Flash flood hazards from surface water runoff are most common in urban areas, where greater population density generally increases the amount of impervious surface (e.g., pavement and buildings), thereby generating more surface water. Flooding can occur when the capacity of the stormwater system is exceeded or when conveyance is obstructed by debris, sediment, and other materials that limit drainage volume.

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

The 100-year flood, which is the minimum standard used by most federal and state agencies, serves as the NFIP's standard for floodplain management and for determining the need for flood insurance. Participation in the NFIP requires adopting and enforcing a local floodplain management ordinance to prevent unsafe development in the floodplain, thereby reducing future flood damage. Participation in the NFIP allows the federal government to make flood insurance available within the community as financial protection against flood losses. Since

floods have an annual probability of occurrence, known magnitudes, depths, and velocities for each event, and, in most cases, a map indicating where they will occur, they are, in many ways, the most predictable and manageable hazard.

The area adjacent to the channel is the floodplain, as shown in Figure 5-69. A floodplain is flat or nearly flat land adjacent to a stream or river that experiences occasional or periodic flooding. It includes the floodway, which consists of the stream channel and adjacent areas that carry flood flows, and the flood fringe, which is an area covered by the flood but does not experience strong current. Floodplains are made when floodwater exceeds the capacity of the main channel or escapes the channel by eroding its banks. When this occurs, sediments (including rocks and debris) are deposited, gradually building up over time to form the floodplain floor. Floodplains generally contain unconsolidated sediments, often extending below the bed of the stream.

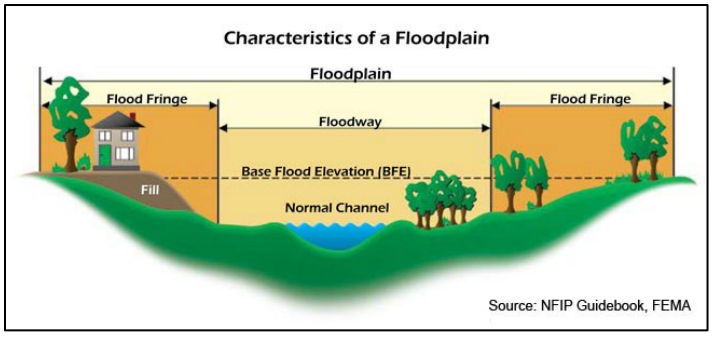


Figure 5-69: Characteristics of a Floodplain

5.7.2. Location and Spatial Extent

Regulated floodplains are illustrated on inundation maps called Flood Insurance Rate Maps (FIRMs). It is the official map for a community on which FEMA has delineated both the Special Flood Hazard Areas (SFHAs) and the risk premium zones applicable to the community. SFHAs represent the areas subject to inundation by the 100-year flood event. Structures located within the SFHA have a 26% chance of flooding during the life of a standard 30-year mortgage. Flood-prone areas were identified using the most current Flood Insurance Study and associated FIRMs developed by FEMA. Table 5-31 summarizes the flood insurance zones identified by the Digital Flood Insurance Rate Maps (DFIRM)s.

Table 5-31: Mapped Flood Insurance Zones within the Region

Zone	Description
AE	AE Zones, also within the 100-year flood limits, are defined with Base Flood Elevations (BFEs) that reflect the combined influence of Stillwater flood elevations and wave effects less than 3 feet. The AE Zone generally extends from the landward VE zone limit to the limits of the 100-year flood from coastal sources, or until it reaches the confluence with riverine flood sources. The AE Zones also depict the SFHA due to riverine flood sources, but instead of being subdivided into separate zones with differing BFEs and possible wave effects, they represent the flood profile determined by hydrologic and hydraulic investigations and have no wave effects.

A	Areas subject to inundation by the 1-percent-annual-chance flood event are generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no BFEs or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply.
AH	Zone AH is the flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.
0.2% Annual Chance (Zone X Shaded)	Moderate risk areas within the 0.2-percent-annual-chance floodplain, areas of 1-percent-annual-chance flooding where average depths are less than 1 foot, and areas of 1-percent-annual-chance flooding where the contributing drainage area is less than 1 square mile. No BFEs or base flood depths are shown within these zones. Zone X Shaded is used on new and revised maps in place of Zone B.
Zone X (unshaded)	Minimal risk areas outside the 1-percent and 0.2-percent-annual-chance floodplains. No BFEs or base flood depths are shown within these zones. Zone X (unshaded) is used on new and revised maps in place of Zone C.

There are areas in the Region that are susceptible to flood events. SFHAs in the Region were mapped using a Geographic Information System (GIS) and FEMA Digital FIRMS (DFIRMS). This includes Zone AE (1-percent annual chance floodplain with elevation) and Zone X (0.2-percent annual chance floodplain). The figures below reflect the mapped flood zones for the Region.

Table 5-32: Flood Hazard Areas in the Planning Area within Jurisdictional and County Boundaries

County	Jurisdiction	Total Flood Hazard Zone (miles^2)				
		0.2% Annual Chance Flood	Zone A	Zone AE	Zone AE (Floodway)	Zone X
Cumberland County	Eastover	2.20	-	1.08	-	8.11
	Falcon	-	-	0.19	-	1.09
	Fayetteville	7.23	0.26	4.99	3.64	134.91
	Godwin	-	-	-	-	0.52
	Hope Mills	0.17	-	0.34	0.44	8.08
	Linden	0.14	-	-	-	0.30
	Spring Lake	0.17	-	1.21	0.23	21.48
	Stedman	-	-	0.10	-	1.49
	Wade	0.04	-	0.01	-	1.70
	Unincorporated Area	49.99	0.03	35.26	8.97	363.48
	Cumberland County Total	**59.94**	**0.29**	**43.18**	**13.28**	**541.16**
Hoke County	Raeford	0.01	-	0.11	0.03	4.07
	Unincorporated Area	0.68	3.69	23.71	2.30	356.73
	Hoke County Total	**0.69**	**3.69**	**23.82**	**2.33**	**360.80**
Planning Area Total		**60.63**	**3.98**	**67.00**	**15.61**	**901.96**

Table 5-33: Cumberland-Hoke Regional Flood Hazard Area as a Percent of Total Jurisdictional Land Area

Jurisdiction	Total Area (sqmi)	0.2% Annual Chance Flood	Zone A	Zone AE	Zone AE (Floodway)	Zone X
Eastover	11.39	19.3%	0.0%	9.5%	0.0%	71.2%
Falcon	1.35	0.0%	0.0%	14.1%	0.0%	80.9%
Fayetteville	151.04	4.8%	0.2%	3.3%	2.4%	89.3%
Godwin	0.52	0.0%	0.0%	0.0%	0.0%	99.4%
Hope Mills	9.03	1.9%	0.0%	3.8%	4.9%	89.5%
Linden	0.44	31.7%	0.0%	0.0%	0.0%	68.0%
Spring Lake	23.35	0.7%	0.0%	5.2%	1.0%	92.0%
Stedman	1.59	0.0%	0.0%	6.3%	0.0%	93.8%
Wade	1.75	2.3%	0.0%	0.6%	0.0%	97.1%
Unincorporated Area	458.39	10.9%	0.0%	7.7%	2.0%	79.3%
Cumberland County Total	**658.85**	**9.1%**	**0.0%**	**6.6%**	**2.0%**	**82.1%**
Raeford	4.23	0.2%	0.0%	2.6%	0.7%	96.3%
Unincorporated Area	387.11	0.2%	1.0%	6.1%	0.6%	92.2%
Hoke County Total	**391.34**	**0.2%**	**0.9%**	**6.1%**	**0.6%**	**92.2%**
Planning Area Total	**1,050.19**	**5.8%**	**0.4%**	**6.4%**	**1.5%**	**85.9%**

It is important to note that while FEMA digital flood data is recognized as the best available for planning, it does not always reflect the most accurate or up-to-date flood risk. Flooding and flood-related losses often do occur outside of delineated special flood hazard areas. The following maps represent the FEMA digital flood data for the planning area and the associated flood risk:

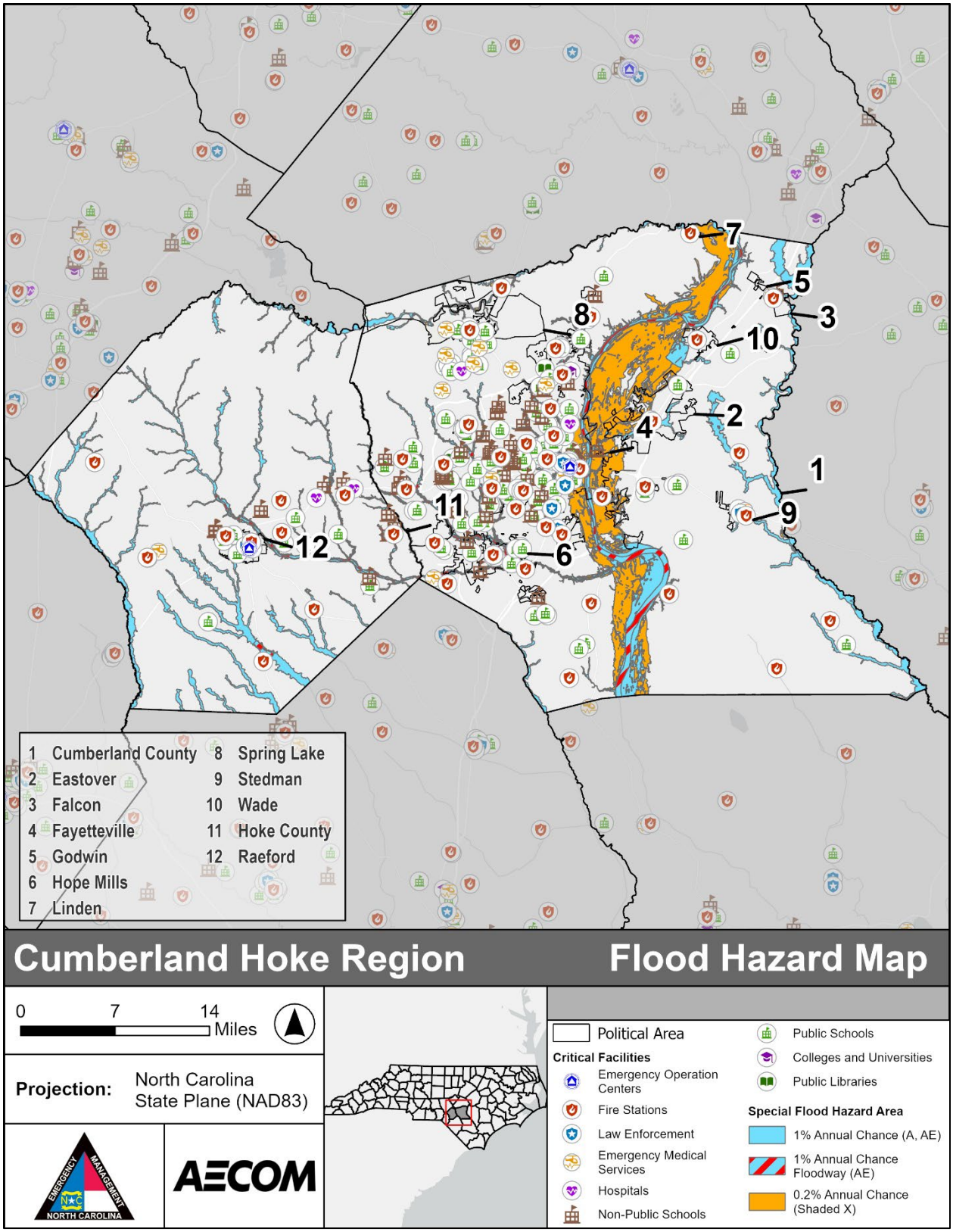


Figure 5-70: Cumberland-Hoke Regional Flood Hazard Map

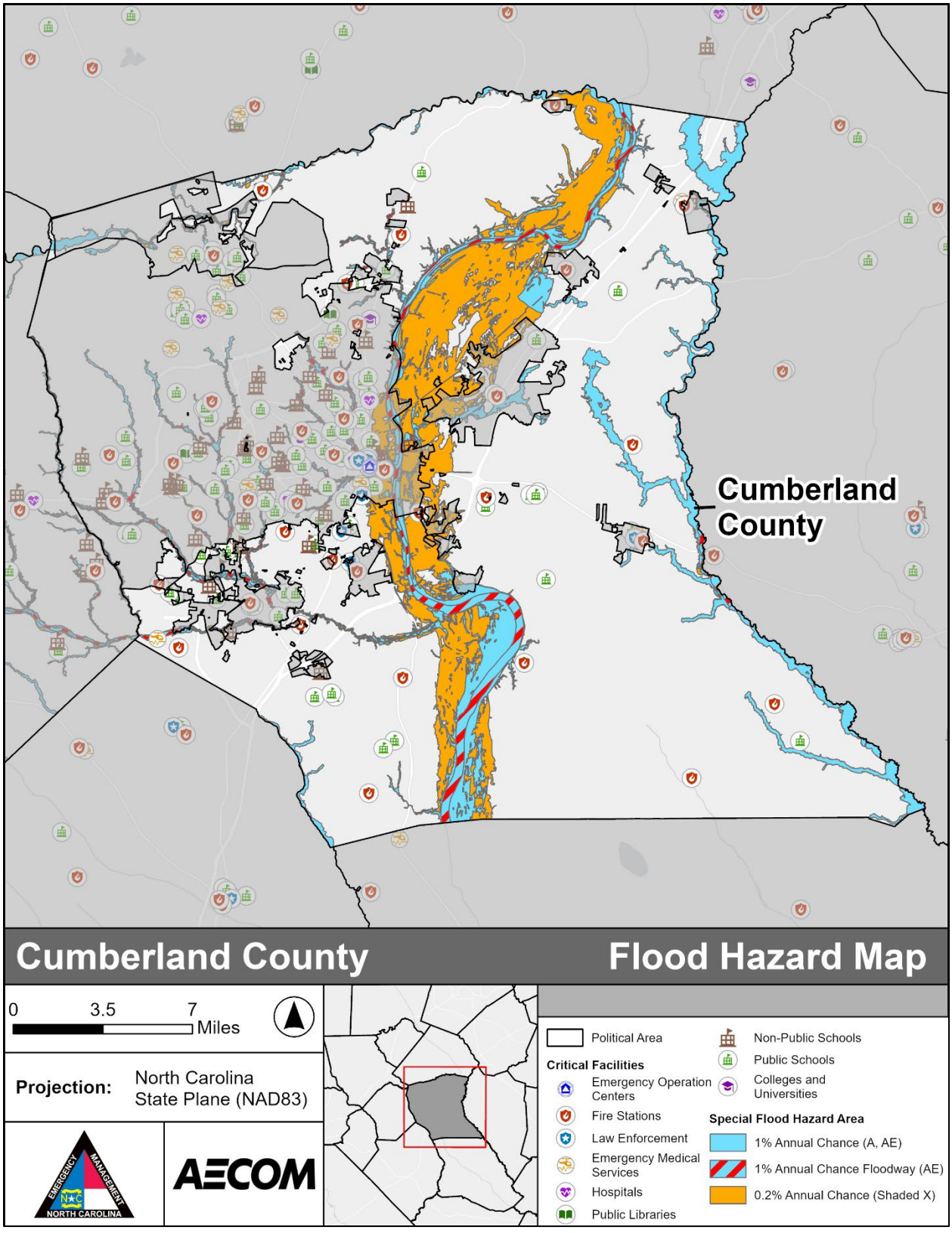


Figure 5-71: Cumberland County Flood Hazard Map

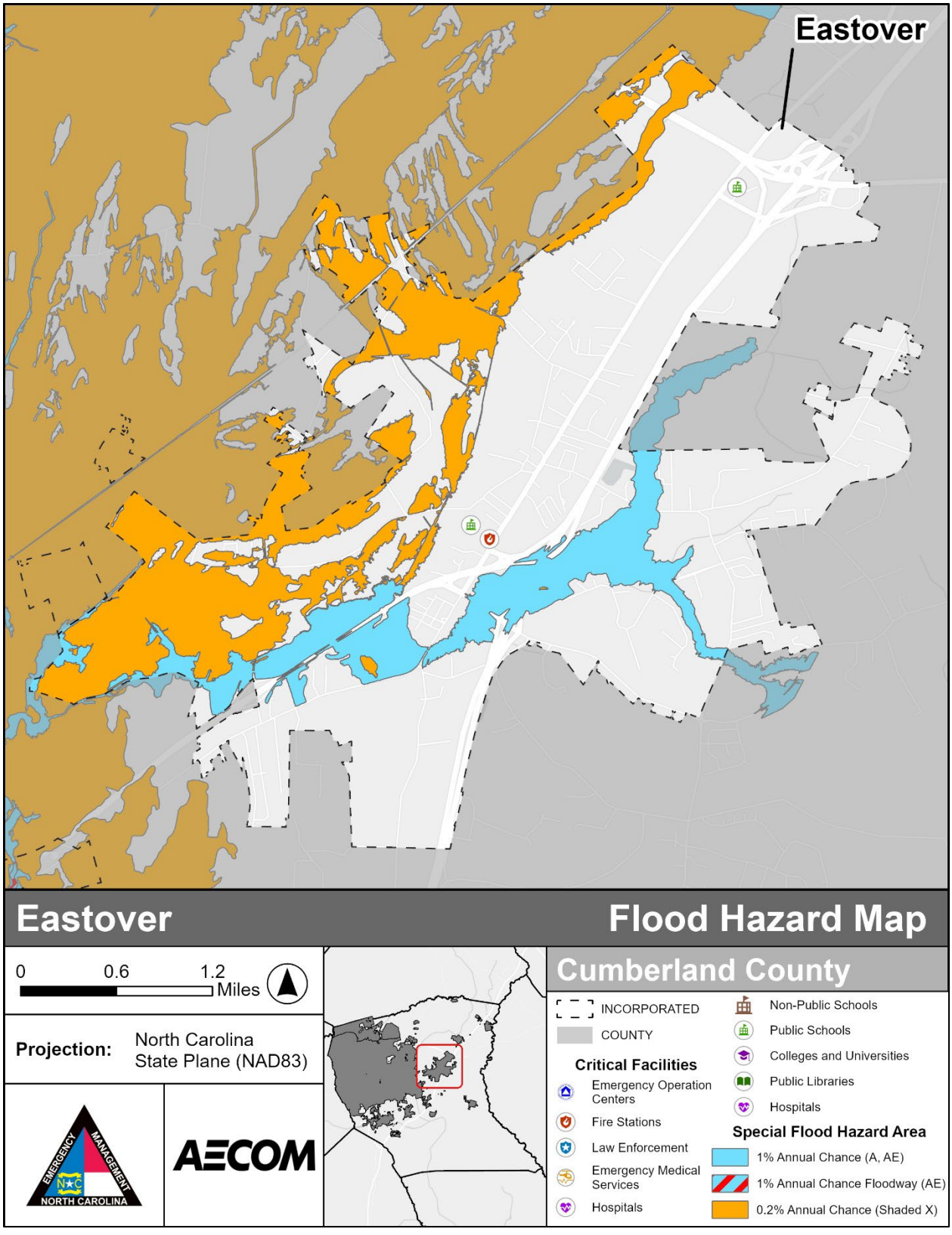


Figure 5-72: Town of Eastover Flood Hazard Map

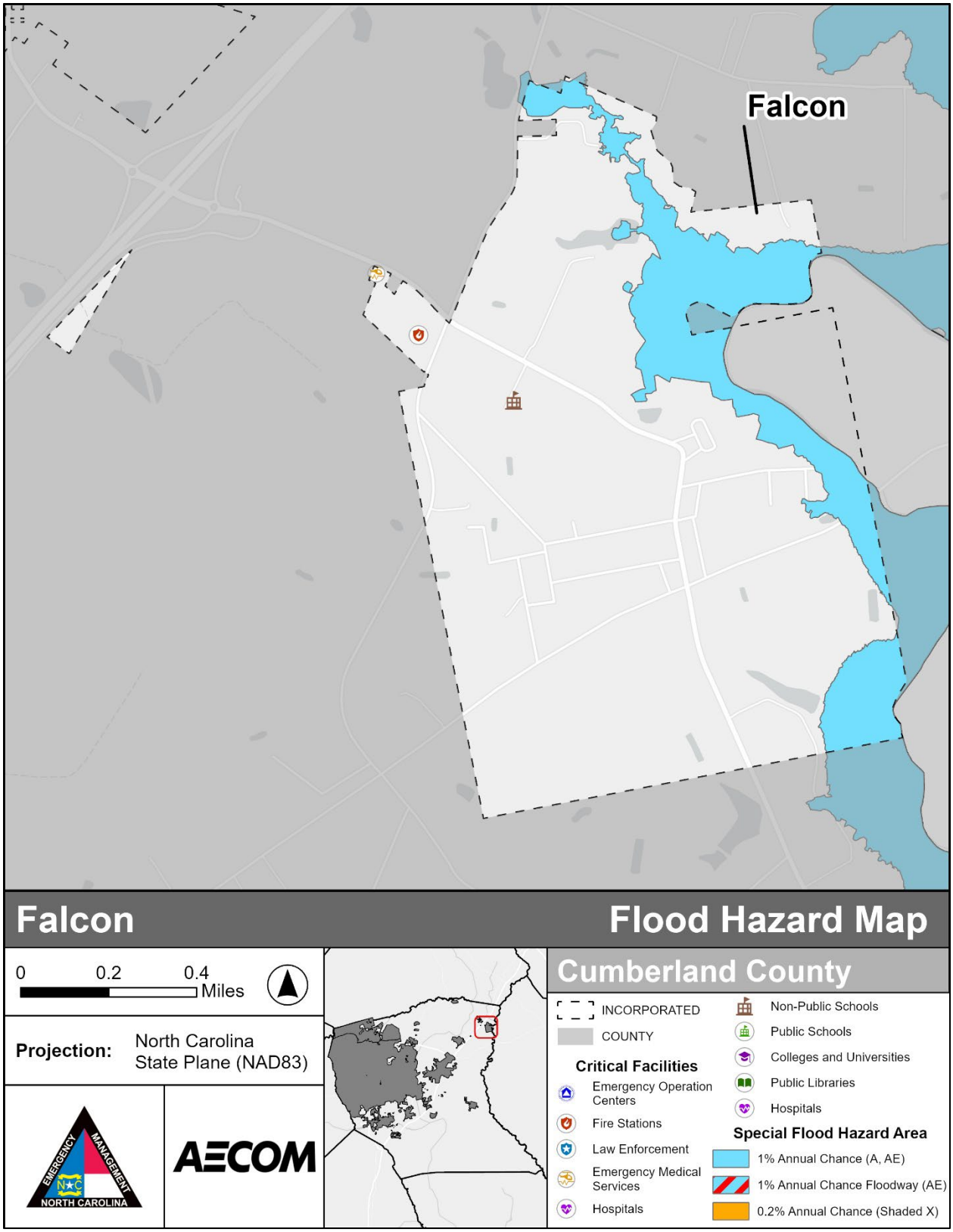


Figure 5-73: Town of Falcon Flood Hazard Map

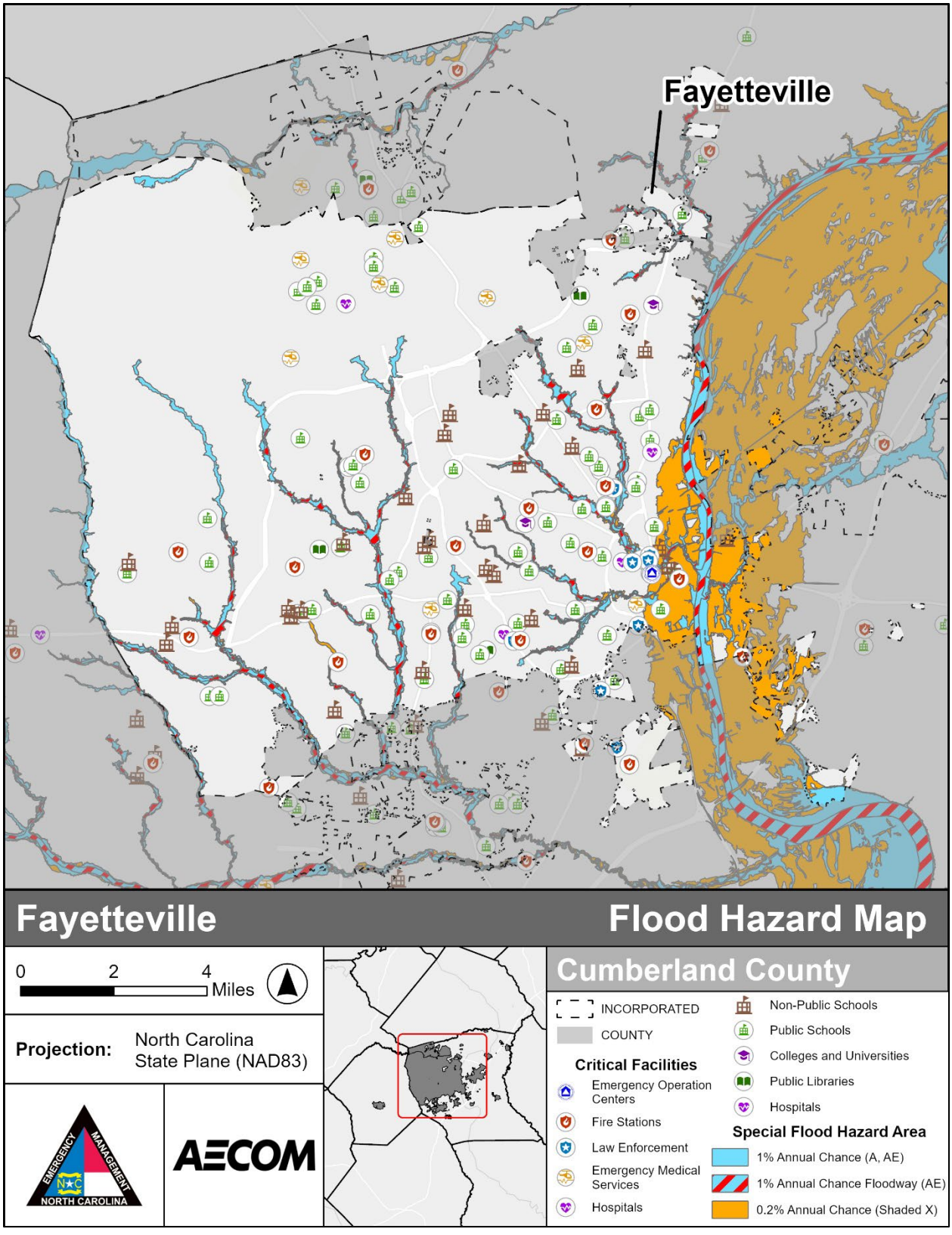


Figure 5-74: City of Fayetteville Flood Hazard Map

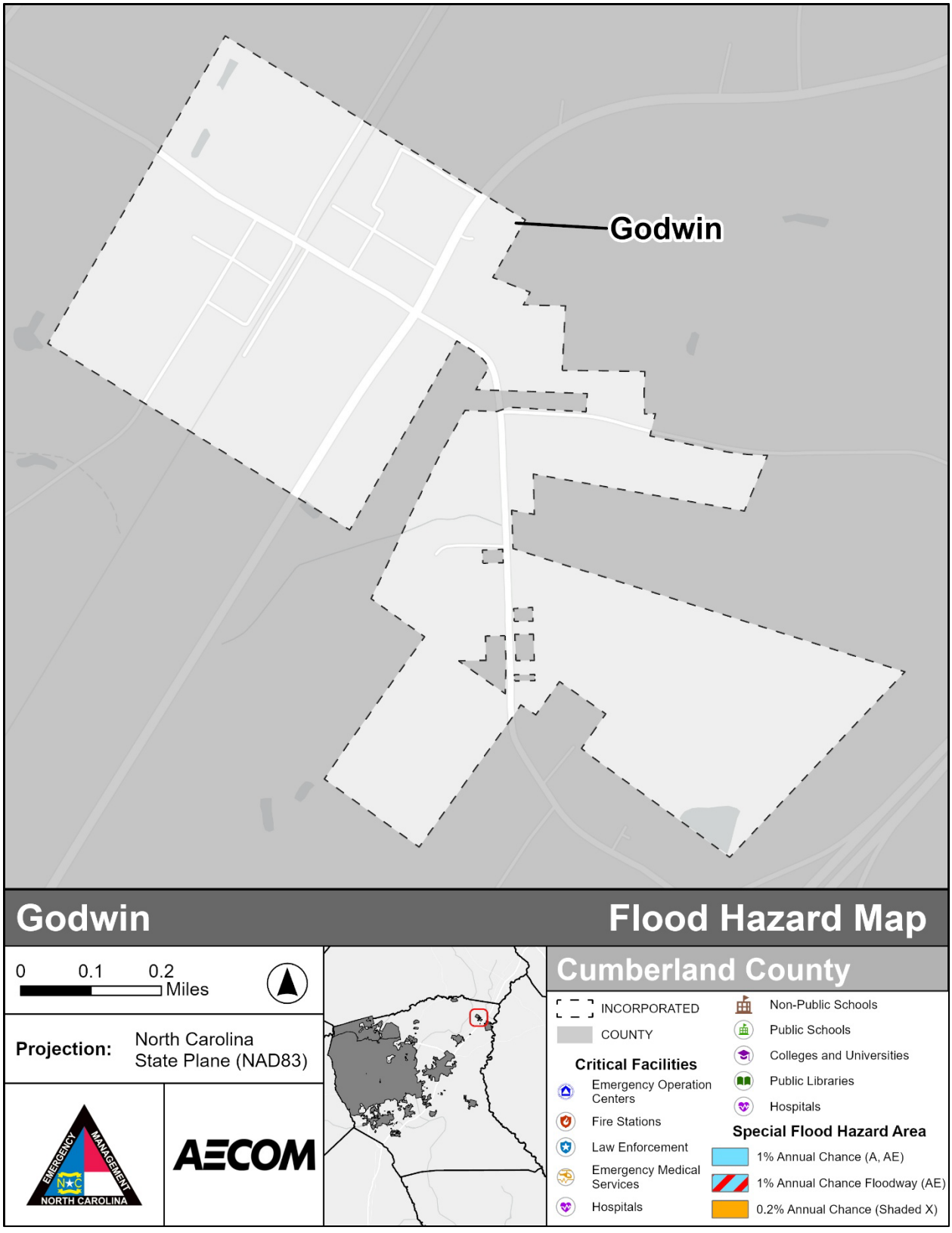


Figure 5-75: Town of Godwin Flood Hazard Map

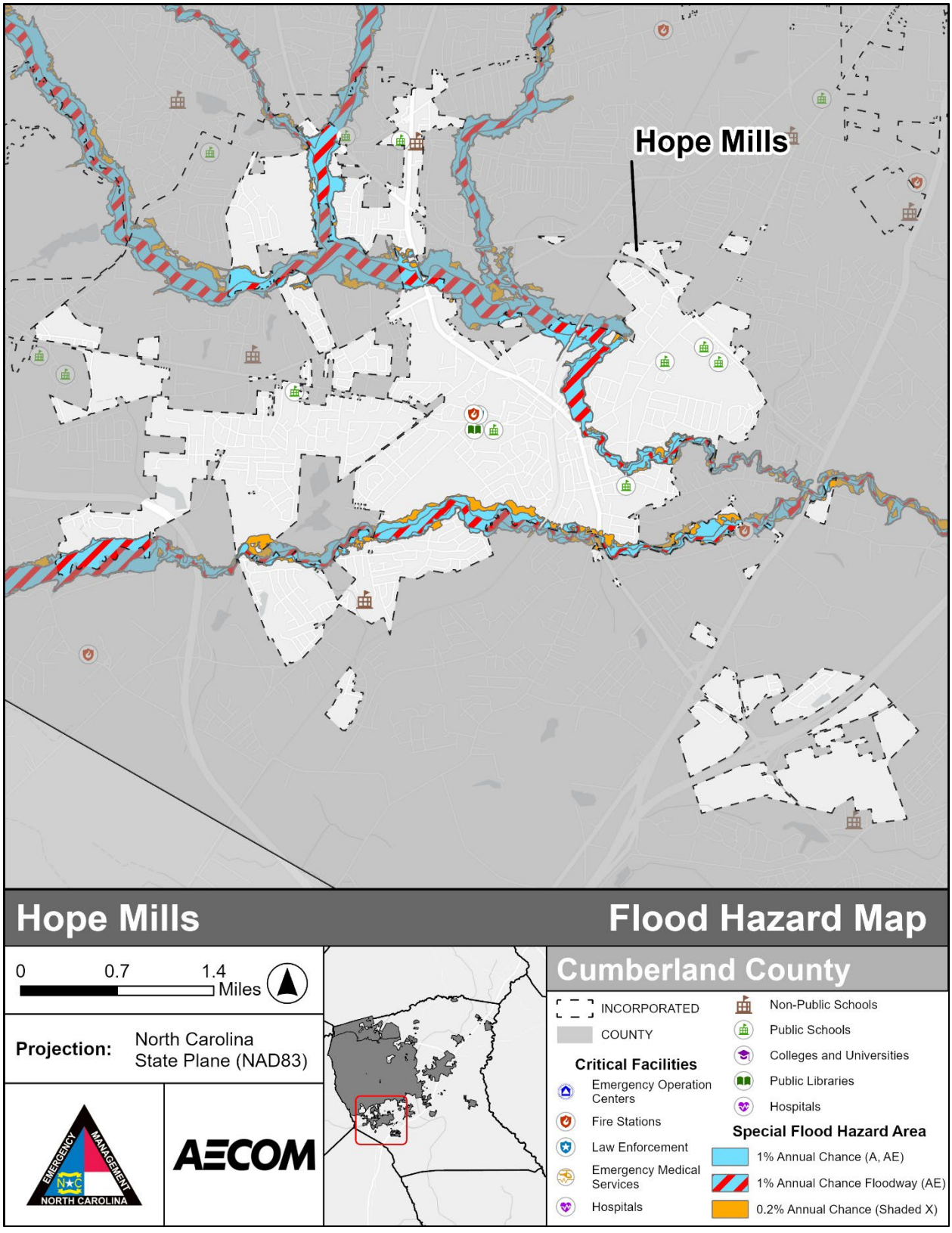


Figure 5-76: Town of Hope Mills Flood Hazard Map

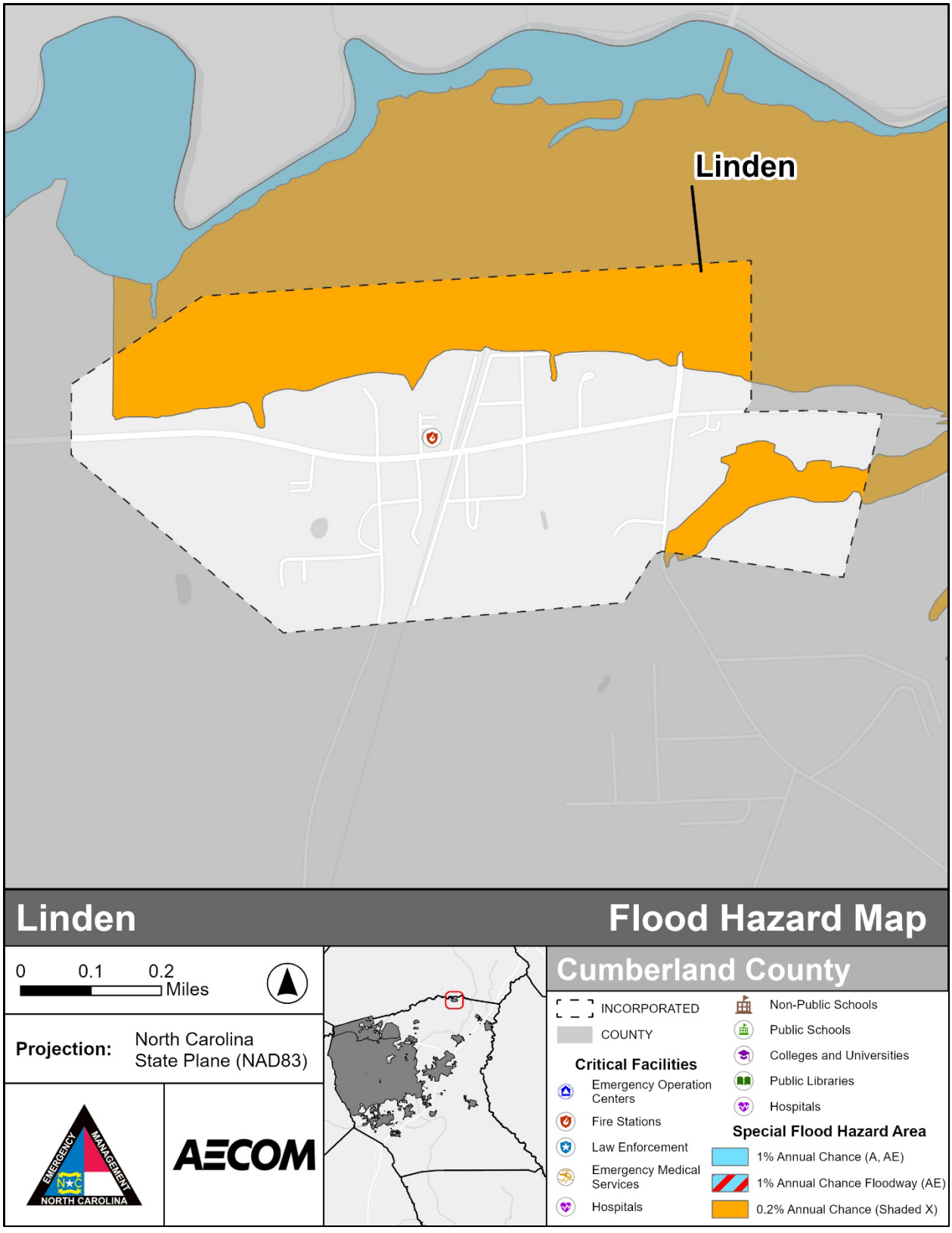


Figure 5-77: Town of Linden Flood Hazard Map

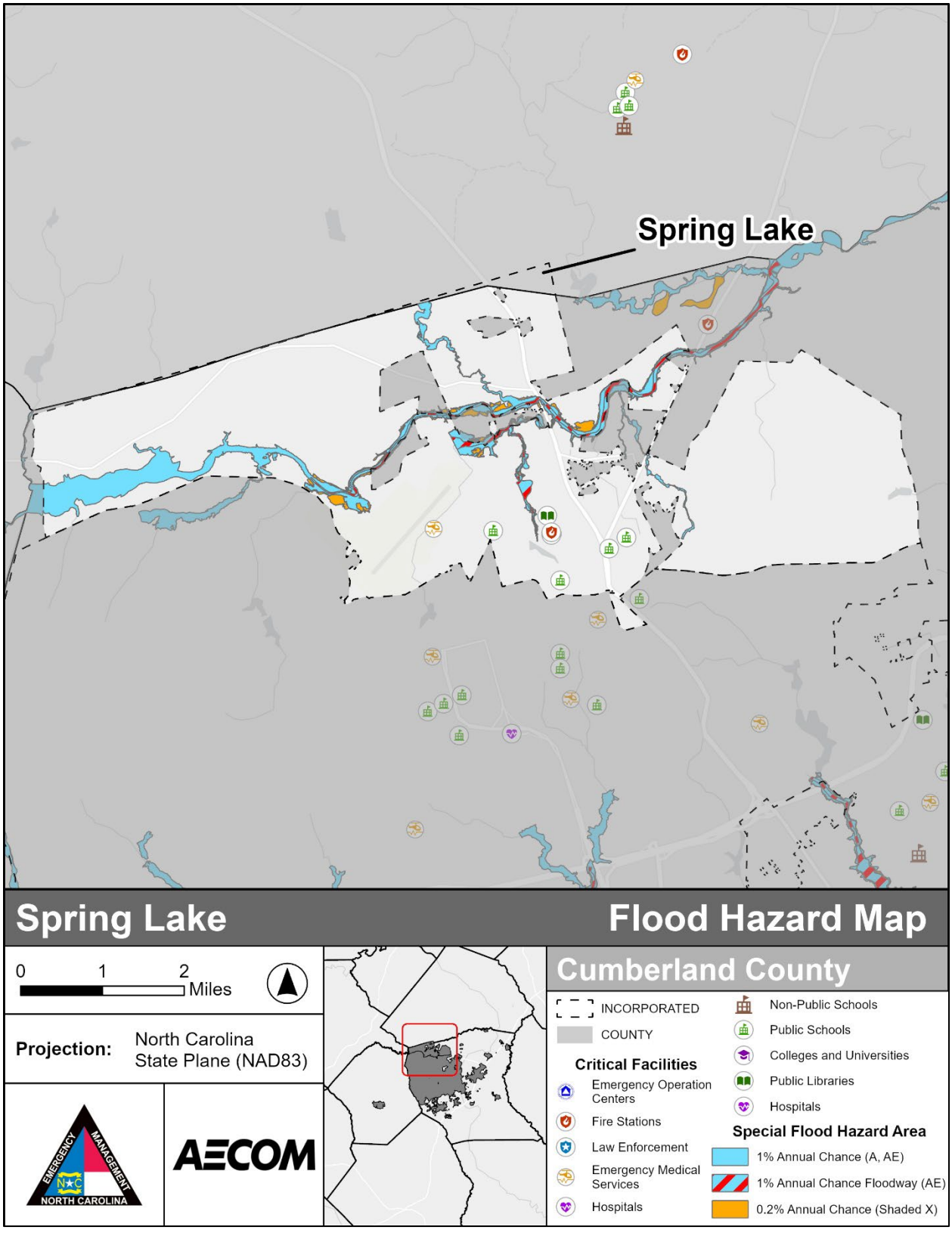


Figure 5-78: Town of Spring Lake Flood Hazard Map

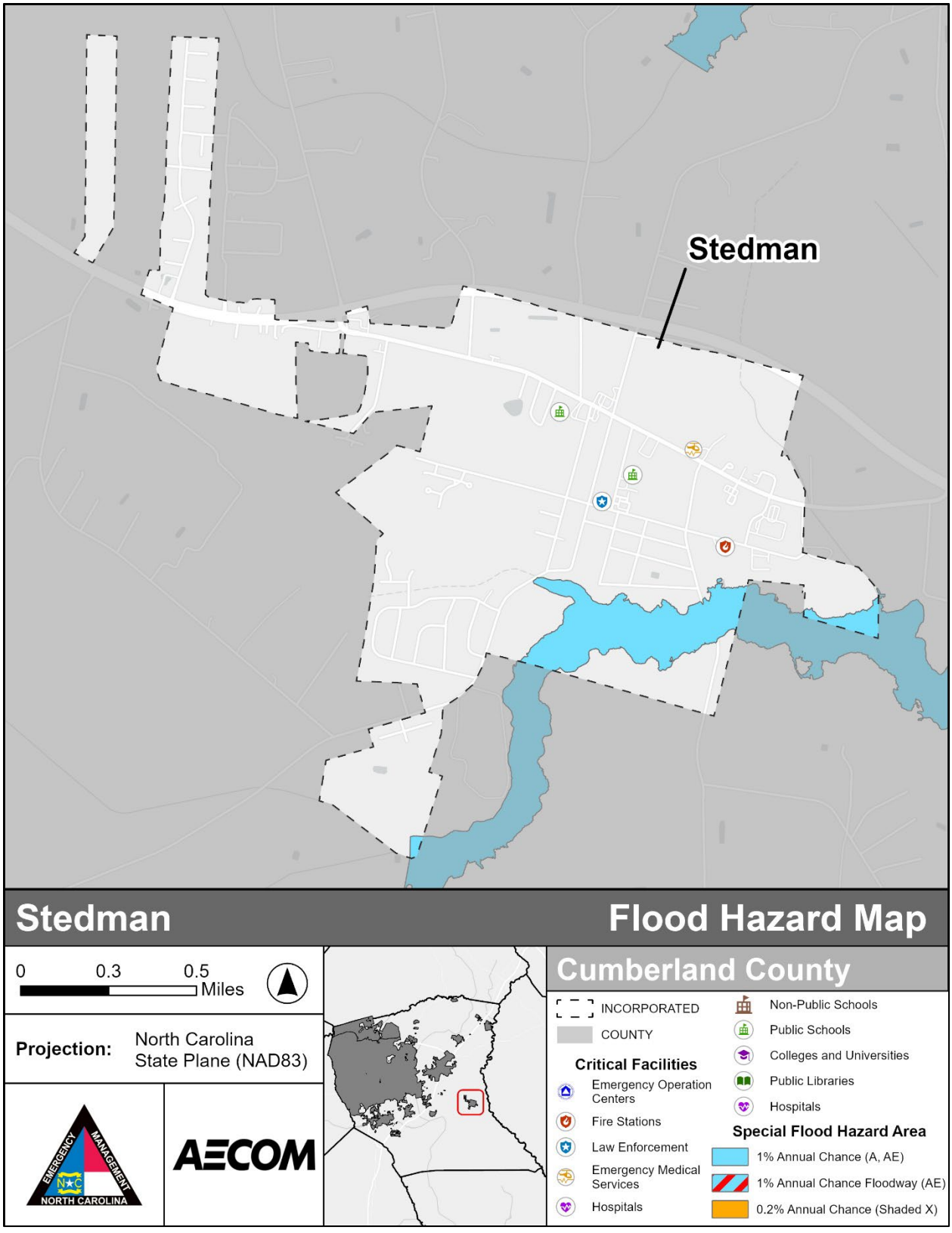


Figure 5-79: Town of Stedman Flood Hazard Map

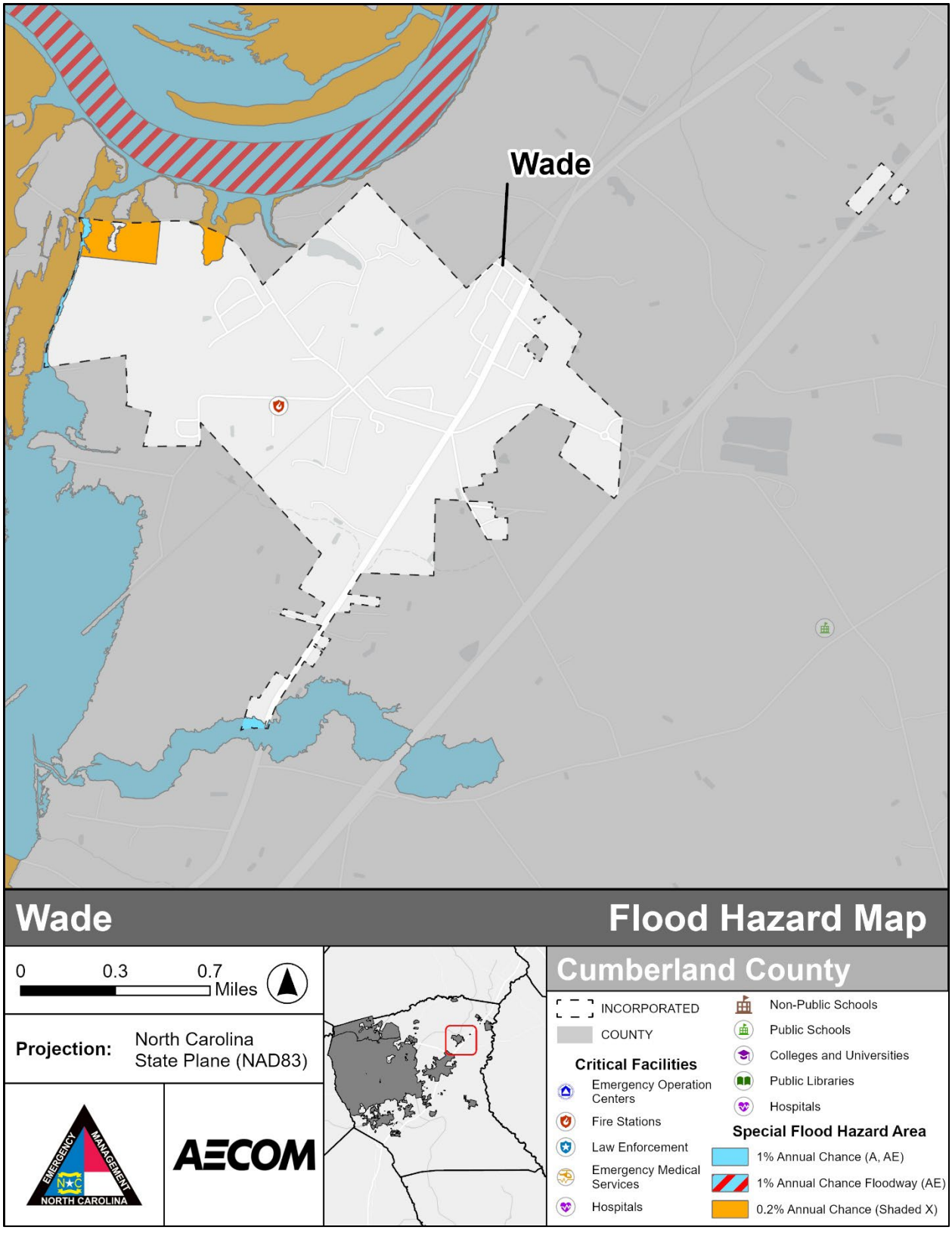


Figure 5-80: Town of Wade Flood Hazard Map

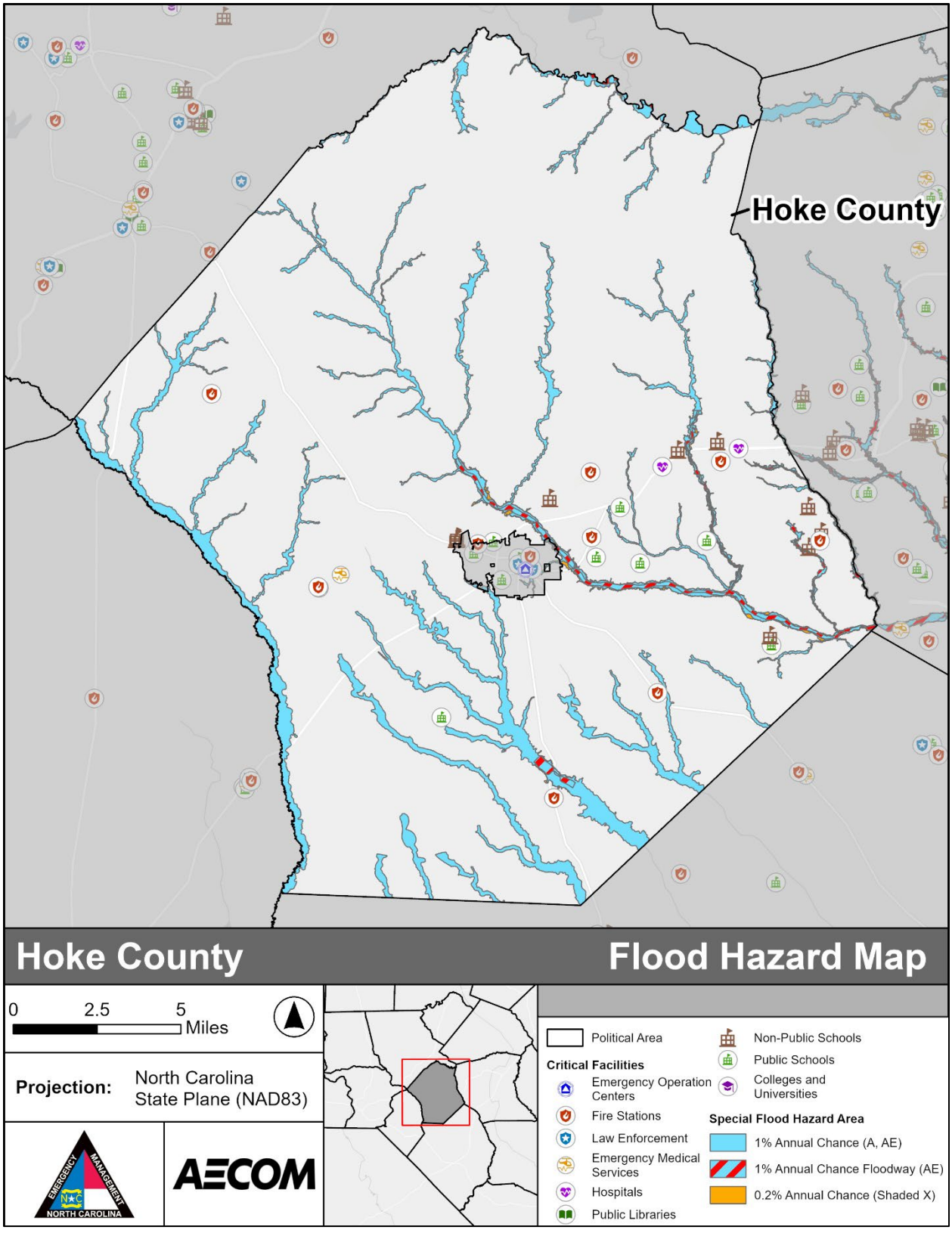


Figure 5-81: Hoke County Flood Hazard Map

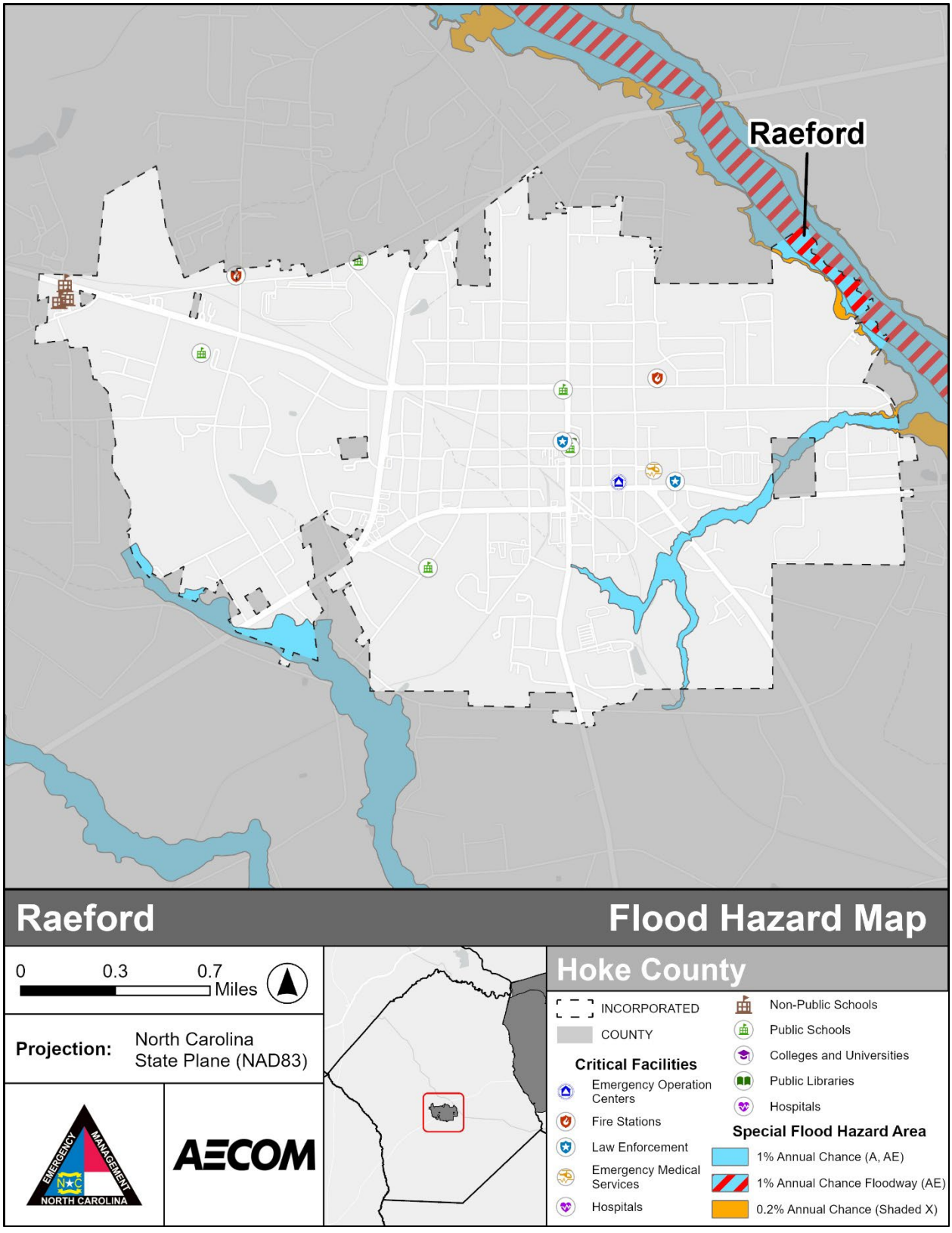


Figure 5-82: City of Raeford Flood Hazard Map

5.7.3. Extent

Table 5-34 provides peak river-stage data from the USGS, showing the highest recorded stage for each jurisdiction.

Table 5-34: Peak Streamflow in the Planning Area from the USGS[60] (* = Gauge Closest to Jurisdictional Boundary within the planning area)

County	River	Jurisdiction	USGS Gage Number	HUC	Drainage Area (Square Miles)	Date Of Peak	Gage Height (Ft)	Stream Flow (Cfs)
Cumberland	Little River	Manchester	02103000	03030004	348	2016-10-10	32.19	10,500
Cumberland	Cape Fear River	Fayetteville	02104000	03030004	4,395	1908-08-29	68.00	133,000
Cumberland	Reese Creek	Fayetteville	02104080	03030004	9.79	1955-09-20	22.56	690
Cumberland	Buckhead Creek	Owens	02104387	03030004	2.85	1973-06-09	--	279
Cumberland	Rockfish Creek	Hope Mills	02104500	03030004	292	1945-09-18	31.75	8,000
Cumberland	Cross Creek at Blue Street	Fayetteville	0210382325	03030004	25.5	2024-08-08	13.42	1,430
Cumberland	Blounts Creek at Winslow Street	Fayetteville	0210398250	03030004	10.3	2024-09-08	13.36	1,120
Cumberland	Beaver Creek at Gruber Road	Fort Bragg	0210433959	03030004	4.78	2024-09-27	10.16	--
Cumberland	Beaver Creek at All American Freeway	Fort Bragg	0210433975	03030004	6.02	2024-08-08	8.83	--
Cumberland	Tank Creek at Butner Road	Fort Bragg	0210307868	03030004	2.99	2024-08-08	10.43	--
Cumberland	Tank Creek at Longstreet Road	Fort Bragg	0210307850	03030004	1.47	2023-08-29	7.43	--
Cumberland	Tank Creek at Reilly Road	Fort Bragg	0210307880	03030004	4.90	2024-08-08	11.13	785

[60] United States Geological Survey. (2025). *Peak Streamflow for the Nation* [Tabular]. National Water Information System: Web Interface. https://nwis.waterdata.usgs.gov/usa/nwis/peak

Cumberland	Cross Creek at Langdon Street	Fayetteville	02103770	03030004	--	2025-07-06	--	343
Hoke	Flat Creek	Inverness	02102908	03030004	7.63	2016-10-08	8.63	733
Hoke	Rockfish Creek	Raeford	02104220	03030004	93.1	2016-10-09	12.94	5,490
Hoke	Raft Swamp	Red Springs	02133960	03040203	39.80	1957-06-09	20.80	920
Harnett	Cape Fear River	Lillington	2102500*	03030004	3,464	9/19/1945	33.19	150,000

Table 5-35: Peak Gauge Height for the Closest Gauges to Jurisdictional Boundaries in the Planning Area

Jurisdiction	Gauge Number	Distance from Jurisdictional Boundaries (miles)	Peak Gauge Height (ft)	Peak Streamflow (cfs)	Peak Height Date
Cumberland County					
Eastover	2104000	2.11	68	133,000	8/29/1908
Falcon	2104000	13.97	68	133,000	8/29/1908
Fayetteville	2104000	0.00	68	133,000	8/29/1908
Godwin	2102500	14.45	33.19	150,000	9/19/1945
Hope Mills	2104000	5.21	68	133,000	8/29/1908
Linden	2102500	10.74	33.19	150,000	9/19/1945
Spring Lake	2103000	0.00	32.19	10,500	10/10/2016
Stedman	2104000	7.96	68	133,000	8/29/1908
Wade	2104000	9.19	68	133,000	8/29/1908
Hoke County					
Raeford	2104220	0.01	12.94	5,490	10/9/2016

5.7.4. Past Occurrences

The following historical occurrences, spanning 2010 to 2025, have been identified from the NCDC Storm Events database (Table 5-36). 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 5-36: Historical Occurrences of River Flooding (2010 to 2025[61])

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Cumberland	Manchester	6/16/2025	Flash Flood	0	0	$5,000	$0	Heavy Rain	Several roads in the Town of Spring Lake were flooded.	A southward-moving cold front out of Virginia stalled out near the North Carolina border. Storms from the late evening on the 15th persisted into the early morning hours of the 16th along and south of the front, producing isolated flash flooding. The stalled boundary then fueled numerous additional showers and storms in the afternoon and evening hours of the 16th along small-scale boundaries. Several trees were downed, and flash flooding was reported.
Cumberland	East Fayetteville	6/11/2025	Flash Flood	0	0	$1,000	$0	Heavy Rain	The road was impassable due to flash flooding.	A stalled front over the Sandhills and Coastal Plain of central North Carolina combined with an inland penetrating sea-breeze to develop isolated to scattered storms in the afternoon and evening hours. A few storms produced wind damage across Sampson County and some flash flooding in Cumberland County.
Cumberland	Clifdale	5/29/2025	Flash Flood	0	0	$0	$0	Heavy Rain	Street/road flooding was reported.	Storms over South Carolina in association with a mid-level system tracked into central North Carolina in

[61] National Center for Environmental Information (NCEI). (2025). *Storm Events Database* [Tabular]. National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/stormevents/

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
										the afternoon and evening hours. The storms initially produced wind damage and an isolated hail threat. Thereafter, the event evolved into a flash flood threat, with training and back-building storms resulting in rainfall rates of 3 or more inches per hour from Albemarle to Greensboro to Burlington to Henderson.
Cumberland	Fayetteville	9/27/2024	Flash Flood	0	0	$0	$0	Heavy Rain	A road near Drake Street was closed due to flooding.	Hurricane Helene weakened to a strong tropical storm on the morning of 27 September across northeast Georgia. Helene continued to track west and northwest into the Tennessee Valley. Widespread rainfall totals of 2-4 inches of rain fell over central North Carolina, along with wind gusts of 25-45 mph. Additionally, four tornadoes occurred, with the strongest EF3, touching down over Rocky Mount in Nash County.
Cumberland	Owens		Flash Flood	0	0	$0	$0	Heavy Rain	Flooding was reported on Cliffdale Road.	
Cumberland	Fayetteville	9/16/2024	Flash Flood	0	0	$2,000	$0	Heavy Rain	Ramsey St near Highway 401 was closed due to flooding.	A subtropical area of low pressure off the coast of the Carolinas moved inland, tracking west-northwest towards Charlotte and western North Carolina into the morning of the 17th of September. Rainfall across central North Carolina ranged from 1 to 4 inches, resulting in isolated flash flooding in Cumberland and Wake Counties.
Cumberland	Hope Mills	8/11/2024	Flash Flood	0	0	$5,000	$0	Heavy Rain	Several roads in Hope Mills were closed due to flash flooding.	Storms developed over the Sandhills and Coastal Plain along a stalled frontal zone. Most of the storms were below severe limits, but a few produced flash flooding and downed

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
										power lines in Nash and Cumberland Counties.
Cumberland	Stedman	8/8/2024	Flash Flood	0	0	$10,000	$0	Heavy Rain	There were reports of numerous roads across Cumberland County being closed due to flooding, including several major thoroughfares.	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 four to six–inch rainfall amounts across the western Piedmont, with higher amounts to the east. In addition, numerous tornadoes occurred during this event, including one on 7 August and an additional six on 8 August, including a rare EF-3 tropical cyclone tornado.
Cumberland	(Fay)Grannis Fld Fay		Flash Flood	0	0	$2,000	$0	Heavy Rain	Flooding on Interstate 95 closed the southbound lanes near mile marker 44.	
Cumberland	Fenix		Flash Flood	0	0	$5,000	$0	Heavy Rain	Officials reported roads closed due to flooding, including Siple Ave and Council Rd.	
Cumberland	Kornbow	6/27/2023	Flash Flood	0	0	$0	$0	Heavy Rain	Flooding was reported at Morganton Road and Skye Drive.	A cold front interacted with a moist, unstable air mass, resulting in numerous showers and storms across central North Carolina. A few discrete cells first developed during the evening in northwest Piedmont, resulting in reports of one to two-inch hail there. Once the storms consolidated into a line farther south and east, they transitioned into more of a damaging wind event in the late evening and early overnight hours, with numerous reports of trees and power lines down in parts of the northeast Piedmont, Sandhills, and
Cumberland	Clifdale	6/26/2023	Flash Flood	0	0	$0	$0	Heavy Rain	South Reilly Road between Willowbrook Drive and Lexi Lane was closed due to flooding.	
Cumberland	Skibo		Flash Flood	0	0	$15,000	$0	Heavy Rain	A water rescue was reported at 5081 Morganton Road.	
Cumberland	Bonnie Doone		Flash Flood	0	0	$0	$0	Heavy Rain	Flooding was reported at Yadkin Road and	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									Santa Fe Drive.	Coastal Plain. There were also many reports of flash flooding in Cumberland County, including Fayetteville.
Cumberland	Skibo		Flash Flood	0	0	$15,000	$0	Heavy Rain	A water rescue was reported at 2056 Skibo Road. Flooding was also reported farther up Skibo Road at Red Tip Road.	
Cumberland	Fayetteville		Flash Flood	0	0	$15,000	$0	Heavy Rain	A water rescue was reported at 82 Martin Luther King Junior Freeway. Water to the depth of 18-20 inches was also reported on the road at Martin Luther King Junior Freeway and Bragg Boulevard, resulting in a road closure.	
Cumberland	East Fayetteville		Flash Flood	0	0	$15,000	$0	Heavy Rain	A water rescue was reported at 100 East Russell Street.	
Cumberland	East Fayetteville		Flash Flood	0	0	$15,000	$0	Heavy Rain	A water rescue was reported at Ramsey Street and Telegraph Circle.	
Cumberland	East Fayetteville		Flash Flood	0	0	$0	$0	Heavy Rain	Flooding was reported at Northeastern Boulevard and Grove Street, as well as Southeastern Boulevard and Person Street.	
Cumberland	Manchester	9/10/2022	Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported near the intersection of North Carolina Highway 24	A tropical airmass interacted with a stalled frontal zone across portions of the southern Coastal Plain and eastern Sandhills of central North

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									and Vass Road.	Carolina, producing heavy rain from numerous showers and storms. Flash flooding was reported in these areas, where the heaviest rain fell.
Cumberland	Cooper	7/15/2022	Flash Flood	0	0	$0	$0	Heavy Rain	Water was flowing over the roadway near the intersection of Sambo Jackson Rd and Stewart Rd.	A mid-level disturbance coupled to a cold front draped along the western Piedmont triggered scattered afternoon and evening thunderstorms across the southern to northeastern Piedmont. These storms produced several reports of flash flooding in Wake and Cumberland Counties. No storms reached severe limits, and the storm activity tapered off across central North Carolina by late evening.
Cumberland	Cooper		Flash Flood	0	0	$0	$0	Heavy Rain	There were multiple reports of a water hazard on Interstate 95 between Wade and the Godwin/Falcon area.	
Cumberland	East Fayetteville	7/9/2022	Flash Flood	0	0	$0	$0	Heavy Rain	Several roads in Fayetteville were reported to be flooded.	A very warm and humid air mass south of an approaching backdoor front combined with passing mid-level disturbances within a broad mid-level trough to produce widespread showers and storms. Very high moisture, deeply warm low levels, and slow storm motion produced high rainfall rates and flash flooding, ranging from nuisance flooding in most places to road closures in Chapel Hill, Durham, and Wake County. Isolated damaging winds were also reported in Sampson County.
Cumberland	Cumberland	7/7/2022	Flash Flood	0	0	$0	$0	Heavy Rain	Several roads in the Fayetteville area were flooded. Hackberry Dr was entirely underwater.	A stalled frontal boundary to the north from the Mid-Mississippi Valley into the Ohio Valley and northern Virginia led to early morning storms north of the Carolinas. This led to numerous surface boundaries that

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
										aided thunderstorm formation along the Piedmont in the mid- to late-afternoon hours. These storms tracked east-southeast in the evening to early overnight hours into the Sandhills and Coastal Plain. Many of the storms produced thunderstorm wind damage, and a few also produced flash flooding.
Cumberland	Methodist College	11/12/2020	Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported near Ramsey Street and Interstate 295.	Moisture from Tropical Storm Eta was drawn northward into the Mid Atlantic during the day of 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 storm damage in Sampson County.

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Cumberland	(Fay)Grannis Fld Fay	2/6/2020	Flash Flood	0	0	$0	$0	Heavy Rain	Highway 301 was reported to be flooded near Dedication Drive and Angel Drive.	A strong upper-level trough tracked eastward across North Carolina from the Gulf Coast states and brought heavy rain and severe weather. A warm front produced heavy rain and flash flooding, along with the first round of severe weather, during the early to mid-afternoon. An associated cold front and surface wave moved across the area during the mid to late afternoon and evening. This is when a line of strong-to-severe thunderstorms raced across the area, producing widespread damaging wind gusts. There were many reports of downed trees and power lines. A bow echo produced 80 to 100 mph straight-line winds near Enfield and near Bunn, which snapped and uprooted trees and resulted in minor to moderate damage to numerous structures. In addition, two EF1 tornadoes were confirmed, one in Randolph County and one in Stanly County.
Cumberland	Cumberland		Flash Flood	0	0	$0	$0	Heavy Rain	John Smith Road was closed due to flooding between Cumberland Road and Crystal Springs Road.	
Cumberland	Bonnie Doone	7/4/2019	Flash Flood	0	0	$2,000	$0	Heavy Rain	Heavy rainfall of up to five inches in Fayetteville led to flash flooding. A vehicle became stranded in a couple of feet of standing water. A nearby automated observing station reported 4.54 inches of rain.	Scattered showers and thunderstorms developed across central North Carolina, primarily along differential heating boundaries, during peak heating as the moist atmosphere became moderately unstable. Several storms became severe, producing wind damage and isolated flash flooding.
Cumberland	East	6/	Flash	0	0	$0	$0	Heavy	Ray Avenue near	A stalled front over the region,

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
	Fayetteville		Flood					Rain	Mason Street was closed due to flooding from Cross Creek over its banks.	interacting with a very moist and slightly unstable atmosphere, produced slow-moving thunderstorms across central NC. Two swaths of heavy rainfall of 3 to 5 inches over Cumberland County, northeastern Wake County, and southern Franklin County produced minor flash flooding.
Cumberland	(Fbg)Ft Bragg	9/17/2018	Flood	0	0	$35,310,000	$30,000,000	Heavy Rain / Tropical System	Torrential rainfall of 15 to 20 inches caused widespread flooding across the county. Additional rainfall upstream resulted in an all-time record of major flooding along the Little River at Manchester and along the Cape Fear River at Fayetteville. Flooding damaged approximately 1,052 structures throughout the county, resulting in $35.3 million in property damage and at least $30 million in crop damage. The Star Lite Motel along the Little River was partially washed away into the river. The Cape Fear River reached the base of both the Person Street and Grove Street bridges at its crest.	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 flooding, with large stretches of I-40 and I-95 remaining impassable for days after the storm.

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									Numerous roads were closed due to flooding, and much of East Fayetteville was evacuated in anticipation of forecast river flooding.	The storm also spawned tornadoes across its path. There were 3 direct and 6 indirect deaths attributed to the storm within the WFO RAH CWA.
Hoke	Edenburg		Flood	0	0	$575,000	$30,000,000	Heavy Rain / Tropical System	Torrential rainfall of 10 to 15 inches caused widespread flash flooding across the county. Additional rainfall upstream led to significant flooding along Flat Creek near Vass. Flooding damaged approximately 36 structures throughout the county, resulting in $575 thousand in property damage. Crop damage was at least $30 million. Numerous streets and roads were reported to be flooded.	
Cumberland	Kornbow		Flash Flood	0	0	$0	$0	Heavy Rain	Antecedent wet conditions from Florence, combined with additional heavy rain from the thunderstorms, resulted in numerous flooded roads across northwestern Fayetteville, Bonnie Doone, and Spring	As remnants of Florence lifted north of the area, scattered thunderstorms developed during the afternoon due to strong differential heating within the pronounced mid-level dry slot, east of the center of the circulation. Two thunderstorms produced scattered wind damage and isolated flash flooding due to the wet antecedent conditions.

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									Lake.	
Hoke	Silver City		Flash Flood	0	0	$0	$0	Heavy Rain	Antecedent wet conditions from Florence, combined with additional heavy rain from the thunderstorms, resulted in several flooded roads within the Raeford city limits.	
Cumberland	Beaver Creek	9/14/2018	Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Torrential rainfall of 15 to 20 inches caused widespread flash flooding across the county. The heavy rains caused flash flooding on several creeks. Numerous roads throughout the county and the city of Fayetteville were closed due to flooding, including Interstate 95 between Exit 65 and Exit 73 and US Highway 421. Numerous homes and businesses were also 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 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
Hoke	Ashley Heights			0	0	$0	$0	Heavy Rain / Tropical System	Torrential rainfall of 10 to 15 inches caused flooding on numerous roads throughout the county. Rockfish Road was closed due to flooding between Overlake Road and	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									Pecan Trace.	impassable for days after the storm. The storm also spawned tornadoes across its path. There were 3 direct and 6 indirect deaths attributed to the storm within the WFO RAH CWA.
Cumberland	Kornbow	7/23/2018	Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported across portions of Fayetteville, including at a business located on Drayton 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 south-southwesterly flow around an anomalous mid to upper low over the Ohio Valley. Loosely organized multi-clusters formed, accompanied by marginally severe hail, wind damage, and isolated flooding.
Hoke	Timberland	4/15/2018	Flash Flood	0	0	$0	$0	Heavy Rain	Several roads in rural areas just to the southwest of Raeford were flooded.	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 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,

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
										as it moved through North Carolina.
Cumberland	Clifdale	9/1/2017	Flash Flood	0	0	$0	$0	Heavy Rain	Heavy rain caused flash flooding on multiple roads near Raeford Road and Skibo Road on the west side of Fayetteville.	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 Central North Carolina and stalled, providing lift in the strongly sheared, moist environment. The resulting thunderstorms became severe, producing damaging wind gusts, large hail, and flash flooding.
Cumberland	(Fbg) Fort Bragg	10/9/2016	Flood	2	0	$62,100,000	$20,000,000	Heavy Rain / Tropical System	Torrential rainfall of 12 to 15 inches caused widespread flash flooding across the county. The heavy rain caused at least eight dams to breach in Cumberland County. Additional rainfall upstream led to significant flooding on the Little River at Manchester and the Cape Fear at Fayetteville. Flooding damaged approximately 4,050 structures throughout the county, resulting in $62.1 million in property damage and at least $20 million in crop damage. There were	Hurricane Matthew skirted by the North Carolina coast on October 8, 2016, dropping torrential rainfall of 8 to 15 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. Matthew's 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

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									more than 700 swift water rescues in Cumberland County alone. The flooding resulted in 2 direct fatalities. An 81-year-old female was found dead inside her vehicle in the 100 block of Rhodes Pond Road. After flood waters receded, a 53-year-old male was found less than 100 yards away from his vehicle near the Clinton Road exit on the southbound side of I-95. There were also two indirect fatalities. A 63-year-old man died several days later from a pre-existing health condition after he was unable to refill his prescription medication due to flooded and impassable roadways. The second indirect fatality occurred several weeks later when a construction equipment operator died while repairing an earthen dam damaged by Hurricane Matthew. The victim was operating a Bobcat when the	and 40. Besides the 11 direct fatalities, at least 3 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 vehicle. Finally, the associated EF-1 tornado in Wayne County resulted in $75 thousand in property damage.

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									equipment overturned, trapping him underwater at McFayden Lake.	
Cumberland	(Fbg) Fort Bragg	10/8/2016	Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Torrential rainfall of 12 to 15 inches caused widespread flash flooding across the county. The heavy rain caused at least eight dams to breach in Cumberland County. Numerous roads were closed due to flooding, including portions of Interstate 95. Numerous homes and businesses were flooded, and water rescues were conducted after people were trapped in homes and vehicles.	
Hoke	Ashmont		Flash Flood	0	0	$3,100,000	$0	Heavy Rain / Tropical System	Heavy rainfall of 9 to 12 inches caused widespread flash flooding across the county. Numerous roads were closed due to flooding. Numerous homes and businesses were also flooded. Flooding damaged approximately 433 structures throughout the county, resulting in $3.1 million in property	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									damage.	
Cumberland	Manchester	9/29/2016	Flash Flood	0	0	$1,000,000	$0	Dam / Levee Break	A significant breach in Long Valley Farm Lake Dam near Carvers Creek State Park was reported. Water was reported to be surging into Jumping Run Creek and surrounding roads.	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 roads were flooded, and/or washed out, homes and businesses flooded, and dams were topped or breached across the Sandhills region.
Hoke	Raeford Muni Arpt		Flash Flood	0	0	$150,000	$0	Heavy Rain	Numerous roads were closed due to flooding between Raeford and Rockfish. Johnson Mill Road was washed out in two places between Fayetteville Road and Pittman Grove Church Road, where it crosses Black Branch and Puppy Creek. The shoulders of Lindsay Road and Galatia Church Road were also washed out.	
Hoke	Rockfish		Flash Flood	0	0	$1,000,000	$0	Dam / Levee Break	The dam on a lake adjacent to McLaughlin Lake failed, dumping water into McLaughlin Lake, which overtopped its dam and flooded surrounding roads.	
Cumberland	Manchester	9/28/2016	Flash Flood	0	0	$100,000	$0	Heavy Rain	Heavy rain caused flash flooding at numerous locations across Cumberland	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									County, including Fayetteville, Spring Lake, Godwin, and Hope Mills. Cross Creek Mall and other areas along Cross Creek were particularly hard hit. Also, Wapiti Drive on the north side of Spring Lake was closed due to flooding, and Sykes Pond Road near Rockfish was washed out. Residents were stranded or needed rescue from their homes in the vicinity of South Reilly Road and Cliffdale Road.	
Hoke	Arabia		Flash Flood	0	0	$50,000	$0	Heavy Rain	Heavy rain caused flash flooding near residences on McLean Loop Road, near Arabia Road. Several roads were also closed in that area. The shoulder was washed out on two roads: Golf Course Road between Ellis Road and Phillipi Church Road, and Old Wire Road between Arabia Road and McGougan Road.	
Cumberland	Vander	8/ 7/	Flash Flood	0	0	$0	$0	Heavy Rain	Flash flooding was reported along John B	Convection developed in a very moist but weakly sheared

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									Carter Road, southeast of Fayetteville.	environment along a stalled frontal boundary oriented from west to east across southern North Carolina. One of the storms produced very heavy rainfall over an urban area, resulting in flash flooding.
Cumberland	Lakedale	6/3/2016	Flash Flood	0	0	$0	$0	Heavy Rain	Robeson Street near downtown Fayetteville was flooded due to heavy rain.	Slow-moving thunderstorms over Cumberland County produced 2 to 3 inches of rainfall in the city of Fayetteville, resulting in minor flooding.
Cumberland	Skibo		Flash Flood	0	0	$0	$0	Heavy Rain	Morganton Road on the western side of Fayetteville was flooded.	
Hoke	Raeford	5/29/2016	Flash Flood	0	0	$0	$0	Heavy Rain / Tropical System	Heavy rainfall associated with a thunderstorm in the rain band of Tropical Storm Bonnie resulted in flash flooding along Highway 211 south of Raeford.	Tropical Storm Bonnie stalled just off the coast of South Carolina during the afternoon and evening. Rain bands from Bonnie extended into Central North Carolina during the evening, producing a band of isolated showers and thunderstorms. One storm produced locally heavy rainfall, which resulted in flash flooding. In addition to the flooding, lightning struck and injured one person and also started a fire at a residence.
Cumberland	Lakedale	6/9/2015	Flash Flood	0	0	$20,000	$0	Heavy Rain	Multiple cars were flooded in the Hope Mills area. One car became stalled in the high water on Hope Mills Road and Camden Road.	A weak mid-level shear axis interacted with a moist and unstable air mass, triggering thunderstorms across the Coastal Plain and Sandhills. Slow-moving and training storms resulted in flash flooding. In addition, one storm produced some wind damage.
Cumberland	Fayetteville	9/	Flash	0	0	$2,000	$0	Heavy	Several roads in	In the presence of steep low-level

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
			Flood					Rain	Fayetteville were flooded, including Hull Road and Yadkin Road. Also, a car became stuck in high water at the intersection of Brookshire Street and Baystone Road.	rates and in the vicinity of a sharpening pre-frontal surface trough, slow-moving storms developed across southern Piedmont and Sandhills during the afternoon and early evening. Severe thunderstorm winds brought down several trees in Cumberland and Moore Counties. Isolated flooding was also reported inside the Fayetteville city limits.
Cumberland	Owens	4/29/2014	Flash Flood	0	0	$0	$0	Heavy Rain	Numerous roads were closed and impassable due to flooding.	Thunderstorms developed during the afternoon just north and south of a well-defined warm front bisecting central North Carolina. Three weak, short-lived tornadoes developed along the warm front across eastern North Carolina. Training thunderstorms also resulted in some flash flooding.
Hoke	Raeford	6/25/2013	Flash Flood	0	0	$0	$0	Heavy Rain	Highway 20 near Raeford had to be closed due to high water.	Deep, moist southwesterly flow combined with strong insolation and weak disturbances aloft to produce scattered afternoon showers and thunderstorms. A lingering trough aloft led to slightly above-normal coverage for the day. Several storms became severe, producing wind damage and hail ranging from quarters to half dollars, with one report of golf-ball-sized hail. Also, the very moist air mass and wet antecedent conditions resulted in some flash flooding.
Cumberland	Beaver Creek	6/23/2013	Flash Flood	0	0	$0	$0	Heavy Rain	Multiple roads had to be closed west of downtown Fayetteville.	A residual boundary across the Coastal Plain of North Carolina provided a focus for scattered

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
Hoke	Rockfish		Flash Flood	0	0	$0	$0	Heavy Rain	Several roads had to be closed due to high water between Raeford and Rockfish.	thunderstorms to develop within a very moist and unstable air mass. One of the storms became severe, causing some wind damage. In addition, training of several storms resulted in some flash flooding.
Cumberland	Cumberland	8/2/2012	Flash Flood	0	0	$10,000	$0	Heavy Rain	Multiple reported of flash flooding were received just west of downtown Fayetteville. Flooding was reported on Yadkin Road, Santa Fe Road, Strickland Bridge Road near the intersection with Graham Road, and Hope Mills Road, with several reports of stranded cars. Hybarts Branch Creek overflowed its banks and flooded several yards. Several roads also flooded near the Cross Creek Mall, with some water entering portions of the mall, and cars in the parking lot had water up to the tires.	With a broad area of troughing persisting across the East Coast, a strong vorticity center aloft, and weak surface convergence, combined with a moist and moderately unstable air mass, resulted in scattered showers and thunderstorms, mainly across the Coastal Plain. Numerous reports of wind damage and large hail were received, with flash flooding reported in the Fayetteville area.
Cumberland	Cumberland	6/22/2011	Flash Flood	0	0	$0	$0	Heavy Rain	Rockfish Road was impassable between Camden Road and Sturbridge Road due to flash flooding.	Strong to severe thunderstorms developed along the northern periphery of the strong upper-level ridge, driven by strong daytime heating that produced moderate instability across the area. Severe hail ranging from quarter-size to as
Cumberland	Fayetteville	6/ 21	Flash Flood	0	0	$0	$0	Heavy Rain	A portion of Bragg Blvd near Glenville Avenue	

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									was impassable due to flash flooding.	large as golf ball size was reported along with numerous downed trees from thunderstorm wind gusts.
Cumberland	Cedar Creek	9/30/2010	Flash Flood	0	0	$0	$0	Heavy Rain	Several secondary roads were closed for a period. A portion of Beulah Road between John Mark Road and Boykin Road was washed out.	A cold front stalled across central and eastern portions of North Carolina on the 25th of September. In the middle and upper levels of the atmosphere, a closed low-pressure system was digging across western Tennessee. The slow-moving upper low would cause a series of low-pressure waves to ride along the stalled frontal zone, while also affecting copious amounts of tropical moisture into the region. Central North Carolina received 2 to 5 inches of rainfall on the 26th, but because of the ongoing severe drought, no flooding occurred. After a lull on the 27th and 28th, a second upper-level low developed over western Tennessee once again. This acted to pull the stationary boundary and moisture conveyor back to the west, as well as pick up remnants of Tropical Storm Nicole. Central North Carolina saw an additional 3 to 6 inches on the 29th and 30th. The combined rainfall of 6 to 10 inches from the 26th through the 30th of September resulted in flashing flooding and minor river flooding.
Cumberland	(Fay)Grannis Fld Fay	6/25/2010	Flash Flood	0	0	$10,000	$0	Heavy Rain	Several vehicles were reported to be stalled in flood waters on Walking Trail Way. Another car drove into a flooded	Strong to severe thunderstorms formed along the sea breeze in a moist and unstable atmosphere. Some of these storms produced isolated wind damage and flash

County	Jurisdiction	Date	Event Type	Direct Deaths	Direct Injuries	Property Damage	Crop Damage	Flood Cause	Event Narrative	Episode Narrative
									intersection at Hackberry Drive and Camden Road and stalled. Flooding was also reported at North Main Street and Rockfish Road.	flooding across portions of the Southern Coastal Plain and Sandhills of central North Carolina.
Hoke	Raeford		Flash Flood	0	0	$10,000	$0	Heavy Rain	Numerous roads were reported to be flooded across the county. The worst of the flooding was reported in Raeford, NC, near Southern Avenue and South Main Street. At this location, flooding was reported in and around an apartment complex, with water waist-deep in the parking lot and surrounding streets.	

5.7.5. Repetitive Loss Properties

Many of North Carolina's insured losses have involved repetitive loss properties. The Federal definition of a repetitive loss property is "any insured structure with at least two paid flood insurance losses of more than $1,000 each in any rolling 10-year period since 1978" (FEMA). A repetitive loss property may or may not be currently insured by the NFIP. Properties that have suffered repetitive damage due to flooding are currently limited to residential structures. According to FEMA, the following are definitions of the NFIP and FEMA Severe Repetitive Loss (SRL) and Repetitive Loss (RL) Properties:

- **NFIP Repetitive Loss Structure:** A structure covered under an NFIP flood insurance policy that (1) has incurred flood-related damage on two occasions, in which the cost of repair, on average, equaled or exceeded 25% of the value of the structure at the time of each such flood event; and (2) at the time of the second incidence of flood-related damage, the contract for flood insurance contains increased cost of compliance coverage. (44 CFR § 77.2(i))
- **NFIP Severe Repetitive Loss Structure:** a structure that is covered under an NFIP flood insurance policy and has incurred flood-related damage (1) for which four or more separate claims have been made under flood insurance coverage, 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 (2) for which at least two separate flood insurance claims payments (building payments only) have been made, with cumulative amount of such claims exceeding the value of the insured structure. (44 CFR § 77.2(j))
- **Flood Mitigation Assistance Program (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.

Table 5-37: Summary of Residential Repetitive Loss Properties in the Cumberland-Hoke Region[62]

NFIP Community Name	Occupancy Type	NFIP Repetitive Loss	FMA Repetitive Loss	NFIP Severe Repetitive Loss	FMA Severe Repetitive Loss	Total Losses
Cumberland County	Single-family residence	13	1	1	1	28
	Single-family residential building, except for a mobile home or a single residential unit within a multi-unit building	5	0	0	0	10
	Residential building with more than four units	1	0	1	0	2
Eastover	Single-family residential building, except for a mobile home or a single residential unit within a multi-unit building	1	0	0	0	2
Falcon	--	--	--	--	--	--
Fayetteville	Single-family residence	26	3	0	3	61
	Single-family residential building, except for a mobile home or a single residential unit within a multi-unit building	15	2	1	2	40
	Non-residential Business	2	0	0	0	5
	Non-residential building	2	2	0	2	4
Hope Mills	Single-family residence	1	0	0	0	2
Linden	--	--	--	--	--	--
Spring Lake	Single-family residence	1	0	0	0	2
Stedman	--	--	--	--	--	--
Wade	--	--	--	--	--	--
Cumberland Total		**67**	**8**	**3**	**8**	**156**
Hoke County	Single-family residential building, except for a mobile home or a single residential unit within a multi-unit building	1	0	0	0	2
Raeford	--	--	--	--	--	--
Hoke Total		**1**	**0**	**0**	**0**	**2**
Planning Area Total		**68**	**8**	**3**	**8**	**158**

[62] Federal Emergency Management Agency. (2025). *NFIP Multiple Loss Properties* (Version 1) [Tabular]. OpenFEMA. https://www.fema.gov/openfema-data-page/nfip-multiple-loss-properties-v1

5.7.6. 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. According to the NRI, Cumberland County has an annualized frequency of 2.17, an EAL of $6,267,625, an EAL Score of 94.86, and a Hazard Risk Score of 95.77, all of which are considered Very High. Fayetteville has the highest EAL total of $5,597,965, followed by Hope Mills and Eastover, which have EAL totals of $945,786 and $402,870, respectively. Census tracts that overlap unincorporated areas of Cumberland County have an average annualized frequency of 2.17, a total EAL of $161,453, an average EAL Score of 64.44, and an average Hazard Risk Index Score of 64.84.

Hoke County has an annualized river flooding frequency of 0.96, a total EAL of $161,056, an EAL Score of 32.99, and a Hazard Risk Rating of 36.27. Census tracts that overlap Raeford have an EAL total of $88,711, an average EAL score of 61.9, and an average Hazard Risk Index Score of 67.6, scores which are considered Relatively High.

Table 5-38: NRI Annualized Frequency, EAL Total, Average EAL, and Average Hazard Risk Index Score for River Flooding in the Planning Area

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Cumberland County (Unincorporated Area)	**2.17**	**$161,453**	**64.44**	**Relatively High**	**64.84**	**Relatively High**
Eastover	2.17	$402,870	84.00	Very High	85.57	Very High
Falcon	1.63	$48,359	66.74	Relatively High	69.40	Relatively High
Fayetteville	1.76	$5,597,965	59.05	Relatively Moderate	60.91	Relatively High
Godwin	2.17	$143,442	89.84	Very High	91.75	Very High
Hope Mills	2.03	$945,787	65.95	Relatively High	68.69	Relatively High
Linden	2.17	$119,391	88.16	Very High	89.78	Very High
Spring Lake	1.67	$393,258	45.71	Relatively Moderate	47.00	Relatively Moderate
Stedman	2.17	$21,341	54.54	Relatively Moderate	53.61	Relatively Moderate
Wade	2.17	$175,006	80.63	Very High	82.98	Very High
Cumberland County Total	**2.17**	**$6,267,625**	**94.86**	**Very High**	**95.77**	**Very High**
Hoke County (Unincorporated Area)	**0.96**	**$33,040**	**52.68**	**Relatively Moderate**	**56.63**	**Relatively Moderate**
Raeford	0.96	$88,711	61.90	Relatively High	67.60	Relatively High
Hoke County Total	**0.96**	**$161,056**	**32.99**	**Relatively Low**	**36.27**	**Relatively Low**

5.7.7. Consequence and Impact Analysis

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 water 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 adequately cleaned can breed mold and mildew. A building that is not thoroughly cleaned becomes a health hazard, especially for small children and the elderly. Another health hazard occurs when heating ducts in a forced air system are not properly cleaned after inundation. When the furnace or air conditioner is turned on, the sediments left in the ducts are circulated throughout the building and inhaled by occupants. If a jurisdiction's 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 surviving 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 their homes can flood again. The resulting stress on floodplain residents takes its toll in the form of aggravated physical and mental health problems. Individuals who have limited mobility, who require medical equipment, or who have limited capabilities to prepare for flooding, including Individuals with disabilities (16.9% in Cumberland County and 18.2% in Hoke County)[63] can be disproportionately impacted by flooding events and are at an increased risk of injury or death.

Technology has become a critical resource for communicating flooding risks, impacts, preparedness information, and safety. Many preparedness resources and alerts are issued online. While it is increasingly common to issue public safety alerts and preparedness information through online resources, many residents lack access to computers. Approximately 6.1% of housing units in Cumberland County and 8.6% in Hoke County lack computing devices, further limiting residents' access to public awareness information.[64] Additionally, an estimated 10.2% of households in Cumberland County and 11.1% in Hoke County lack internet

[63] U.S. Census Bureau. (2023). *Disability Characteristics* (No. ACSST5Y2023.S1810; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S1810
[64] U.S. Census Bureau. (2023). *Types of Computers and Internet Subscriptions* (No. ACSDP5Y2023.S2801; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S2801

subscriptions, limiting residents' access to a wide range of publicly available preparedness materials online.[64] 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, flyers, and newspapers.

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 (0.9% of Housing Units in Cumberland County and 1.3% in Hoke County), which means these residents may not have access to critical, time-sensitive emergency alerts.[65] It is important that residents in the planning area have a way to receive emergency alerts and preparedness information.

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. It is important that any new development is designed to reduce flooding impacts and avoid areas with increased flood risk.

Economy

During floods (especially flash floods), roads, bridges, farms, houses, and automobiles are destroyed. Additionally, the local government must deploy firefighters, 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.

Natural Environment

During a flood event, chemicals and other hazardous substances may contaminate local water bodies. Flooding kills animals and, in general, disrupts the ecosystem. Snakes and insects may also make their way to the flooded areas.

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 trap residents, so first responders may be at increased risk when responding to emergency calls during and after flood events when infrastructure or roads are damaged.

Future Conditions

According to the NCCSR, extreme precipitation is likely to increase inland flooding in NC, and there is high confidence that the frequency and intensity of heavy precipitation will increase.[66]

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[65] U.S. Census Bureau. (2023). *Selected Housing Characteristics* (No. ACSDP5Y2023.DP04; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP04

[66] Kunkel, K. E., Easterling, D. R., Ballinger, A., Bililign, S., Champion, S. M., Corbett, D. R., Dello, K. D., Dissen, J., Lackmann, G. M., Luettich Jr., R. A., Perry, L. B., Robinson, W. A., Stevens, L. E., Stewart, B. C., & Terando, A. J.

(2020). *North Carolina Climate Science Report* (p. 233). North Carolina Institute for Climate Studies. https://ncics.org/programs/nccsr/

5.8. Severe Weather (Thunderstorm Wind, Lightning & Hail)

5.8.1. Hazard Description

Thunderstorms

Thunderstorms result from the rapid upward movement of warm, moist air. They can occur inside warm, moist air masses and at fronts. As warm, moist air rises, it cools, condenses, and forms cumulonimbus clouds that can reach heights of more than 35,000 ft. As the rising air reaches its dew point, water droplets and ice form and begin falling the long distance through the clouds towards Earth‘s surface. As the droplets fall, they collide with other droplets and become larger. The falling droplets create a downdraft of air that spreads out at Earth‘s surface and causes strong winds associated with thunderstorms.

There are four ways in which thunderstorms can organize: single cell, multi-cell cluster, multi-cell lines (squall lines), and supercells. Even though supercell thunderstorms are most frequently associated with severe weather, thunderstorms most often organize into clusters or lines. Warm, humid conditions are favorable for thunderstorm development. The average single-cell thunderstorm is approximately 15 miles in diameter and lasts less than 30 minutes at a single location. However, thunderstorms, especially when organized into clusters or lines, can travel intact for distances exceeding 600 miles.

Thunderstorms are responsible for the development of many severe weather phenomena, posing significant hazards to the population and the landscape. Damage that results from thunderstorms is mainly inflicted by downburst winds, large hailstones, and flash flooding caused by heavy precipitation. Stronger thunderstorms can produce tornadoes and waterspouts.

The NCEI divides wind events into several types, including High Wind, Strong Wind, Thunderstorm Wind, Tornado, and Hurricane. For this severe weather risk assessment, the wind hazard will include data from High Wind, Strong Wind, and Thunderstorm Wind. Hurricane Winds and Tornadoes are addressed as individual hazards. The following definitions come from the NCEI Storm Data Preparation document.

- **High Wind** – Sustained non-convective winds of 40mph or greater lasting for one hour or longer, or winds (sustained or gusts) of 58 mph for any duration on a widespread or localized basis.
- **Strong Wind** – Non-convective winds gusting less than 58 mph, or sustained winds less than 40 mph, resulting in a fatality, injury, or damage.
- **Thunderstorm Wind** – Winds, arising from convection (occurring within 30 minutes of lightning being observed or detected), with speeds of at least 58 mph, or winds of any speed (non-severe thunderstorm winds below 58 mph) producing a fatality, injury, or damage.

Lightning

Lightning is an electrical discharge between positive and negative regions of a thunderstorm. A lightning flash is composed of a series of strokes with an average of about four. The length and duration of each lightning stroke vary, but typically average about 30 microseconds.

Lightning is one of the more dangerous weather hazards in the United States. Each year, lightning is responsible for deaths, injuries, and millions of dollars in property damage, including damage to buildings, communications systems, power lines, and electrical systems. Lightning also causes forest and brush fires, as well as deaths and injuries to livestock and other animals. According to the National Lightning Safety Institute, lightning causes more than 26,000 fires in the United States each year. The institute estimates that property damage, increased operating costs, production delays, and lost revenue from lightning and its secondary effects exceed $6 billion per year. Impacts can be direct or indirect. People or objects can be directly struck, or damage can occur indirectly when the current passes through or near them.

Hail

Hail is associated with thunderstorms, which can also bring high winds and tornadoes. It forms when updrafts carry raindrops into extremely cold areas of the atmosphere where they freeze into ice. Hail falls when it becomes heavy enough to overcome the strength of the updraft and is pulled by gravity towards the earth. Hailstorms occur throughout the spring, summer, and fall in the region, but are more frequent in late spring and early summer. Hailstones are usually less than two inches in diameter and can fall at speeds of 120 mph. Hail causes nearly $1 billion in damage to crops and property each year in the United States.

5.8.2. Location and Spatial Extent

The entirety of the Region, including all assets located within the Counties and each jurisdiction, can be considered at risk to severe weather events. This includes the entire population and all critical facilities, buildings (commercial and residential), and infrastructure. The figures below show the locations of recorded thunderstorms and lightning events, with data ranging from 2010 to the present. Per the NWS 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 map for event type “lightning” records the 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 Storm Prediction Center (SPC) severe weather event reports, which include hail data from multiple sources, including 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 show the reported hail, wind, and lightning events in the planning area between 2010 and 2025, including a heat map showing where severe weather events were reported more or less frequently.

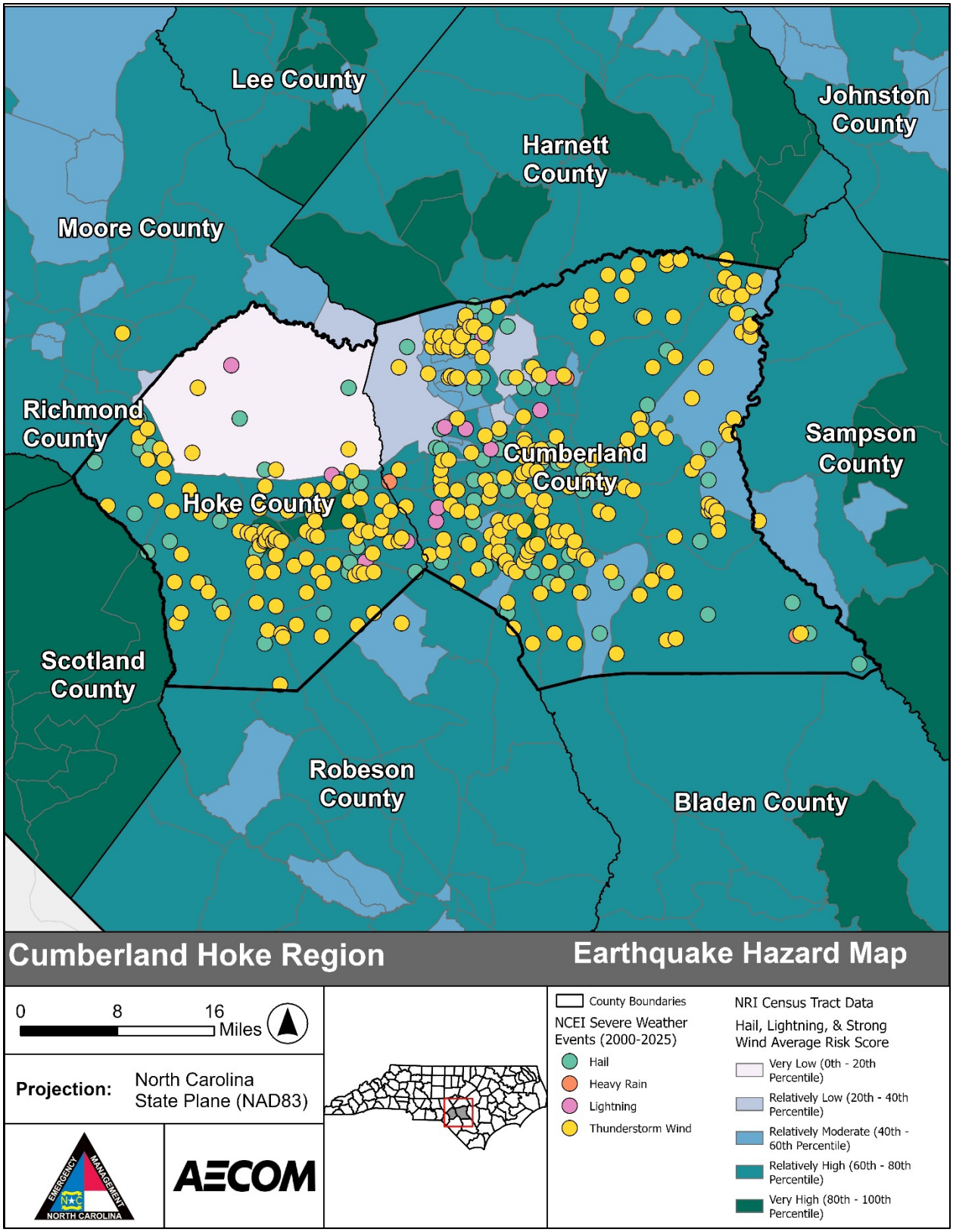


Figure 5-83: Cumberland-Hoke Regional Severe Weather Map

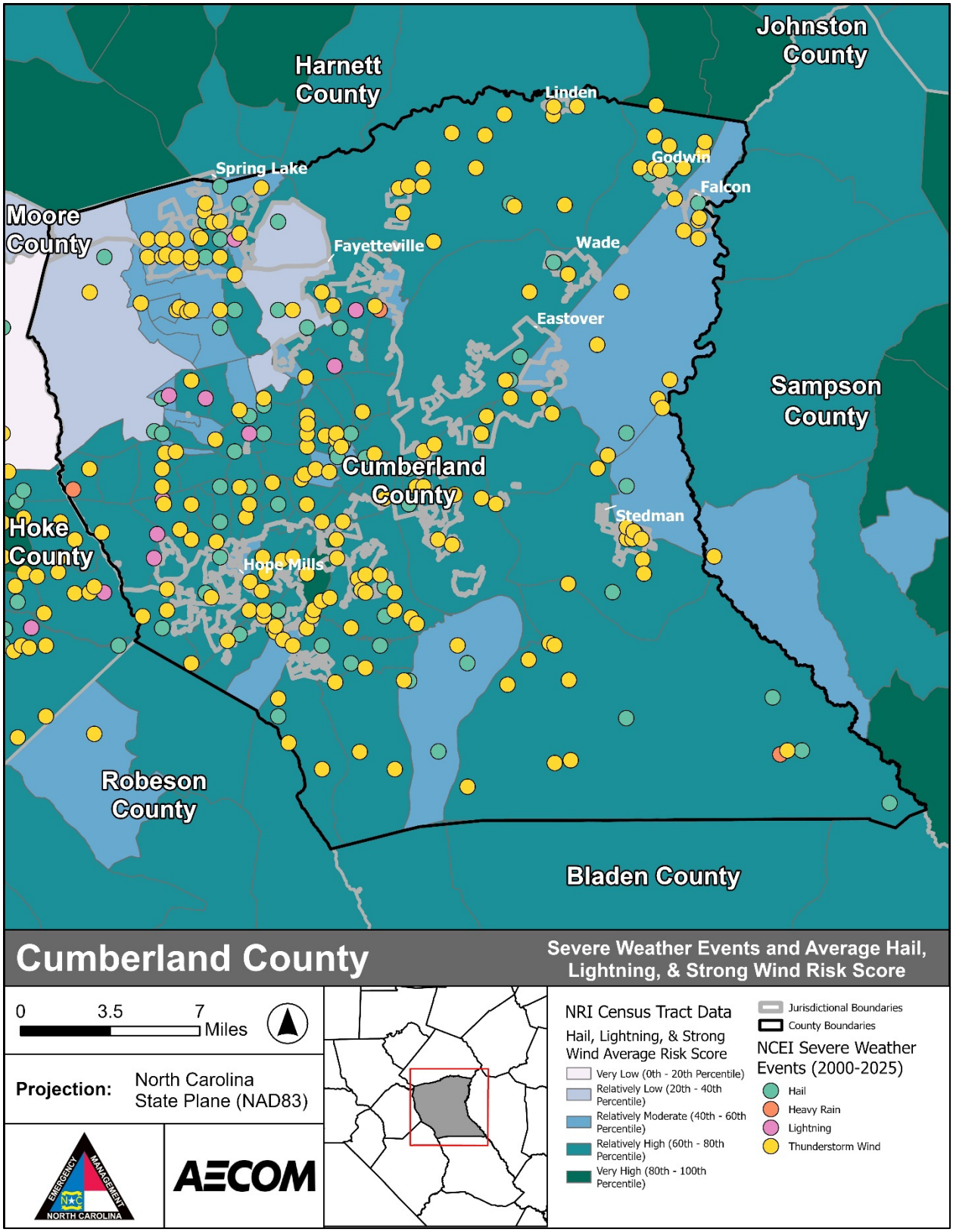


Figure 5-84: Cumberland County Severe Weather Map

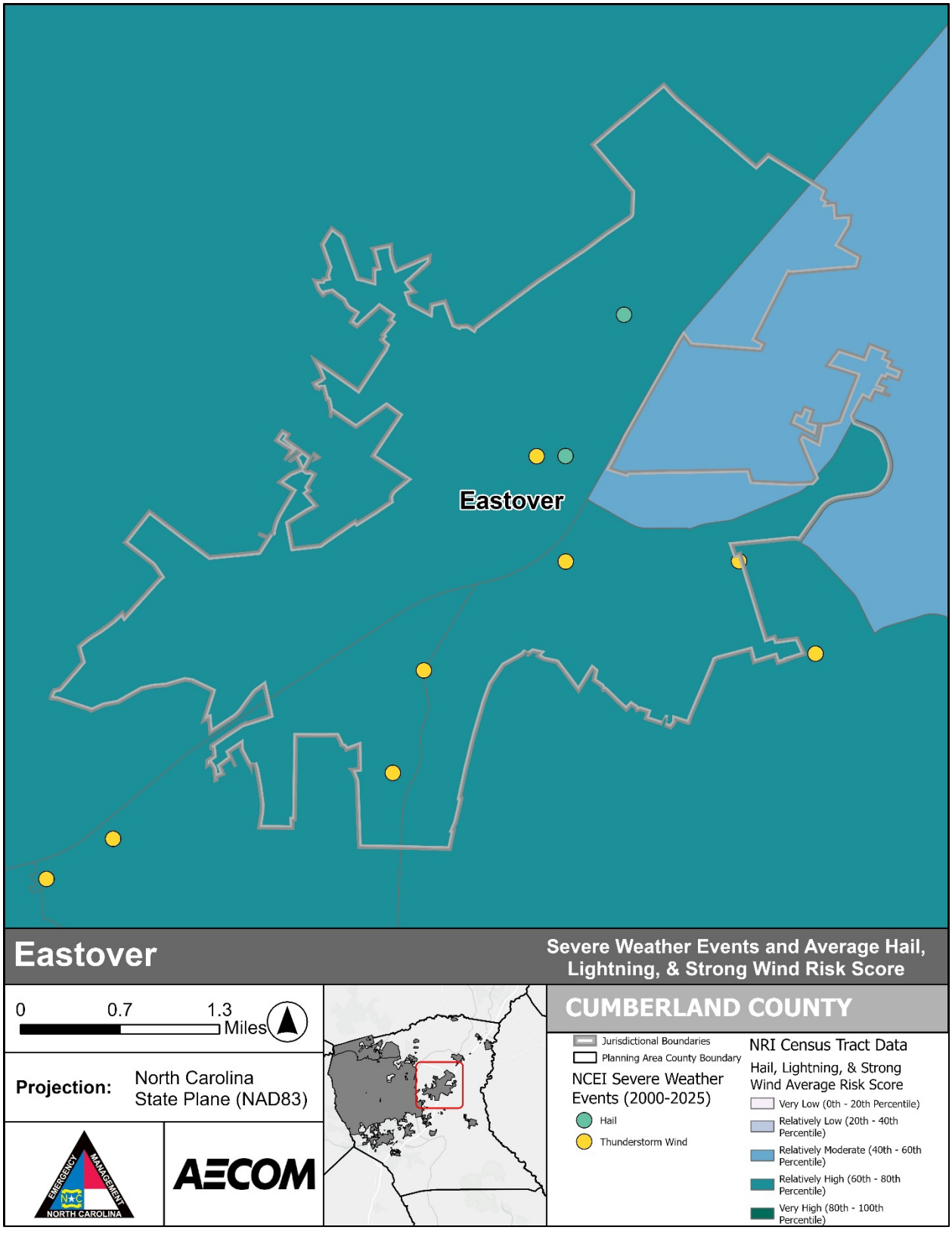


Figure 5-85: Town of Eastover Severe Weather Map

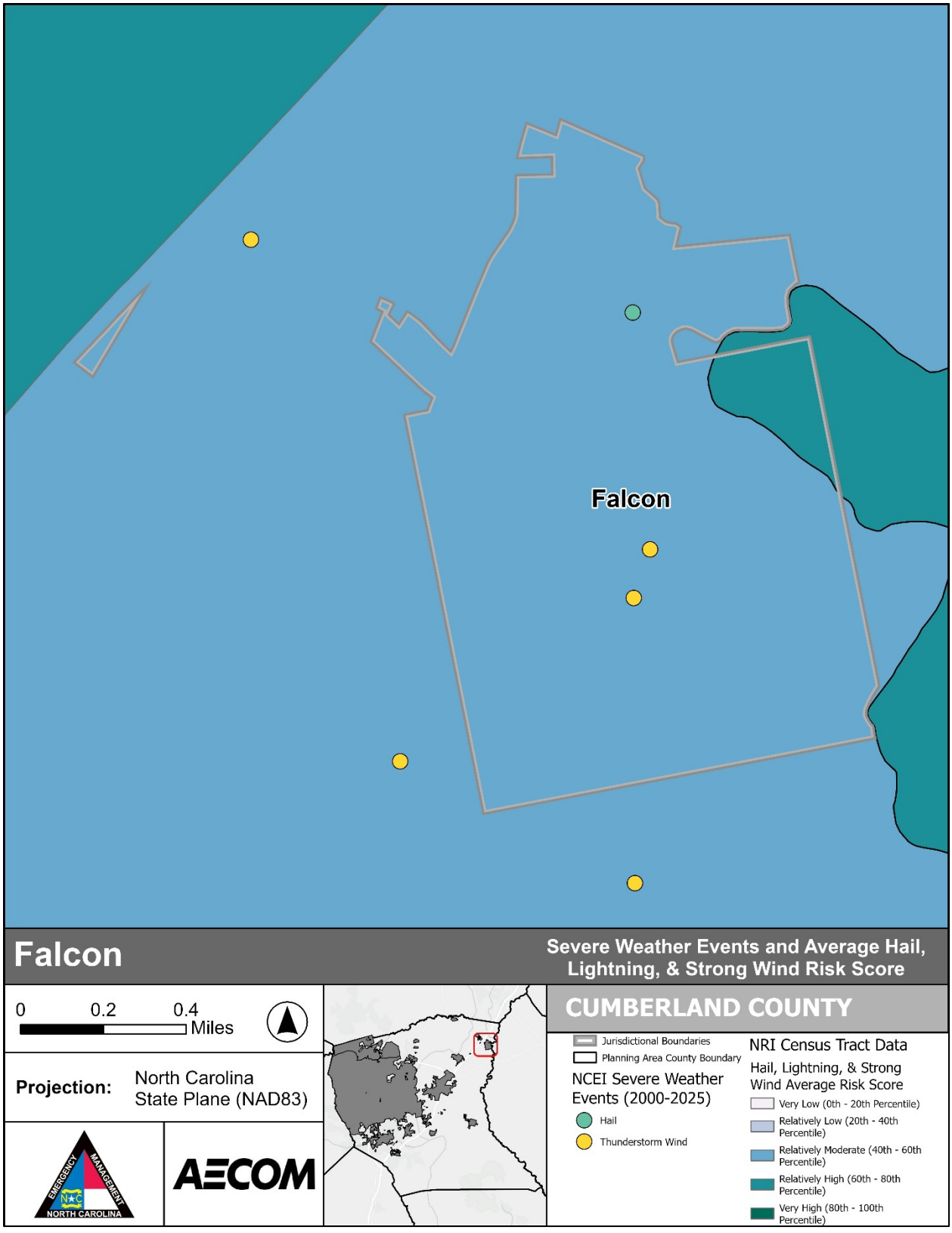


Figure 5-86: Town of Falcon Severe Weather Map

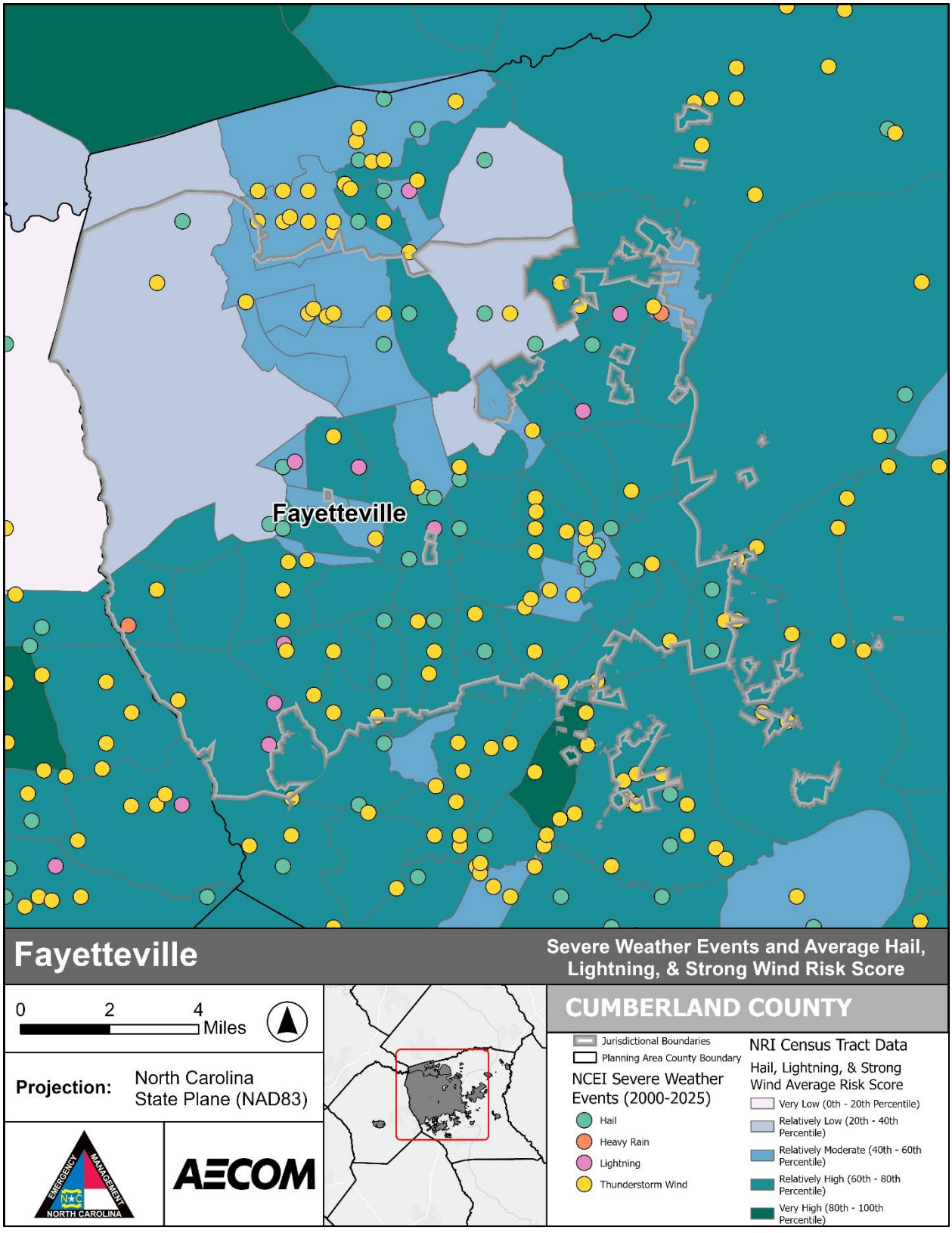


Figure 5-87: City of Fayetteville Severe Weather Map

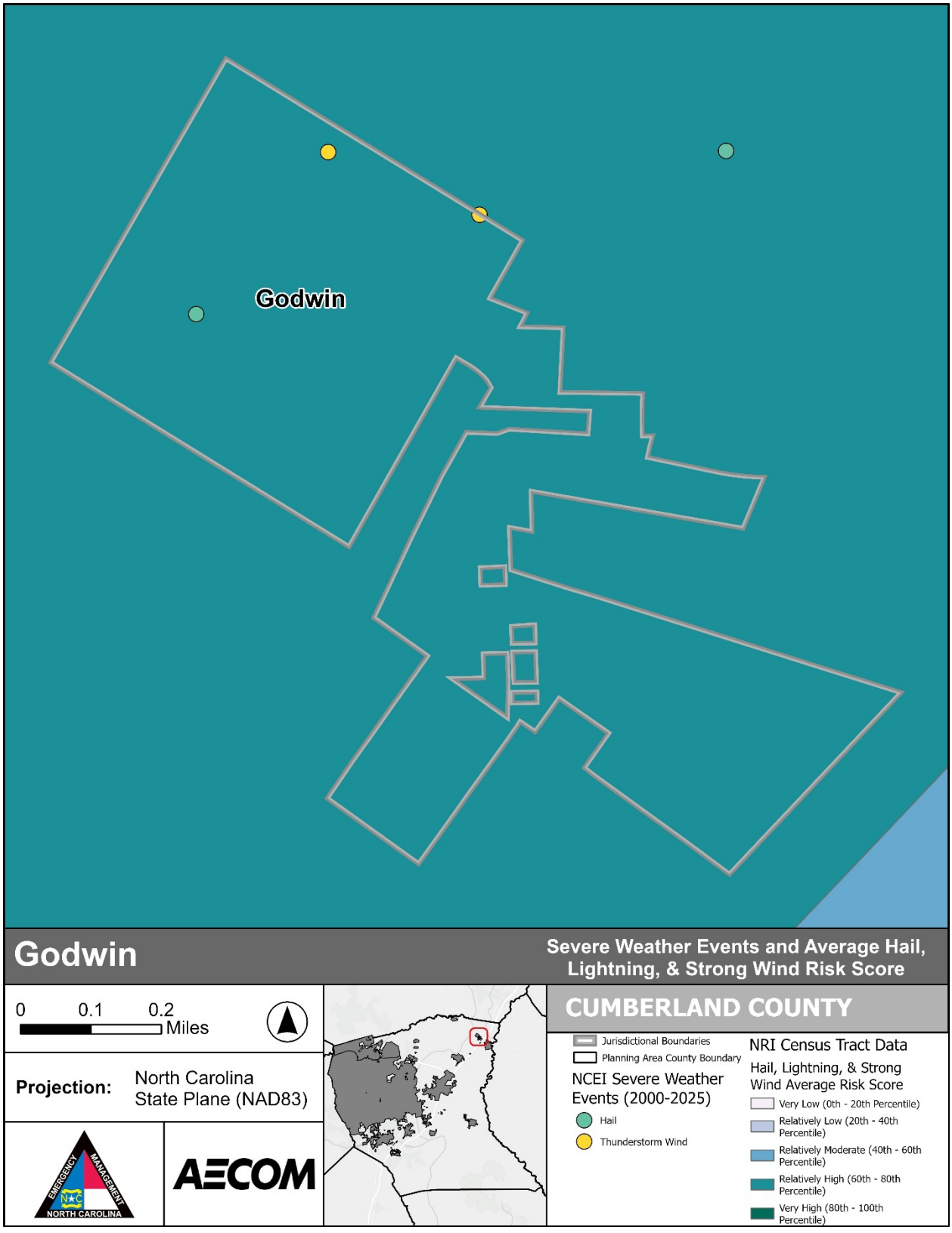


Figure 5-88: Town of Godwin Severe Weather Map

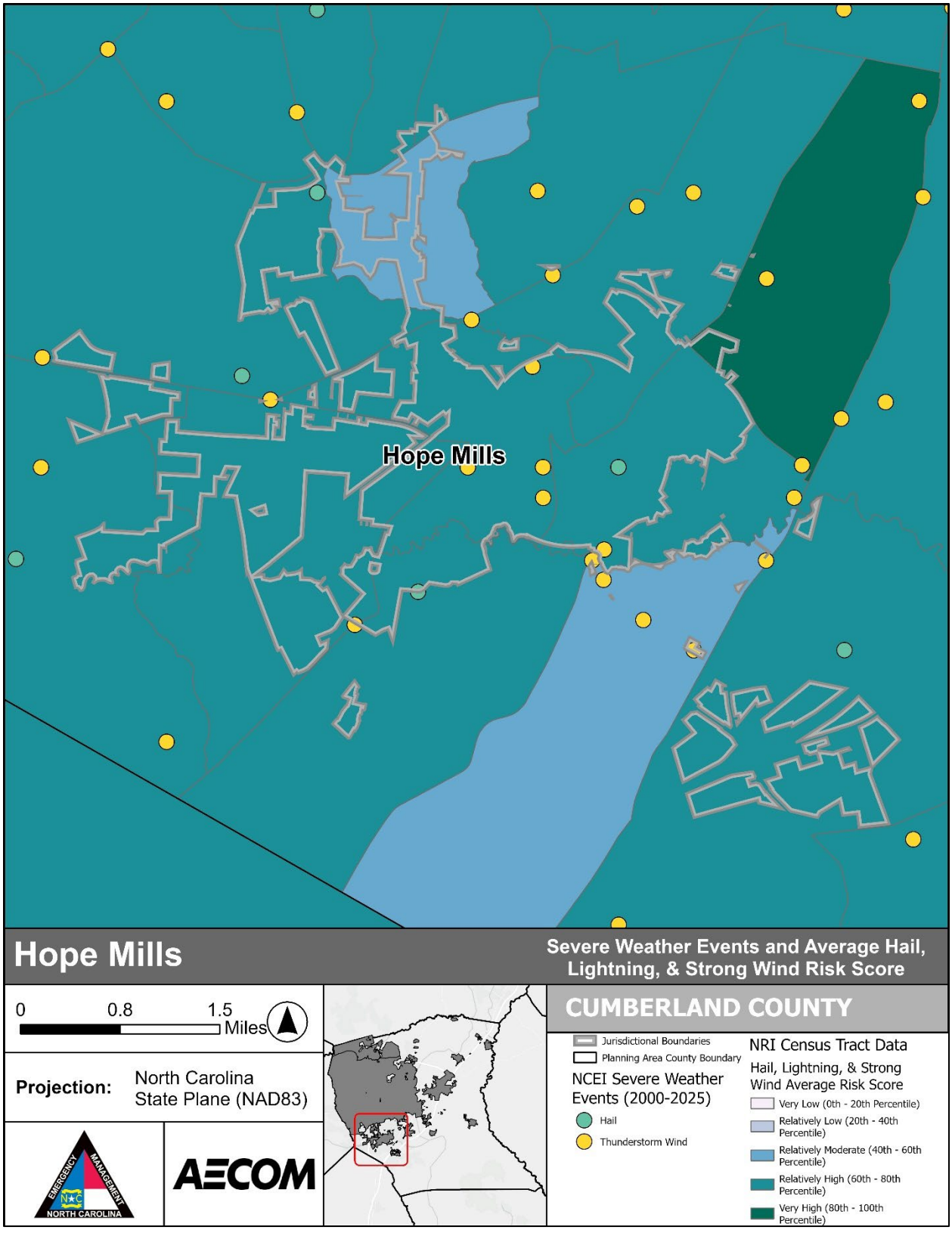


Figure 5-89: Town of Hope Mills Severe Weather Map

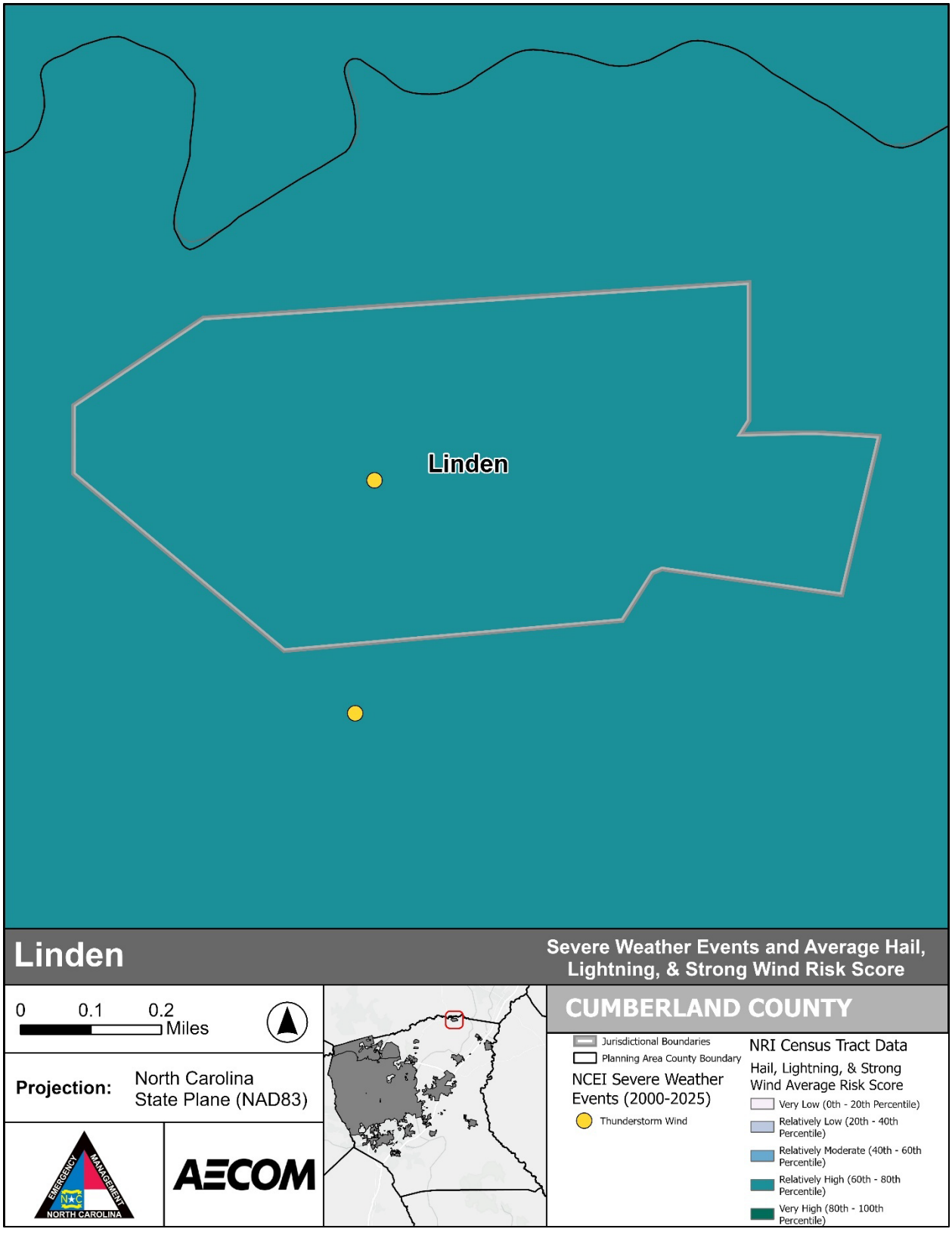


Figure 5-90: Town of Linden Severe Weather Map

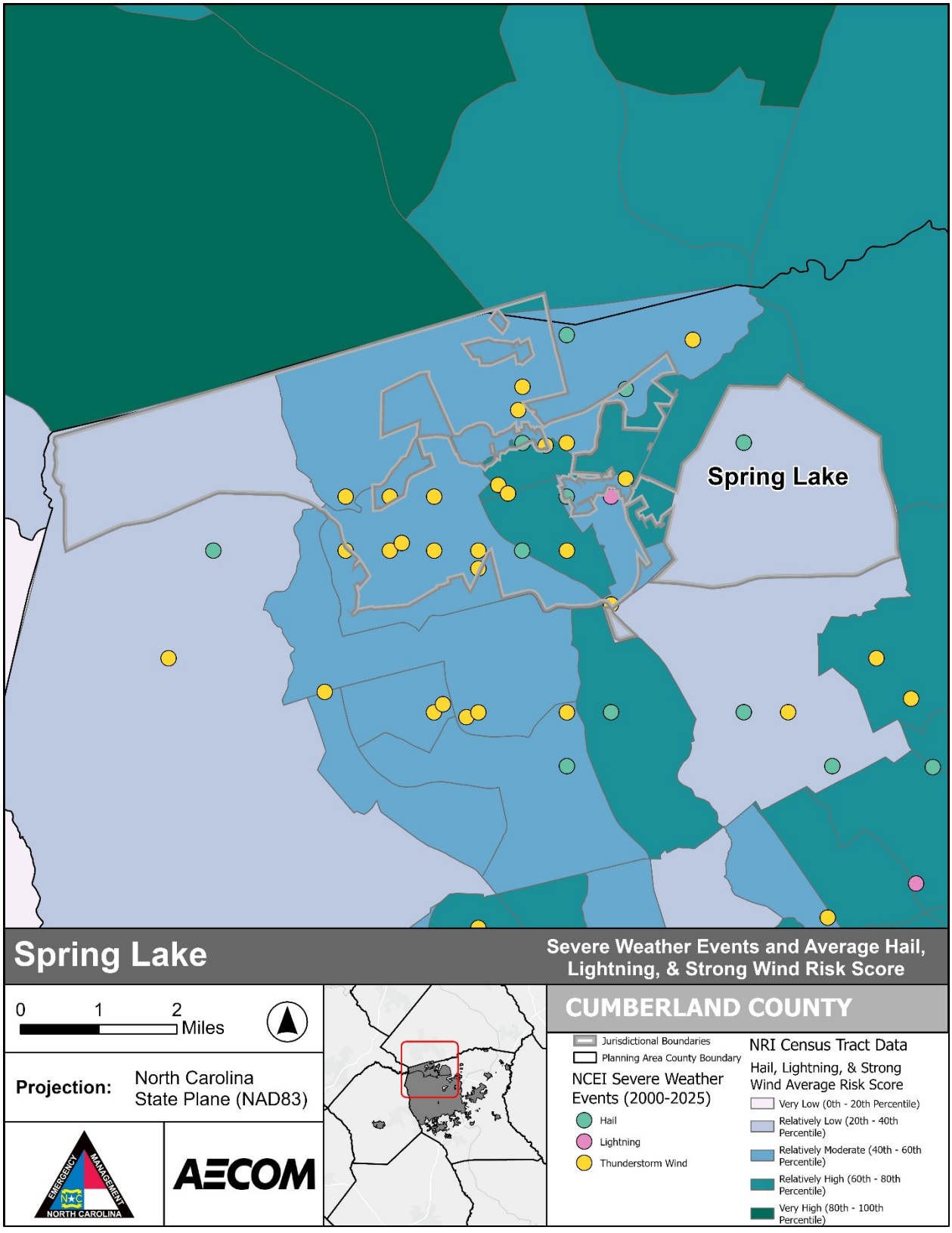


Figure 5-91: Town of Spring Lake Severe Weather Map

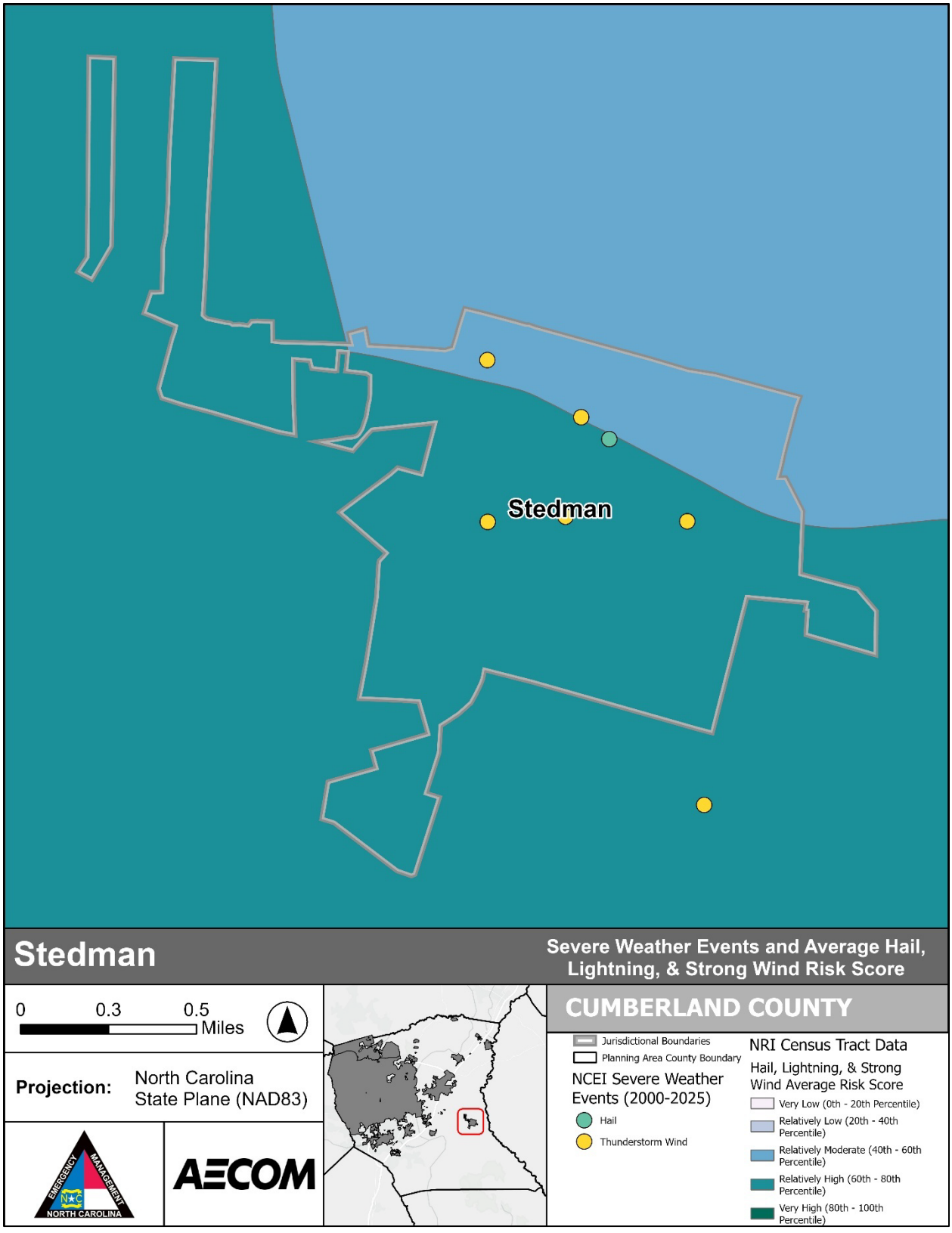


Figure 5-92: Town of Stedman Severe Weather Map

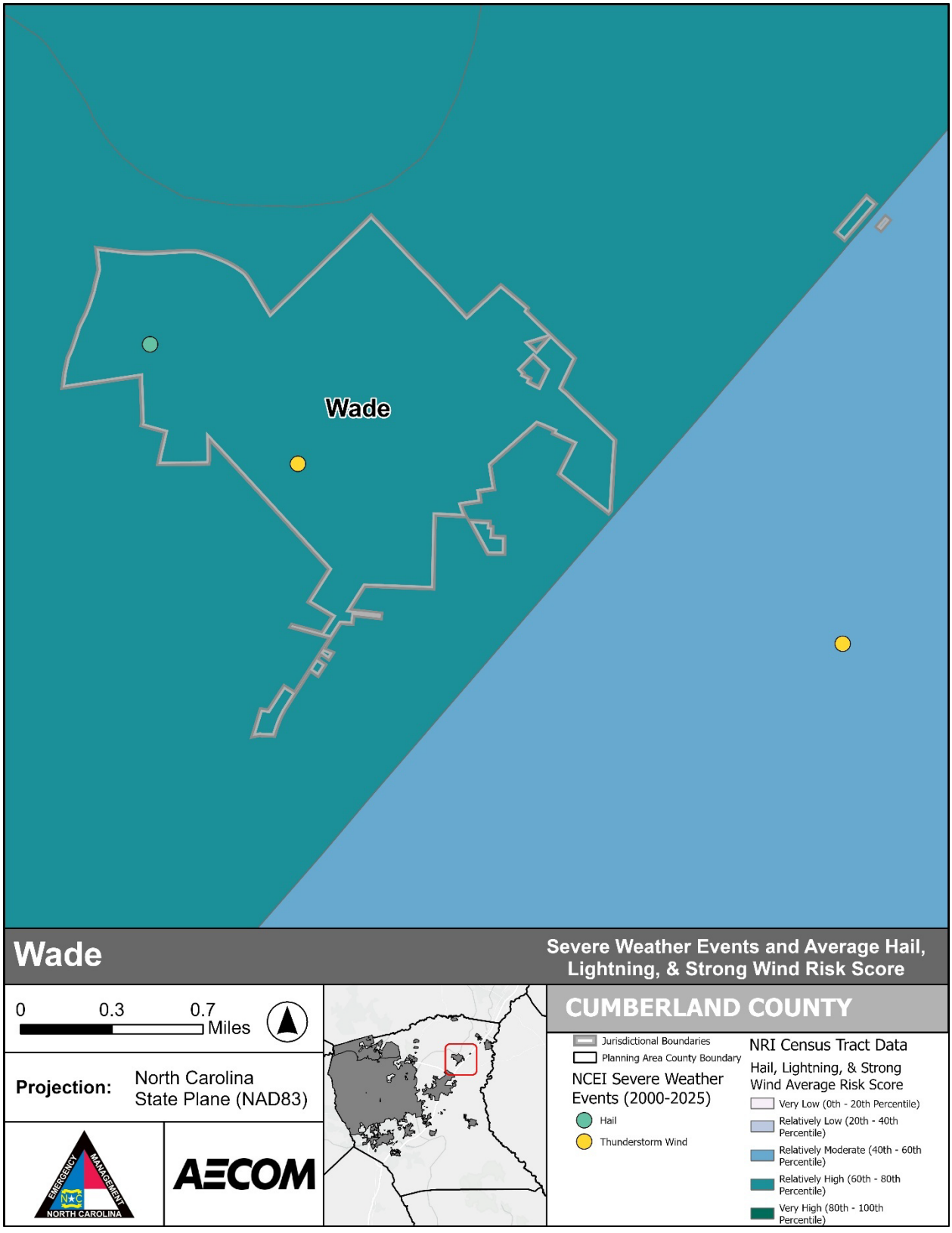


Figure 5-93: Town of Wade Severe Weather Map

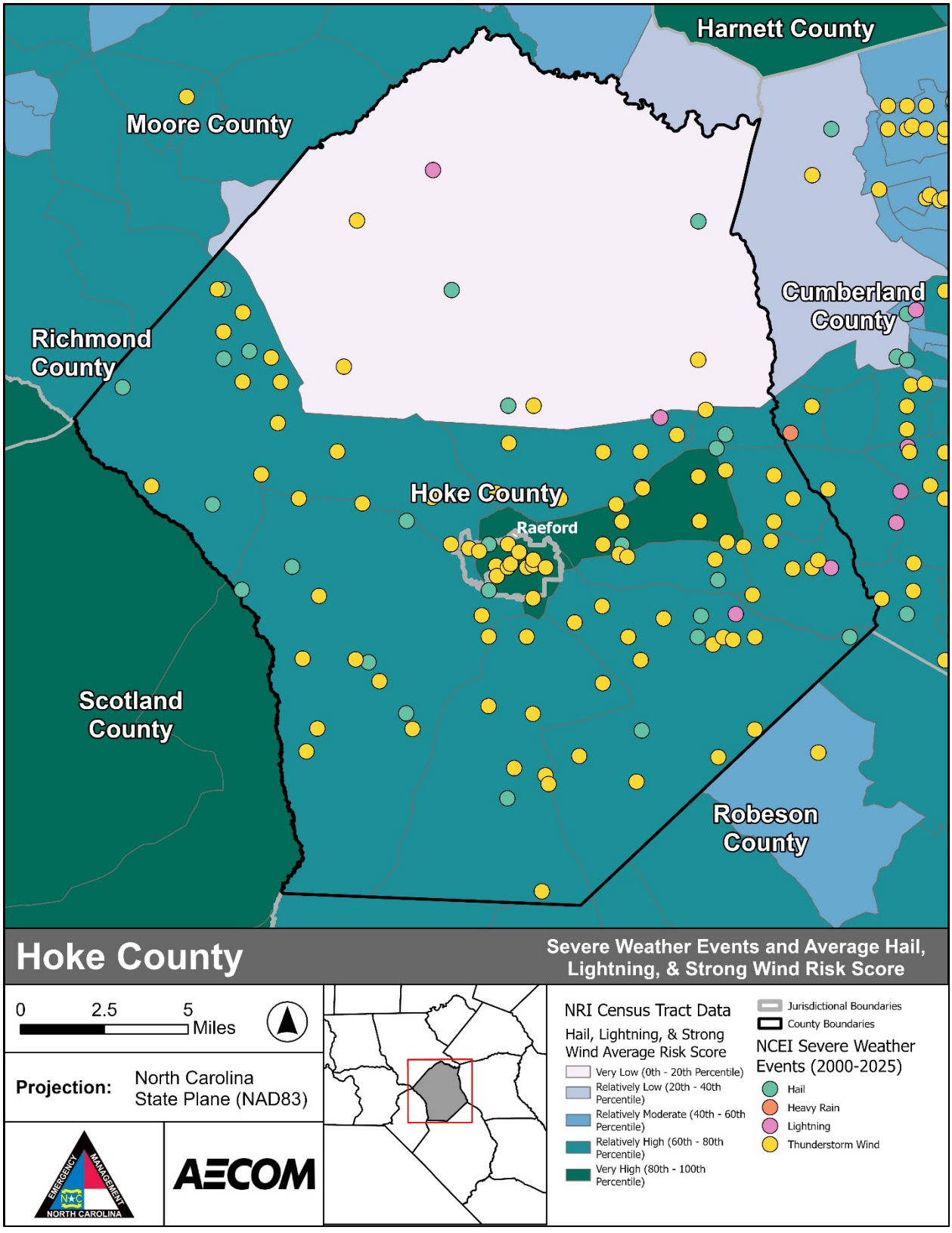


Figure 5-94: Hoke County Severe Weather Map

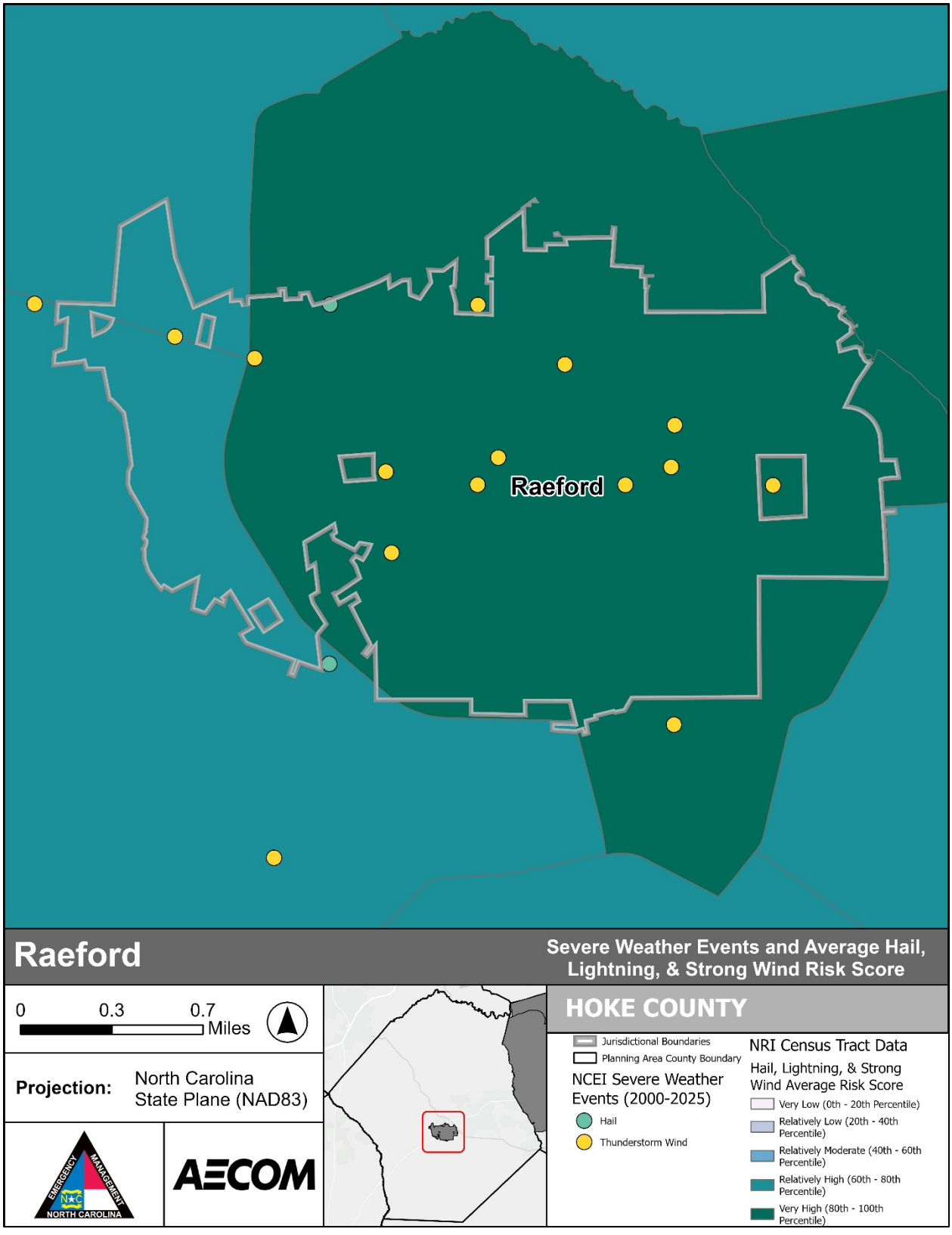


Figure 5-95: City of Raeford Severe Weather Map

5.8.3. Extent

The number of thunder events and reported wind speeds determine the extent of thunderstorms. According to the NCEI Storm Events Database, the strongest recorded wind event in Cumberland County is 73 mph, and 70 mph in Hoke County, and the largest recorded hail size in both counties is 3.5 inches.

Table 5-39: Summary of Hail, Heavy Rain, Lightning, Strong Wind, and Thunderstorm Wind Events Reported by the NCEI Storm Events Database[67]

County	Hail			Heavy Rain			Lightning			Strong Wind			Thunderstorm Wind		
	Events	Deaths	Injuries	Events	Deaths	Injuries	Events	Deaths	Injuries	Events	Deaths	Injuries	Events	Deaths	Injuries
Cumberland	11	0	1	146	0	0	8	0	0	16	0	22	312	0	8
Hoke	7	0	0	58	0	0	2	0	0	4	0	1	131	0	4
Total	**18**	**0**	**1**	**204**	**0**	**0**	**10**	**0**	**0**	**20**	**0**	**23**	**443**	**0**	**12**

Table 5-40: Maximum Recorded Wind Speed and Hail Size in the Planning Area from the NCEI Storm Events Database[67]

Jurisdiction	Maximum Event Wind Speed (mph)	Maximum Hail Size (in)
Cumberland County	**73**	**3.5**
Eastover	50	1.25
Falcon	50	1.75
Fayetteville	62	2.5
Godwin	50	0.75
Hope Mills	60	1.75
Linden	50	--
Spring Lake	60	1.75
Stedman	50	1.75
Wade	50	1
Hoke County	**60**	**1.75**
Raeford	70	1.75

5.8.4. Past Occurrences

Table 5-41 shows the total damage, property, and crop damage reported by the NCEI Storm Events Database in the planning area. It also presents details of severe weather events reported by the NCEI Storm Events Database since 1960 for the Region. The NCEI has recorded over 695 events in the planning area that have caused no deaths, but 36 injuries, and over $9,389,000 in damage.

[67] National Center for Environmental Information (NCEI). (2025). *Storm Events Database* [Tabular]. National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/stormevents/

Table 5-41: Total Damages Reported by the NCEI for Hail, Heavy Rain, Lightning, Strong Wind, and Thunderstorms Since 1960 (includes property damage includes property and crop damage reported by the NCEI)[68]

Jurisdiction	Damage Reported				
	Hail	Heavy Rain	Lightning	Strong Wind	Thunderstorm Wind
Cumberland County Total	**$1,025,000**	**$1,500,000**	**$1,836,000**	**$1,635,000**	**$1,701,500**
Eastover	$0	$0	$0	$0	$10,000
Falcon	$0	$0	$0	$0	$6,000
Fayetteville	$1,025,000	$1,500,000	$716,000	$0	$205,500
Godwin	$0	$0	$0	$0	$16,000
Hope Mills	$0	$0	$0	$0	$20,000
Linden	$0	$0	$0	$0	$0
Spring Lake	$0	$0	$750,000	$0	$1,039,500
Stedman	$0	$0	$0	$0	$8,000
Wade	$0	$0	$0	$0	$20,000
Unincorporated Area	$0	$0	$370,000	$1,635,000	$376,500
Hoke County Total	**$0**	**$0**	**$85,000**	**$1,072,000**	**$534,500**
Raeford	$0	$0	$0	$0	$20,000
Unincorporated Area	$0	$0	$85,000	$1,072,000	$514,500

[68] National Center for Environmental Information (NCEI). (2025). *Storm Events Database* [Tabular]. National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/stormevents/

Table 5-42: 10 Events with the Highest Damage Reported in the Planning Area in the NCEI Storm Events Database Reported After 2015[69]

County	Jurisdiction	Date	Event Type	Magnitude	Injuries	Damages	Event Narrative	Episode Narrative
Cumberland County	Unincorporated Area	2020-10-29	Strong Wind	45	0	$1,500,000	Frequent wind gusts of 40 to 56 mph resulted in scattered to numerous trees and power lines down across Cumberland County, including some on homes. Numerous customers in Cumberland County lost power due to strong winds.	Hurricane Zeta made landfall along the Louisiana coast during the afternoon of October 28th. It quickly lifted off to the north and northeast, moving across the southern Appalachians and the southern Mid-Atlantic region on October 29th as it transitioned to an extratropical cyclone. This resulted in numerous reports of wind damage across the area, especially across the northern Piedmont of central North Carolina.
Hoke County	Unincorporated Area			40	0	$1,000,000	Frequent wind gusts of 40 to 55 mph resulted in scattered to numerous trees and power lines down across Hoke County, including some on homes. Numerous customers lost power in Hoke County due to strong winds.	
Hoke County	Unincorporated Area	2020-02-07	Strong Wind	44	0	$50,000	Numerous trees and power lines were reported down across the county.	A rapidly strengthening area of low pressure tracked northeastward across the middle Atlantic states as a trailing cold front swept eastward across central NC during the morning. Behind the front, very strong southwesterly winds overspread the region, causing power outages and damage across central North Carolina.

[69] National Center for Environmental Information (NCEI). (2025). *Storm Events Database* [Tabular]. National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/stormevents/

Cumberland County	Unincorporated Area	2020-07-28	Thunderstorm Wind	50	0	$50,000	Multiple trees were reported down along Stedman Cedar Creek Road, one of which caused damage to a roof.	Precipitable water values near 2 inches, high temperatures in the 90s, and an upper-level wave moving across the area helped to develop widespread showers and thunderstorms across central North Carolina. Colliding outflow boundaries continued storm development throughout the afternoon and evening hours. MLCAPE of 1500-3000 J/kg and low shear created pulse-type, slow-moving storms. This resulted in multiple reports of wind damage.
Cumberland County	Unincorporated Area	2023-01-04	Thunderstorm Wind	50	0	$30,000	A tree was reported down on the roof of a mobile home on Hancock Street.	An approaching cold front supported the development of a band of showers and thunderstorms with locally heavy rain that slowly moved east across central North Carolina during the morning and afternoon. The band of thunderstorms moved east into the eastern Piedmont and Coastal Plain of central North Carolina, where it interacted with an increasingly humid and unstable airmass. The thunderstorms intensified, and some became severe with locally damaging wind gusts across the eastern Sandhills and southern Coastal Plain.
Hoke County	Unincorporated Area	2016-05-29	Lightning	--	1	$25,000	A female was struck by lightning approximately 2 miles west-southwest of Rockfish. Lightning was also responsible for a house fire shortly after 6 PM on the 1100	Tropical Storm Bonnie stalled just off the coast of South Carolina during the afternoon and evening. Rain bands from Bonnie extended into Central North Carolina during

							block of Turnpike Road in Fayetteville.	the evening, producing a band of isolated showers and thunderstorms. One storm produced locally heavy rainfall, which resulted in flash flooding. In addition to the flooding, lightning struck and injured one person and also started a fire at a residence.
Cumberland County	Unincorporated Area	2016-06-05	Thunderstorm Wind	50	0	$25,000	Homes were reported damaged along Goshawk Drive and Screech Owl Drive.	An upper-level disturbance moved across central North Carolina during the afternoon into the evening. Scattered showers and storms develop along and ahead of this feature, with many storms producing large hail and damaging wind gusts.
Hoke County	Unincorporated Area	2017-09-01	Thunderstorm Wind	60	0	$25,000	Rear flank downdraft winds uplifted and ripped a roof off an outdoor building. There was also some roof damage to the primary home on the property. The downdraft winds also resulted in approximately 50 snapped pine trees in the neighboring Calloway Forest Preserve.	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 Central North Carolina and stalled, providing lift in the strongly sheared, moist environment. The resulting thunderstorms became severe, producing damaging wind gusts, large hail, and flash flooding.
Cumberland County	Unincorporated Area	2021-05-04	Thunderstorm Wind	50	0	$25,000	A tree fell on a Camper truck.	Showers and storms developed across the central Piedmont in a moist, unstable atmosphere during the mid-afternoon hours. Several storms became severe, producing damaging wind gusts and large hail.

Cumberland County	Spring Lake	2022-06-11	Thunderstorm Wind	50	0	$25,000	A tree was reported down on a residence.	Showers and isolated deeper convection popped up over the southern Piedmont, Sandhills, and southern Coastal Plain in the afternoon and early evening, within a weak instability axis along and south of a moisture boundary. One of these storms produced isolated damaging winds from southeastern Moore County into northern Cumberland County, including a 67-mile-per-hour gust at Pope Air Force Base.

5.8.5. Probability of Future Occurrences

The NRI reports hazard risk for hail, lightning, and strong winds to represent severe weather. The NRI uses NWS SPC severe weather event reports, which include hail data from sources such as public submissions, media, insurance, emergency managers, and trained spotters. These reports 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 practices that could impact data consistency, imprecise location data that may not reflect the full range of hail impacts, and hail size and damage estimates that may be incomplete or underreported. There may be duplicate or inconsistent reports that affect data consistency.

Hail

In Cumberland County, there is an annualized frequency of 4.28 hail events per year, a $308,275 EAL, an EAL Score of 75.37, and a Hazard Risk Index Score of 77.54. In Cumberland County, the jurisdictions with the highest EAL totals from overlapping census tracts are Fayetteville, Spring Lake, and Hope Mills, totaling $286,299, $75,657, and $62,062, respectively. Census tracts overlapping unincorporated areas had a total EAL of $9,591, an average EAL Score of 63.94, and an average Hazard Risk Index Score of 64.28.

In Hoke County, the annualized frequency of hail events is 4.05 events per year, a total EAL of $105,329, an EAL Score of 54.22, and a Hazard Risk Index Score of 58.13. Census tracts overlapping unincorporated areas of Hoke County have a total EAL of $17,668, an average EAL Score of 67.01, and an average Hazard Risk Index Score of 69.87. Census tracts overlapping Raeford have a total EAL of $56,297, an average EAL Score of 74.60, and an average Hazard Risk Index Score of 78.1.

Table 5-43: 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
Cumberland County (Unincorporated Area)	4.21	$9,591	63.94	Relatively High	64.28	Relatively High
Eastover	4.48	$21,224	66.13	Relatively High	67.78	Relatively High
Falcon	4.54	$9,984	65.75	Relatively High	67.02	Relatively High
Fayetteville	4.41	$286,299	60.83	Relatively High	62.97	Relatively High
Godwin	4.54	$7,767	70.95	Relatively High	73.62	Relatively High
Hope Mills	4.21	$62,062	61.64	Relatively High	64.18	Relatively High
Linden	4.54	$10,570	74.55	Relatively High	76.58	Relatively High

Spring Lake	4.53	$75,657	58.34	Relatively Moderate	59.30	Relatively Moderate
Stedman	4.42	$7,177	60.58	Relatively High	58.59	Relatively Moderate
Wade	4.54	$12,323	67.84	Relatively High	69.94	Relatively High
Cumberland County Total	**4.38**	**$308,275**	**75.37**	**Relatively High**	**77.54**	**Relatively High**
Hoke County (Unincorporated Area)	3.89	$17,669	67.01	Relatively High	69.87	Relatively High
Raeford	3.89	$56,297	74.60	Relatively High	78.10	Relatively High
Hoke County Total	**4.05**	**$105,330**	**54.22**	**Relatively Moderate**	**58.13**	**Relatively Moderate**

The following maps represent the NRI Hail Risk Rating range and total EAL expected by census tract.

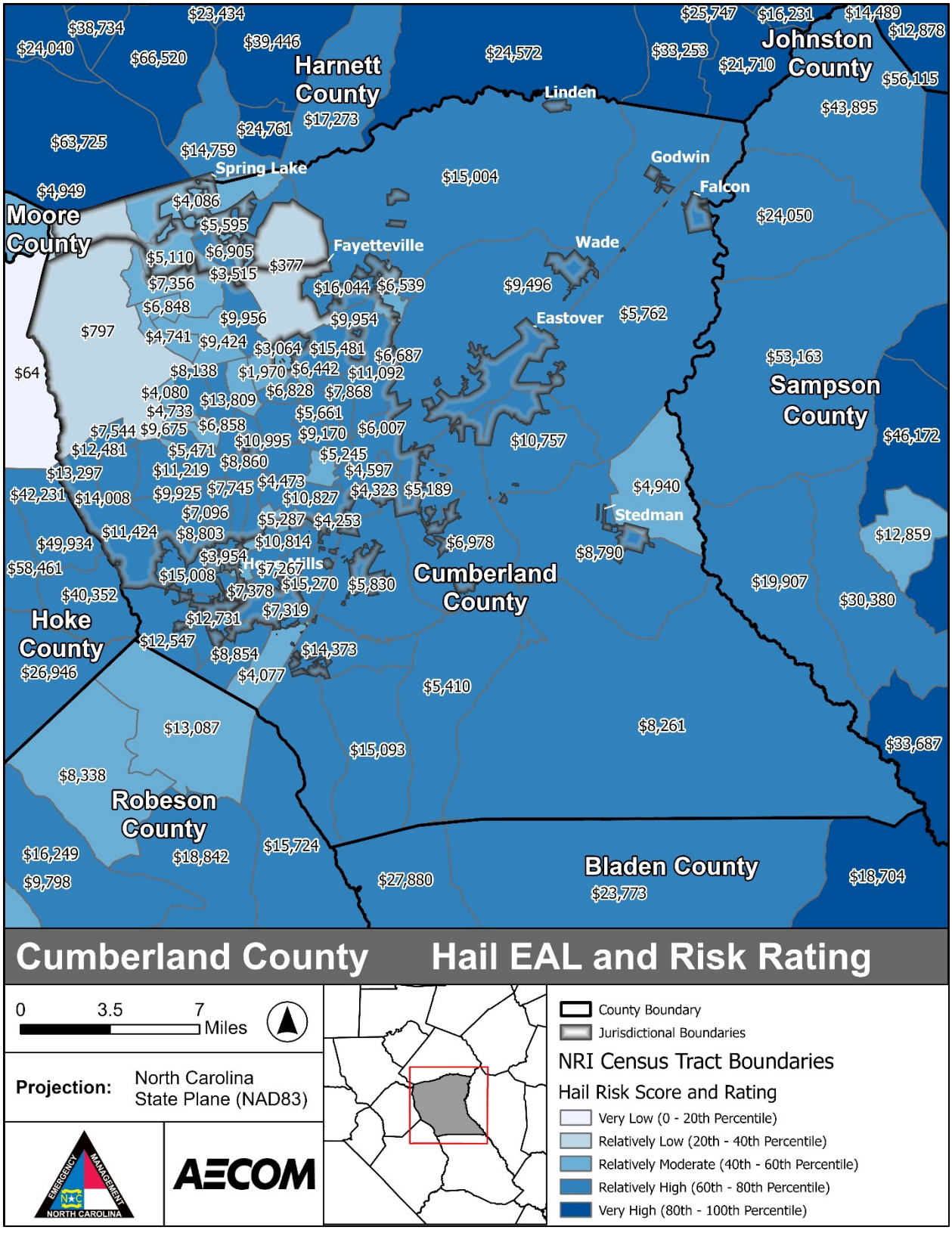


Figure 5-96: Cumberland County NRI Hail Risk Map

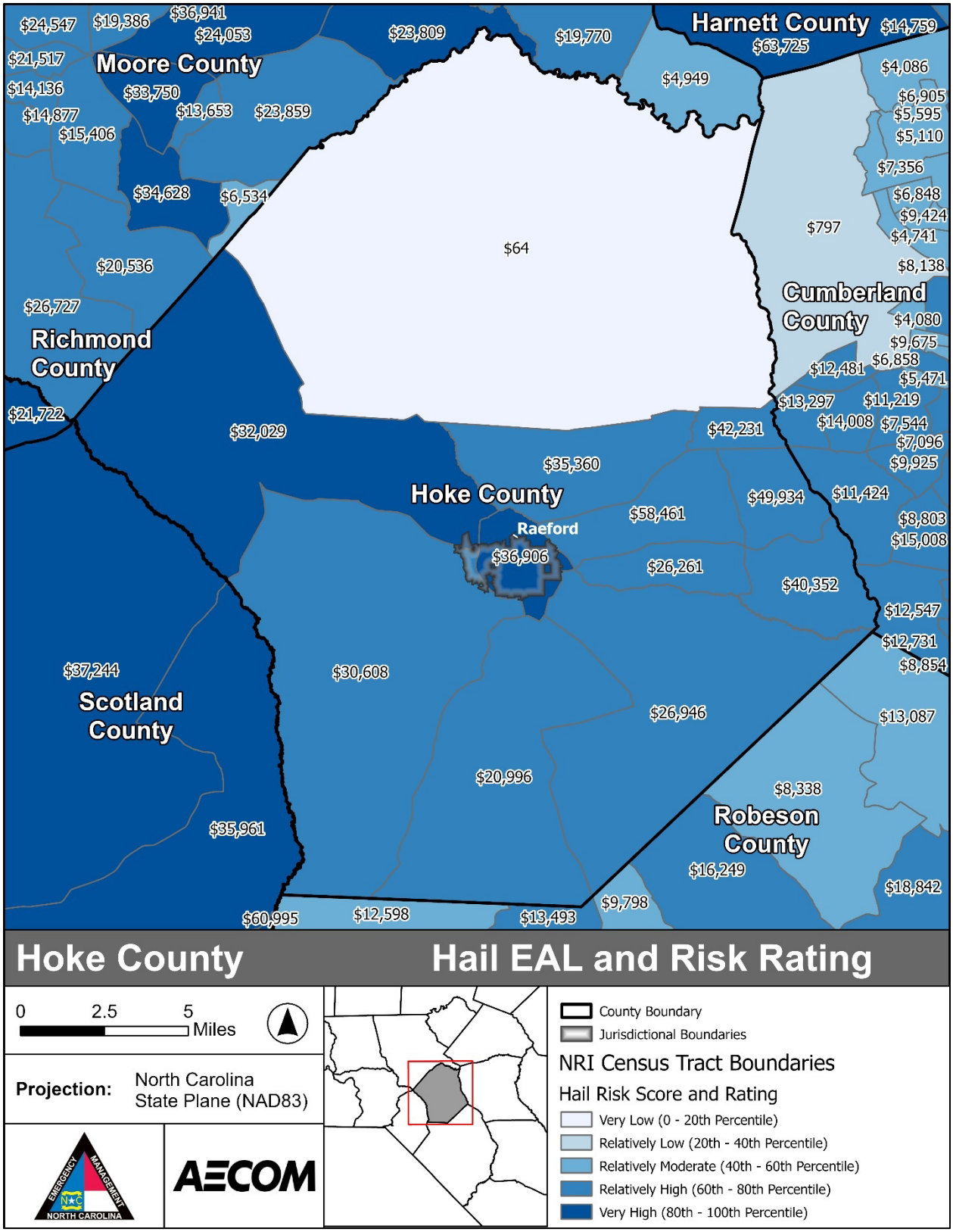


Figure 5-97: Hoke County NRI Hail Risk Map

Lightning

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 NRI uses annual lightning strikes to develop annualized frequencies at the census tract level from 1991 to 2012. These lightning strike reports are from the National Lightning Detection Network, which is operated by Vaisala and uses 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, thereby affecting reporting accuracy. Annualized summaries may also reduce the ability to understand seasonal trends or variability in lightning strikes.

In Cumberland County, lightning has an annualized frequency of 70.56, a total EAL of $1,220,716, an EAL Score of 96.24, and a Hazard Risk Index score of 97.36. Census tracts overlapping with unincorporated Cumberland County have an average annualized frequency of 67.83 lightning events, a total EAL of $34,786, an average EAL score of 78.92, and an average Hazard Risk Index Score of 80.7. The jurisdictions with the highest total EALs across overlapping census tracts are Fayetteville, Hope Mills, and Spring Lake, with total EALs of $1,036,846, $286,344, and $170,878, respectively.

In Hoke County, there is a 77.87 annualized frequency of lightning events, a $68,240 total EAL, a 42.34 EAL Score, and a Hazard Risk Index Score of 48.04. Census tracts overlapping Raeford have an average annualized frequency of 77.66 events per year, a total EAL of $32,971, an average EAL score of 53.85, and an average Hazard Risk Index Score of 65.31. Similarly, unincorporated census tracks in Hoke County have an average annualized frequency of $13,804, an average EAL Score of 44.19, and an average Hazard Risk Index Score of 52.98.

Table 5-44: NRI Lightning Average Annualized Frequency, EAL, 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
Cumberland County (Unincorporated Area)	67.83	$34,786	78.92	Relatively High	80.70	Very High
Eastover	74.75	$65,648	79.98	Relatively High	83.98	Very High
Falcon	67.33	$13,071	50.96	Relatively Moderate	55.52	Relatively Moderate
Fayetteville	71.58	$1,036,846	73.82	Relatively High	78.43	Relatively High
Godwin	75.61	$18,971	85.38	Very High	90.08	Very High
Hope Mills	70.95	$286,345	81.16	Very High	85.85	Very High
Linden	76.31	$30,724	94.26	Very High	95.79	Very High
Spring Lake	74.25	$170,878	66.59	Relatively High	68.15	Relatively High

Stedman	67.12	$24,702	71.74	Relatively High	68.66	Relatively High
Wade	72.12	$29,059	76.57	Relatively High	81.59	Very High
Cumberland County Total	**70.56**	**$1,220,716**	**96.24**	**Very High**	**97.36**	**Very High**
Hoke County (Unincorporated Area)	76.54	$13,805	44.19	Relatively Moderate	52.98	Relatively Moderate
Raeford	77.66	$32,972	53.85	Relatively Moderate	65.31	Relatively High
Hoke County Total	**77.87**	**$68,240**	**42.34**	**Relatively Moderate**	**48.04**	**Relatively Moderate**

The following maps represent the NRI Lightning EAL Total, Risk Rating, and Risk Score range by census tract within the planning area.

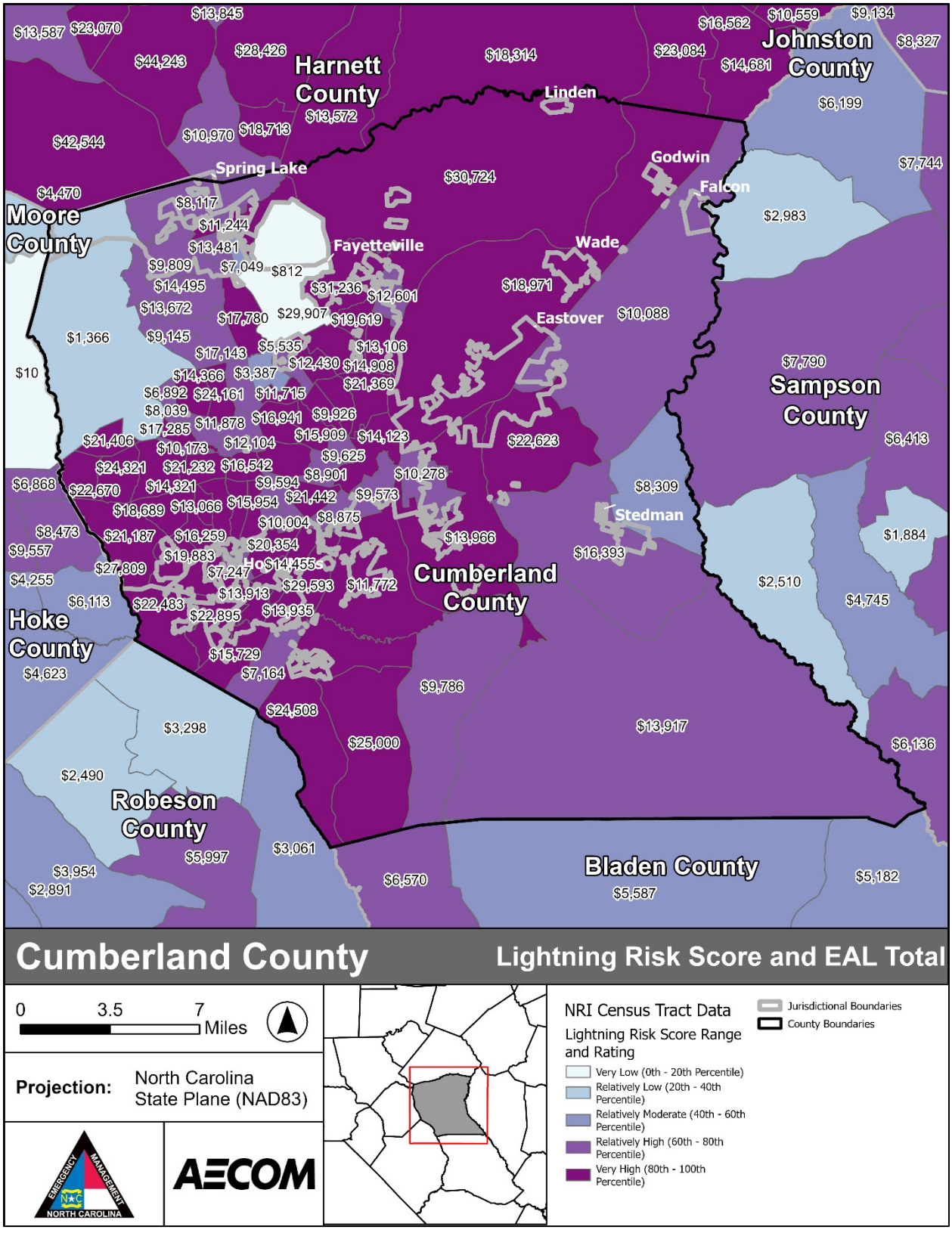


Figure 5-98: Cumberland County NRI Lightning Risk Map

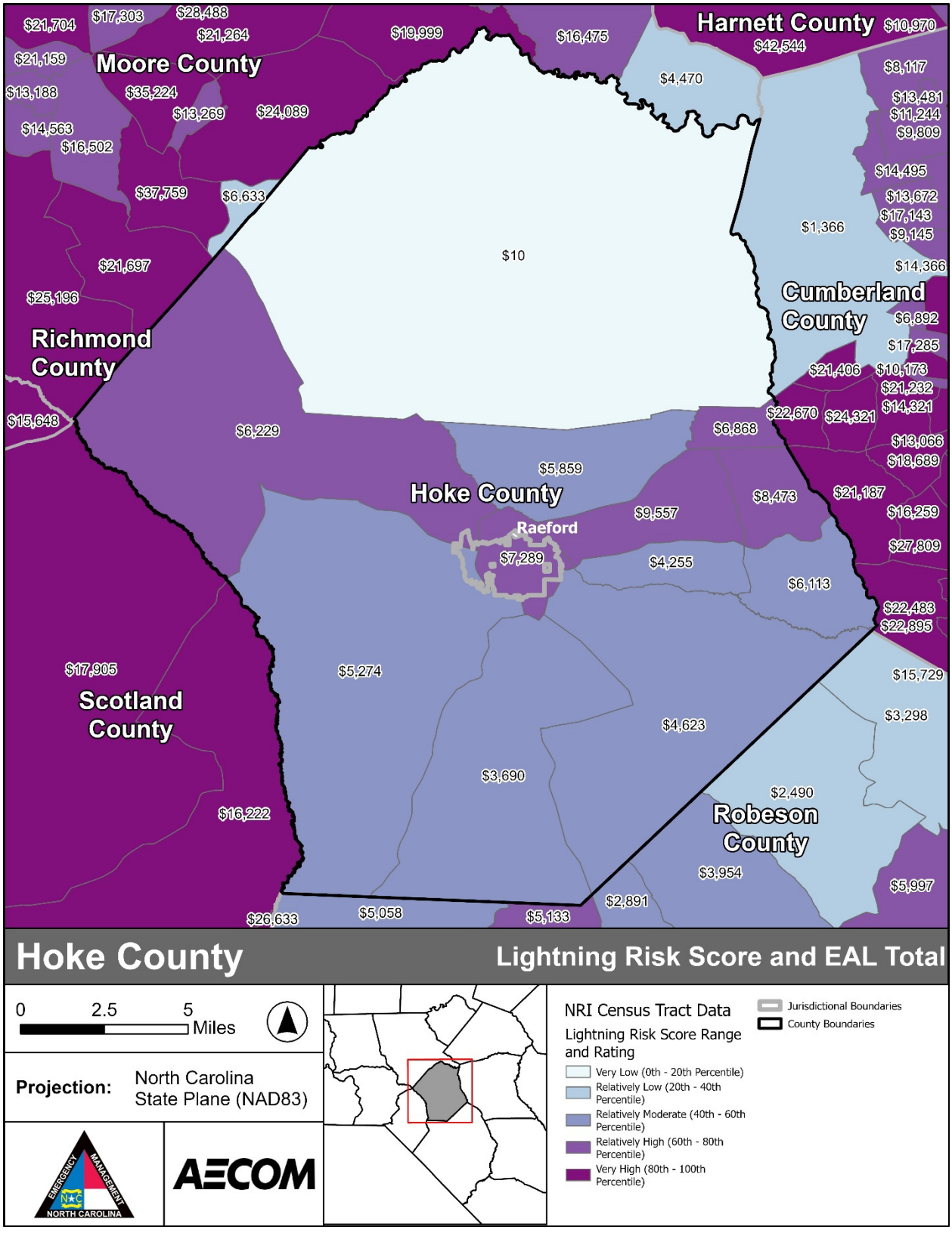


Figure 5-99: Hoke County NRI Lightning Risk Map

Strong Wind

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 and archived in the Storm Data archives to populate 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 recorded only from 2006 onward in the dataset. Wind speeds below 58 mph (50.4 knots) were excluded from annualized frequency calculations. The coordinates of the strong wind events were buffered by 80km to estimate the general area where strong winds may have occurred. The areas of impact with an 80km buffer were then used to calculate the annualized frequency at the census block level. Wind speed measurements were inconsistently recorded until 2006, and many are estimated rather than measured. Additionally, only events above 58mph were excluded, so the full record of damaging wind events may not be included. There may also be misrepresentation of the impacts of strong winds in vulnerable areas with sparsely distributed populations.

According to the NRI, Cumberland County has an annualized frequency of strong wind events of 2.16, a total EAL of $640,647, an EAL of 72.52, and a Hazard Risk Index of 77.03. Fayetteville, Hope Mills, and Spring Lake are the jurisdictions with overlapping census tracts that have the highest total EALs, at $627,614, $179,690, and $83,745, respectively. The unincorporated areas of Cumberland County have an average annualized frequency of 2.3 events per year, a total EAL of $24,775, an average EAL Score of 54.28, and an average Hazard Risk Index Score of 54.95.

Hoke County has an annualized frequency of 2.51 strong wind events, a total EAL of $357,947, an EAL score of 54.65, and a Hazard Risk Index Score of 60.9. Census tracts that overlap Raeford and unincorporated areas of Hoke County have an average annualized frequency of 2.81 strong wind events per year. Census tracts overlapping Raeford have a total EAL of $180,374, an average EAL score of 78.64, and an average Hazard Risk Index Score of 84.79. Census tracts overlapping unincorporated areas of the county have a total EAL of $67,416, an average EAL score of 69.02, and an average Hazard Risk Index Score of 74.90.

Table 5-45: NRI Strong Wind Average Annualized Frequency, EAL, 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
Cumberland County (Unincorporated Area)	2.73	$24,775	54.28	Relatively Moderate	54.95	Relatively Moderate
Eastover	1.88	$28,446	44.67	Relatively Moderate	48.17	Relatively Moderate
Falcon	1.70	$28,235	54.09	Relatively Moderate	56.61	Relatively Moderate
Fayetteville	2.09	$627,615	46.09	Relatively Moderate	50.07	Relatively Moderate

Godwin	1.70	$7,862	46.97	Relatively Moderate	52.40	Relatively Moderate
Hope Mills	2.73	$179,691	53.32	Relatively Moderate	58.19	Relatively Moderate
Linden	1.70	$12,889	57.33	Relatively Moderate	62.00	Relatively High
Spring Lake	1.70	$83,746	40.02	Relatively Moderate	41.34	Relatively Moderate
Stedman	2.06	$12,594	41.55	Relatively Moderate	39.23	Relatively Low
Wade	1.70	$12,136	41.70	Relatively Moderate	45.61	Relatively Moderate
Cumberland County Total	**2.16**	**$640,648**	**72.52**	**Relatively High**	**77.03**	**Relatively High**
Hoke County (Unincorporated Area)	2.81	$67,417	69.02	Relatively High	74.90	Relatively High
Raeford	2.81	$180,374	78.64	Relatively High	84.79	Very High
Hoke County Total	**2.51**	**$357,948**	**54.65**	**Relatively Moderate**	**60.90**	**Relatively High**

The following maps represent the NRI Strong Wind EAL Total, Risk Rating, and Risk Score range by census tract within the planning area.

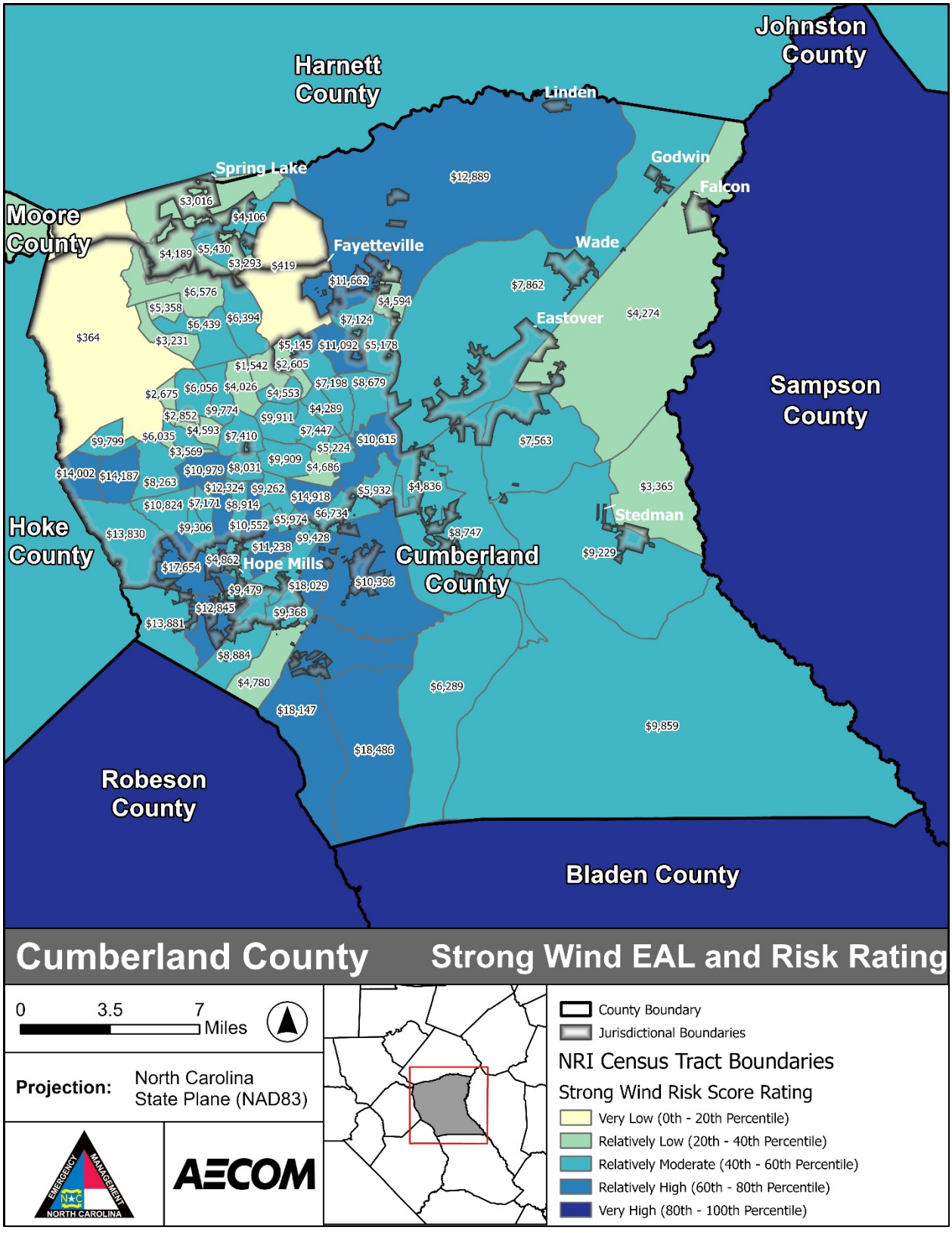


Figure 5-100: Cumberland County NRI Strong Wind Risk Map

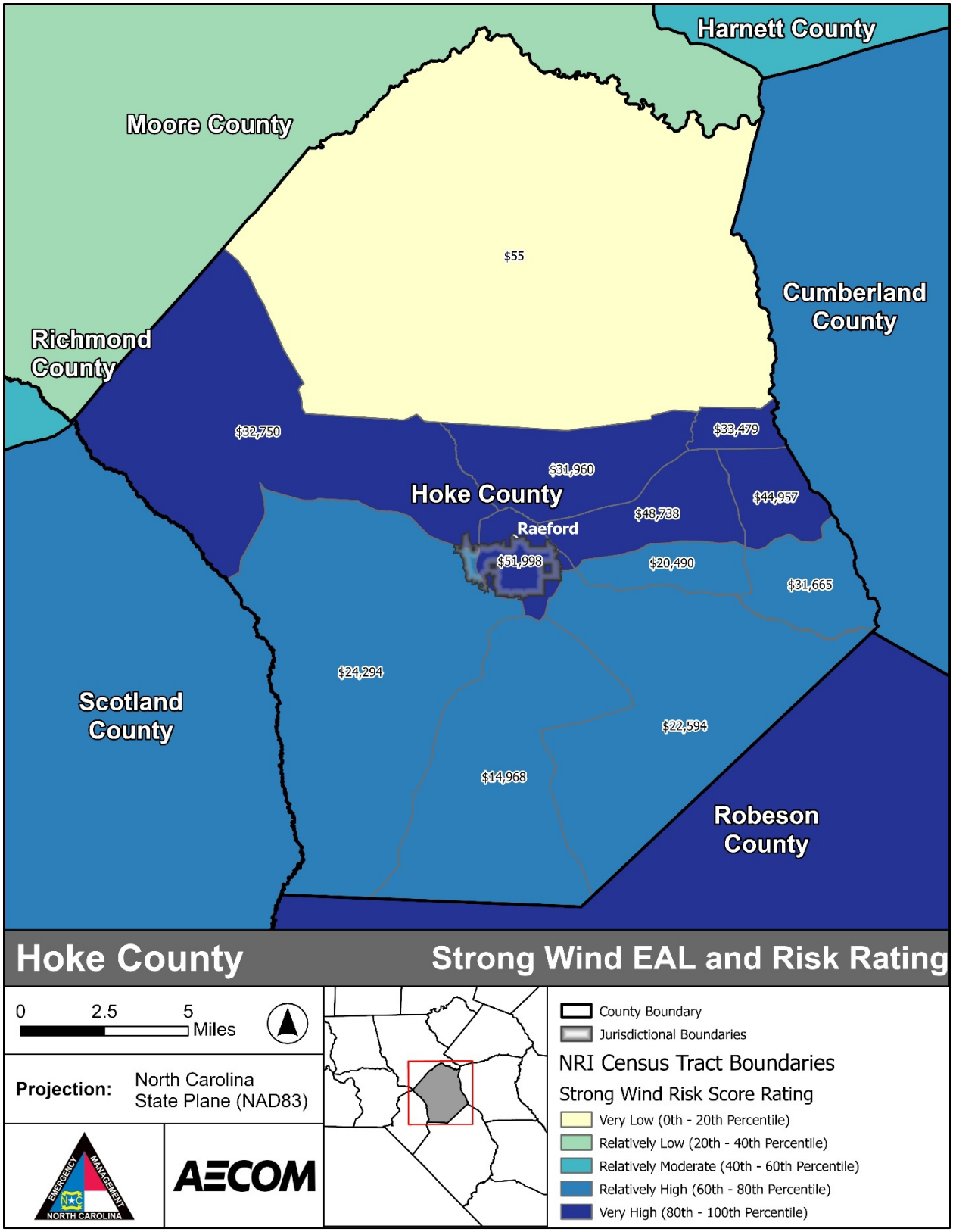


Figure 5-101: Hoke County NRI Strong Wind Risk Map

5.8.6. Consequence and Impact Analysis

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 can also impact the planning area through power outages, blocked roads, and damage to property and infrastructure. Residents who have a disability (16.9% in Cumberland County and 18.2% in Hoke County) or an independent living difficulty (7.3% in Cumberland County and 8.3% in Hoke County) may require assistance in the event of severe weather, especially for those residents who have limited mobility or those who rely on electricity to power medical devices.[70]

Critical emergency alerts are often transmitted via radio, reverse 911, or text message. Residents in the planning area who lack telephone service[71] (0.9% of Housing Units in Cumberland County and 1.3% of Housing Units in Hoke County), don't have a computing device[72] (6.1% of housing units in Cumberland County and 8.6% in Hoke County), or those who do not have an internet subscription[72] (10.2% of households in Cumberland County and 11.1% of households in Hoke County) may have a limited capacity to receive information over the telephone, the internet, or essential emergency alerts, and review preparedness and response information.

Hail can cause injury as well as severe property damage to homes and automobiles. All jurisdictions in the Region are vulnerable to this impact. Hail may also pose a risk to the health and safety of residents in the planning area, which can range from minor injuries to severe and potentially fatal head trauma. Lightning can have a significant impact on humans if directly struck, which includes severe brain injury, burns, cardiovascular damage, nervous system damage, and death.

Changes in Development

Thunderstorms can cause damage to commercial buildings and homes due to strong winds, lightning strikes, and hail. Heavy rains associated with thunderstorm events may also lead to flash flooding, which can damage roads and bridges. Residents who live in Boats, RVs, or Vans (0.08% in Cumberland County and 0% in Hoke County) and who live in mobile homes (7.5% in Cumberland County and 21% in Hoke County) may experience disproportionate damage to their housing unit in the event of severe weather.[71] The expanding infrastructure in the planning area should be developed to be resilient to frequent severe weather impacts and be designed to avoid frequent storm disruptions.

[70] U.S. Census Bureau. (2023). *Disability Characteristics* (No. ACSST5Y2023.S1810; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S1810
[71] U.S. Census Bureau. (2023). *Selected Housing Characteristics* (No. ACSDP5Y2023.DP04; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP04
[72] U.S. Census Bureau. (2023). *Types of Computers and Internet Subscriptions* (No. ACSDP5Y2023.S2801; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S2801

Economy

Economic damage includes property damage from wind, lightning, and hail, as well as intangibles such as business interruption and additional living expenses.

Natural Environment

Thunderstorms have a huge impact on the environment. One of the most dangerous environmental outcomes is when lightning ignites flares in surrounding forests or dense shrubs. This is often the cause of brushfires, which then spread quickly due to the storm's fast winds. High winds can also damage crops and trees. Flooding can kill animals and cause soil erosion.

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. Severe weather events can result in power outages, downed trees and power lines, and flash flooding, all of which may impact access to critical facilities, emergency equipment, and residents who require emergency response.

Future Conditions

According to the NCCR,[73] the frequency and severity of thunderstorms in NC are likely to increase due to climate change. This includes increases in frequent extreme precipitation and flooding in the planning area.

[73] Kunkel, K. E., Easterling, D. R., Ballinger, A., Bililign, S., Champion, S. M., Corbett, D. R., Dello, K. D., Dissen, J., Lackmann, G. M., Luettich Jr., R. A., Perry, L. B., Robinson, W. A., Stevens, L. E., Stewart, B. C., & Terando, A. J. (2020). *North Carolina Climate Science Report* (p. 233). North Carolina Institute for Climate Studies. https://ncics.org/programs/nccsr/

5.9. Tornado

5.9.1. Hazard Description

According to the Glossary of Meteorology from the American Meteorological Society (AMS) (2000), a tornado is "a violently rotating column of air, pendant from a cumuliform cloud or underneath a cumuliform cloud, and often (but not always) visible as a funnel cloud." Tornadoes can appear from any direction. Most move from southwest to northeast, or west to east. Some tornadoes have changed direction mid-path or even backtracked.

Tornadoes are commonly produced by landfalling tropical cyclones. Those making landfall along the Gulf coast traditionally produce more tornadoes than those making landfall along the Atlantic coast. Tornadoes that form within hurricanes are more common in the right front quadrant with respect to the forward direction, but can occur in other areas as well. According to the NHC, about 10% of the tropical cyclone-related fatalities are caused by tornadoes. Tornadoes are more likely to be spawned within 24 hours of landfall and are usually within 30 miles of the tropical cyclone's center.

Tornadoes have the potential to produce winds in excess of 200 mph (EF5 on the Enhanced Fujita Scale) and can be very expansive – some in the Great Plains have exceeded two miles in width. Tornadoes associated with tropical cyclones, however, tend to be of lower intensity (EF0 to EF2) and much smaller in size than those that form in the Great Plains.

Before February 1, 2007, tornado intensity was measured by the Fujita (F) scale. This scale was revised and is now the Enhanced Fujita (EF) scale (Table 5-47). Both scales are sets of wind estimates (not measurements) based on damage. The new scale provides more damage indicators (28) and associated degrees of damage, allowing for more detailed analysis and better correlation between damage and wind speed. It is also more precise because it considers the materials affected and the construction of structures damaged by a tornado. Table 5-46 shows the wind speeds associated with the enhanced Fujita scale ratings and the damage that could result at different levels of intensity.

Table 5-46: The Fujita Scale (Effective Before 2005)

F-Scale Number	Intensity	Wind Speed (Mph)	Type of Damage Done
F0	Gale Tornado	40–72	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages to sign boards.
F1	Moderate Tornado	73–112	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
F2	Significant Tornado	113–157	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	Roofs and some walls were torn off well-constructed houses; trains overturned; most trees in forest uprooted.

F4	Devastating Tornado	207–260	Well-constructed houses leveled; structures with weak foundations blown some distance; cars thrown, and large missiles generated.
F5	Incredible Tornado	261–318	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 re-enforced concrete structures badly damaged.
F6	Inconceivable Tornado	319–379	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable along with the mess produced by F4 and F5 wind that 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 some manner of ground swirl pattern, for it may never be identifiable through engineering studies.

Source: National Weather Service

Table 5-47: 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; branches break off trees; pushes over shallow-rooted trees; damages to sign boards.
EF1	Moderate	86–110	The lower limit is the beginning of hurricane wind speed; peels surface off roofs; mobile homes pushed off foundations or overturned; moving autos pushed off the roads; attached garages may be destroyed.
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 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 re-enforced concrete structures badly damaged.

Source: National Weather Service

5.9.2. Location and Spatial Extent

Although tornadoes can occur in most locations, most tornado activity in the United States occurs in the Midwest and Southeast. There is no specific season for tornadoes; however, most occur from early spring to mid-summer (February–June). shows tornado activity in the United States based on the number of recorded tornadoes per 1,000 square miles.

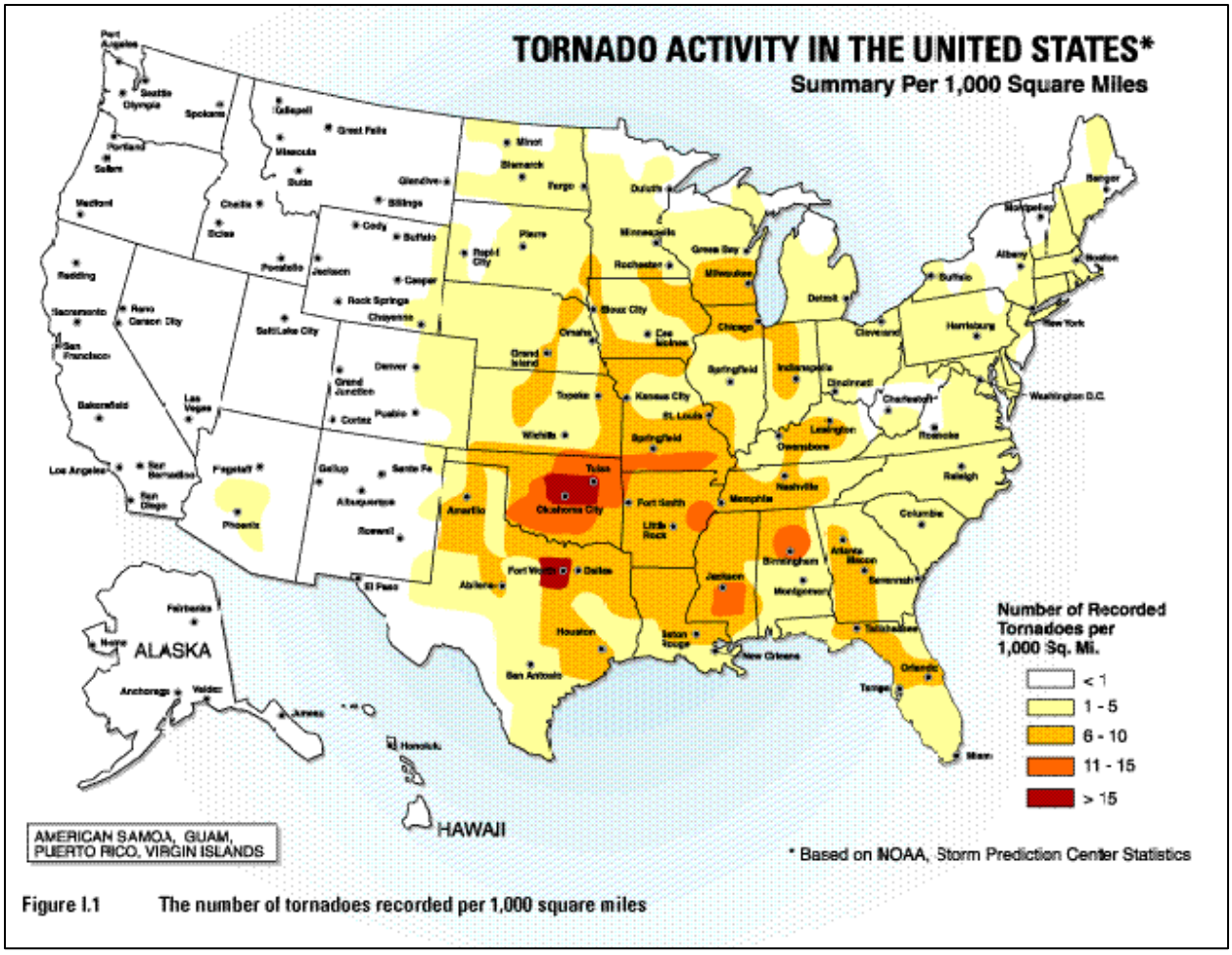


Figure 5-102: Tornado Activity in the United States

Tornadoes occur throughout North Carolina, and thus in the Region. Tornadoes typically impact a relatively small area, but the damage can be extensive. Event locations are entirely 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 Region is uniformly exposed to this hazard. The figures below illustrate the paths of previous tornadoes in the Region.

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.[74] 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[75] to evaluate tornado risk in the planning area. The period of

[74] Storm Prediction Center, & National Oceanic and Atmospheric Administration. (2024). *Tornado Tracks* [Geodatabase]. Federal Emergency Management Administration Geospatial Resource Center. https://gis-fema.hub.arcgis.com/datasets/fedmaps::tornado-tracks-1/about

[75] Storm Prediction Center. (2021). *Severe Weather Database Files, Tornado, 1950-2021* [Dataset]. National Weather Service. https://www.spc.noaa.gov/wcm/#torclim

record for the 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 were recorded from 1986 to 2019.

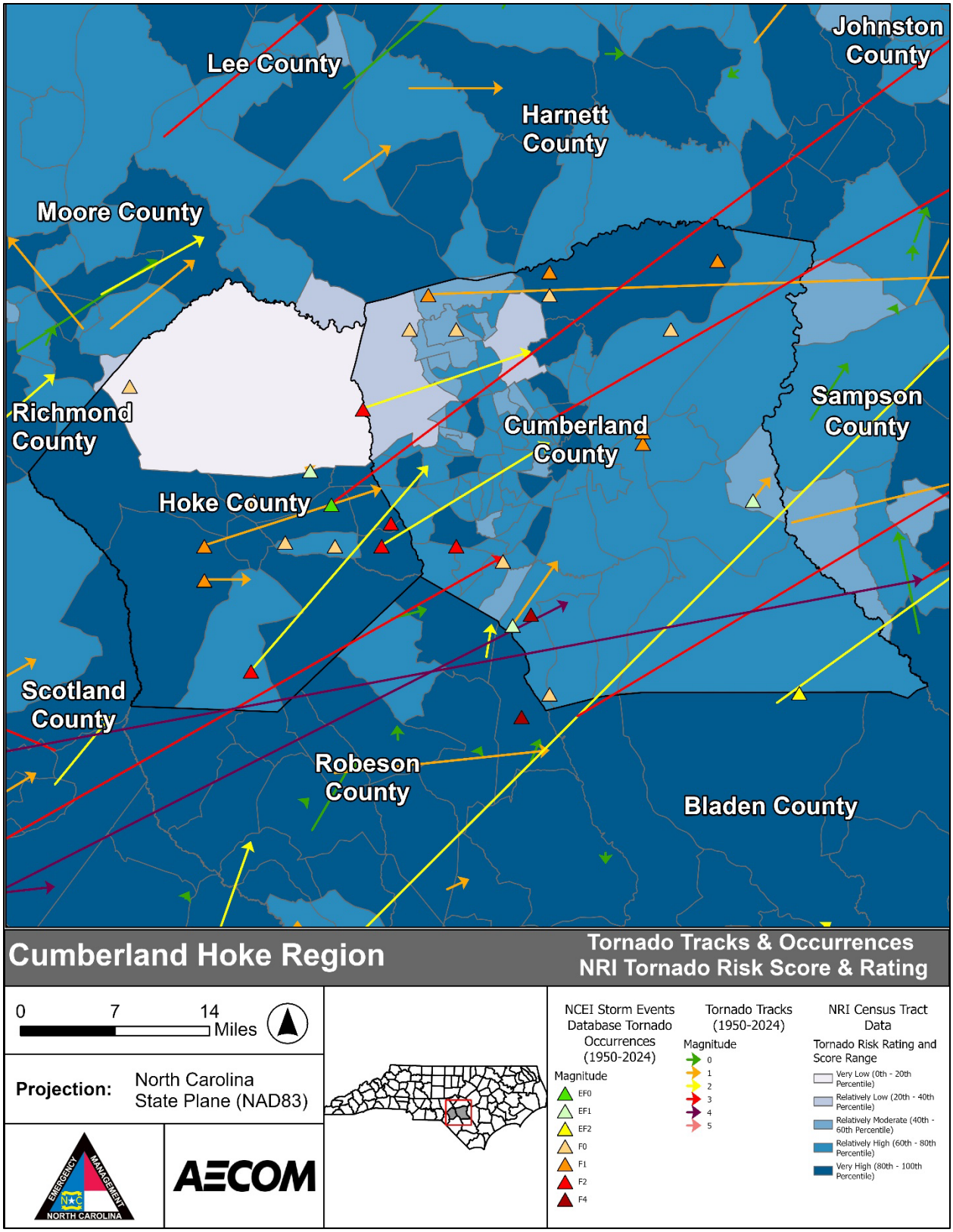


Figure 5-103: Cumberland-Hoke Regional Tornado Hazard Map

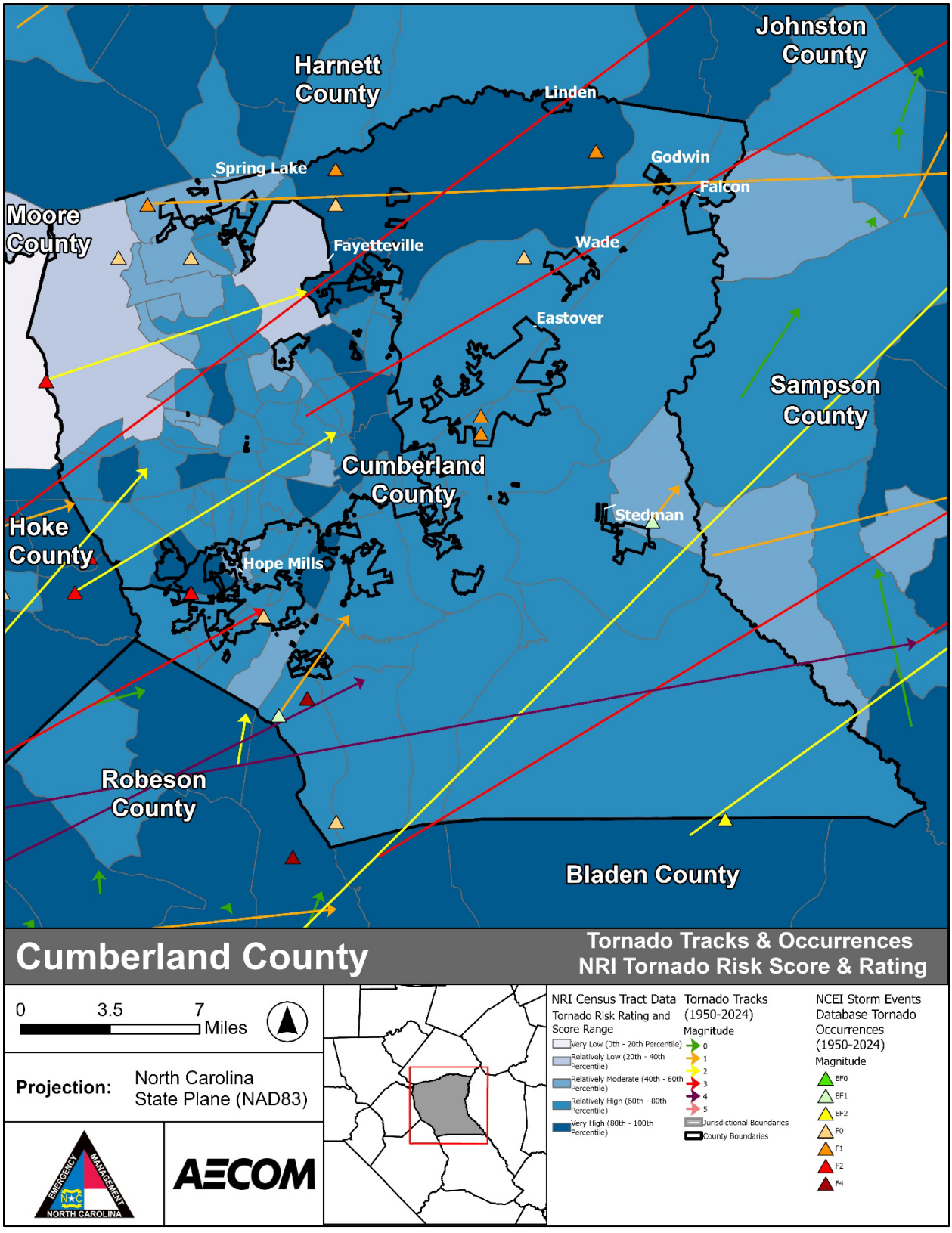


Figure 5-104: Cumberland County Tornado Hazard Map

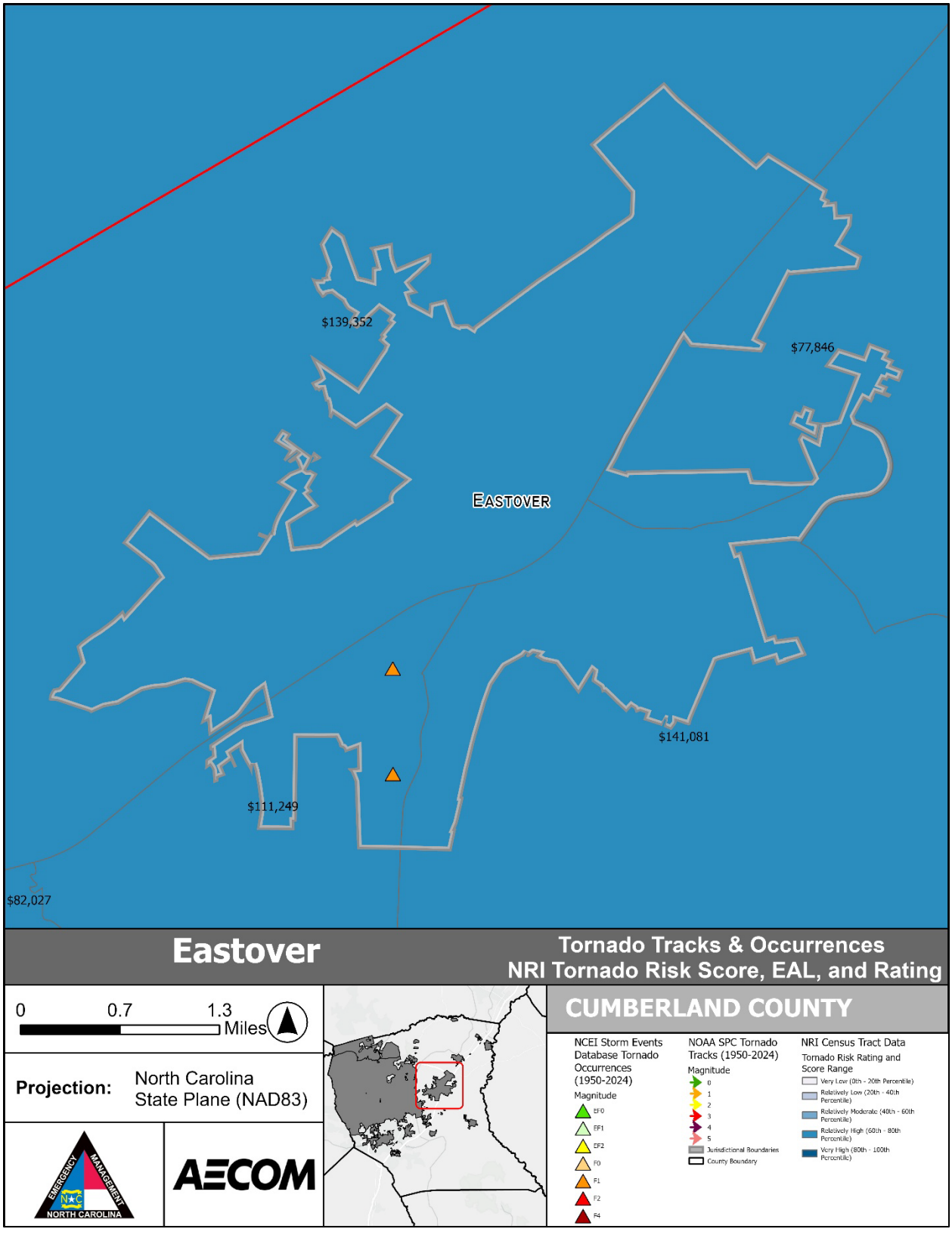


Figure 5-105: Town of Eastover Tornado Hazard Map

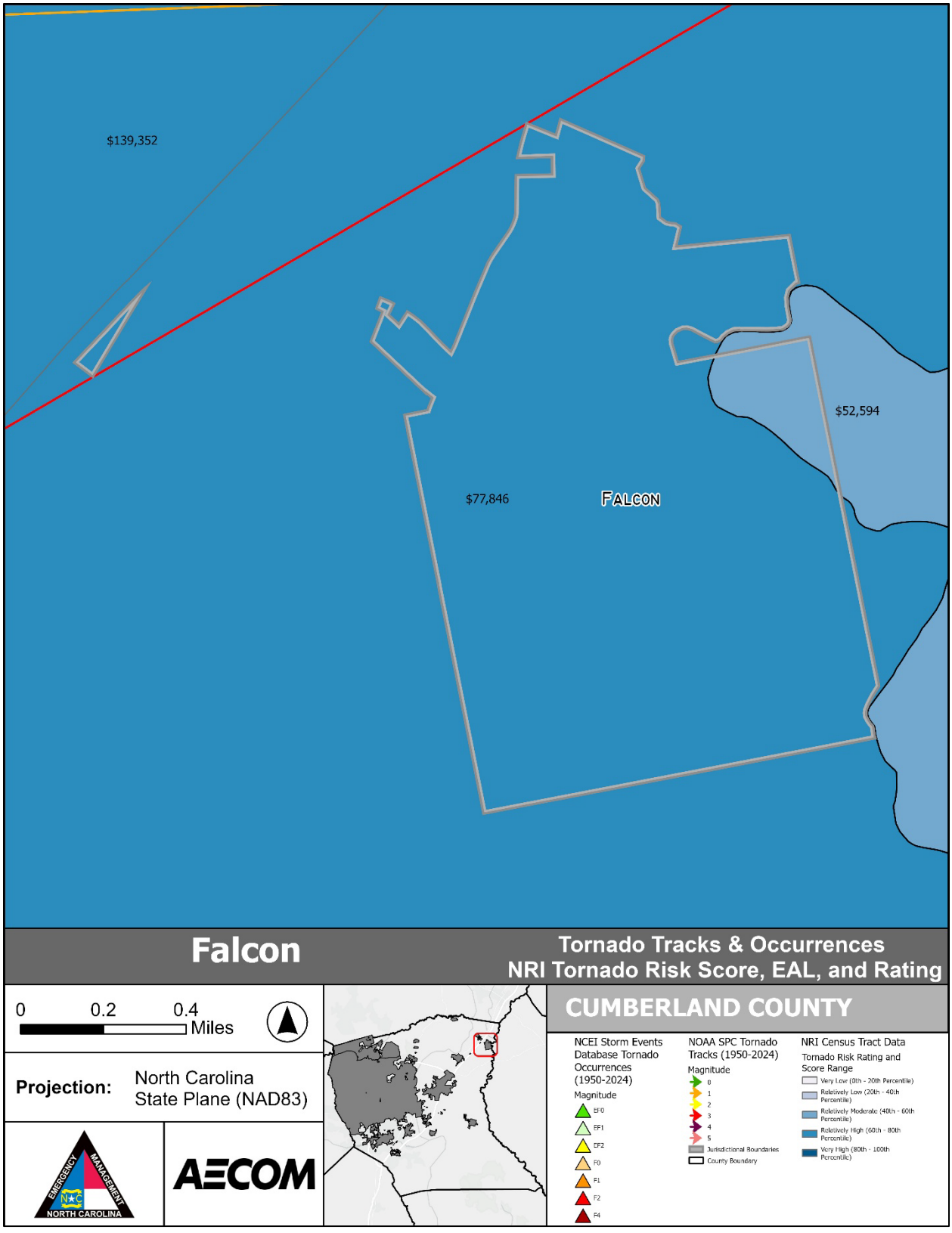


Figure 5-106: Town of Falcon Tornado Hazard Map

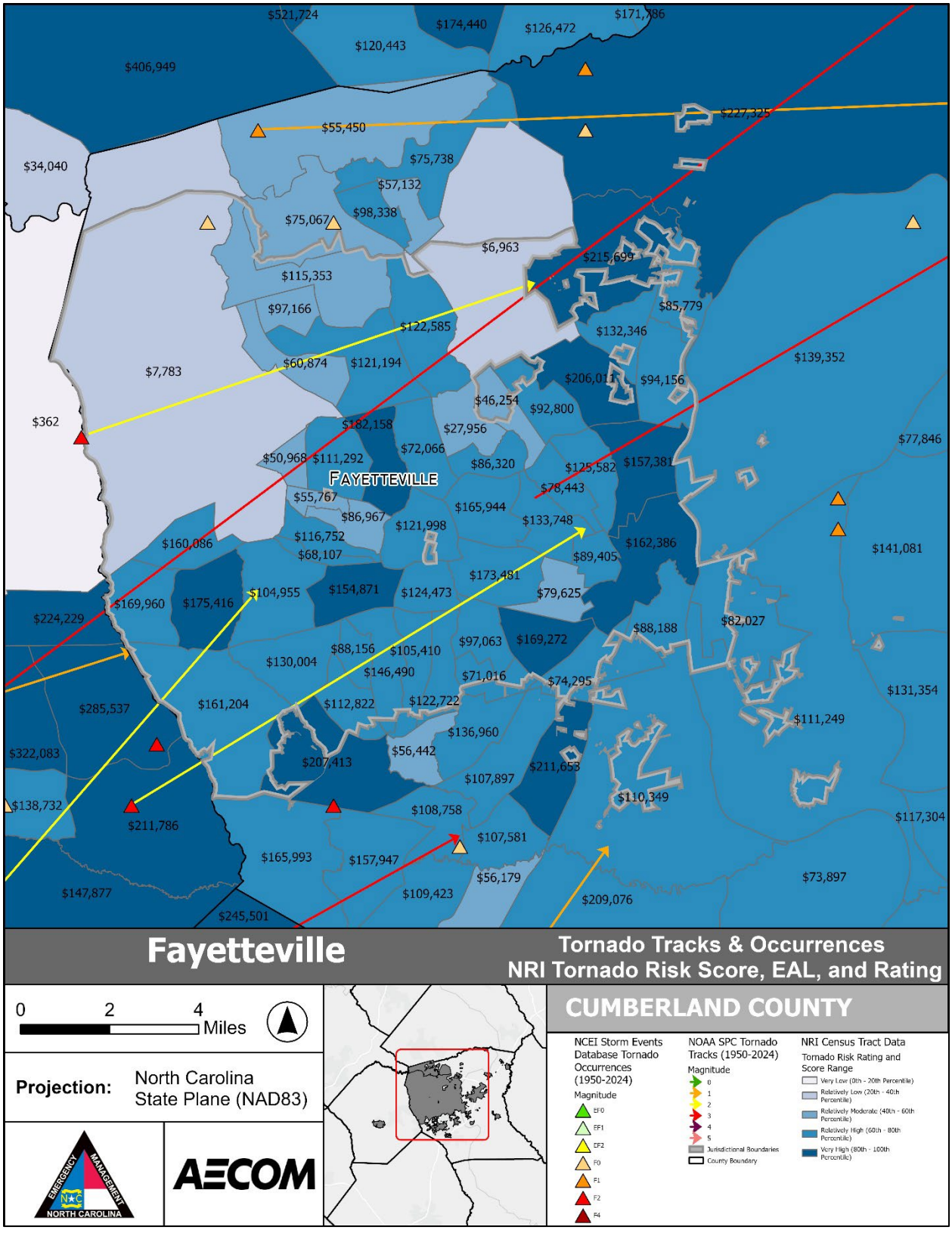


Figure 5-107: City of Fayetteville Tornado Hazard Map

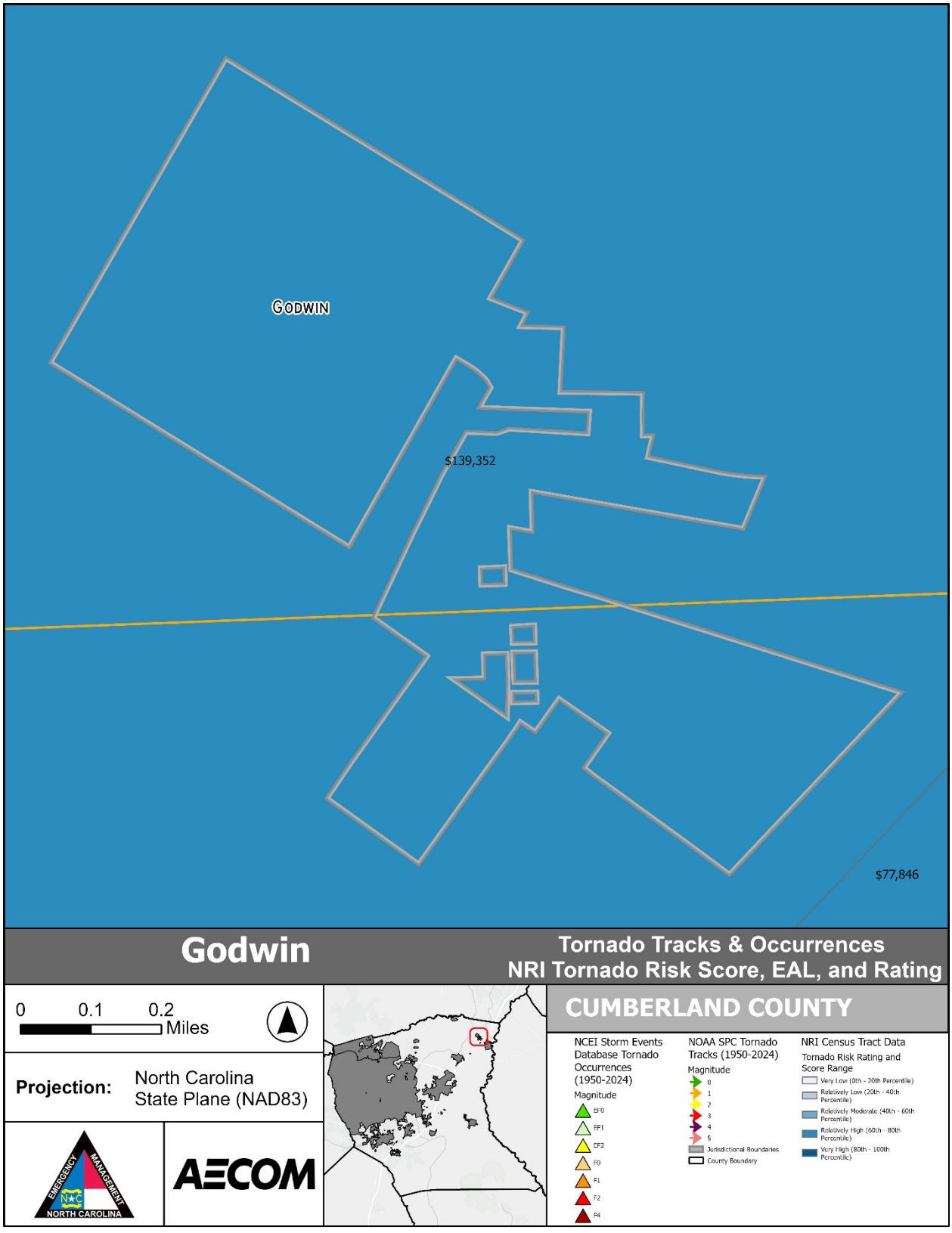


Figure 5-108: Town of Godwin Tornado Hazard Map

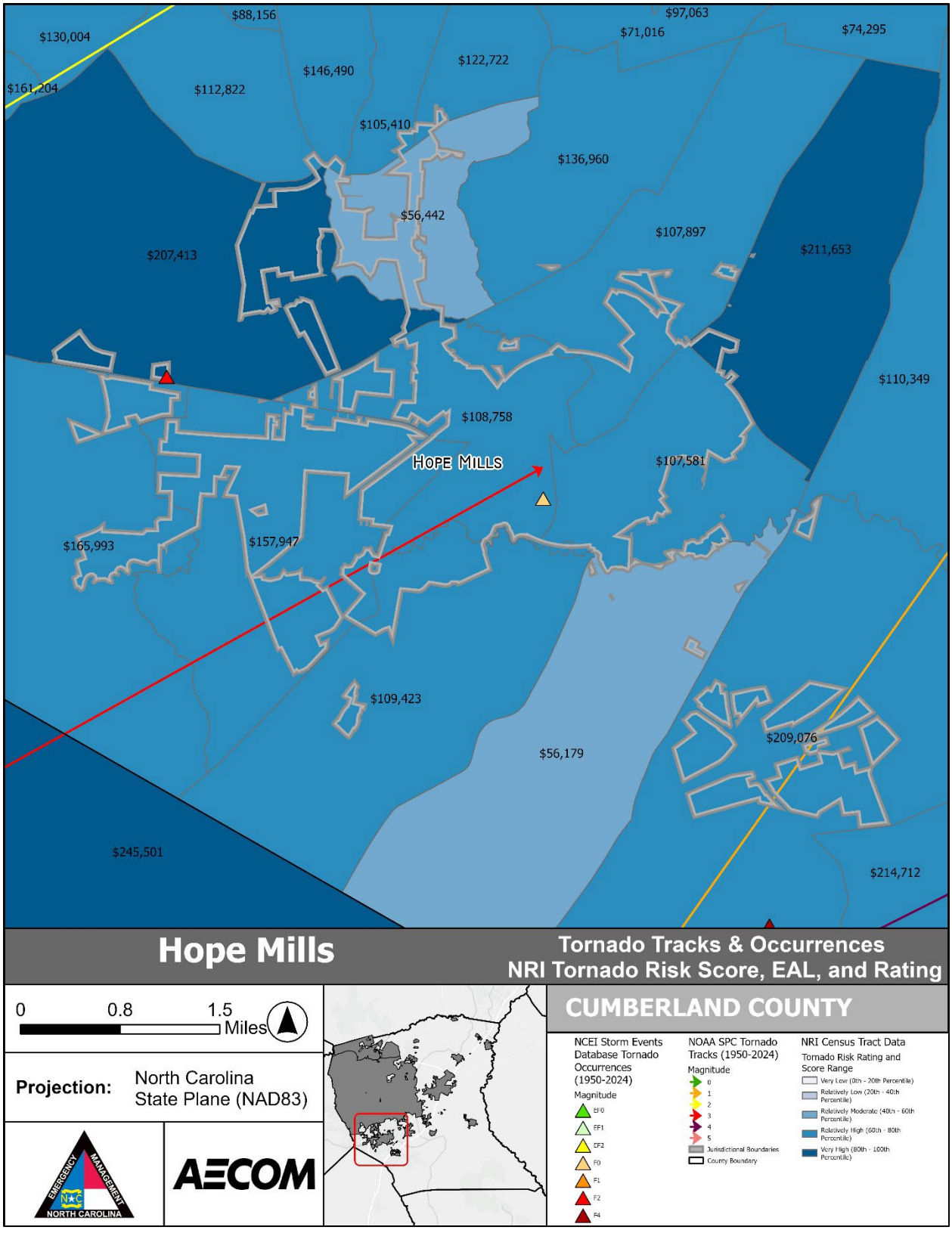


Figure 5-109: Town of Hope Mills Tornado Hazard Map

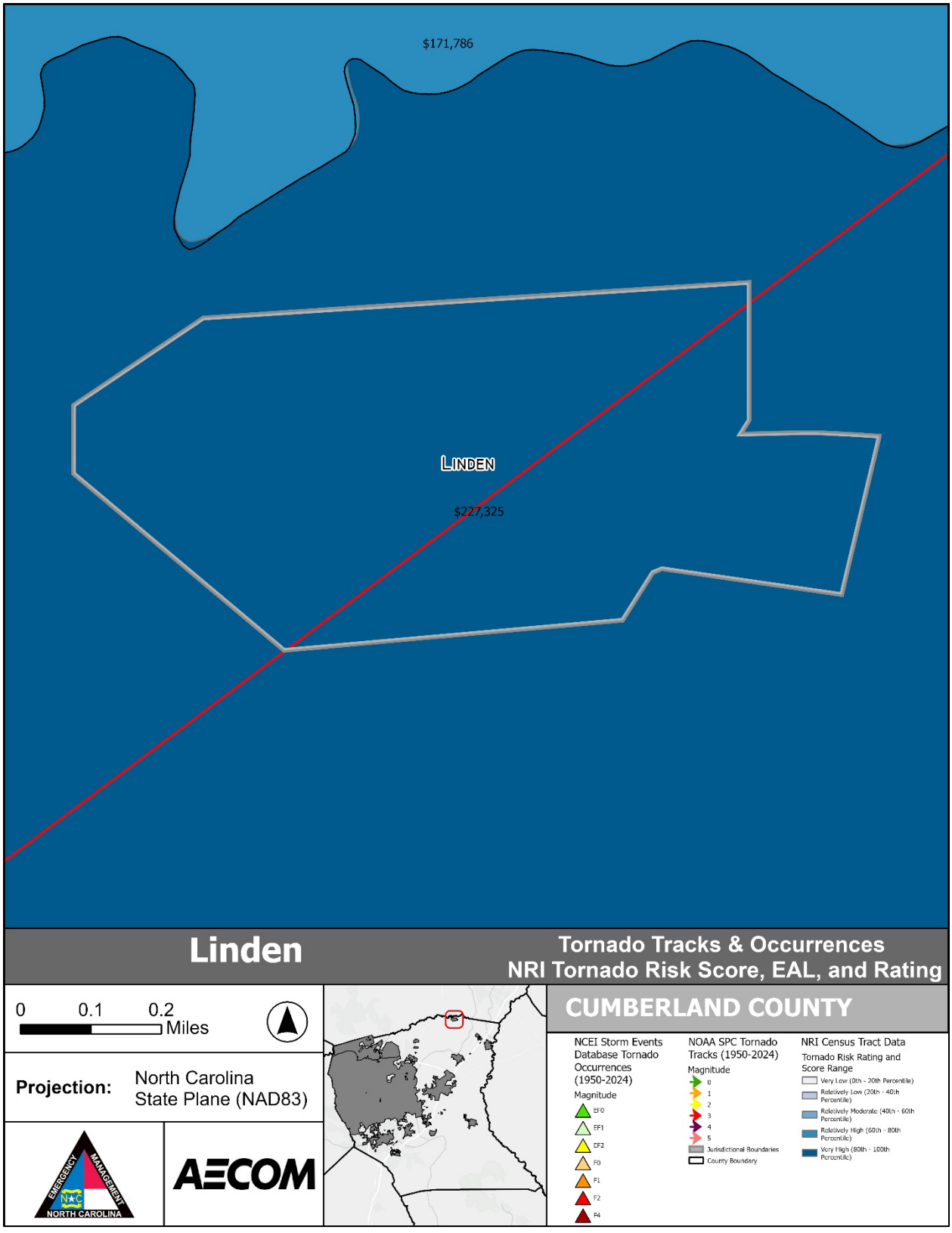


Figure 5-110: Town of Linden Tornado Hazard Map

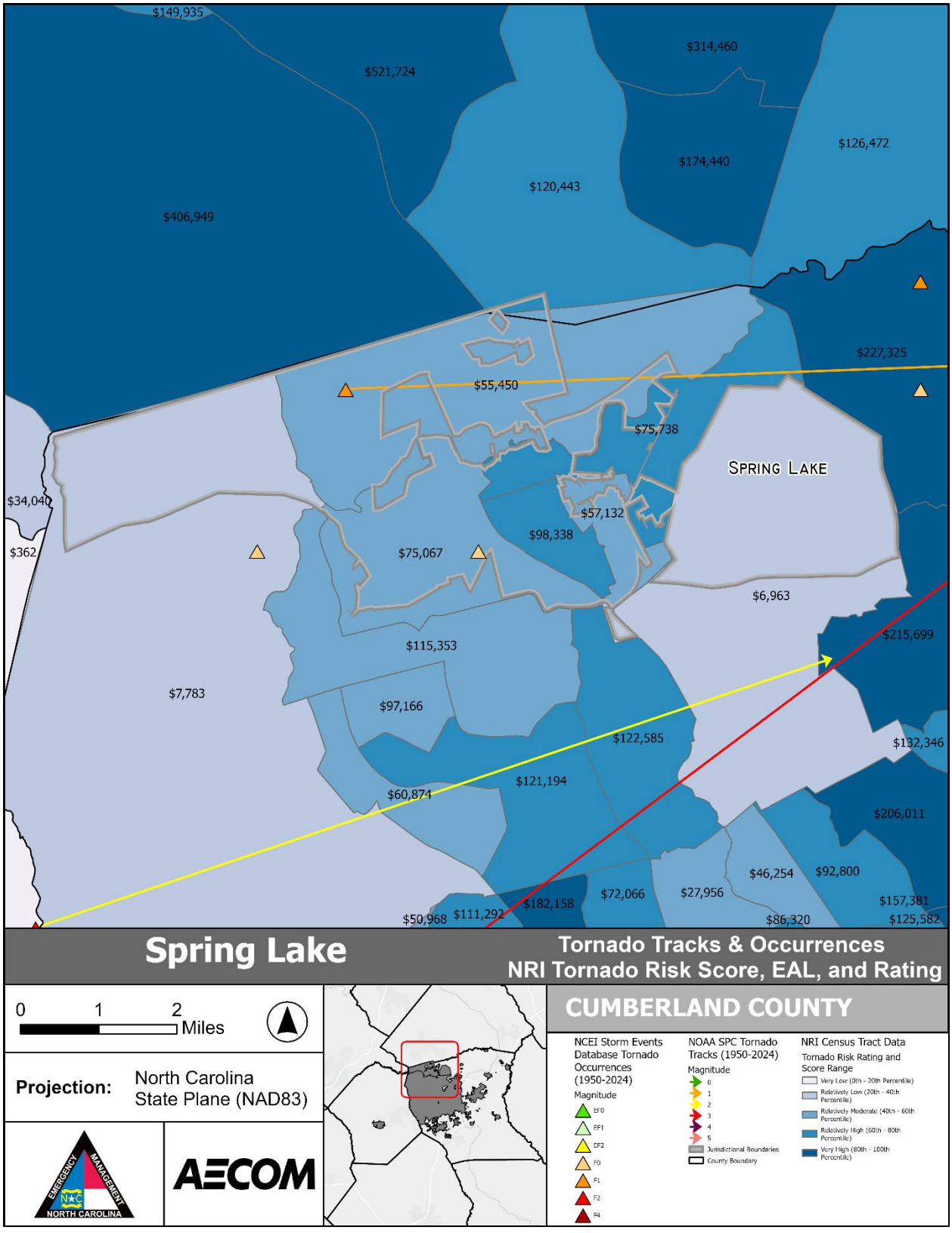


Figure 5-111: Town of Spring Lake Tornado Hazard Map

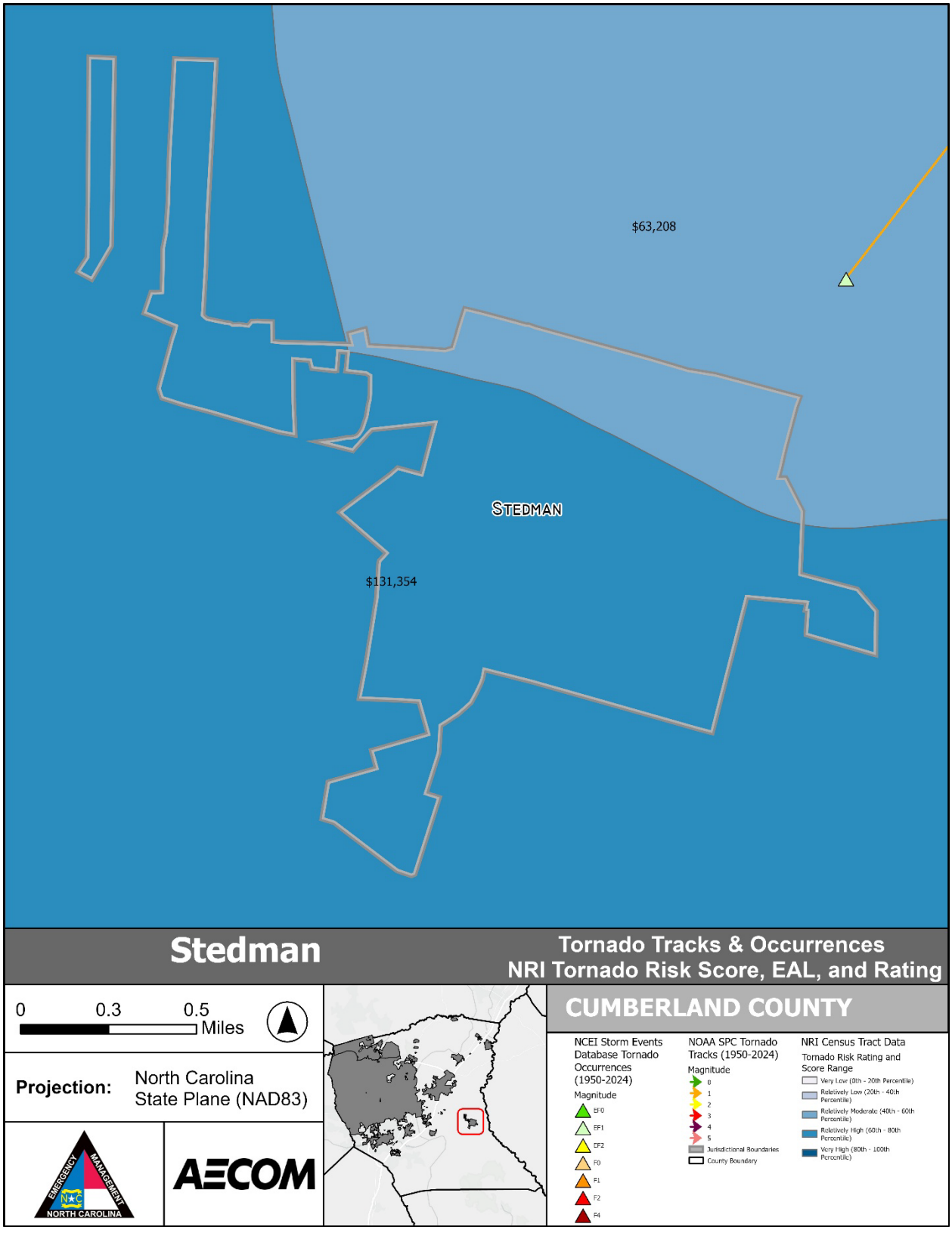


Figure 5-112: Town of Stedman Tornado Hazard Map

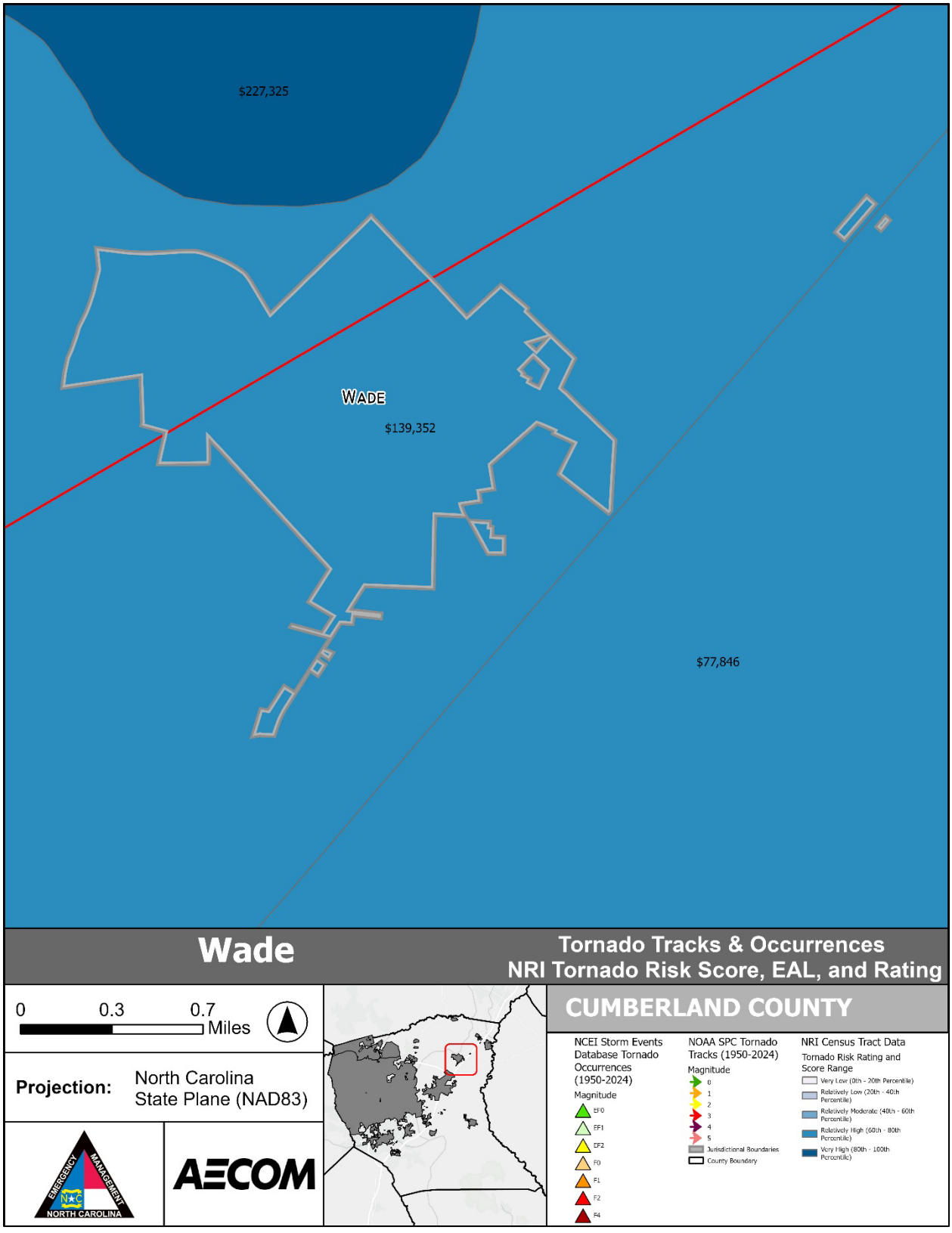


Figure 5-113: Town of Wade Tornado Hazard Map

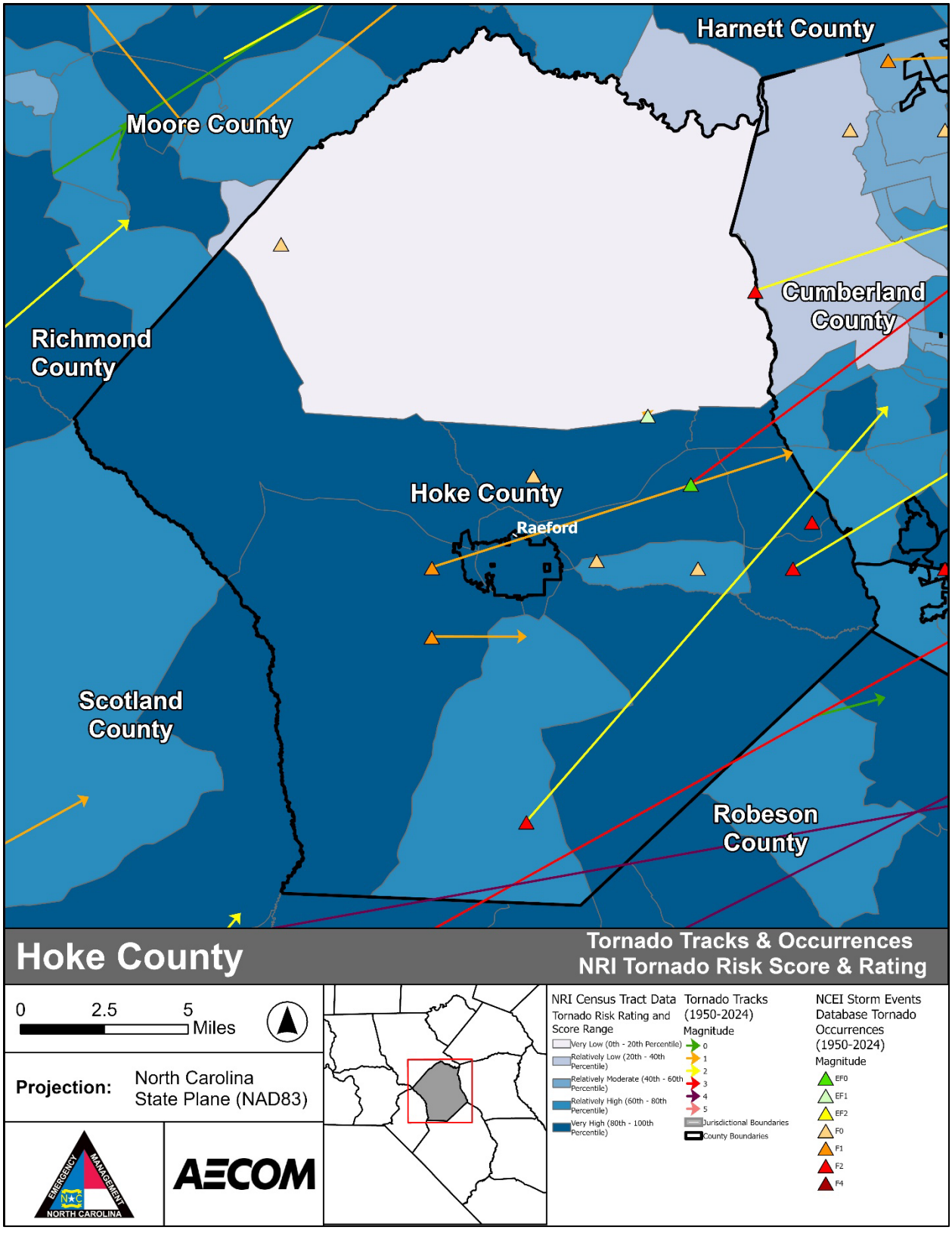


Figure 5-114: Hoke County Tornado Hazard Map

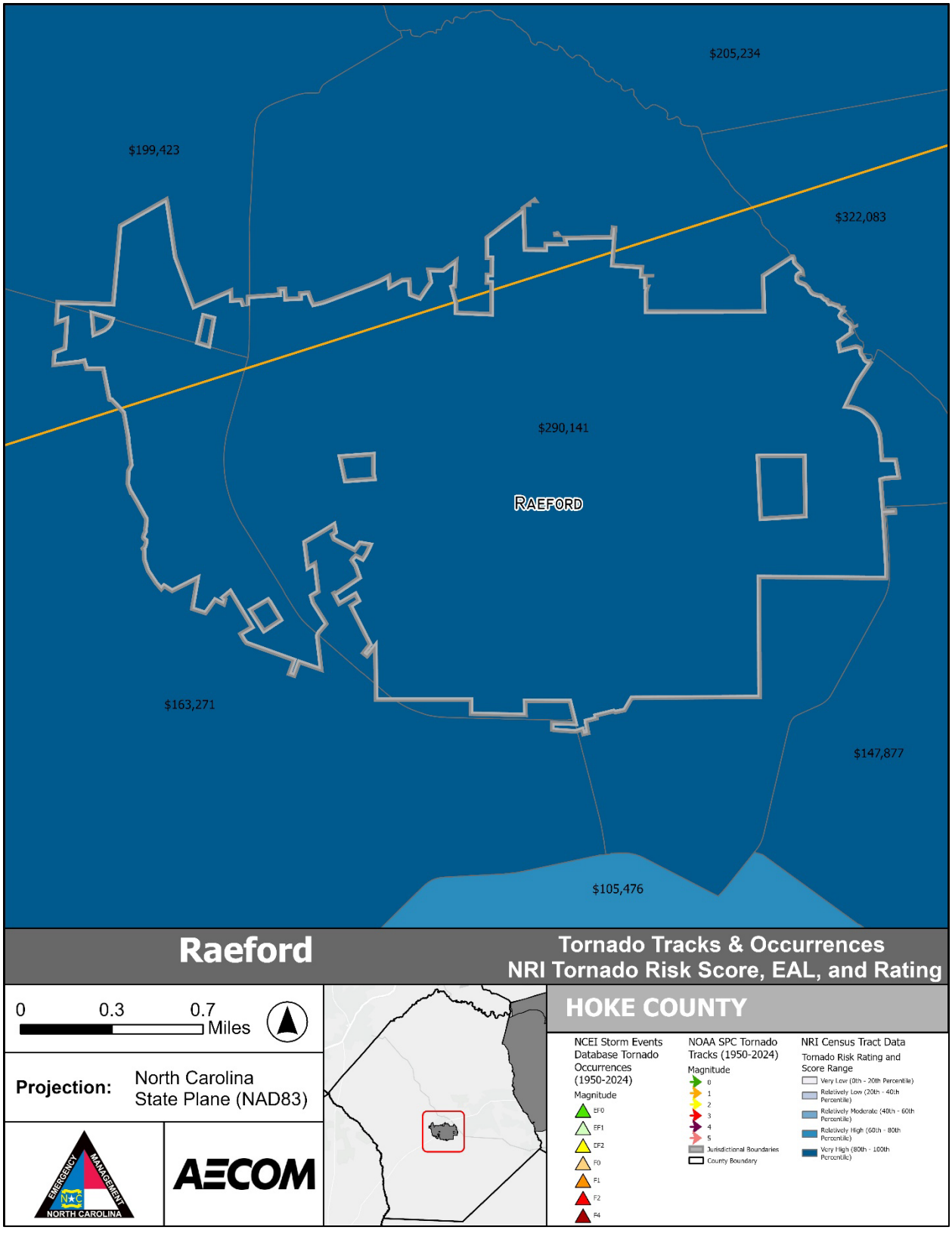


Figure 5-115: City of Raeford Tornado Hazard Map

5.9.3. Extent

Tornado hazard extent is measured by tornado occurrence rates in the US, based on the Fujita/Enhanced Fujita Scale. Table 5-48 lists the jurisdictions with the highest recorded tornado events in the Region (except Falcon, Godwin, Linden, Stedman, Wade, or Raeford, which have not experienced tornadoes). It should be noted that jurisdictions can be affected by these events even though they are not depicted in the table.

Table 5-48: Highest Magnitude Tornado Hazard Events in the Planning Area

Jurisdiction	Date of Event	Magnitude
Cumberland County		
Eastover	1960-10-04	F1
	1964-12-26	F1
Falcon	--	--
Fayetteville	2011-04-16	EF3
Godwin	--	--
Hope Mills	1986-05-19	F2
Linden	--	--
Spring Lake	1971-03-15	F1
Stedman	--	--
Wade	--	--
Unincorporated Area	1957-04-08	F4
	1984-03-28	F4
Hoke County		
Raeford	--	--
Unincorporated Area	1981-02-11	F2
	1986-05-19	F2

5.9.4. Past Occurrences

Table 5-49 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.

Five notable tornado events that occurred in the planning area are summarized below:

Cumberland and Hoke County Tornado - 04/08/1957

A tornado outbreak occurring on April 8, 1957, produced at least 18 tornadoes, was responsible for 7 deaths, and was responsible for 203 injuries, according to NCEI Storm Events Database Records. According to the NWS Tornado Tracks Database[76], the F4 tornado that impacted the planning area formed in Lancaster County, South Carolina, and passed through Hoke and Cumberland County, traveling approximately 121.4 miles before ending in Sampson County. The tornado tracks database also reports four fatalities and 70 injuries from this tornado alone,

[76] Storm Prediction Center, & National Oceanic and Atmospheric Administration. (2024). *Tornado Tracks* [Geodatabase]. Federal Emergency Management Administration Geospatial Resource Center. https://gis-fema.hub.arcgis.com/datasets/fedmaps::tornado-tracks-1/about

along with unknown damage. In Cumberland County, there were eight injuries and around $250,000 damage reported because of the tornado.

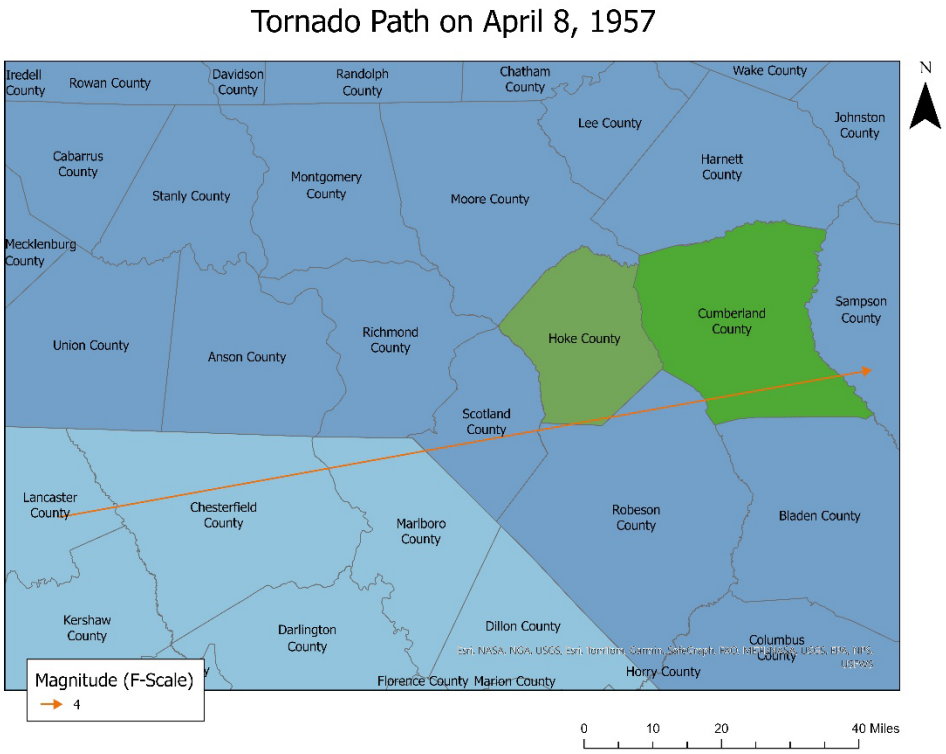


Figure 5-116: Tornado Path on April 8, 1957, from the SPC Tornado Tracks Database[76]

Cumberland County Tornado - 2/22/1971

Based on the NC Climate Office event summary[77], a tornado outbreak occurred across the southeast US on February 21-22, 1971, when an upper-level low traveler originating in the North Pacific moved east, converging with cold air across the Midwest. At the same time, warm, moist air from the Gulf pushed across Louisiana and Mississippi, forming a strong cold front along the boundary between the warm and cold air masses and developing into severe thunderstorms. 14 tornadoes occurred throughout Texas, Louisiana, Arkansas, Mississippi, and Tennessee on February 21, 1971. On February 22, 1971, an F3 tornado with winds exceeding 158 mph damaged 68 homes in Fayetteville, 400 homes in Cumberland County, and approximately $4.5 million in total damage was reported. According to the NCEI Storm Events Database reports, two people died, 60 were injured, and $2.5 million in damages were reported as a result of the tornado in Cumberland County.

[77] Davis, C. (2016, February 22). February Tornadoes are Rare, But With a Damaging History—North Carolina State Climate Office. *Climate Blog*. https://climate.ncsu.edu/blog/2016/02/february-tornadoes-are-rare-but-with-a-damaging-history/

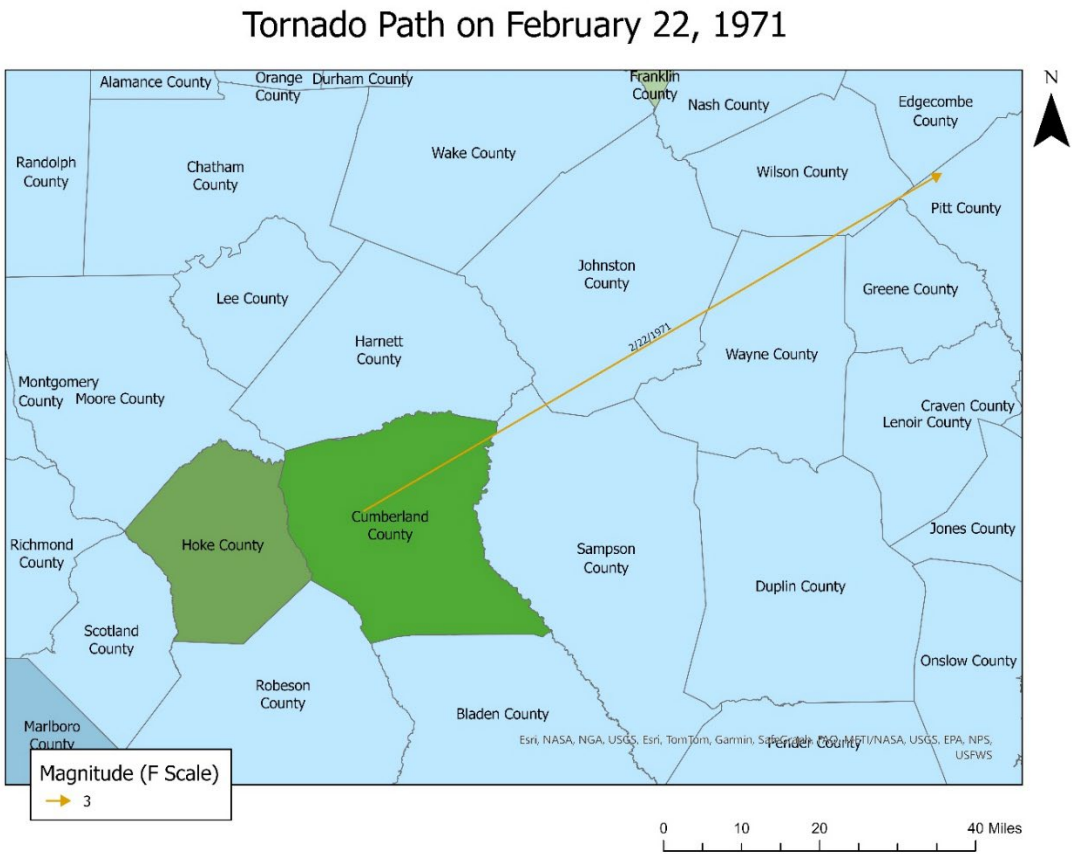


Figure 5-117: Tornado Path on February 22, 1971, from the SPC Tornado Tracks Database[78]

Cumberland County Tornadoes - 03/28/1984

According to the NWS summary of the Carolinas tornado outbreak[79], strong low surface pressure across Texas converged with an upper-level trough moving across the southern Rocky Mountains. Surface pressures were irregularly low across the southern Plains and the lower Mississippi valley surrounding a warm from inland of the Gulf Coast. Very warm, humid air moved north from the Gulf, while the mid and upper levels of the atmosphere were cooling due to the approaching upper-level trough moving east, fueling an unstable situation across Georgia and the Carolinas in the afternoon of March 28. This outbreak produced 11 tornadoes in NC, 11 in South Carolina, and two in Georgia, resulting in 57 fatalities and 1248 injuries.

An F4 tornado formed in South Carolina before traveling approximately 38 miles and ending in Cumberland County, where sections of the pine forest were leveled. In Cumberland County, there was $2.5 million in damage attributed to the F4 tornado, according to the NCEI Storm

[78] Storm Prediction Center, & National Oceanic and Atmospheric Administration. (2024). *Tornado Tracks* [Geodatabase]. Federal Emergency Management Administration Geospatial Resource Center. https://gis-fema.hub.arcgis.com/datasets/fedmaps::tornado-tracks-1/about

[79] National Oceanic and Atmospheric Administration. (2014, March 28). *Carolinas Tornado Outbreak: March 28, 1984*. National Weather Service; NOAA's National Weather Service. https://www.weather.gov/ilm/CarolinasOutbreak

Events Database. According to the SPC Tornado Tracks Database, throughout the entire path of the F4 tornado, there were a total of 4 deaths and 395 injuries.[80]

The F3 tornado passed through Cumberland County, travelling approximately 40 miles, causing damage of $5 million to $50 million, 12 fatalities, and 101 injuries.[80] According to the NCEI Storm Events Database, in Cumberland County, there were 2 deaths and 11 injuries that occurred as a result of the F3 tornado and $25 million in damages.

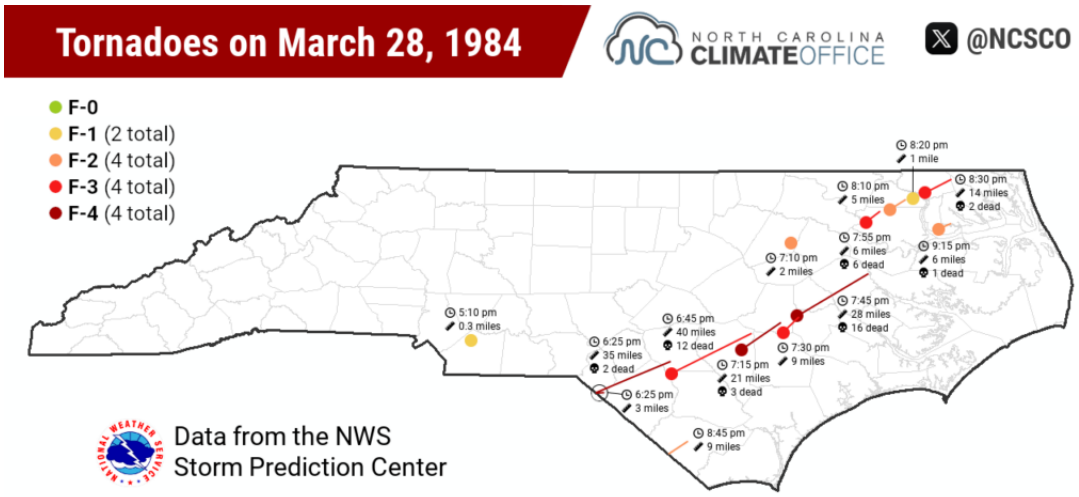


Figure 5-118: March 28, 1984, tornado map from the NWS SPC Data and the NC State Climate Office[81]

Cumberland and Hoke County Tornadoes - 4/16/2011

- **Hoke County EF0** – $100,000 of damages
- **Cumberland County (Linden & Fayetteville) and Hoke County EF3**: - $100 million of damages, 1 death, 85 injuries
- **Cumberland County EF2** - $250,000 of damage, four injuries

A storm system across Oklahoma and the south weakened, and a squall line descended the Blue Ridge early in the morning, moving east into the central Piedmont area of NC. These conditions produced 32 confirmed tornados, making the outbreak one of the most widespread ever seen in NC.[82] Total property damage across the state totaled over $328 million, with 304 injuries and 24 deaths reported. In Cumberland and Hoke Counties, there were four deaths and 89 injuries attributed to tornadoes in the planning area.

[80] Storm Prediction Center, & National Oceanic and Atmospheric Administration. (2024). *Tornado Tracks* [Geodatabase]. Federal Emergency Management Administration Geospatial Resource Center. https://gis-fema.hub.arcgis.com/datasets/fedmaps::tornado-tracks-1/about

[81] Davis, C. (2024, March 28). March Mayhem: Remembering the 1984 Tornadoes, Forty Years Later—North Carolina State Climate Office. *North Carolina State Climate Office*. https://climate.ncsu.edu/blog/2024/03/march-mayhem-remembering-the-1984-tornadoes-forty-years-later/

[82] Davis, C. (2015, April 16). NC Extremes: April 2011 Tornado Outbreak One for the Records—North Carolina State Climate Office. *North Carolina State Climate Office*. https://climate.ncsu.edu/blog/2015/04/nc-extremes-april-2011-tornado-outbreak-one-for-the-records/

According to the NCEI Storm Events Database, there was $100,000 in damage in Hoke County attributed to an EF0 tornado, which destroyed a home and damaged 60 others. Another EF3 tornado impacted Hoke County and Cumberland County, passing through Linden and Fayetteville, causing around $100 million in damage, one death, and 85 injuries. An EF2 tornado passed through Cumberland County, causing $250,000 damage and 4 injuries.



Figure 5-119: Tornado Damage in Fayetteville After April 16th, 2011, Tornado Outbreak[83]

[83] *FROM THE ARCHIVES: Fayetteville destruction in 2011 tornado*. (2020, April 16). The Fayetteville Observer. https://www.fayobserver.com/picture-gallery/news/2017/08/05/from-the-archives-fayetteville-destruction/69251463007/

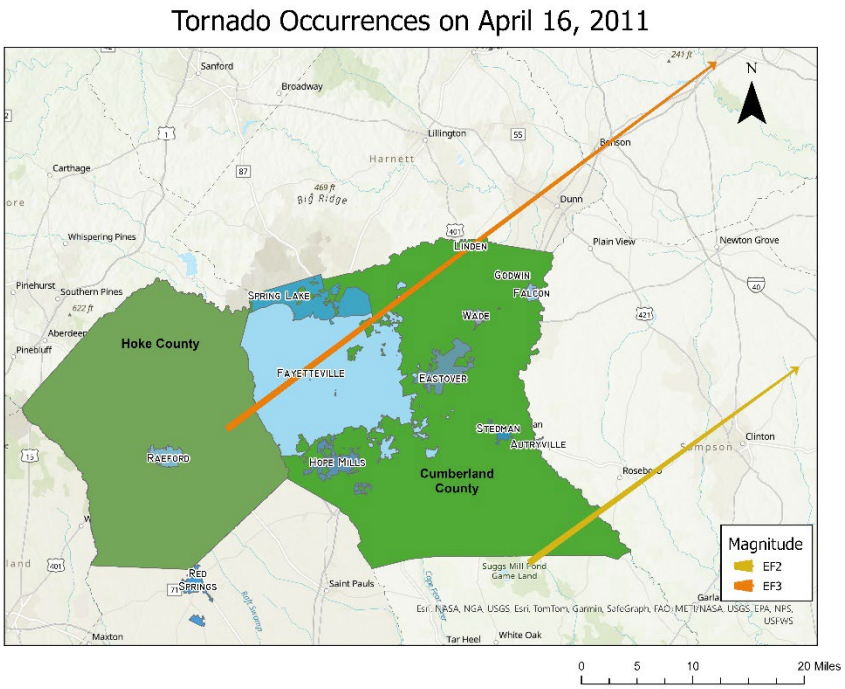


Figure 5-120: Tornado Paths from April 16th, 2011, from the SPC Tornado Track Database[84]

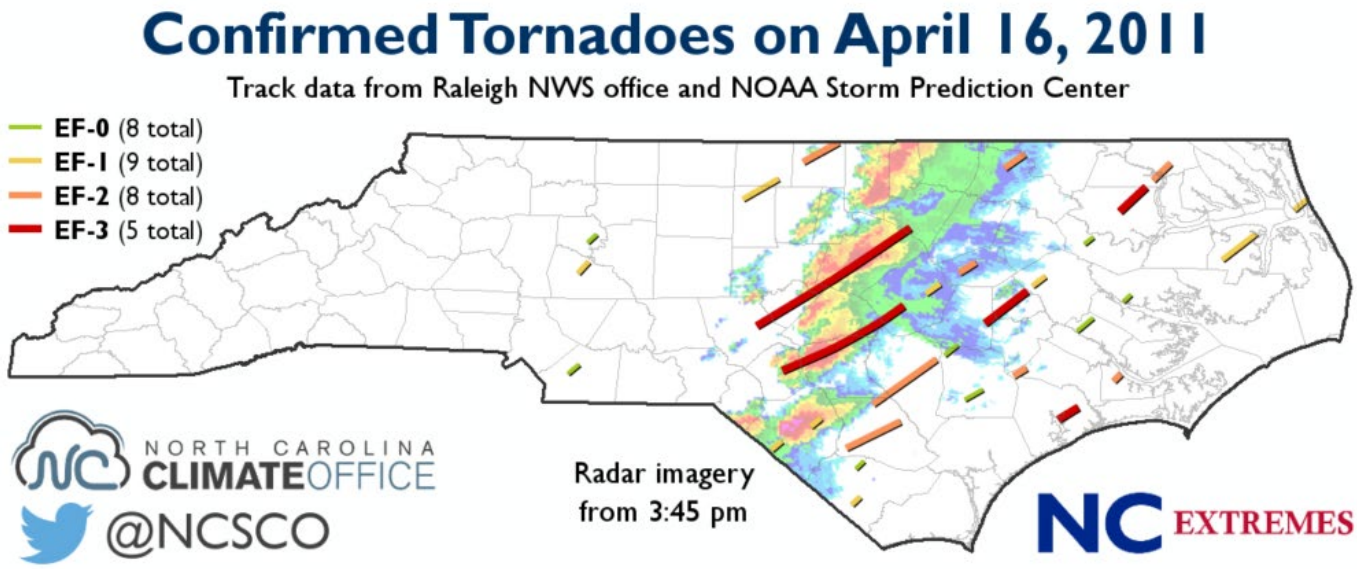


Figure 5-121: Confirmed Tornadoes on April 16th, 2011, from the NC Climate Office[85]

[84] Storm Prediction Center, & National Oceanic and Atmospheric Administration. (2024). *Tornado Tracks* [Geodatabase]. Federal Emergency Management Administration Geospatial Resource Center. https://gis-fema.hub.arcgis.com/datasets/fedmaps::tornado-tracks-1/about

[85] Davis, C. (2015, April 16). NC Extremes: April 2011 Tornado Outbreak One for the Records—North Carolina State Climate Office. *North Carolina State Climate Office*. https://climate.ncsu.edu/blog/2015/04/nc-extremes-april-2011-tornado-outbreak-one-for-the-records/

Hoke County Tornado - 5/21/2020

- NCEI Database Damages - $50,000

According to the NCEI Storm Events Database, an EF1 tornado touched down about 5.5 miles northeast of Raeford, Hoke County, on the southern border of the Fort Bragg Military Reservation. The damage observed consisted of snapped and uprooted trees, and the damage path was under a quarter of a mile and recorded as approximately 0.2 miles in the SPC tornado tracks database.[86] The maximum reported wind speed was 100mph, and there were no reported injuries or deaths attributed to the tornado.

[86] Storm Prediction Center, & National Oceanic and Atmospheric Administration. (2024). *Tornado Tracks* [Geodatabase]. Federal Emergency Management Administration Geospatial Resource Center. https://gis-fema.hub.arcgis.com/datasets/fedmaps::tornado-tracks-1/about

Table 5-49: Tornado Events (1950-2025) in the Planning Area from the NCEI Storm Events Database[87]

County	Location	Date	Magnitude	Deaths	Injuries	Damage	Event Narrative	Episode Narrative
Cumberland County	--	4/8/1957	F4	0	8	$250,000	--	--
Cumberland County	--	6/2/1959	F0	0	0	$25,000	--	--
Cumberland County	--	10/4/1960	F1	0	0	$25,000	--	--
Cumberland County	--	9/29/1963	F2	0	0	$250,000	--	--
Cumberland County	--	12/26/1964	F1	0	1	$2,500	--	--
Cumberland County	--	2/22/1971	F3	2	60	$2,500,000	--	--

[87] National Center for Environmental Information (NCEI). (2025). *Storm Events Database* [Tabular]. National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/stormevents/

County	Location	Date	Magnitude	Deaths	Injuries	Damage	Event Narrative	Episode Narrative
Cumberland County	--	3/15/1971	F1	0	0	$250,000	--	--
Cumberland County	--	5/29/1973	F1	0	0	$25,000	--	--
Cumberland County	--	8/2/1974	F0	0	0	$25,000	--	--
Hoke County	--	3/24/1975	F1	0	0	$250	--	--
Hoke County	--	2/11/1981	F2	1	0	$250,000	--	--
Cumberland County	--	2/11/1981	F2	0	0	$250,000	--	--
Cumberland County	--	3/28/1984	F3	2	11	$25,000,000	--	--

County	Location	Date	Magnitude	Deaths	Injuries	Damage	Event Narrative	Episode Narrative
Cumberland County	--	3/28/1984	F4	0	0	$2,500,000	--	--
Hoke County	--	5/19/1986	F2	0	5	$250,000	--	--
Cumberland County	--	5/19/1986	F2	0	0	$250,000	--	--
Hoke County	--	5/19/1988	F0	0	0	$2,500	--	--
Cumberland County	--	8/28/1988	F1	0	0	$250,000	--	--
Hoke County	--	10/23/1990	F0	0	0	$2,500	--	--
Cumberland County	--	11/4/1992	F0	0	0	$0	--	--

County	Location	Date	Magnitude	Deaths	Injuries	Damage	Event Narrative	Episode Narrative
Cumberland County	--	11/4/1992	F0	0	0	$0	--	--
Cumberland County	--	11/4/1992	F0	0	0	$0	--	--
Hoke County	--	5/19/1995	F1	0	1	$200,000	Tornado damage across the county from State Roads #401 and #1207 eastward to near State Road 211. Numerous trees were down, some across houses. Damage to several mobile homes. Twelve roads were impassable.	
Cumberland County	Hope mills	5/28/2000	F0	0	0	$0	A tornado was reported to have briefly touched down on Chicken Foot Road.	
Cumberland County	Pope afb	12/17/2000	F0	0	0	$0	Observers at Pope AFB reported a tornado moving northeast.	
Hoke County	Raeford	8/29/2004	F0	0	0	$0	A tornado touched down in the Hillcrest area on Pittman Grove Church Road. Four houses sustained structural damage, and trees were blown down.	
Hoke County	Arabia	9/7/2004	F0	0	0	$0	A tornado briefly touched down near Arabia.	

County	Location	Date	Magnitude	Deaths	Injuries	Damage	Event Narrative	Episode Narrative
Hoke County	Rockfish	9/8/2004	F0	0	0	$0	A tornado touched down on Ray Road just north of Rockfish. Numerous trees were blown down, damaging the roof of a house and destroying one car.	
Cumberland County	Hope mills	3/27/2009	EF1	0	0	$225,000	An EF-1 tornado touched down just north of the Robeson County line and southeast of Hope Mills in the Roslin community. The tornado damage track was about 50 yards wide and stretched northeast for approximately 5 miles. On Roslin Farm Road, a brick home lost more than eighty percent of its roof structure. Several sheds and outbuildings in the area were also destroyed. A neighboring house also suffered minor structural damage to the garage. The tornado then tracked northeast over bare fields before reaching Braxton Road. At Braxton Road, the tornado continued at EF-1 intensity, causing significant damage to a recently built two-story home. The home was condemned after experiencing approximately 20% roof loss and significant damage to the upstairs structure. Numerous sheds and fences were also blown over in the area. ||The tornado continued northeast, crossing Chicken Foot Road and Corporation Drive, along which several trees were snapped. The tornado crossed Interstate	Low topped tornadic supercells developed along a stationary front located across the coastal plain region of North Carolina. The storms intensified as shortwave troughs moved northeast across the area, producing EF-1 damage in Cumberland County.

County	Location	Date	Magnitude	Deaths	Injuries	Damage	Event Narrative	Episode Narrative
							95, where numerous trees were blown down and snapped near Tim Starling Road. It was just north of this intersection where the high winds overturned a tractor-trailer. Just west of Interstate 95 near the intersection of Tim Starling Road and Research Drive, a large industrial building suffered significant roof damage. The tornado's wind caused the roof to buckle enough for the Fire Marshal to order an evacuation of the building. Rocks from the building's roof were blown into the parking lot, shattering the windows of numerous vehicles. A house currently under construction on Tim Starling Drive also sustained significant damage. The tornado continued tracking northeast along Research Road while weakening to an EF-0 as it approached Claude Lee Road. Numerous trees were blown down, and sheds were destroyed along Catherine Drive and Arlie Drive. Several homes in the area lost shingles and suffered minor damage to trim and siding. The tornado then lifted off the ground just as it approached the Fayetteville Regional Airport.	

County	Location	Date	Magnitude	Deaths	Injuries	Damage	Event Narrative	Episode Narrative
Hoke County	Raeford Municipal Airport	4/16/2011	EF0	0	0	$100,000	A tornado initially formed near the Wayside and Johnsons Mill communities in Hoke County. EF0 damage was observed in this area, with mostly tree damage. The tornado continued to move northeast, crossing into Cumberland County just north of NC Highway 401. One home was destroyed, with 60 other homes sustaining some damage.	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 9 tornadoes in the Raleigh CWA, including 2 EF3s and 4 EF2s. The tornadoes left 8 dead with approximately 275 injuries.
Cumberland County	Fenix	4/16/2011	EF3	1	85	$100,000,000	The tornado exited Hoke County and continued to move northeast, crossing into Cumberland County, just north of NC Highway 401. EF0 damage continued near the Clifdale community, where the damage was more sporadic across Bones Creek and Stewarts Creek. Strong	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

County	Location	Date	Magnitude	Deaths	Injuries	Damage	Event Narrative	Episode Narrative
							tornado damage then occurred in and near the Beaver Creek community along Reilly Road and Yadkin Road west of Fayetteville. Damage was mostly EF1 and EF2, but was briefly EF3 damage, with wind speeds near 140 mph, causing major damage to a business and some dwellings along Yadkin Road. EF0 and EF1 damage was then observed across Simmons Army Airfield, along Andrews Road, and across from the Pine Forest High School. The Goodyear Plant on NC Highway 401 sustained minor damage as well. The tornado continued northeast through the Carlos and Slocomb communities, with mainly EF0 tree damage. Just south of the Linden community, a small area of EF2 damage occurred near McBryde Road, where several homes were heavily damaged, including a mobile home that was completely destroyed. One fatality occurred when the tornado hit a double-wide mobile home. The victim suffered massive head injuries. Two other occupants of the mobile home survived and were taken to Betsy Johnson Hospital. In total, approximately 1,000 homes were damaged, of which 310 suffered major damage, and 287 were	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 live tornadic supercells evolving from the linear convective segment. These tornadic supercells went on to produce 9 tornadoes in the Raleigh CWA, including 2 EF3s, and 4 EF2s. The tornadoes left 8 dead with approximately 275 injuries.

County	Location	Date	Magnitude	Deaths	Injuries	Damage	Event Narrative	Episode Narrative
							destroyed. 40 businesses also experienced damage.	
Cumberland County	Cedar creek	4/16/2011	EF2	0	4	$250,000	The tornado exited Bladen County and moved into Cumberland County just west of NC Highway 242. The tornado moved northeast, crossing NC Highway 210 near Smith Road and Peters Creek Road. In this area, a few homes were damaged, with one home sustaining heavy damage rated EF2. Four occupants sustained injuries. Hundreds of trees were also downed in this vicinity. Damage was also observed along Broadwater Bridge Road, east of Smith Road.	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 9 tornadoes in the Raleigh CWA, including 2 EF3s and 4 EF2s. The tornadoes left 8 dead with approximately 275 injuries.

County	Location	Date	Magnitude	Deaths	Injuries	Damage	Event Narrative	Episode Narrative
Cumberland County	Stedman	4/29/2014	EF1	0	0	$50,000	Damage included dozens of snapped and uprooted trees and nearly a dozen homes with roof damage. The roof damage ranged from loss of shingles to one single-wide home that lost nearly its entire roof. The extent of damage to the single-wide home, along with the nearby tree damage, is consistent with maximum wind speeds of 90-95 mph.	Thunderstorms developed during the afternoon just north and south of a well-defined warm front bisecting central North Carolina. Three weak, short-lived tornadoes developed along the warm front across eastern North Carolina. Training thunderstorms also resulted in some flash flooding.
Hoke County	Raeford Municipal Airport	5/21/2020	EF1	0	0	$50,000	An EF-1 tornado with maximum wind speeds of 100 mph briefly touched down 5.5 miles northeast of Raeford in Hoke County, NC, on the southern edge of the Fort Bragg Military Reservation. Damage consisted of an area of snapped and uprooted pine trees about 200 yards wide at its maximum width. The overall length of the damage path was just under a quarter mile. The tree damage straddled Plank Road, with the worst just south of it. The tree debris and ground vegetation were lofted high enough to result in a well-defined tornado debris signature on National Weather Service Doppler radar at the time the damage occurred.	A large upper-level low over the Tennessee Valley slowly lifted northward and into Ohio Valley. This allowed for copious amounts of moisture and rain to affect central North Carolina. This resulted in several reports of flash flooding across western portions of central North Carolina, which lingered into the morning of May 22nd. Several storms became strong too severe during the afternoon with daytime heating, producing wind damage and a brief tornado in Hoke County.

Table 5-50: Summary of Historical Tornado Occurrences by Participating Jurisdictions from the NCEI Storm Events Database[88]

Jurisdiction	Number of Occurrences	Deaths	Injuries	Reported Property Damage	Reported Crop Damage
Eastover	2	0	1	$27,500	$0
Falcon	--	--	--	--	--
Fayetteville	3	3	145	$102,525,000	$0
Godwin	--	--	--	--	--
Hope Mills	2	0	0	$250,000	$0
Linden	--	--	--	--	--
Spring Lake	2	0	0	$250,000	$0
Stedman	--	--	--	--	--
Wade	--	--	--	--	--
Unincorporated Area	14	2	23	$29,075,000	$0
Cumberland County Subtotal	**23**	**5**	**169**	**$132,127,500**	**$0**
Raeford	--	--	--	--	--
Unincorporated Area	11	1	6	$855,250	$0
Hoke County Subtotal	**11**	**1**	**6**	$855,250	$0
Plan Total	**34**	**6**	**175**	**$132,982,750**	**$0**

5.9.5. Probability of Future Occurrences

The NRI uses the NWS SPC Severe Weather Database to assess 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 and EF-1 tornadoes recorded from 1986 to 2019.

Cumberland County has an annualized frequency of 0.39 tornado events per year, with a total EAL of $9,294,461, an EAL score of 94.04, and a Hazard Risk Index Score of 95.39. Unincorporated census tracts in the county have an average annualized frequency of 0.012 events per year, a total EAL of $288,608, an average EAL score of 68.42, and an average Hazard Risk Index Score of 69.12. Fayetteville has the highest EAL total at $8,434,477, but a low average annual frequency of 0.005 events per year. Census tracts that overlap Linden have the highest annualized frequency of 0.037 events per year, but a total EAL of $227,324, which is significantly lower than the highest jurisdictional total EAL. Linden has an average EAL score of 82.06 and an average Hazar Risk Index score of 86.91, both of which fall into the Very High rating categories. The other jurisdictions with the highest annualized frequency are Godwin and Wade, which have average annualized frequencies of 0.032 and 0.03, respectively, but only Relatively High EAL Rating and Hazard Risk Index Ratings.

Hoke County has an annualized frequency of 0.21 tornado events per year, a total EAL of $2,294,151, an EAL score of 73.57, and a Hazard Risk Index Score of 77.54. Raeford and the census tracts that overlap the jurisdictional boundaries have an annualized frequency of 0.019 events per year, an average EAL Score of 80.32, and an average Hazard Risk Index Score of

[88] National Center for Environmental Information (NCEI). (2025). *Storm Events Database* [Tabular]. National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/stormevents/

87.93, both rated as Very High EAL Ratings and Risk Index Ratings. Unincorporated areas in Hoke County and the census tracts that overlap these areas have an annualized frequency of 0.01 events per year, a total EAL of $449,442, an average EAL score of 70.59, and an average Hazard Risk Index score of 77.49, all of which fall into the Relatively High Risk Ratings.

Table 5-51: NRI Tornado Annualized Frequency, EAL Total, Average EAL Score, and Average 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
Cumberland County (Unincorporated Area)	0.012	$288,608	68.42	Relatively High	69.12	Relatively High
Eastover	0.020	$469,528	65.20	Relatively High	69.48	Relatively High
Falcon	0.020	$130,440	53.73	Relatively Moderate	56.62	Relatively Moderate
Fayetteville	0.005	$8,434,477	63.68	Relatively High	68.58	Relatively High
Godwin	0.032	$139,352	69.37	Relatively High	76.23	Relatively High
Hope Mills	0.003	$2,122,764	67.35	Relatively High	72.88	Relatively High
Linden	0.037	$227,325	82.06	Very High	86.91	Very High
Spring Lake	0.010	$1,341,798	58.49	Relatively Moderate	60.46	Relatively High
Stedman	0.013	$194,561	60.77	Relatively High	58.39	Relatively Moderate
Wade	0.030	$217,198	63.35	Relatively High	68.47	Relatively High
Cumberland County Total	**0.39**	**$9,294,461**	**94.04**	**Very High**	**95.39**	**Very High**
Hoke County (Unincorporated Area)	0.010	$449,442	70.59	Relatively High	77.49	Relatively High
Raeford	0.019	$1,122,795	80.32	Very High	87.93	Very High
Hoke County Total	**0.21**	**$2,294,151**	**73.57**	**Relatively High**	**77.54**	**Relatively High**

5.9.6. Consequence and Impact Analysis

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.

According to NOAA and FEMA, 54% of tornado fatalities are in mobile homes, and you are 15 to 20 times more likely to be killed in a mobile home than a traditionally constructed home during a

tornado.[89] 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. 7.5% of housing units in Cumberland County and 21% in Hoke County are mobile homes, and these units are disproportionately at risk of tornado impact.[90] Individuals in the planning area who live in housing units that may be disproportionately at risk of tornado damage should have a plan to reach a safe location in the event of a tornado.

The NWS reported an average lead time of 10.52 minutes from 2006 to 2024, indicating it is critical that residents in the planning area receive emergency alerts in a timely manner so they can reach a storm shelter. Residents who do not have access to a vehicle in their planning unit[90] (6.6% of housing units in Cumberland County and 5.3% of housing units in Hoke County), residents who have independent living difficulties (7.3% in Cumberland County and 8.3% in Hoke County), and residents with disabilities (16.9% in Cumberland County and 18.2% in Hoke County) may require assistance to reach a safe space to shelter in the event of tornado.[91] The ability to shelter in a timely manner 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 the internet. In the planning area, it is estimated that 6.1% of housing units in Cumberland County and 8.6% in Hoke County lack access to a computing device, and 10.2% of households in Cumberland County and 11.1% in Hoke County lack a household internet subscription.[92]

To prepare residents in the planning area for tornado events, the following mitigation actions should be considered:

- Ensure that residents who require assistance reaching a safe shelter location in the event of a tornado are prioritized by emergency services.
- Ensure that all residents in the planning area have at least one way to receive emergency alerts in the event of severe weather events or tornadoes, including developing plans to shelter in place or to reach an adequate storm shelter.

Changes in Development

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 wind-borne debris that tornadoes

[89] National Oceanic and Atmospheric Administration. (n.d.). *Severe Weather Awareness Week—Mobile Home Safety*. National Weather Service. https://www.weather.gov/shv/awarenessweek_severe_mobilehomes
[90] U.S. Census Bureau. (2023). *Selected Housing Characteristics* (No. ACSDP5Y2023.DP04; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSDP5Y2023.DP04
[91] U.S. Census Bureau. (2023). *Disability Characteristics* (No. ACSST5Y2023.S1810; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S1810
[92] U.S. Census Bureau. (2023). *Types of Computers and Internet Subscriptions* (No. ACSDP5Y2023.S2801; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S2801

turn into missiles. Mobile homes are particularly susceptible to damage and fatalities during tornadoes. All jurisdictions in the Region are vulnerable to building damage. Development in the planning area should be designed to reduce tornado impacts and ensure that new housing units are not disproportionately vulnerable to tornado impacts.

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 complete destruction of homes, buildings, 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 damage.

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.

First Responders

Due to the rapid onset of tornado events, first responders can be critically affected by direct tornado impacts or injuries sustained during response efforts. Response may be hindered if responders are unable to reach those affected, either because storm conditions persist or because they cannot safely enter affected areas. As mentioned above, a large percentage of tornado-related injuries occur during rescue attempts, cleanup, and other post-tornado activities, including walking through debris and entering damaged buildings.

Future Conditions

The increased frequency of severe weather events, such as extreme heat, thunderstorms, and drought, can be attributed to climate change. Some analyses suggest that the proportion of tornadoes in the US generally decreases in the summer, while the proportion in the fall increases, especially in the Southeast.[93] Increases in severe weather events may create conditions favorable to tornado formation; however, the link between tornadoes and climate change is not clearly defined by current climate models.[94]

[93] Moore, T. W. (2017). Annual and seasonal tornado trends in the contiguous United States and its regions. *International Journal of Climatology*, *38*(3), 1582–1594. https://doi.org/10.1002/joc.5285
[94] Center for Climate and Energy Solutions. (2022). *Tornadoes and Climate Change*. Center for Climate and Energy Solutions. https://www.c2es.org/content/tornadoes-and-climate-change/

5.10. Wildfire

5.10.1. Hazard Description

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

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

Generally, wildfires are started by humans, either through arson or carelessness. Both short-term weather conditions and longer-term vegetation conditions control fire intensity. During intense fires, understory vegetation, such as leaves, small branches, and other organic materials that accumulate on the ground, can become additional fuel for the fire. The most explosive conditions occur when dry, gusty winds blow across dry vegetation.

5.10.2. Location and Spatial Extent

The entire region is at risk of a wildfire occurrence. However, several factors, such as drought or high levels of fuel on the forest floor, may increase the likelihood of wildfire. Conversely, areas of high development limit wildfire risk. It is also important to note that areas in the urban-wildland interface (where development abuts forest or open land) are particularly susceptible to wildfire hazard. When large wildfires burn on these open lands, it can be difficult to contain their spread to the built environment, thereby endangering structures and the population. The expansion of residential development from urban centers into rural landscapes increases the potential for wildland fire threat to public safety and the potential for damage to forest resources and dependent industries. The Wildland Urban Interface (WUI) is the area where structures and other human developments meet and intermingle with undeveloped wildland or vegetative fuels. Population growth in the WUI substantially increases wildfire risk.

To identify specific potential wildfire-hazard areas within the planning area, a GIS-based data layer, the Wildland Fire Susceptibility Index (WFSI), was obtained from the North Carolina Division of Forest Resources (NCDFR). The WFSI is a component layer derived from the Southern Wildfire Risk Assessment Portal (SWRAP), a multi-year project that assesses and quantifies wildfire risk across the 13 Southern states. The WFSI is a value between 0 and 1. It was developed consistently with the mathematical calculation process for determining the probability of an acre burning. The WFSI integrates the probability of an acre igniting and the expected final fire size, based on the rate of spread, across four weather percentile categories

into a single measure of wildland fire susceptibility. Due to certain necessary assumptions, primarily fuel homogeneity, this is not the true probability. But since all areas of the planning area have this value consistently determined, it allows for comparison and ranking of areas by the likelihood of an acre burning. Wildfire can potentially occur anywhere in the region. Table 5-52 below shows areas of the state with a high probability of experiencing wildfire. The Region is located within the highest probability category.

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.[95] The Fire Intensity Scale (FIS) layer was used to develop risk maps. The Fire Intensity Scale is based on the severity of wildfires that would occur if they did, but it does not provide a measure of susceptibility. See Table 5-52 for descriptions of the FIS.

Table 5-52: SWRAP Fire Intensity Scale Descriptions and Definitions[95]

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; small amount of very short-range spotting possible. Fires are easy to suppress by trained firefighters with protective equipment and specialized tools.
3	Moderate	Flames up to 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 dozer 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 appropriate mitigation actions for each zone. The categories identify which zones buildings are located in and the types of mitigation actions that may reduce wildfire exposure risk. See Table 5-53 for WUI categories, descriptions, and recommended mitigation activities for buildings located in each zone.

[95] Pyrologix. (2023). *Characteristic Fire Intensity Scale* [Dataset]. Southern Wildfire Risk Assessment Portal. https://wrap.southernwildfirerisk.com/Map/Public/#whats-your-risk

Table 5-53: WUI Exposure Categories and Descriptions from SWRAP[96]

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.
Wildfire Transmission Zone	The Wildfire Transmission Zone is unpopulated land within about 2.4 km of a group of structures. Fires that originate within or spread to the Wildfire Transmission Zone have an immediate threat of reaching the nearby structures.	Fuel treatments that slow fire spread in this zone can reduce risk to these 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 to reduce the ember load on 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.	

The Functional Wildland Urban Interface (WUI) is a classification of land near buildings into zones that describe the types of mitigation activities that would help prevent wildfire impacts on buildings in those zones. According to SWRAP, 14% of the land area in Cumberland County and 10% of the area in Hoke County are categorized as Primary Exposure areas, where there is burnable land within 75m of a structure. It is recommended that structures within areas of Direct Exposure should be hardened to resist ignition. 16% of the areas in Cumberland County and 5% of the areas in Hoke County are within Secondary Exposure areas, where non-burnable land cover is within 1500m of burnable land cover and 75m from a structure. Wildfire Transmission Zones cover 27% of the land in Cumberland County and 25% in Hoke County, where fuel treatments to slow fire spread and reduce risk to structures are recommended. Sources of Ember Load to Buildings account for 43% of the land in Cumberland County and

[96] Pyrologix. (2023). *Functional Wildland Urban Interface* [Dataset]. Southern Wildfire Risk Assessment Portal. https://wrap.southernwildfirerisk.com/Map/Public/#whats-your-risk

60% in Hoke County, where these areas should be prioritized for fuel treatment. Little to no area in either Cumberland or Hoke County is designated as a Little-to-No-Exposure zone.

Table 5-54: Functional Wildland Urban Interface Acres in each Exposure Category in the Planning Area from SWRAP, with Acres and Percentage of the Total Planning Area[97]

Functional Wildland Urban Interface Category	Cumberland		Hoke	
	Acres	Percent	Acres	Percent
Primary Exposure	57,923	14 %	24,861	10 %
Secondary Exposure	65,848	16 %	12,082	5 %
Sources of Ember Load to Buildings	180,163	43 %	150,998	60 %
Wildfire Transmission Zone	112,723	27 %	62,188	25 %
Low to No Exposure	567	0 %	0	0 %
Water	4,192	1 %	969	0 %
Total	**421,415**	**100 %**	**251,099**	**100 %**

The FIS Class 1 area, which represents 9% of Cumberland County and 8% of Hoke County, consists of very low-intensity wildfires that are easily suppressed by firefighters with basic training and non-specialized equipment. In Class 0 to Class 1.5 areas, 54% of Cumberland County and 36% of Hoke County (45% of the total planning area) should expect fire behavior with low enough intensity not to require specialized equipment or training to suppress. However, the remaining 55% of the planning area in both counties is classified as having fire behavior that may require specialized tools and equipment for suppression.

Any area with a Class 2 or higher FIS scale, flames less than 2ft long, and short-range spotting possible is susceptible to fires that require protective equipment and specialized tools, with approximately 12% of Cumberland County and 9% of Hoke County in the Class 2 to 2.5 FIS category. Class 2 to 2.5 FIS land represents areas where flames are usually less than 2ft long, and fires are easy to suppress with basic training and non-specialized equipment.

Areas categorized as Class 3 FIS, with flames up to 9ft in length, are susceptible to fires that are difficult to suppress without aircraft or engine support, increasing the potential to impact property and threaten those in the affected areas. Class 3 to 3.5 FIS areas comprise 22% of Cumberland County and 41% of Hoke County, meaning that if wildfires were to occur in these areas, flames could reach up to 9 feet in length and be difficult to suppress without aircraft or engine support. There is an increased potential for harm or damage to life and property.

Areas categorized as Class 4 to 4.5 FIS, with large flames up to 40ft in length, are not effectively suppressed by indirect methods such as firefighters, engines, or dozers. This represents 12% of Cumberland County and 15% of Hoke County. If these areas experience wildfire, there is a risk of significant property damage and the potential for loss of life and severe injury. There are 5.266 acres in Cumberland County and 1,429 acres in Hoke County that are classified as 4.5 on the FIS, which falls between High and Very High intensity conditions.

[97] Pyrologix. (2023). *Functional Wildland Urban Interface* [Dataset]. Southern Wildfire Risk Assessment Portal. https://wrap.southernwildfirerisk.com/Map/Public/#whats-your-risk

Table 5-55: SWRAP Characteristic Fire Intensity Scale (FIS) Ratings for the Planning Area, Including Acres and Percent of Total Planning Area[98]

Characteristic Fire Intensity Scale Category	Cumberland		Hoke	
	Acres	Percent	Acres	Percent
0	136,390	32 %	56,557	23 %
1 - Very Low	36,020	9 %	21,232	8 %
1.5	53,741	13 %	12,494	5 %
2 - Low	32,474	8 %	14,849	6 %
2.5	16,658	4 %	7,697	3 %
3 - Moderate	55,451	13 %	62,502	25 %
3.5	37,848	9 %	39,755	16 %
4 - High	47,567	11 %	34,584	14 %
4.5	5,266	1 %	1,429	1 %
5 - Very High	0	0 %	0	0 %
> 5	0	0 %	0	0 %
Total	**421,415**	**100 %**	**251,099**	**100 %**

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 move into 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.[99] The FIS layer was used to develop the following risk maps. The FIS is based on the severity of wildfire if it occurred, but does not provide a measure of susceptibility.

[98] Pyrologix. (2023). *Characteristic Fire Intensity Scale* [Dataset]. Southern Wildfire Risk Assessment Portal. https://wrap.southernwildfirerisk.com/Map/Public/#whats-your-risk

[99] Southern Group of State Foresters. (2022). *Southern Wildfire Risk Explorer: North Carolina Advanced Viewer* [Dataset]. Southern Wildfire Risk Assessment Portal. https://wrap.southernwildfirerisk.com/Map/Public/#whats-your-risk

Figure 5-122: Cumberland County WUI Map from the SWRAP[100]

[100] Southern Group of State Foresters. (2022). *Southern Wildfire Risk Explorer: North Carolina Advanced Viewer* [Dataset]. Southern Wildfire Risk Assessment Portal. https://wrap.southernwildfirerisk.com/Map/Public/#whats-your-risk

Figure 5-123: Hoke County WUI Map from the SWRAP[101]

[101] Southern Group of State Foresters. (2022). *Southern Wildfire Risk Explorer: North Carolina Advanced Viewer* [Dataset]. Southern Wildfire Risk Assessment Portal. https://wrap.southernwildfirerisk.com/Map/Public/#whats-your-risk

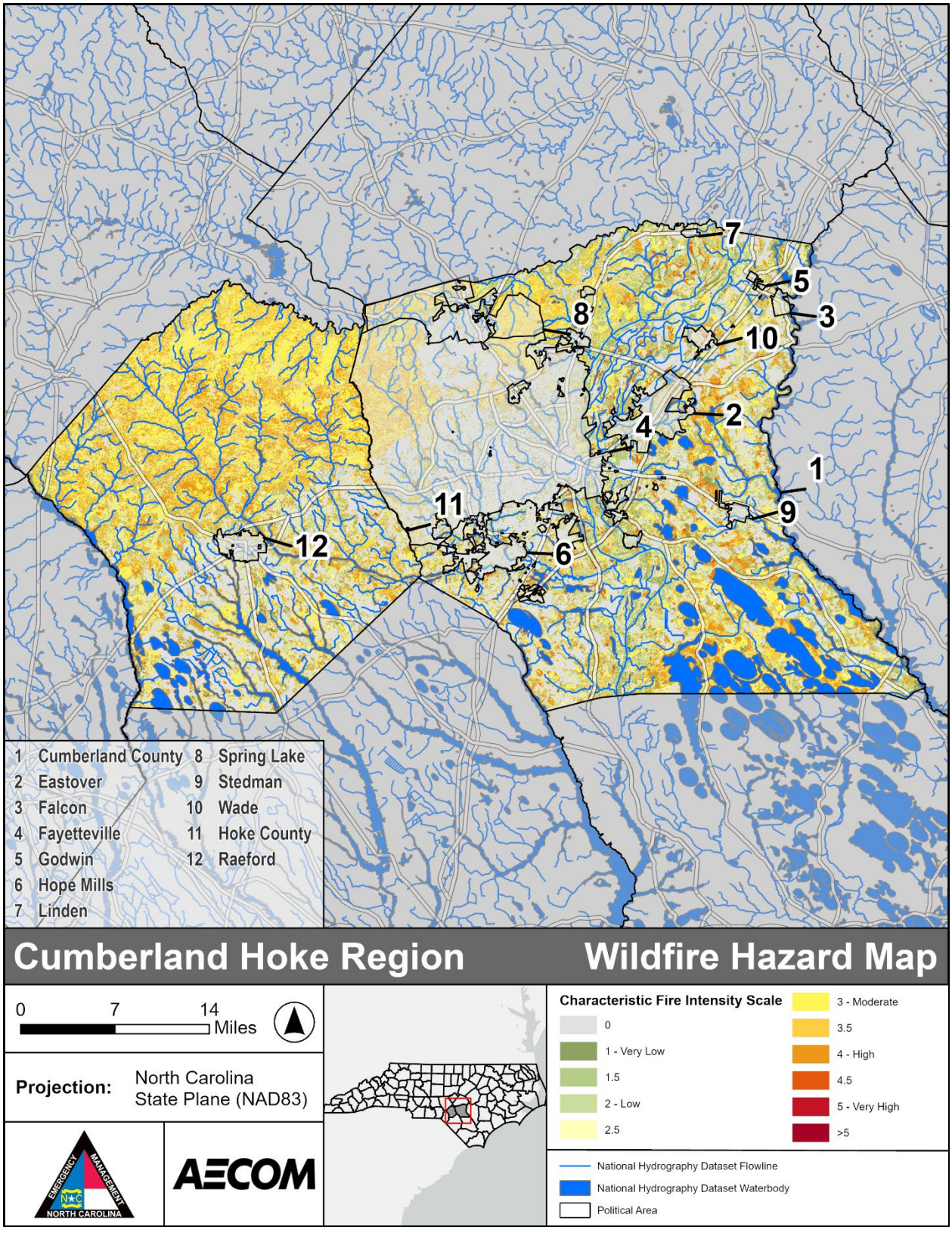


Figure 5-124: Cumberland-Hoke Wildfire Hazard Map

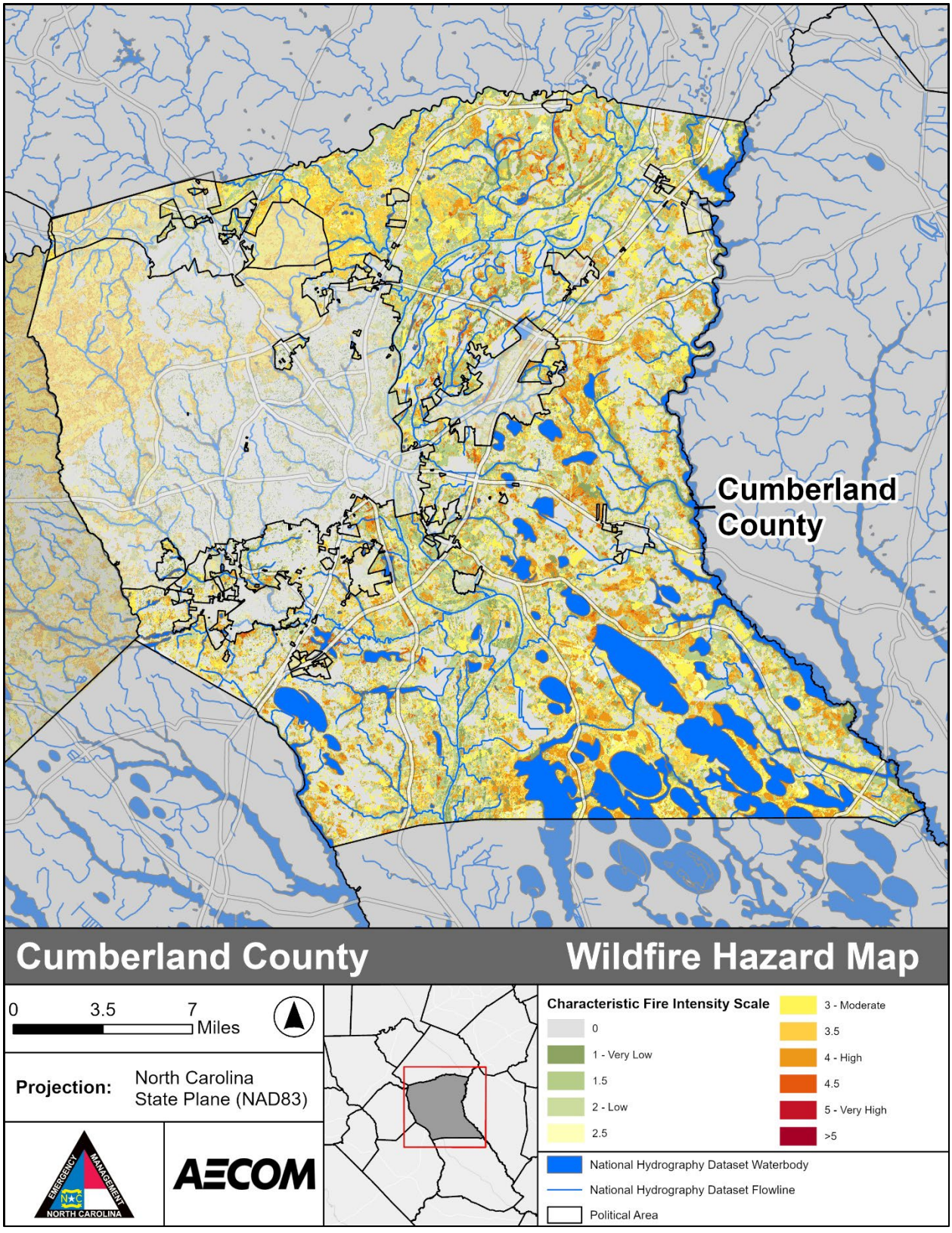


Figure 5-125: Cumberland County Wildfire Hazard Map

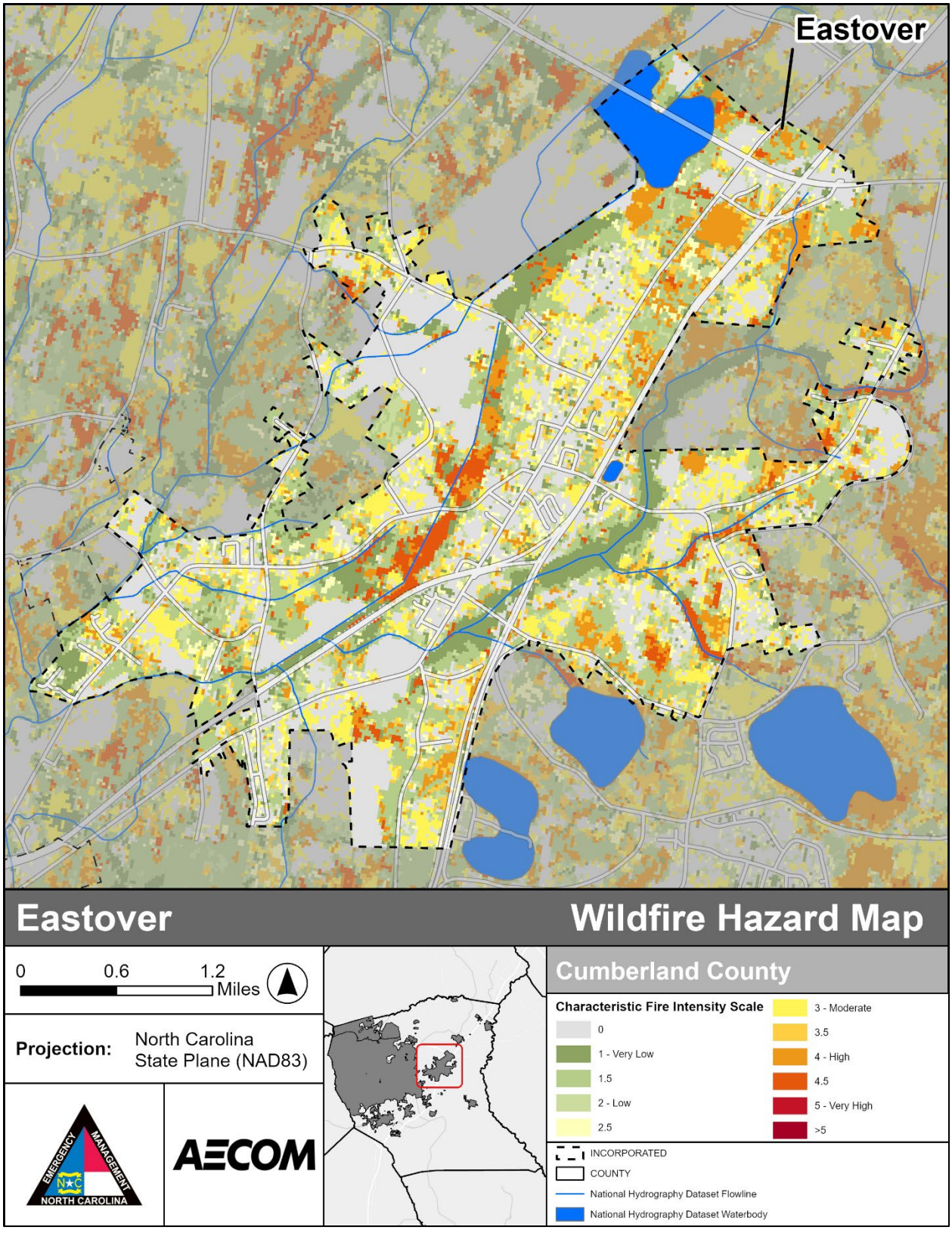


Figure 5-126: Town of Eastover Wildfire Hazard Map

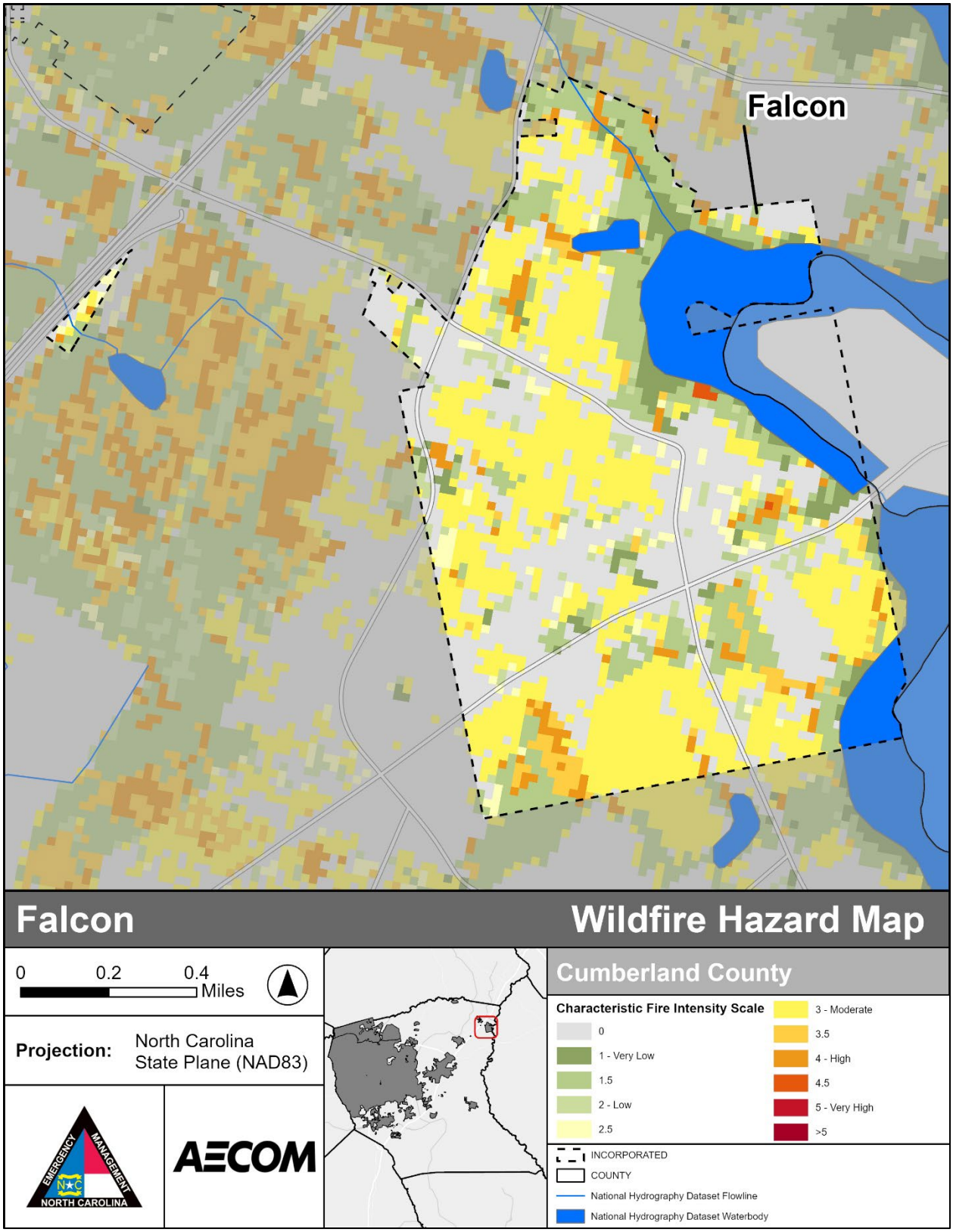


Figure 5-127: Town of Falcon Wildfire Hazard Map

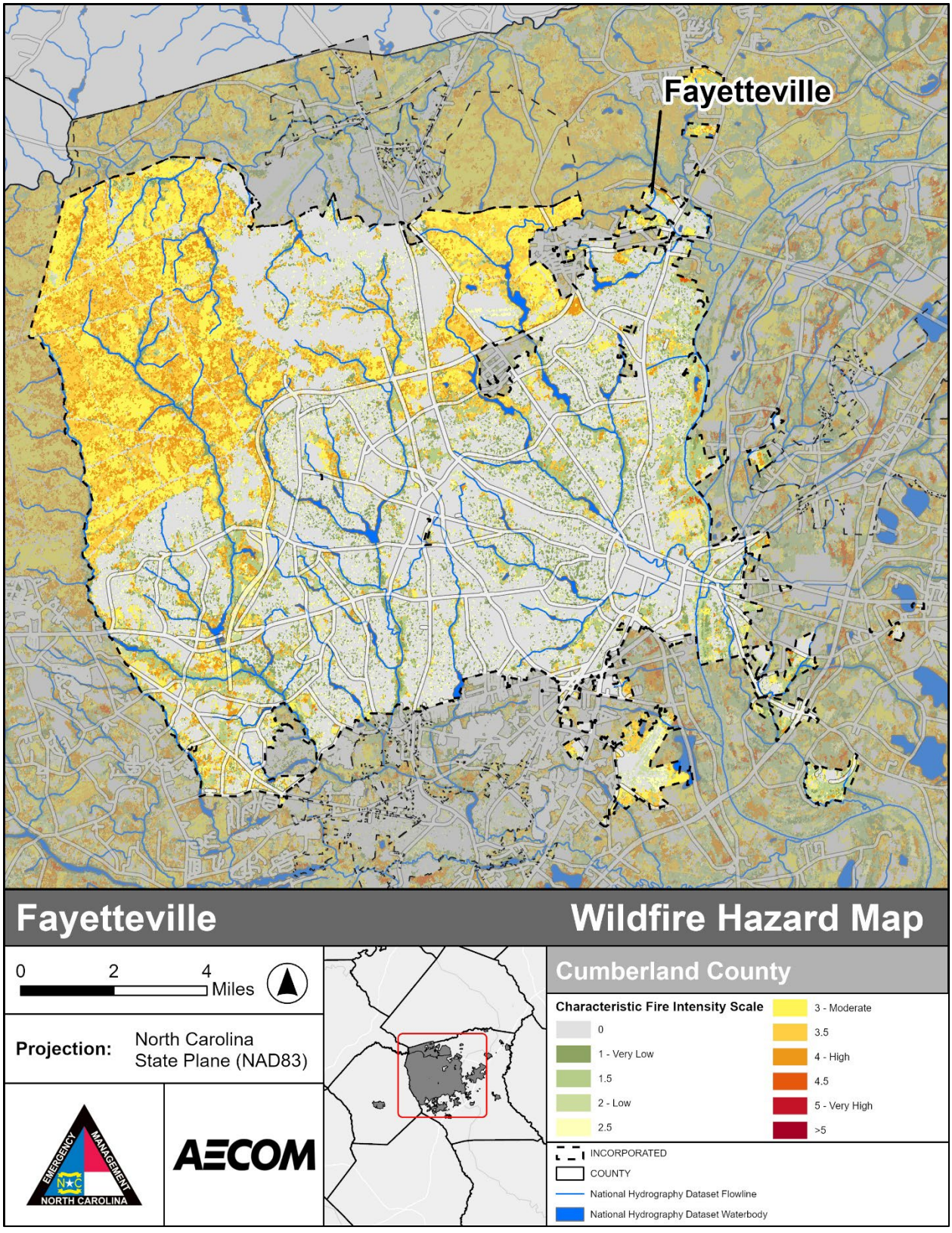


Figure 5-128: City of Fayetteville Wildfire Hazard Map

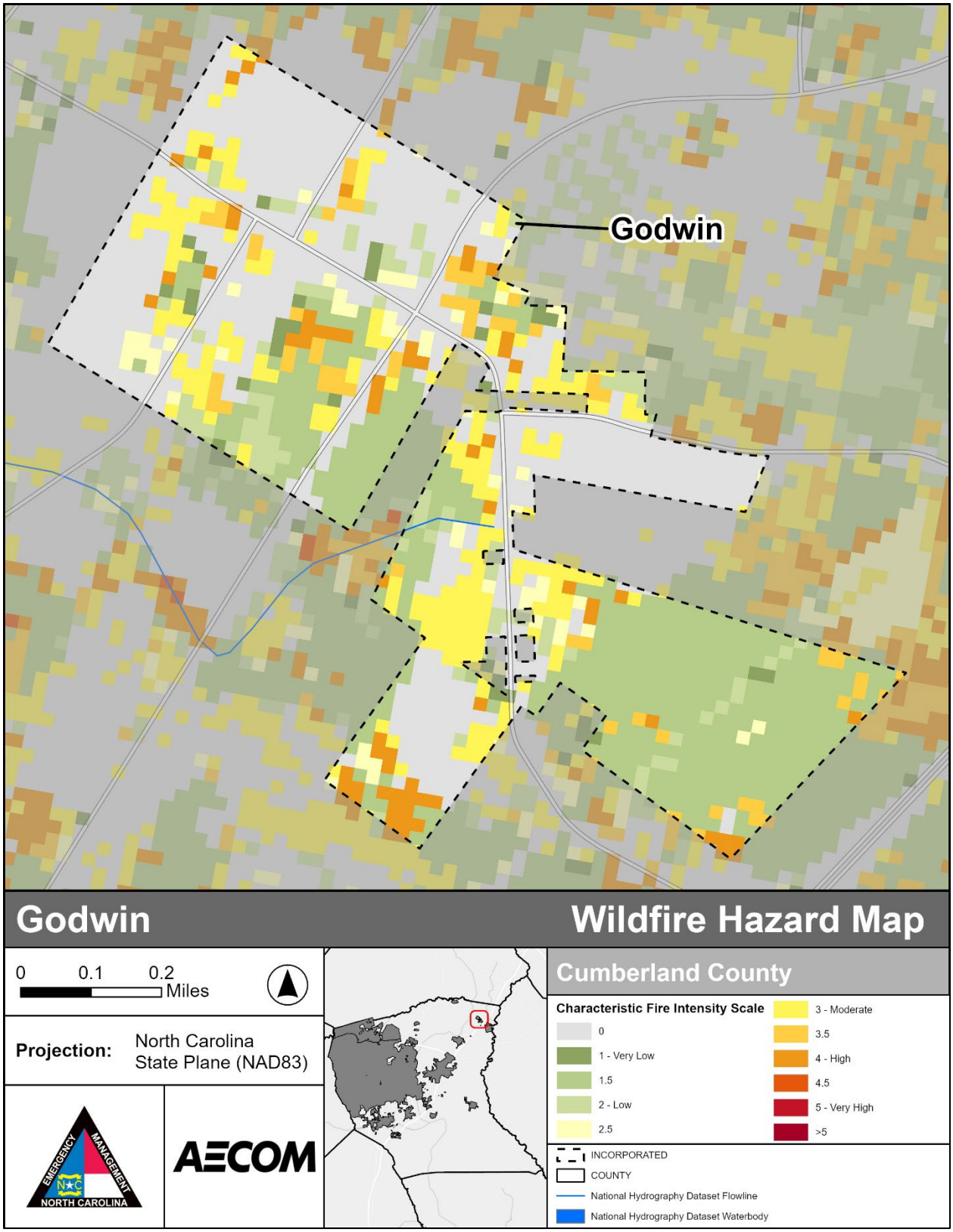


Figure 5-129: Town of Godwin Wildfire Hazard Map

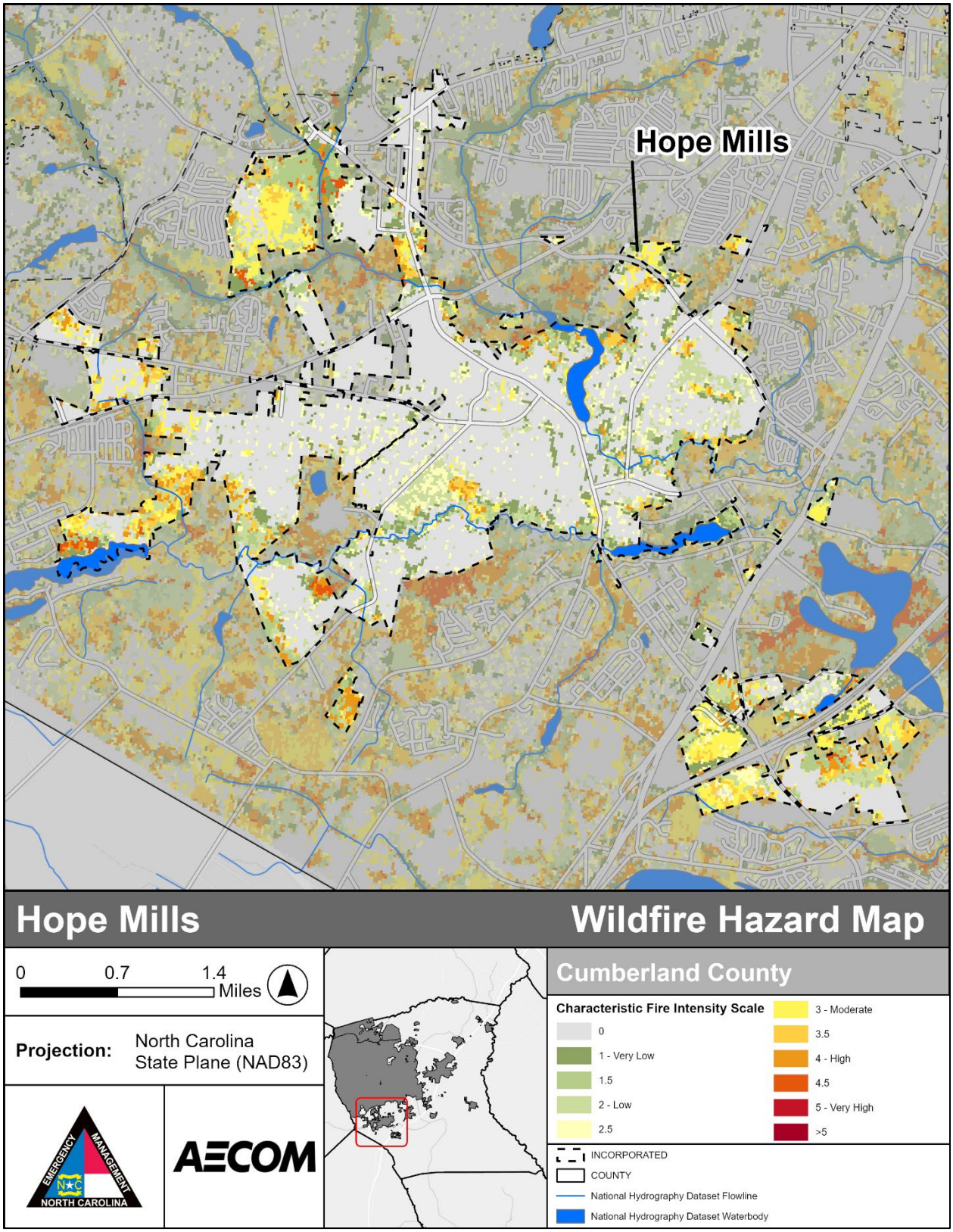


Figure 5-130: Town of Hope Mills Wildfire Hazard Map

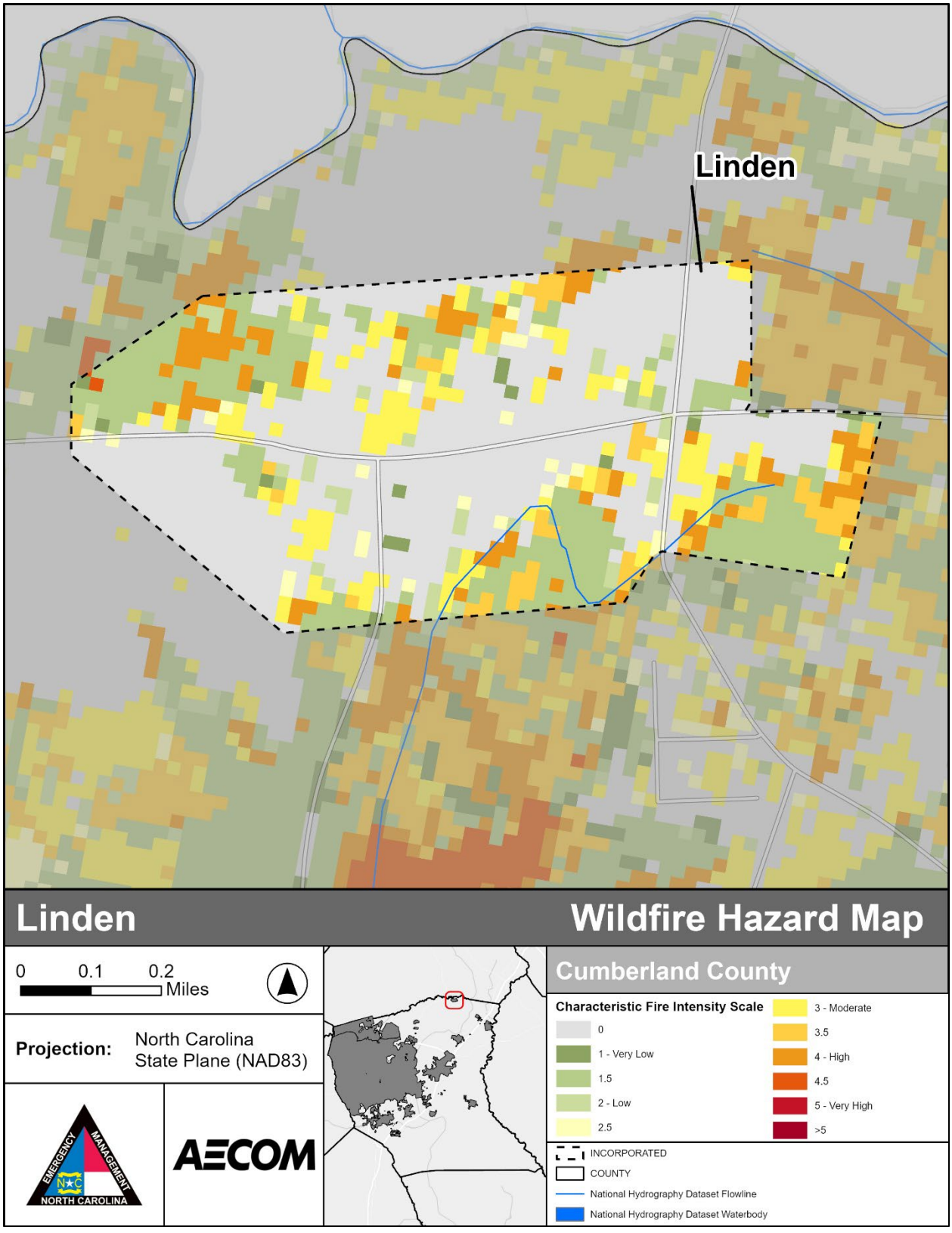


Figure 5-131: Town of Linden Wildfire Hazard Map

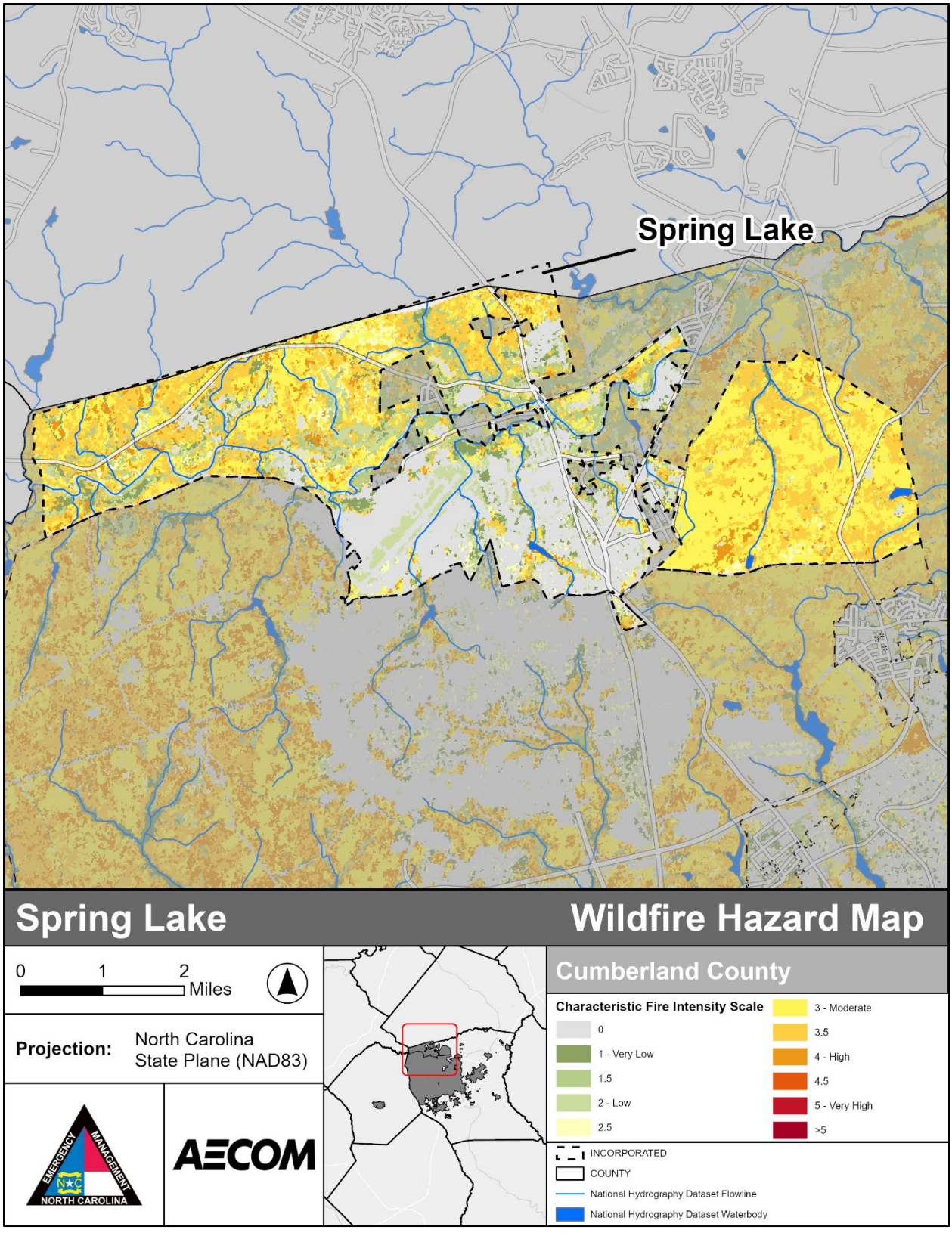


Figure 5-132: Town of Spring Lake Wildfire Hazard Map

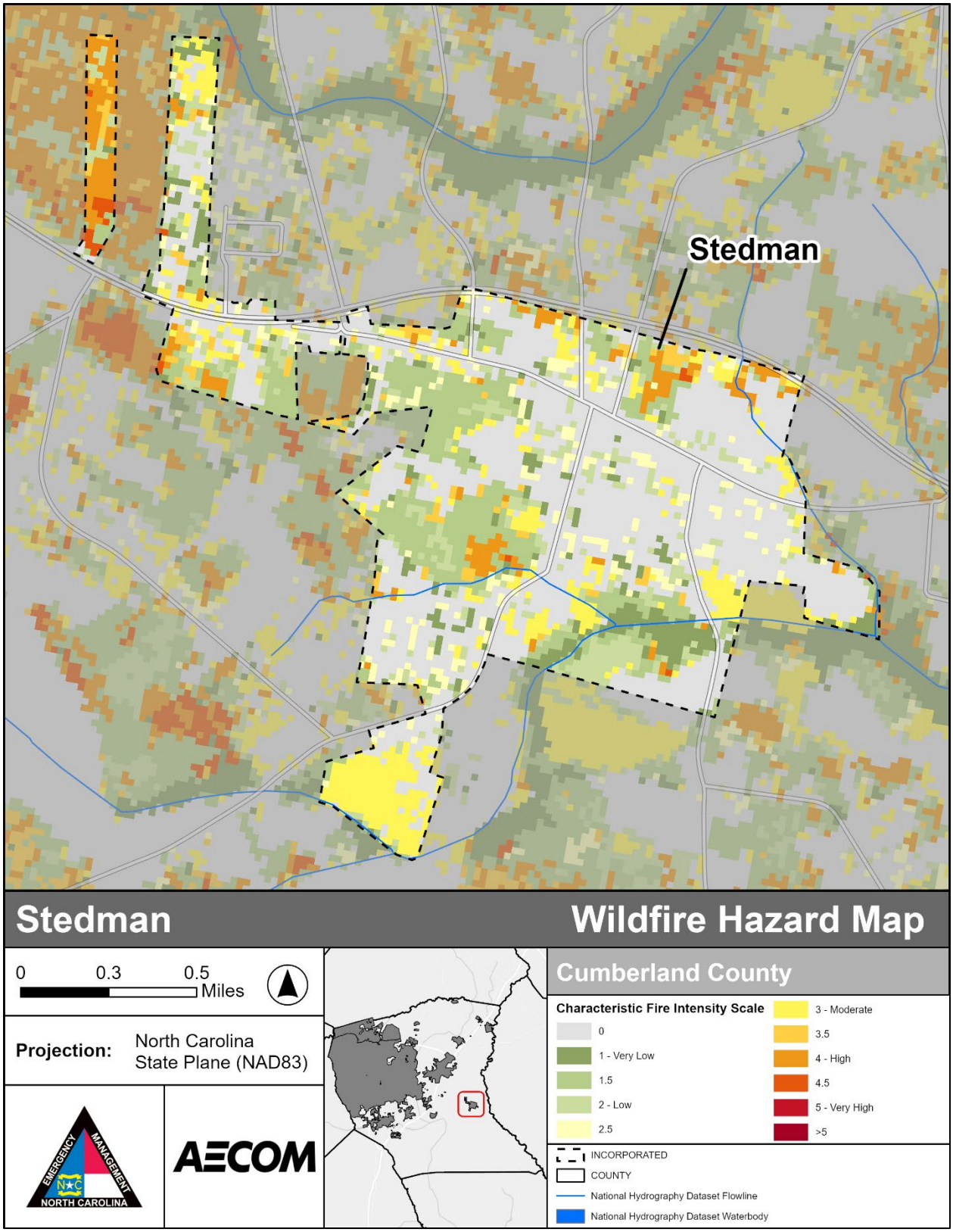


Figure 5-133: Town of Stedman Wildfire Hazard Map

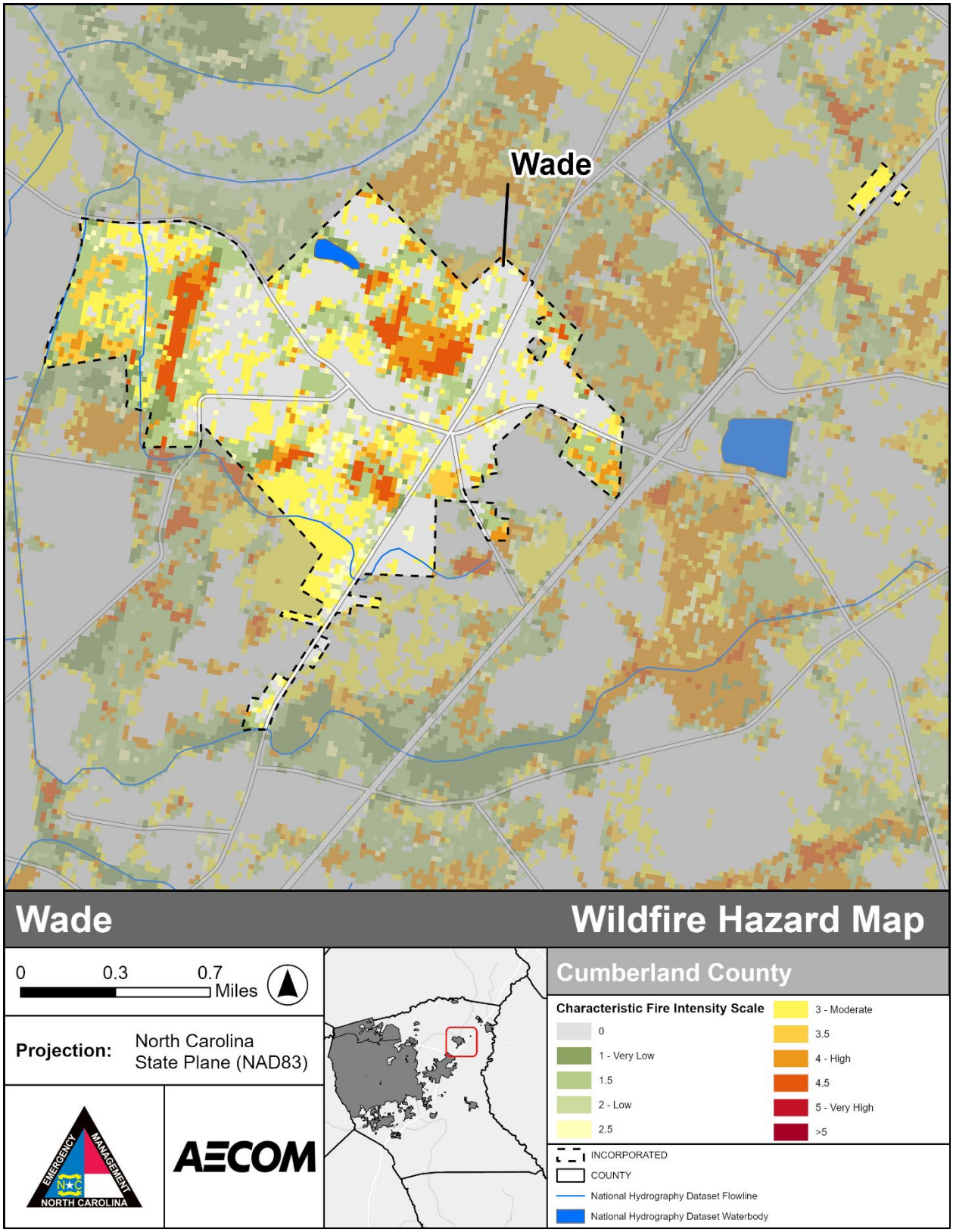


Figure 5-134: Town of Wade Wildfire Hazard Map

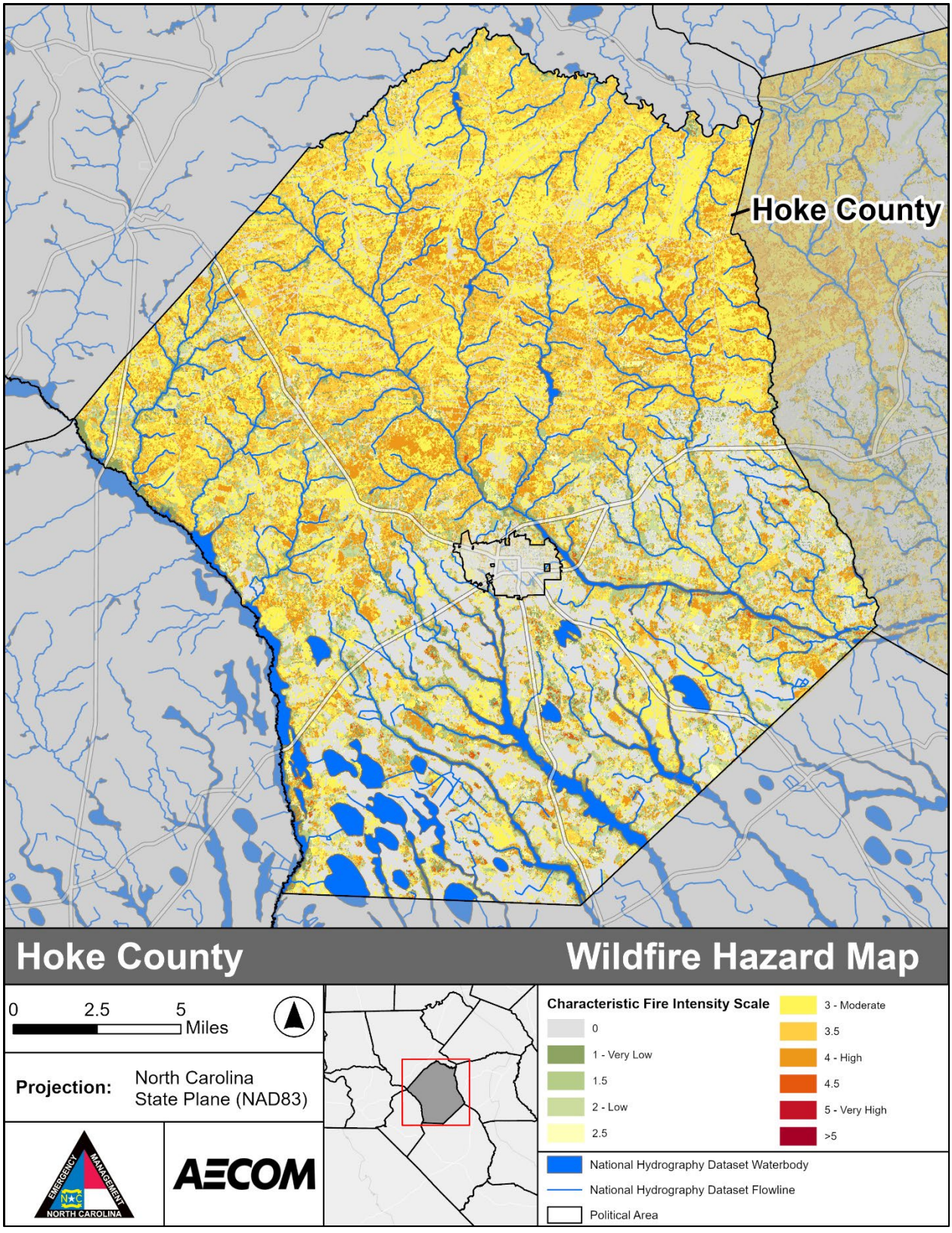


Figure 5-135: Hoke County Wildfire Hazard Map

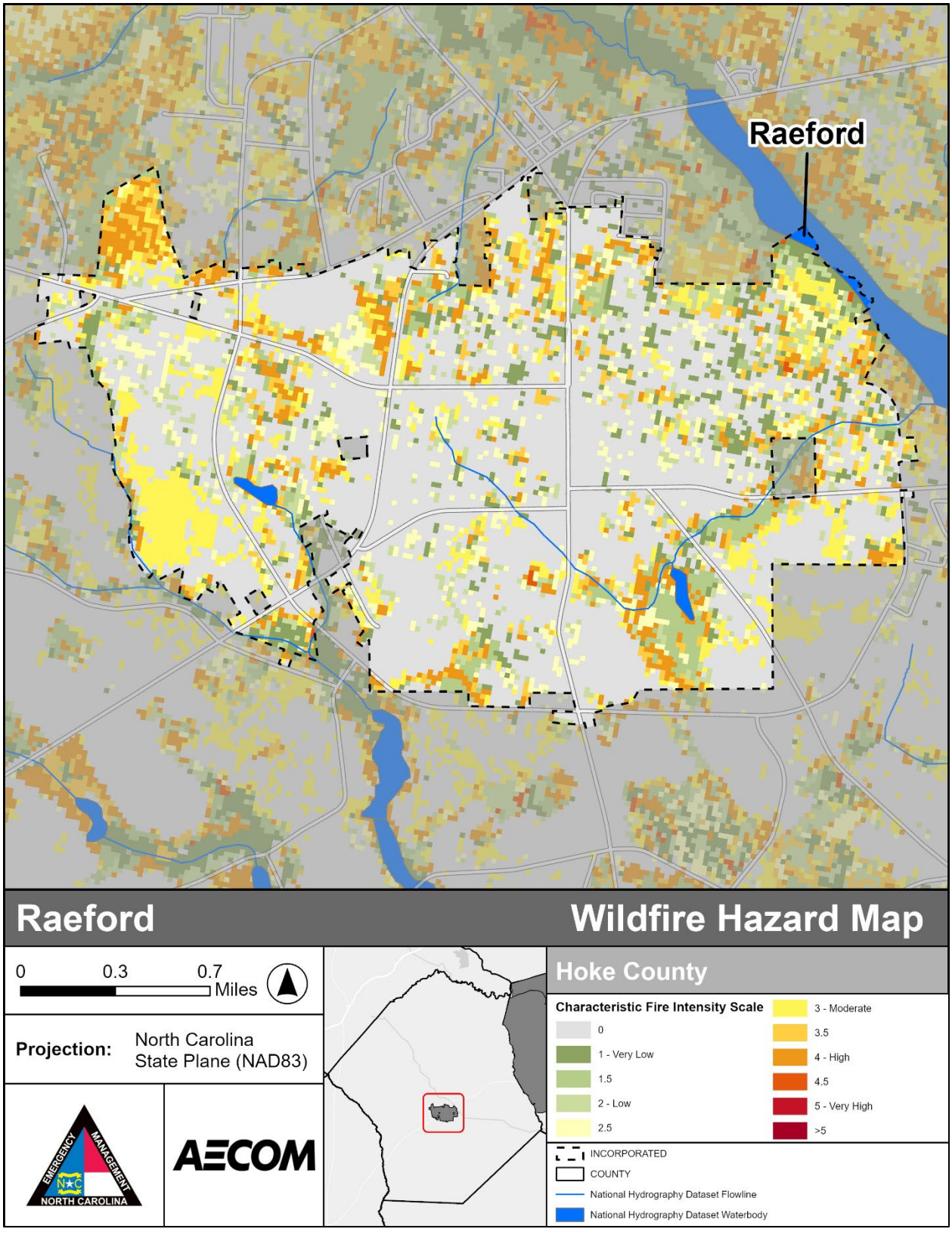


Figure 5-136: City of Raeford Wildfire Hazard Map

5.10.3. Past Occurrences

The average size of wildfires in the Region is typically small. There were no wildfires reported in the area by the NCEI Storm Events Database or the Interagency Wildfire Perimeter History,[102] but the National Association of State Foresters (NASF) reports that approximately 16,905 acres were impacted by wildfire in the planning area between 2001 and 2021.[103] In Cumberland County, the average wildfire incident reported between 2001 and 2021 burned 7.11 acres, and in Hoke County, the average wildfire burned 5.68 acres.

Table 5-56: National Association of State Foresters Wildfire Occurrence Summary of Events Between 2001 and 2021[104]

County	Events Reported	Injuries	Fatalities	Residences Threatened	Residences Destroyed	Other Structures Threatened	Other Structures Destroyed	Final Fire Acre Quantity
Cumberland	1,193	0	0	921	2	288	24	8,486.36
Hoke	1,483	6	0	845	6	529	42	8,418.25
Planning Area Total	**2,676**	**6**	**0**	**1,766**	**8**	**817**	**66**	**16,904.61**

5.10.4. Probability of Future Occurrences

The NRI uses the US Department of Agriculture (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) 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 susceptible, so any area with a BP higher than zero would be considered exposed.

Based on the NRI Wildfire Risk data, Cumberland County has an exposure area of 14.71 Mi^2, an annualized frequency of 0.00052, a total EAL of $462,973, an EAL Score of 80.97, and a Hazard Risk Index Score of 81.93, both of which are scores that fall into the Very High Risk Ratings. The highest average annualized frequency of occurrence is for census tracts that overlap Stedman (0.00052 events per year), Eastover (0.00038 events per year), and Linden (0.00034 events per year). Census tracts that overlap unincorporated areas in Cumberland County have a total exposure area of 0.83 mi^2, an average annualized frequency of 0.00039, a

[102] National Interagency Fire Center. (2025). *Interagency Wildland Fire Perimeter History (IFPH)* [Geodatabase]. National Interagency Fire Center Open Data Site. https://data-nifc.opendata.arcgis.com/datasets/nifc::interagencyfireperimeterhistory-all-years-view/about

[103] National Association of State Foresters. (2025). *National Association of State Foresters Fire Data Extract* [Tabular]. Fire and Aviation Management Web Applications (FAMWeb). https://famprod.nwcg.gov/cognos11/bi/?pathRef=.public_folders%2FFAMWEB%2BData%2BWarehouse%2FPublic%2BAccess%2BReports%2FFire%2BData%2BExtract%2FNASF%2BState%2BData%2BExtract

[104] National Association of State Foresters. (2025). *National Association of State Foresters Fire Data Extract* [Tabular]. Fire and Aviation Management Web Applications (FAMWeb). https://famprod.nwcg.gov/cognos11/bi/?pathRef=.public_folders%2FFAMWEB%2BData%2BWarehouse%2FPublic%2BAccess%2BReports%2FFire%2BData%2BExtract%2FNASF%2BState%2BData%2BExtract

total EAL of $22,225, an average EAL Score of 83.67, and an average Hazard Risk Index Score of 84.02.

In Hoke County, there are 7.68 mi² of exposed areas to wildfire hazards, an annualized frequency of 0.00047 events per year, a total EAL of $224,336, an EAL Score of 73.62, and a Hazard Risk Index Rating of 75.79. Raeford and census tracts that overlap Raeford have an exposure area of 4.89 mi², a total EAL of $125,612, an average annualized frequency of 0.00045, an average EAL Score of 87.92, and an average Hazard Risk Index Score of 89.58. Census tracts of unincorporated areas in Hoke County have an exposure area of 1.8 mi², a total EAL of $33,739, an average annualized frequency of 0.00046, an average EAL Score of 84.61, and an average Hazard Risk Index Score of 86.03.

Table 5-57: NRI Wildfire Exposure Area, Annualized Frequency, EAL Total, EAL Score, and Hazard Risk Index Score

Jurisdiction	Exposure Area (Mi²)	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Rating
Cumberland County (Unincorporated Area)	0.83	0.00039	$22,225	83.67	Very High	84.02	Very High
Eastover	1.88	0.00038	$42,262	82.19	Very High	83.57	Very High
Falcon	0.74	0.00018	$1,930	59.30	Relatively Moderate	61.53	Relatively High
Fayetteville	8.44	0.00019	$348,701	61.76	Relatively High	63.83	Relatively High
Godwin	0.78	0.00017	$6,994	82.59	Very High	83.98	Very High
Hope Mills	1.84	0.00029	$98,592	74.41	Relatively High	76.23	Relatively High
Linden	1.39	0.00034	$37,294	90.40	Very High	91.29	Very High
Spring Lake	2.95	0.00030	$116,748	69.00	Relatively High	69.72	Relatively High
Stedman	0.81	0.00052	$27,255	82.73	Very High	82.23	Very High
Wade	1.16	0.00025	$8,699	77.68	Relatively High	79.69	Relatively High
Cumberland County Total	**14.71**	**0.00052**	**$462,973**	**80.97**	**Very High**	**81.93**	**Very High**
Hoke County (Unincorporated Area)	1.80	0.00046	$33,739	84.61	Very High	86.03	Very High
Raeford	4.89	0.00045	$125,612	87.92	Very High	89.58	Very High
Hoke County Total	**7.68**	**0.00047**	**$224,336**	**73.62**	**Relatively High**	**75.79**	**Relatively High**

5.10.5. Consequence and Impact Analysis

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.

Changes in Development

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.

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. Wildfires can also have positive effects on local economies. Positive effects come from economic activity generated in the community during fire suppression and post-fire rebuilding. These may include forestry support work, such as building fire lines and implementing other defensive measures, or providing firefighting teams with food, ice, and amenities, including temporary shelters, and washing machines.

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.

First Responders

Public and firefighter safety is the 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 volunteers. 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 fire is, the larger the threat to health and safety of first responders who assist with wildfire suppression and response.

Future Conditions

According to the NCCSR, higher annual and seasonal temperatures will increase drying vegetation and conditions that favor wildfires.[105] The increases in wildfires will pose a greater

[105] Kunkel, K. E., Easterling, D. R., Ballinger, A., Bililign, S., Champion, S. M., Corbett, D. R., Dello, K. D., Dissen, J., Lackmann, G. M., Luettich Jr., R. A., Perry, L. B., Robinson, W. A., Stevens, L. E., Stewart, B. C., & Terando, A. J. (2020). *North Carolina Climate Science Report* (p. 233). North Carolina Institute for Climate Studies. https://ncics.org/programs/nccsr/

threat to human health, emergency services, the economy, first responders, and the planning area.

5.11. Winter Storm (Winter Weather & Ice Storm)

5.11.1. Hazard Description

North Carolina winter weather is characterized by storms that produce snow, sleet, freezing rain, or a wintry mix of precipitation types. Along with wintry precipitation, North Carolina winter weather also includes outbreaks of bitterly cold temperatures. The occurrence of severe winter weather has a substantial impact on communities, utilities, transportation systems, and agriculture, and often results in loss of life due to accidents or hypothermia. In addition, severe winter weather may spawn other hazards, such as flooding, severe thunderstorms, tornadoes, and extreme winds, which may delay recovery efforts. Winter storm events are defined below:

- **Heavy Snow** - Heavy snow can immobilize a community by stranding commuters, closing airports, halting commerce, and disrupting emergency and medical services. The weight of snow can cause roofs to collapse and knock down trees and power lines. Residents may be isolated for days, and unprotected livestock may be lost. The costs of snow removal, damage repairs, and lost business can have severe economic impacts on communities. Snow accumulation meeting or exceedingly locally/regionally defined 12 and/or 24-hour warning criteria, on a widespread or localized basis. For the NWS Office in Raleigh, this means snow accumulation of 3 inches or greater in 12 hours (4 inches or more in 24 hours). In some heavy snow events, structural damage, due to the excessive weight of snow accumulations, may occur in the few days following the meteorological end of the event.
- **Ice Storm** - Ice accretion meeting or exceedingly locally/regionally defined warning criteria. For the NWS Office in Raleigh, this means freezing rain accumulations of ¼ inch or greater on a widespread or localized basis.
- **Winter Storm** - A winter weather event which has more than one significant hazard (i.e., heavy snow and blowing snow; snow and ice; snow and sleet; sleet and ice; or snow, sleet and ice) and meets or exceeds locally/regionally defined 12 and/or 24-hour warning criteria for at least one of the precipitation elements, on a widespread or localized basis.
- **Winter Weather** - A winter precipitation event that causes a death, injury, or a significant impact to commerce or transportation but does not meet locally/regionally defined warning criteria. A Winter Weather event could result from one or more winter precipitation types (snow, blowing/drifting snow, or freezing rain/drizzle), on a widespread or localized basis.

5.11.2. Location and Spatial Extent

The entire Region can be considered at risk from winter storm events. This includes the whole population and all critical facilities, buildings (commercial and residential), and infrastructure. To capture the distribution of winter weather-related hazards, the NRI's Ice Storm and Winter Weather risk data are used to show expected annualized losses and the spatial distribution of winter weather-related hazards and risks. The NRI defines Ice Storms as freezing rain situations, or rain that freezes on contact, resulting in significant ice accumulations of 0.25 inches or more. The NRI uses the USACE Cold Regions Research and Engineering Laboratory

(CRREL) Damaging Ice Storm GIS data, which covers freezing rain events between 1940 and 2014. The NRI defines winter weather events as those in which the main types of precipitation are snow, sleet, or freezing rain. The NRI uses the Iowa State University Iowa Environmental Mesonet for winter weather event data, spanning from November 12, 2005, to October 6, 2022. To best represent the hazards associated with winter storms in the planning area, the following maps illustrate Ice Storm and Winter Storm events, as defined by the NRI and the EAL, at the census tract level.

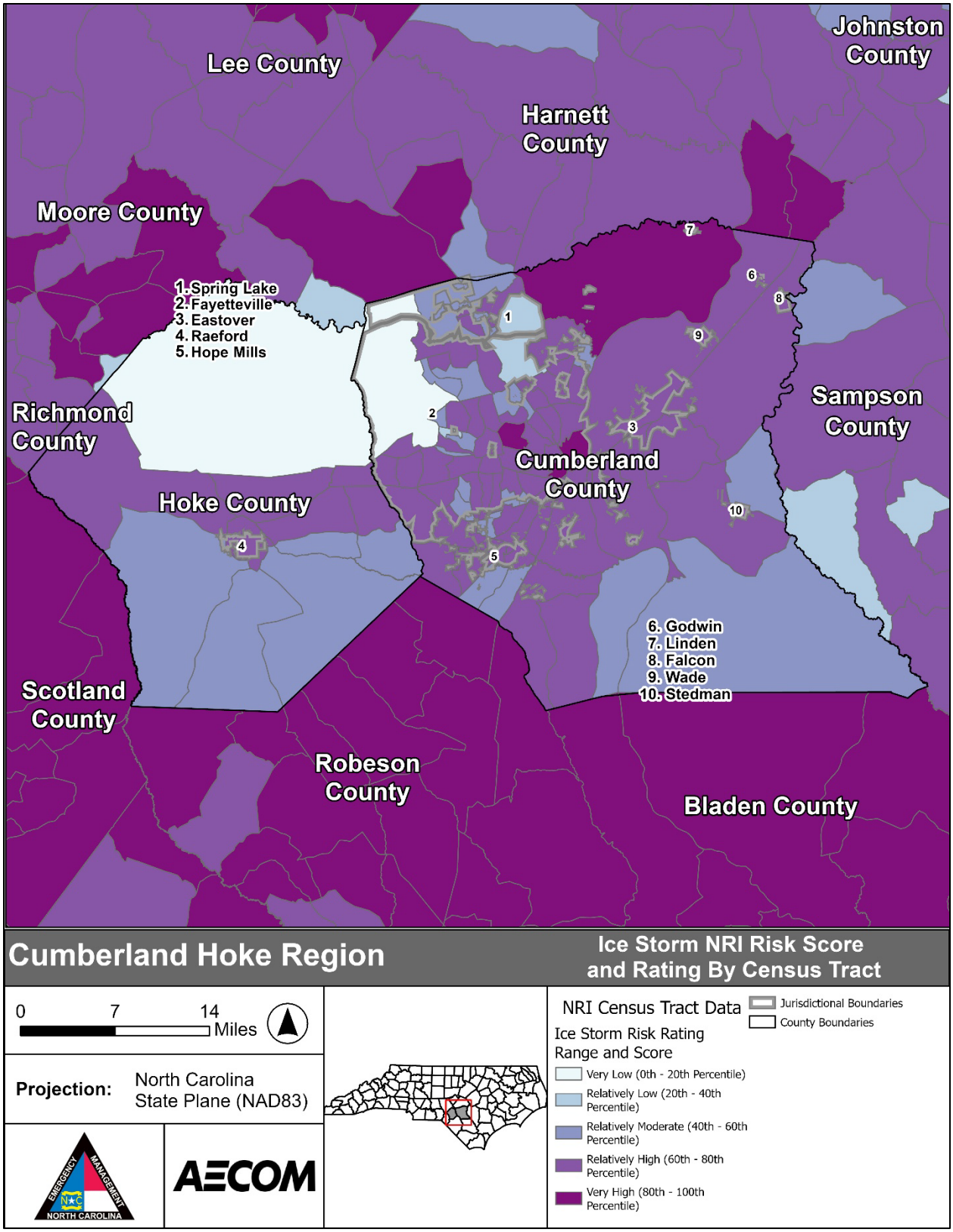


Figure 5-137: Cumberland-Hoke Regional Ice Storm Hazard Map

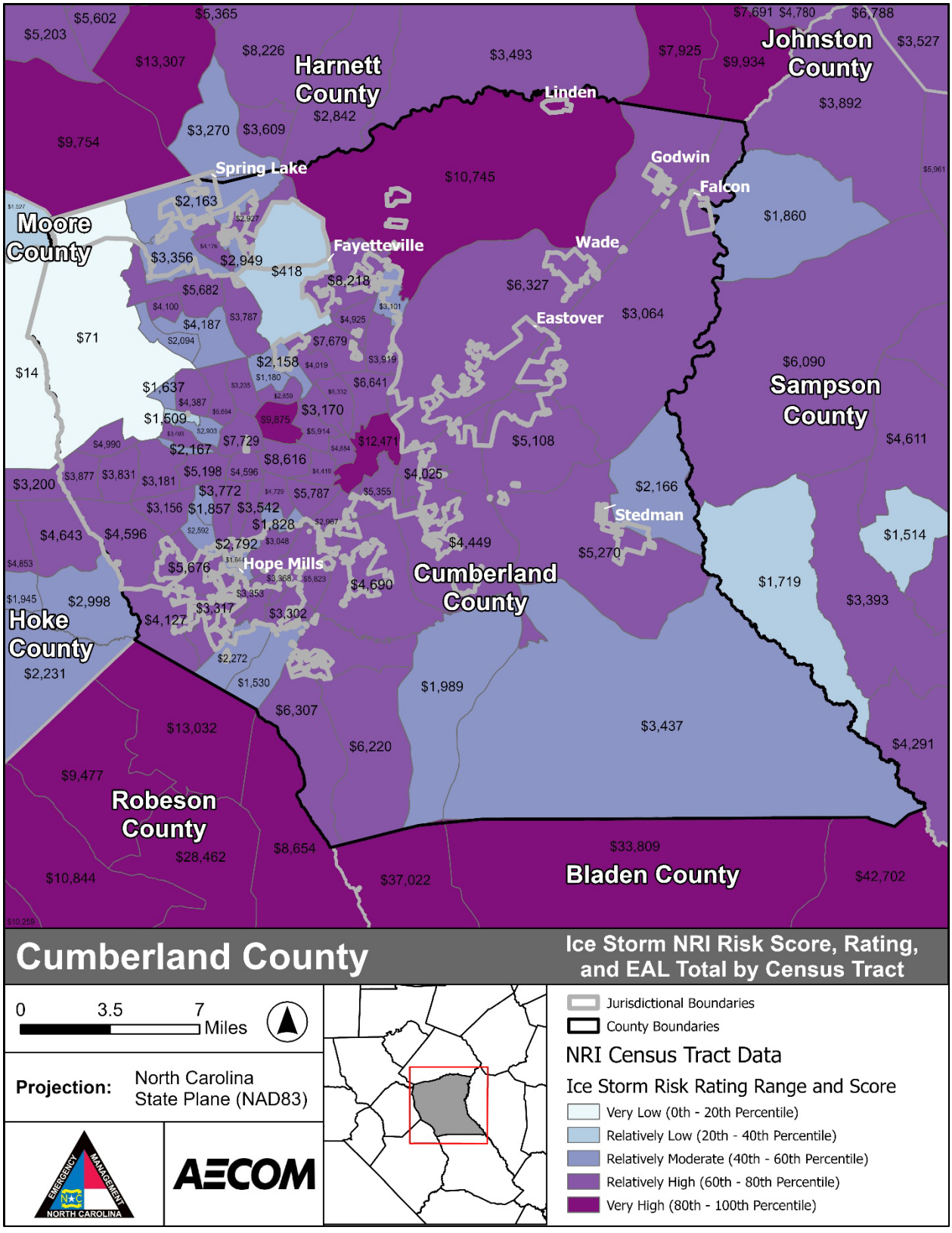


Figure 5-138: Cumberland County Ice Storm Hazard Map

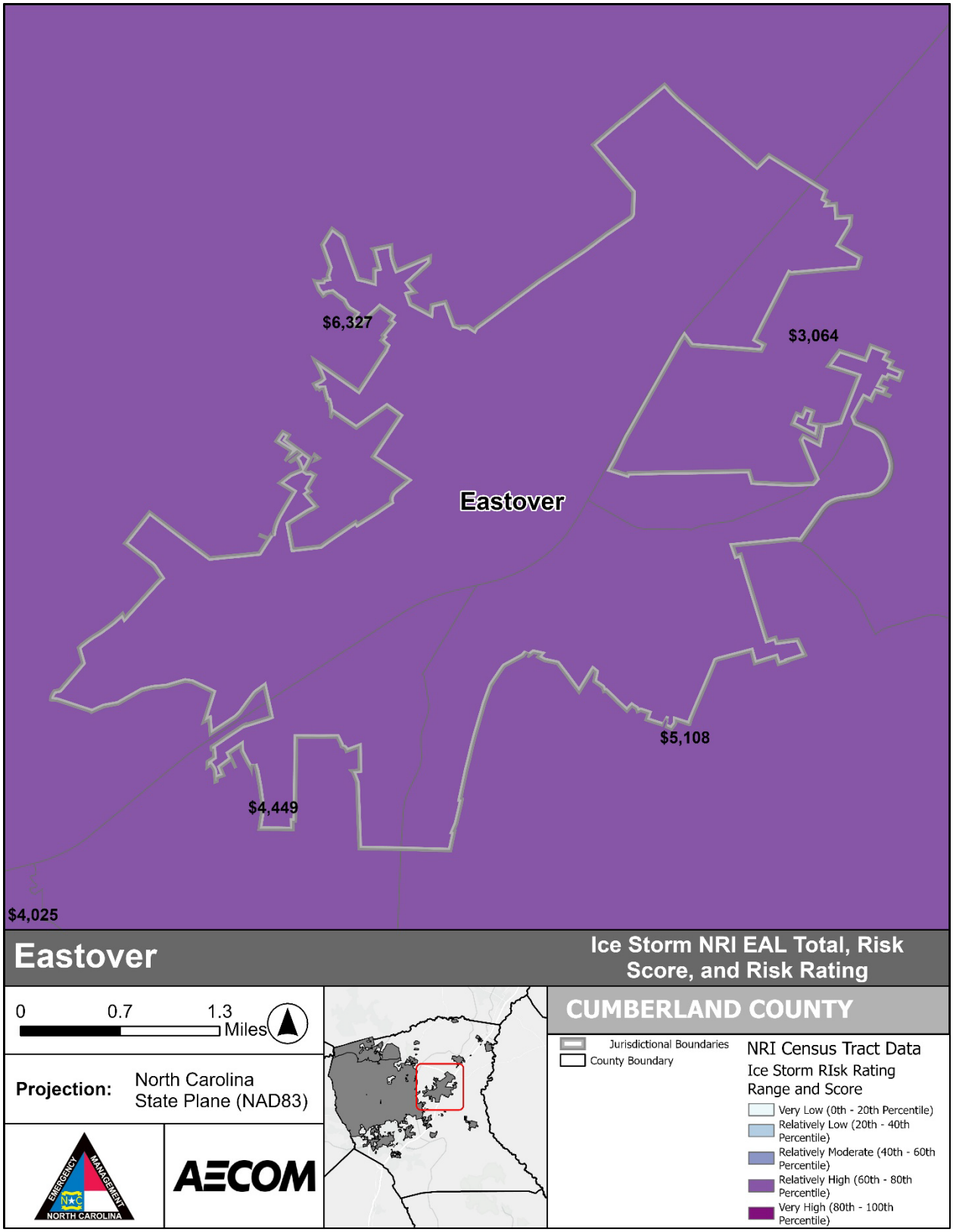


Figure 5-139: Town of Eastover Ice Storm Hazard Map

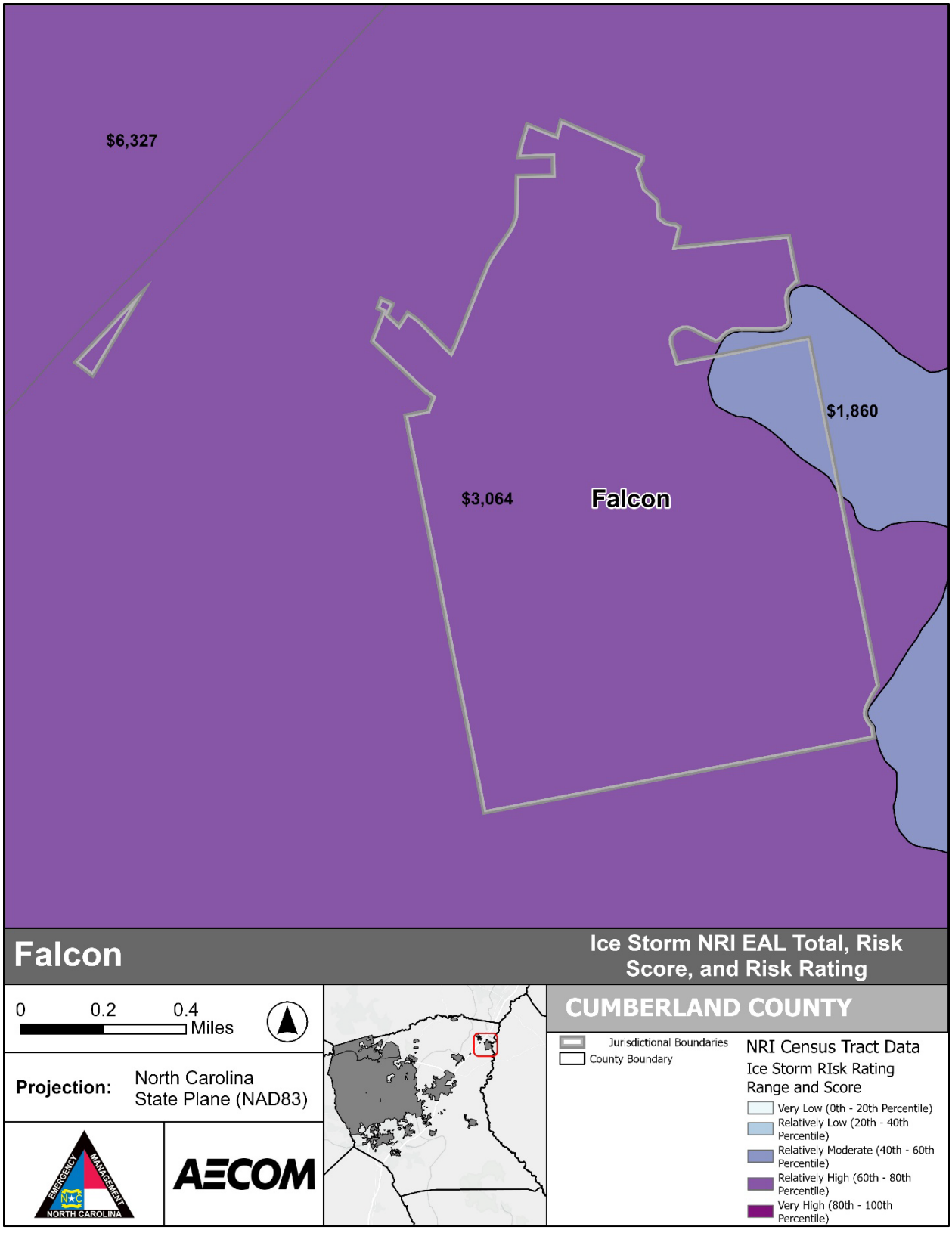


Figure 5-140: Town of Falcon Ice Storm Hazard Map

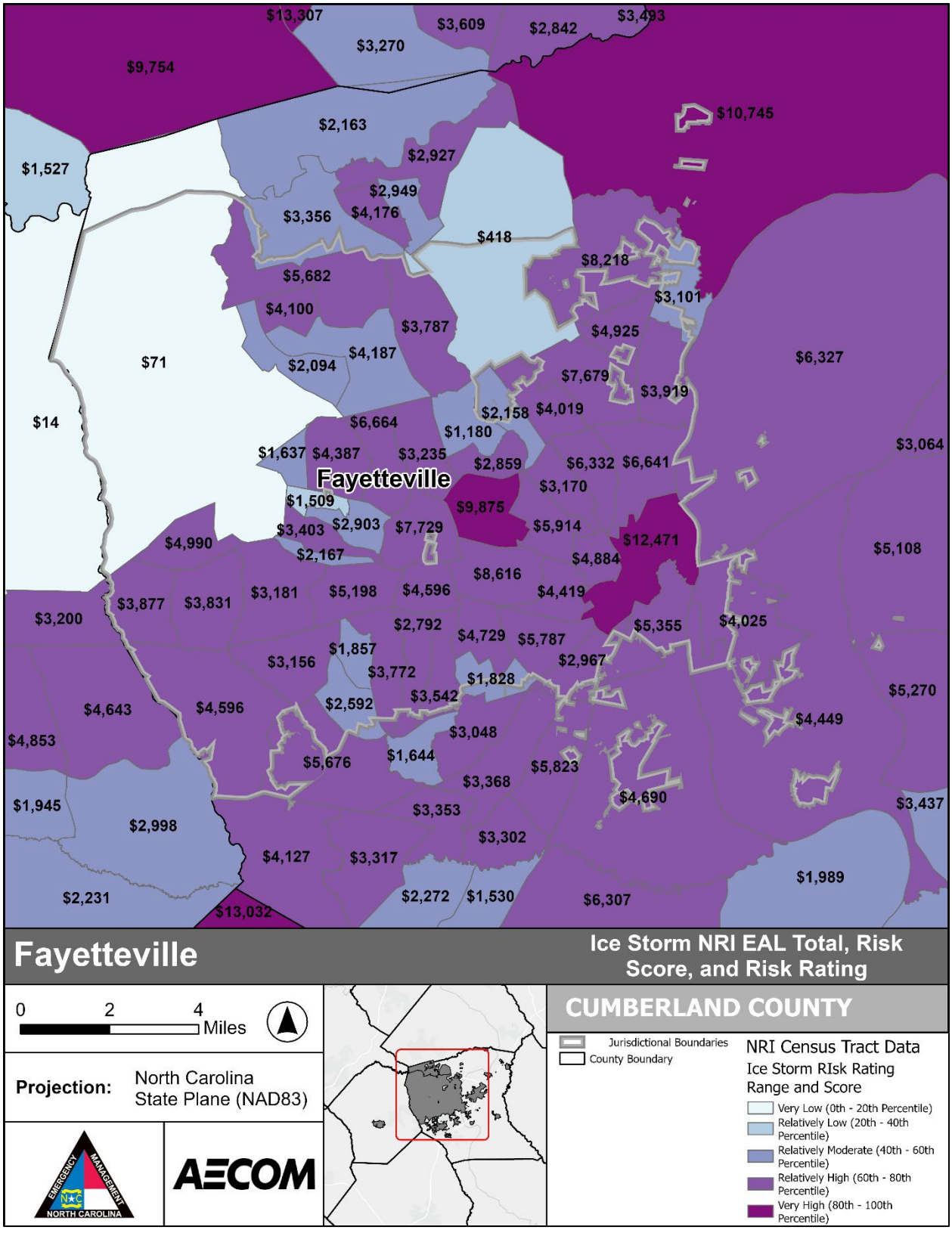


Figure 5-141: City of Fayetteville Ice Storm Hazard Map

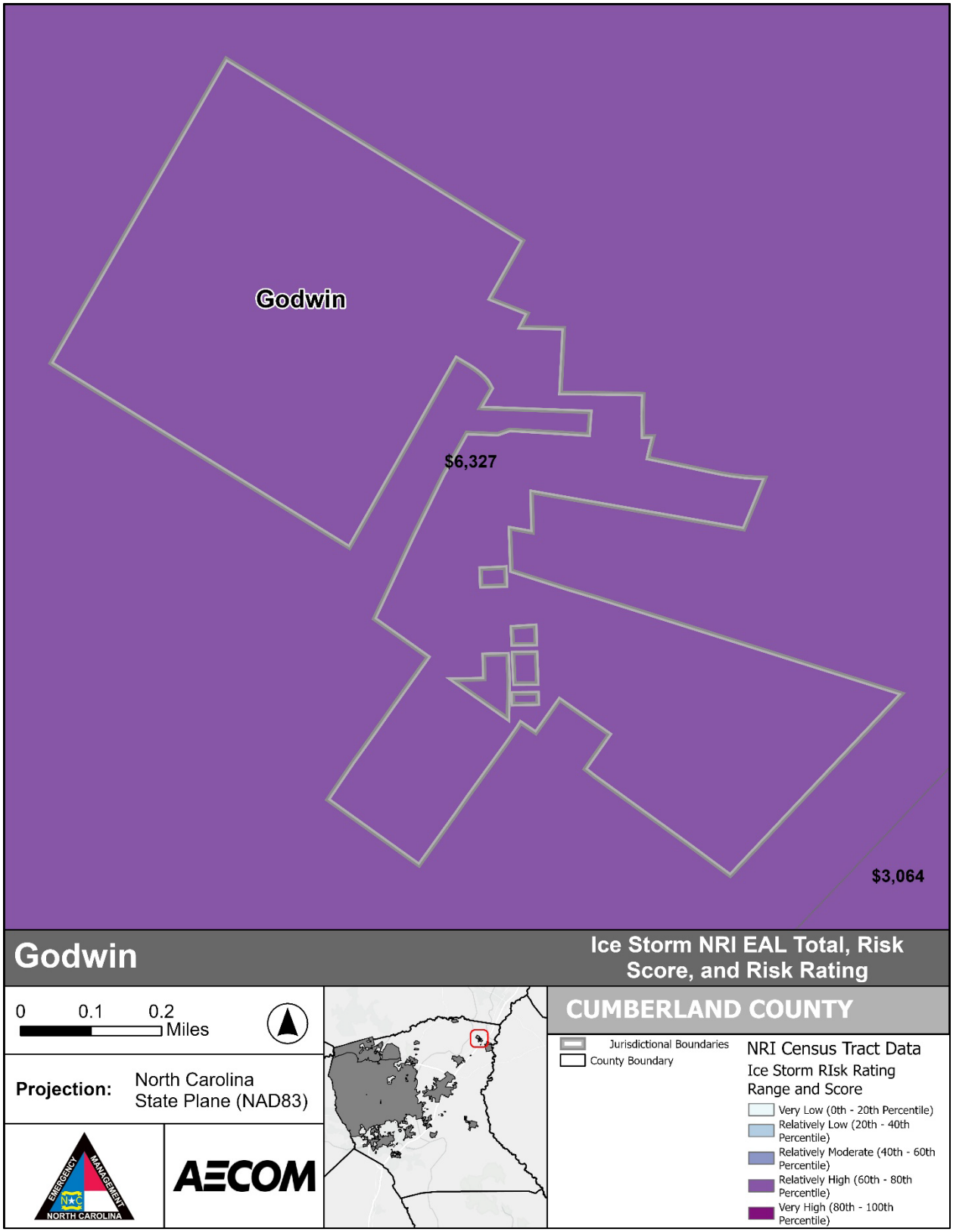


Figure 5-142: Town of Godwin Ice Storm Hazard Map

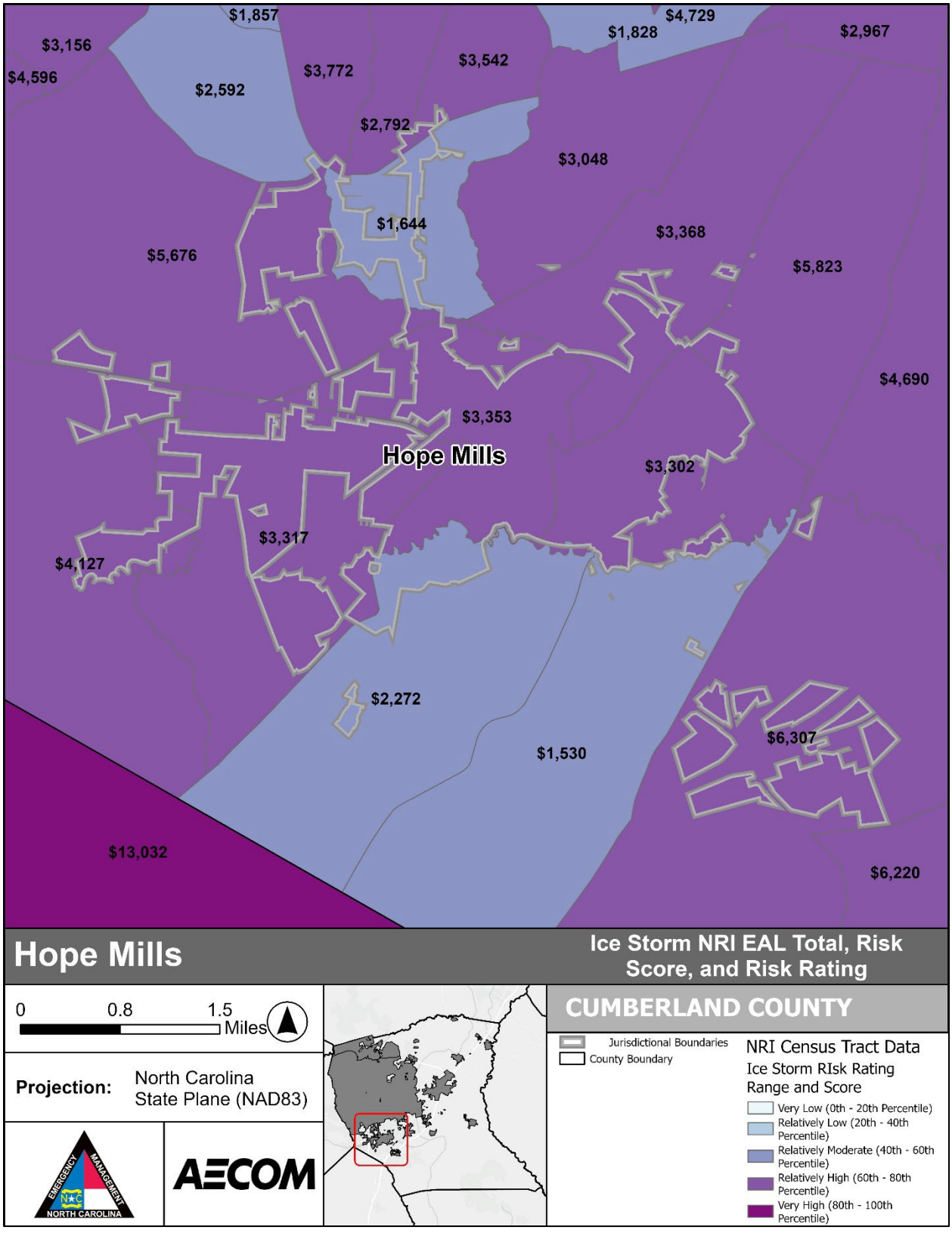


Figure 5-143: Town of Hope Mills Ice Storm Hazard Map

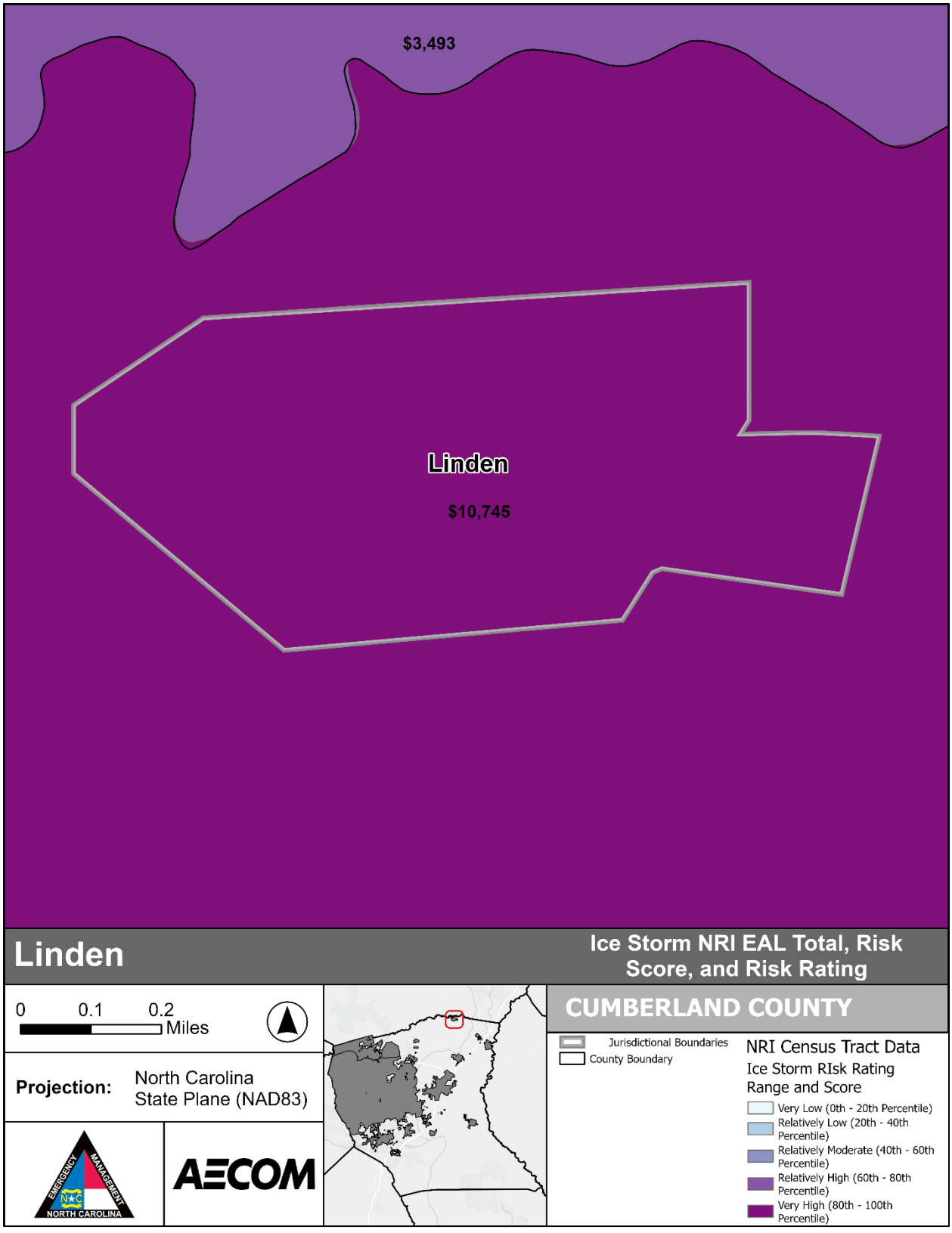


Figure 5-144: Town of Linden Ice Storm Hazard Map

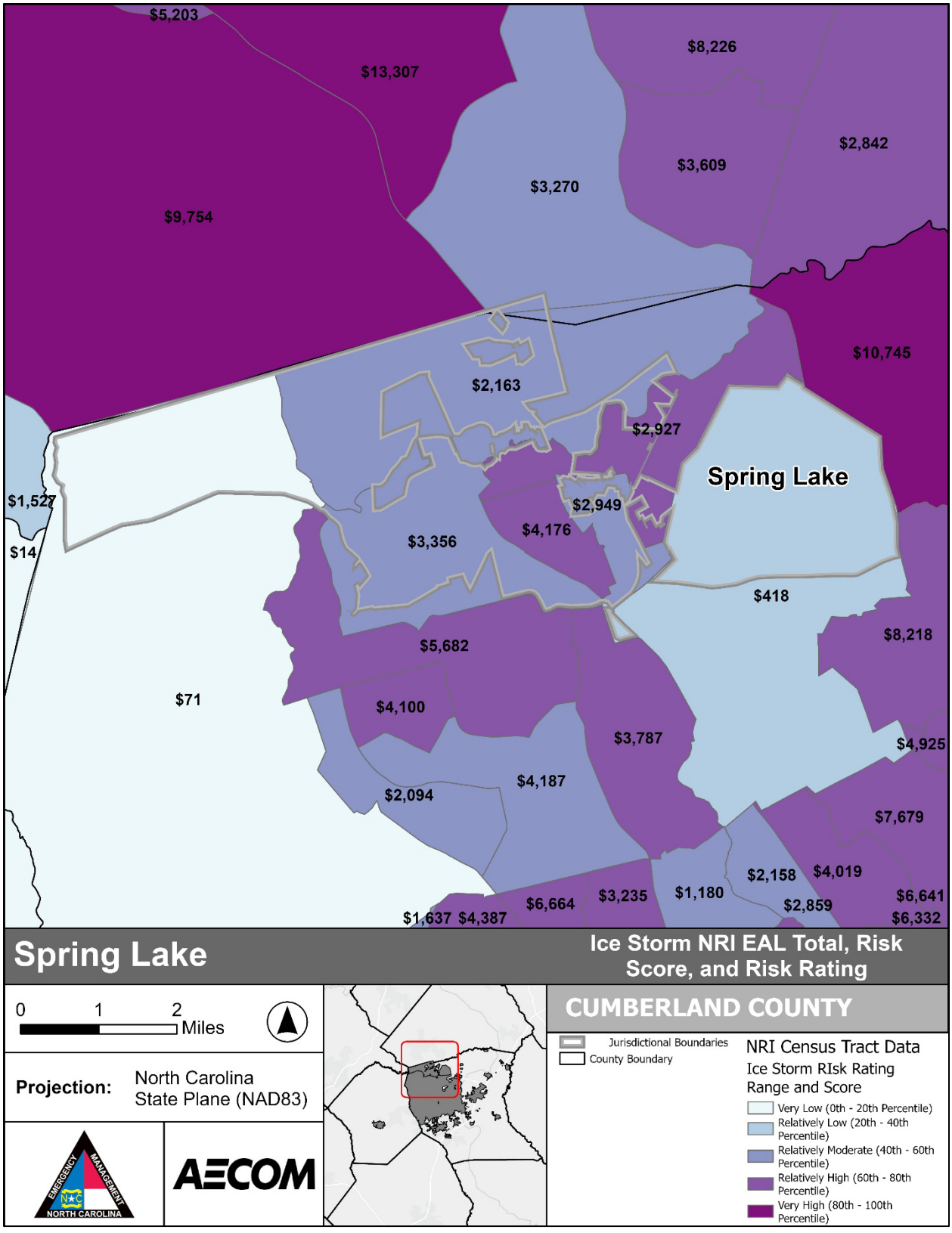


Figure 5-145: Town of Spring Lake Ice Storm Hazard Map

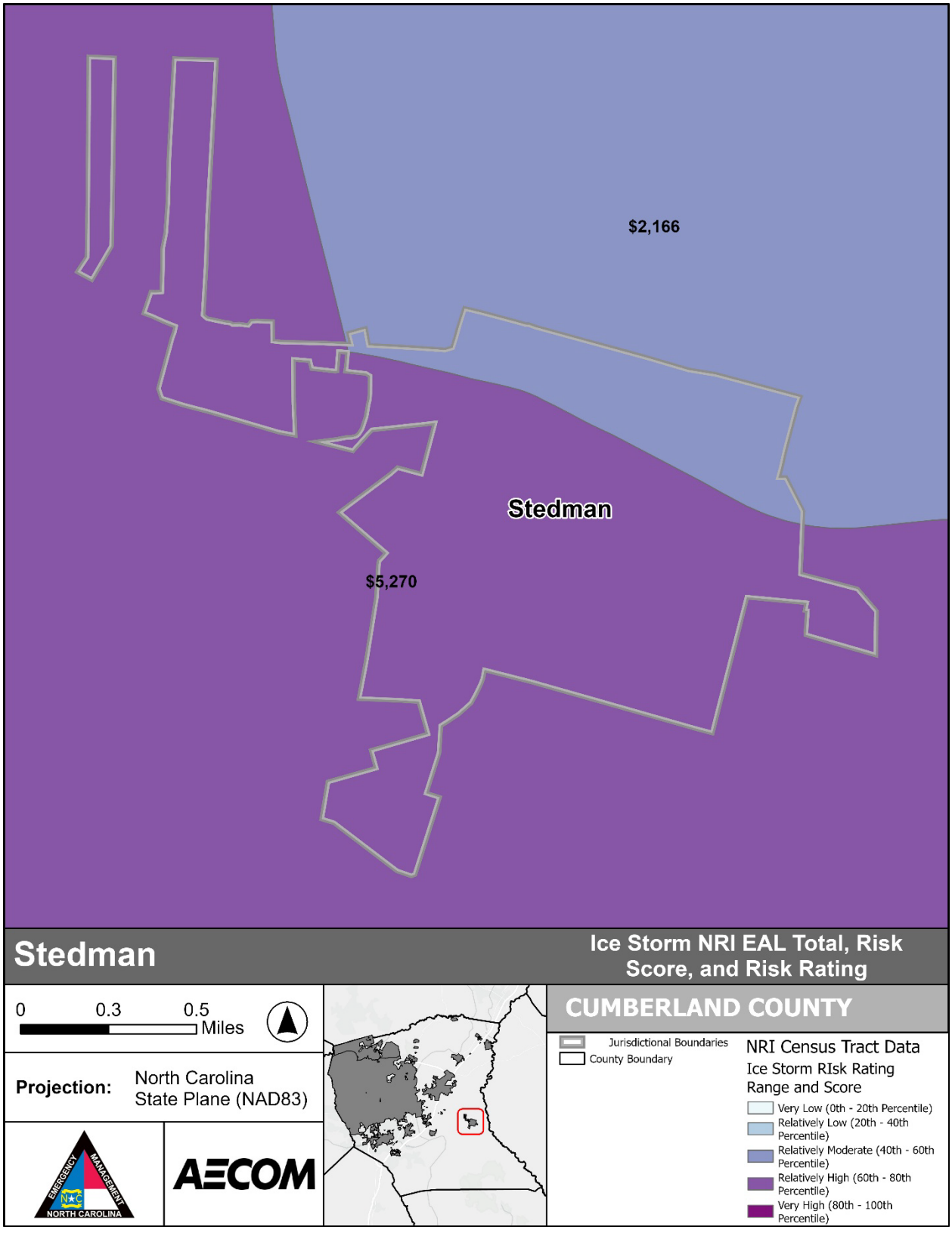


Figure 5-146: Town of Stedman Ice Storm Hazard Map

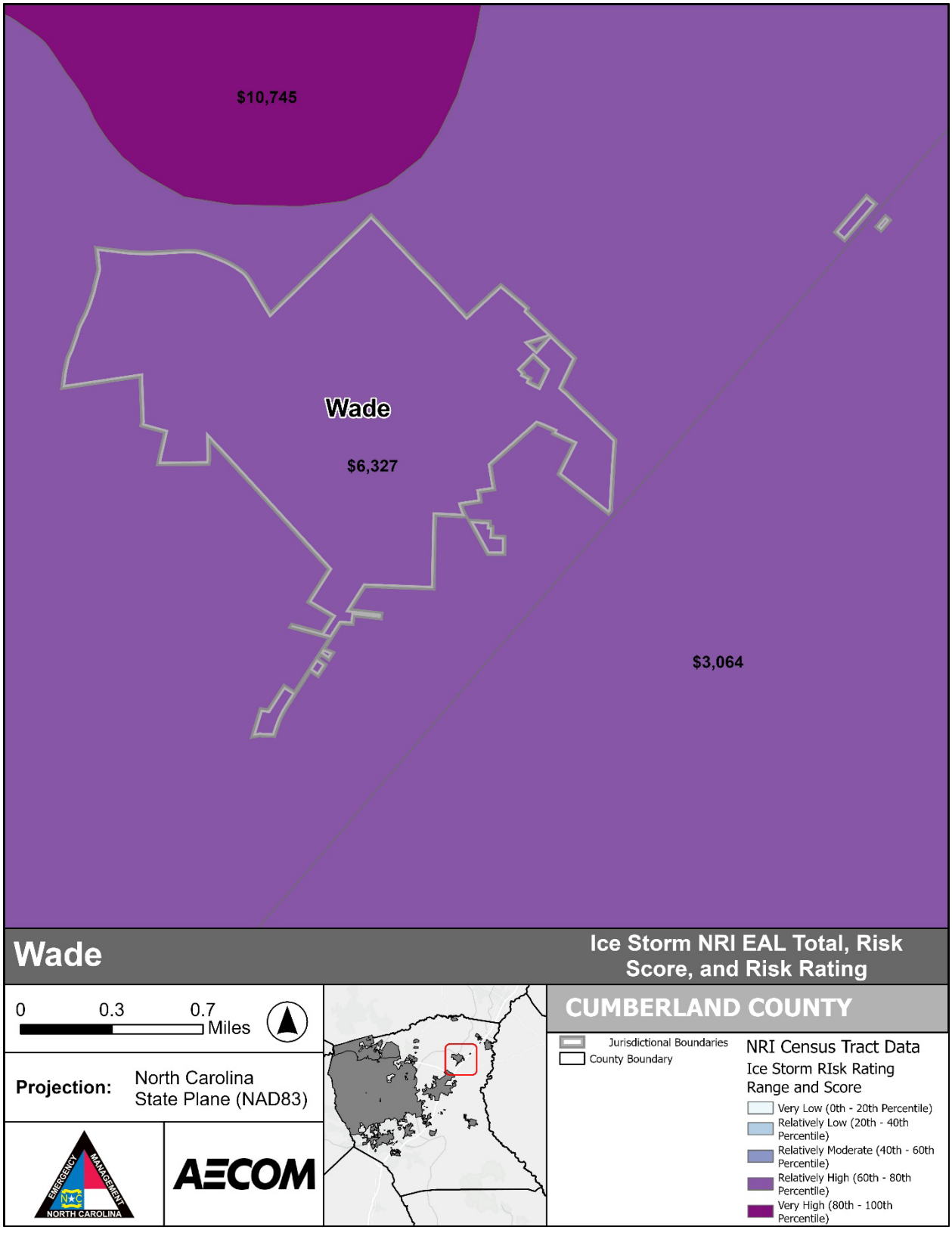


Figure 5-147: Town of Wade Ice Storm Hazard Map

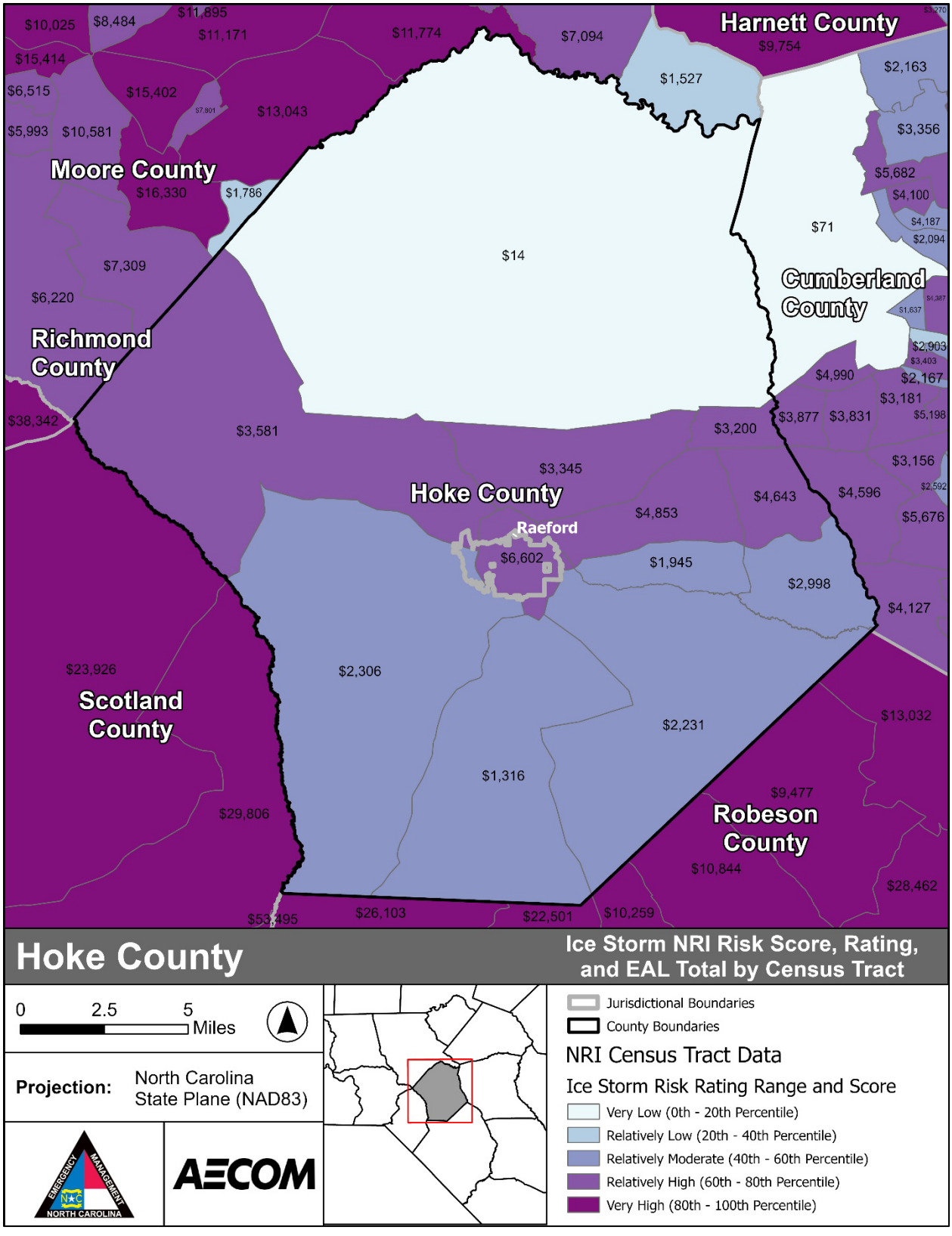


Figure 5-148: Hoke County Ice Storm Hazard Map

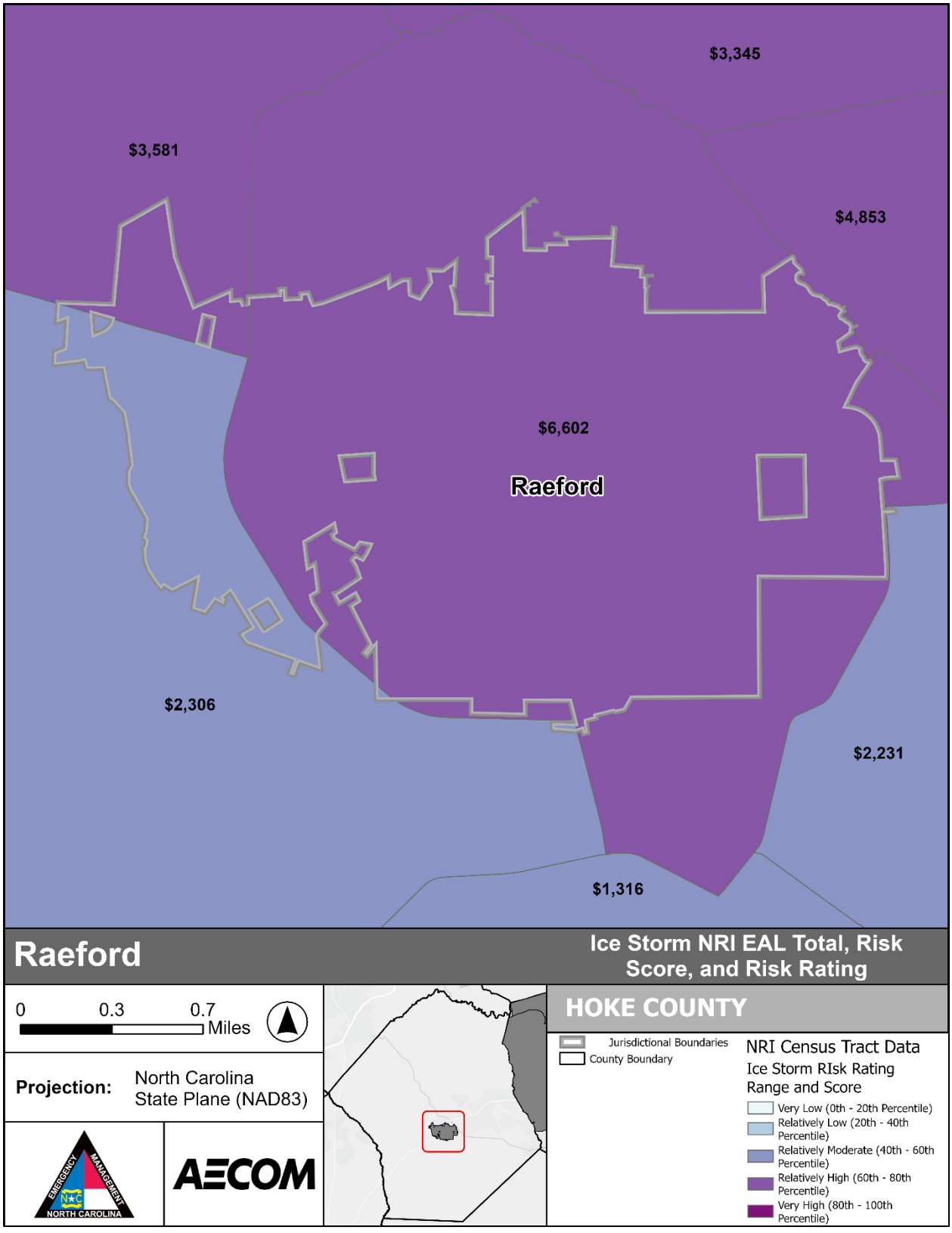


Figure 5-149: Town of Raeford Ice Storm Hazard Map

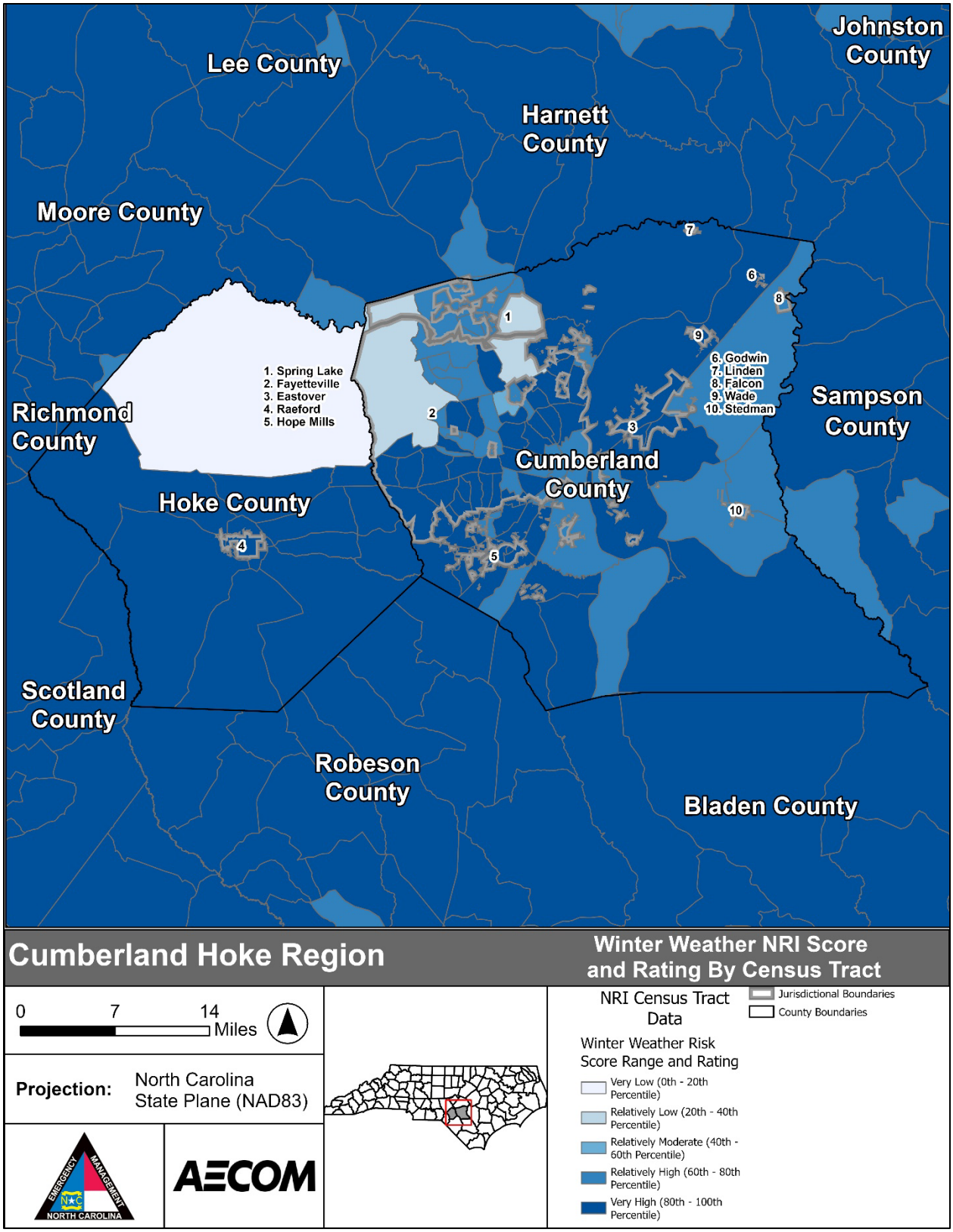


Figure 5-150: Cumberland-Hoke Regional Winter Weather Hazard Map

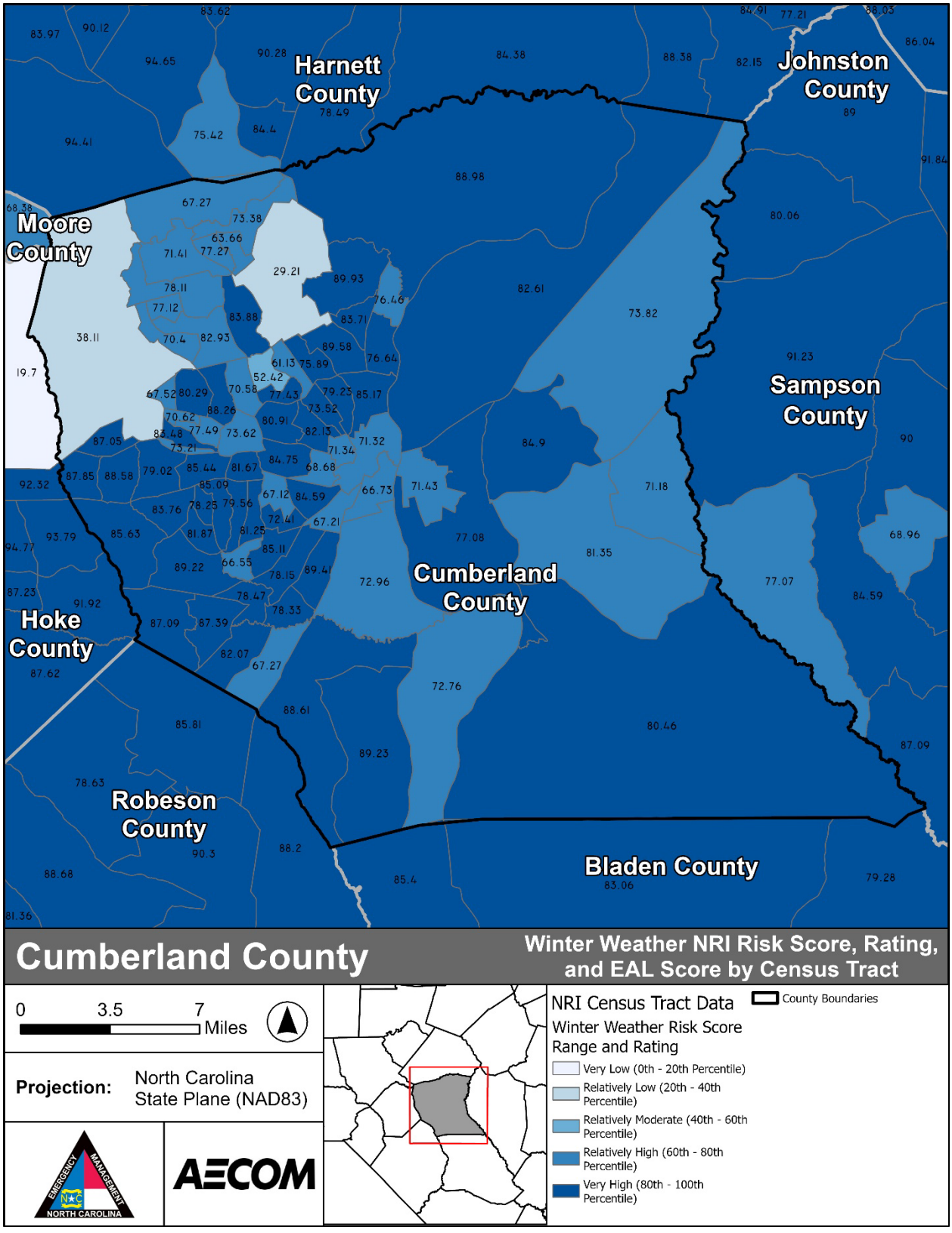


Figure 5-151: Cumberland County Winter Weather Hazard Map

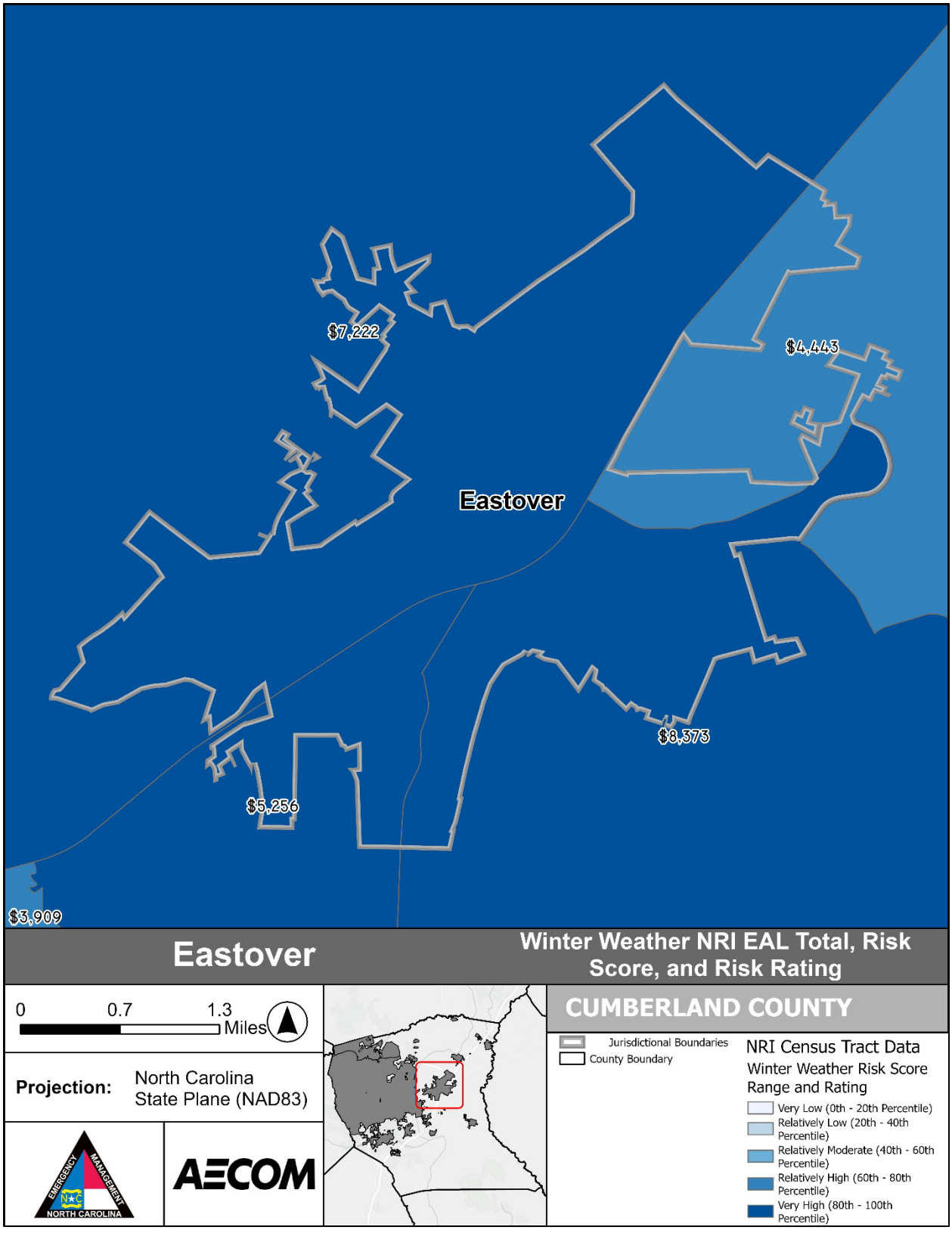


Figure 5-152: Town of Eastover Winter Weather Hazard Map

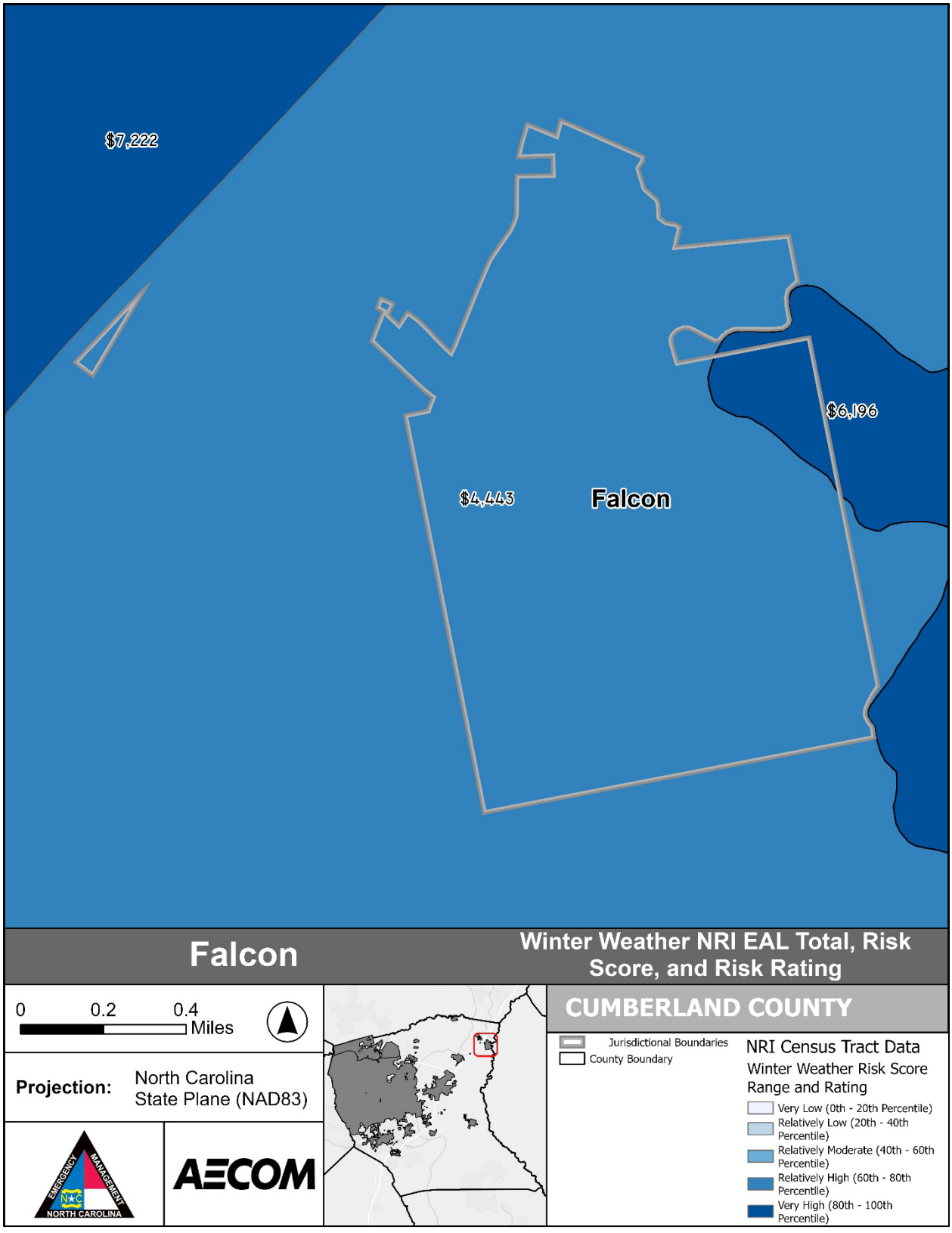


Figure 5-153: Town of Falcon Winter Weather Hazard Map

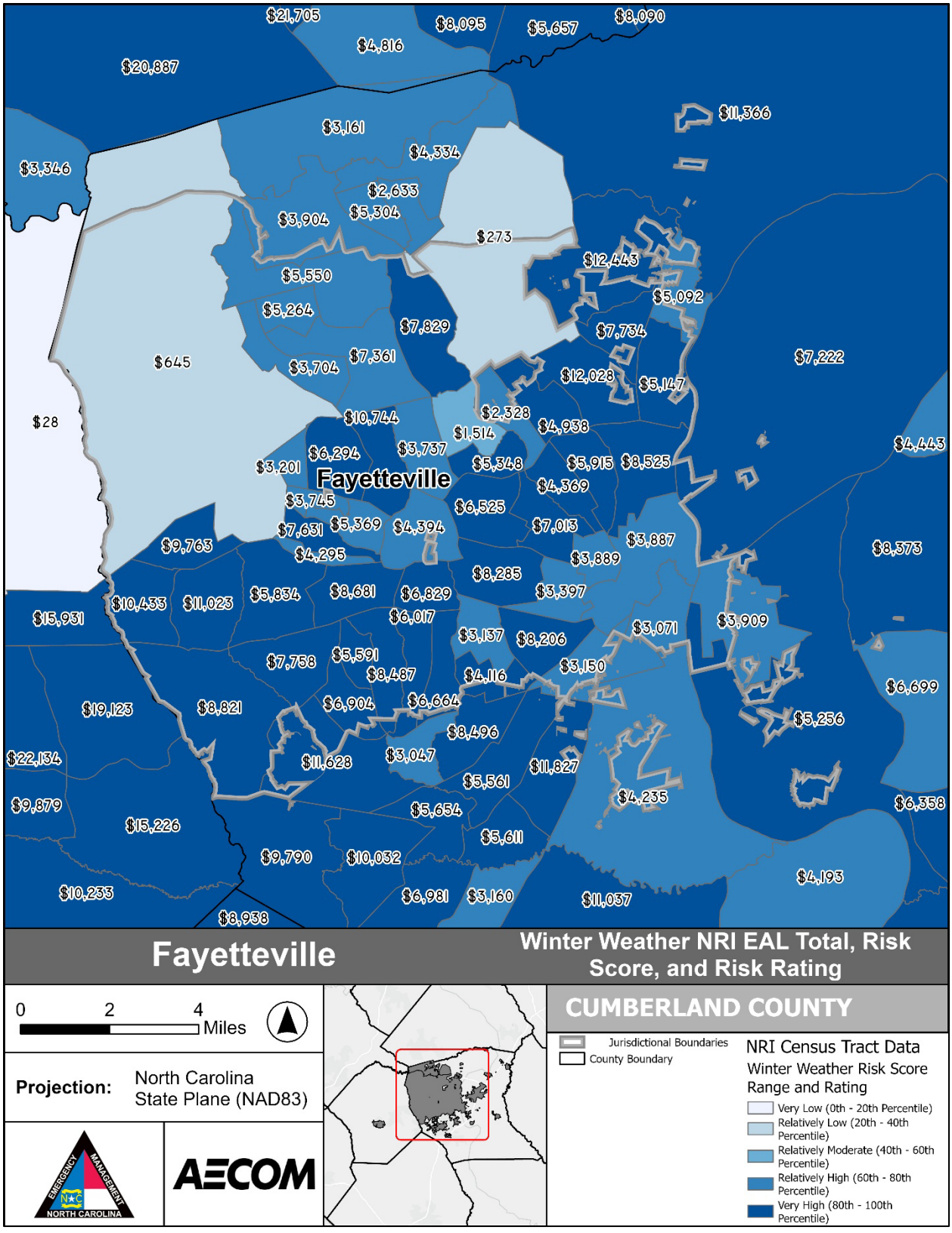


Figure 5-154: City of Fayetteville Winter Weather Hazard Map

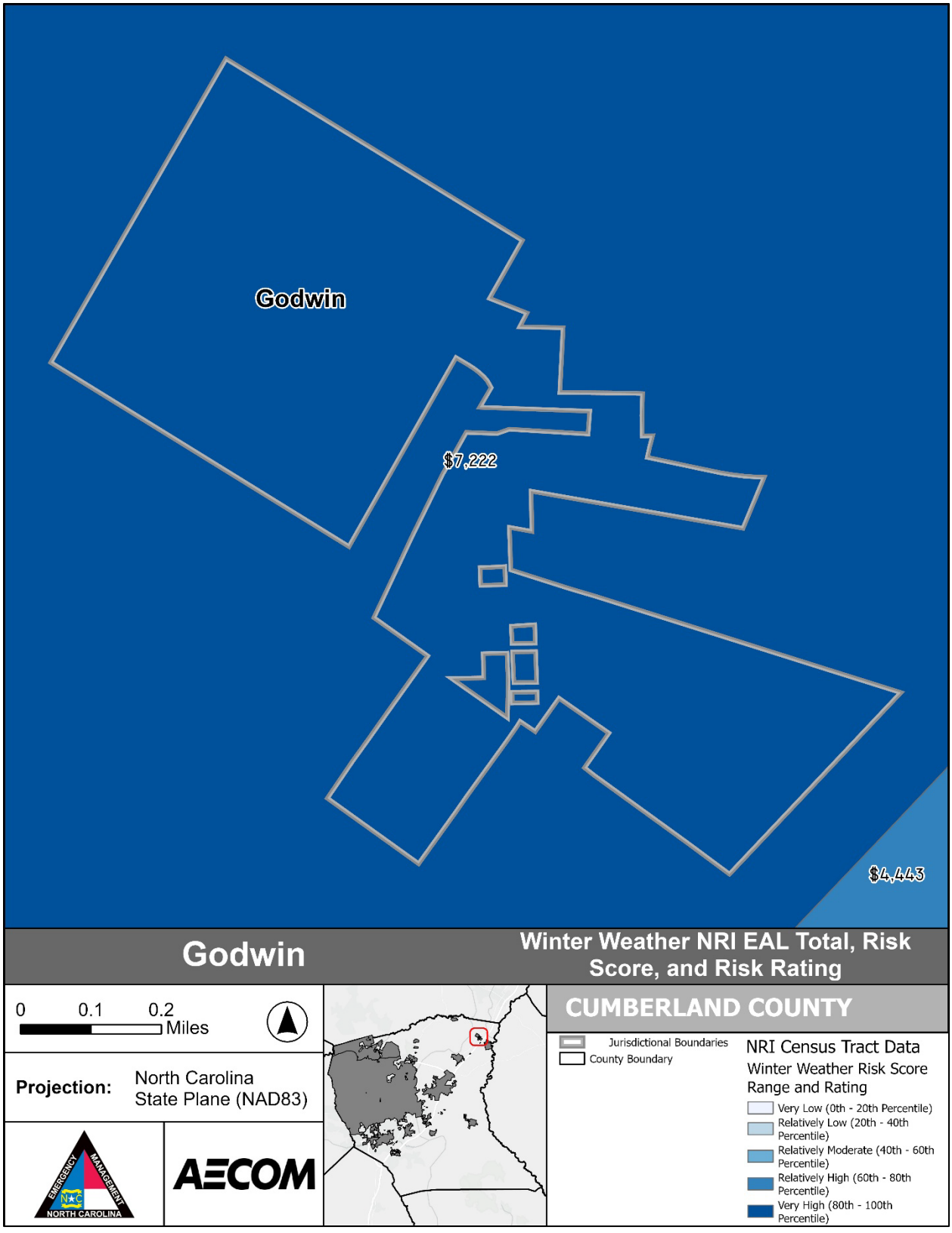


Figure 5-155: Town of Godwin Winter Weather Hazard Map

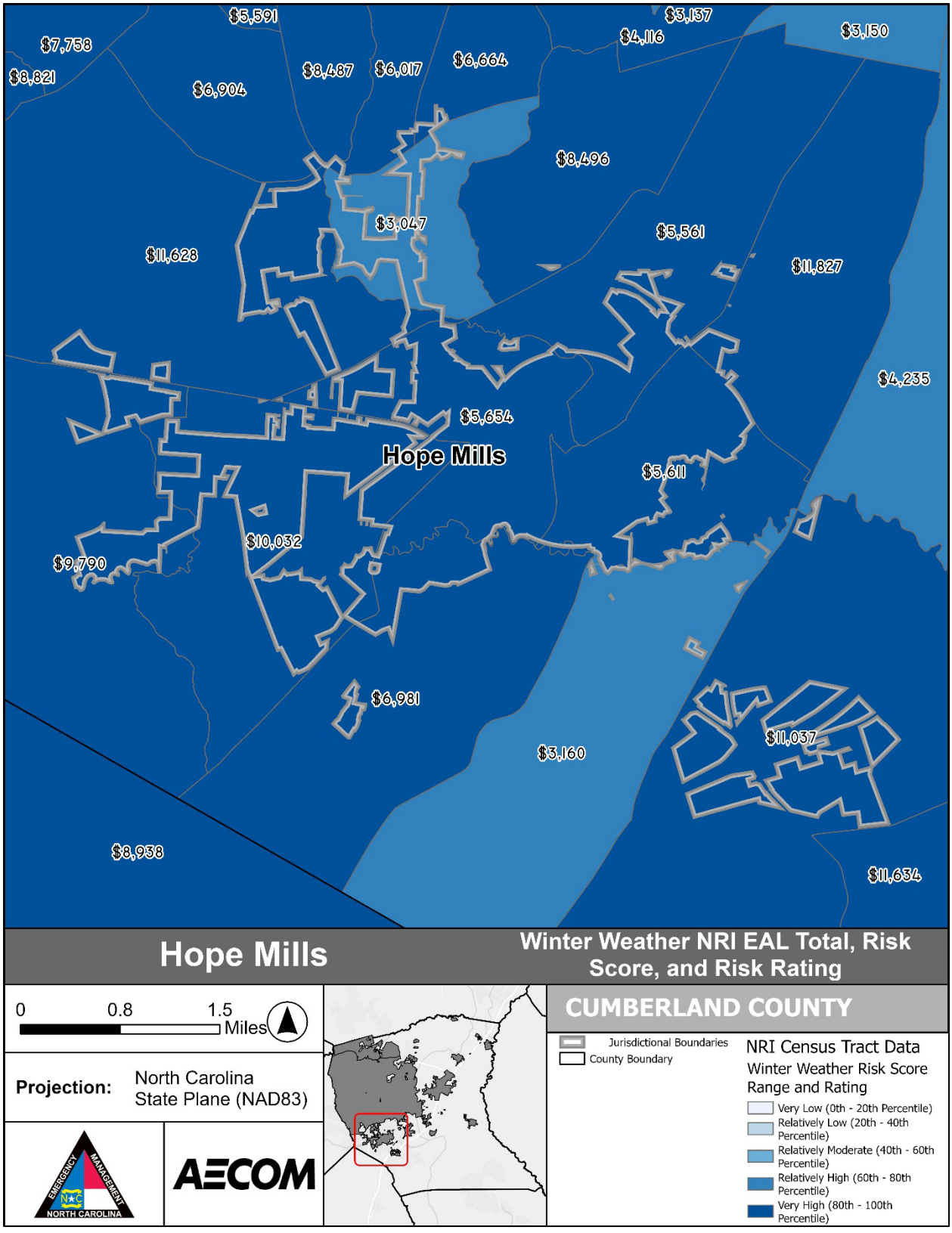


Figure 5-156: Town of Hope Mills Winter Weather Hazard Map

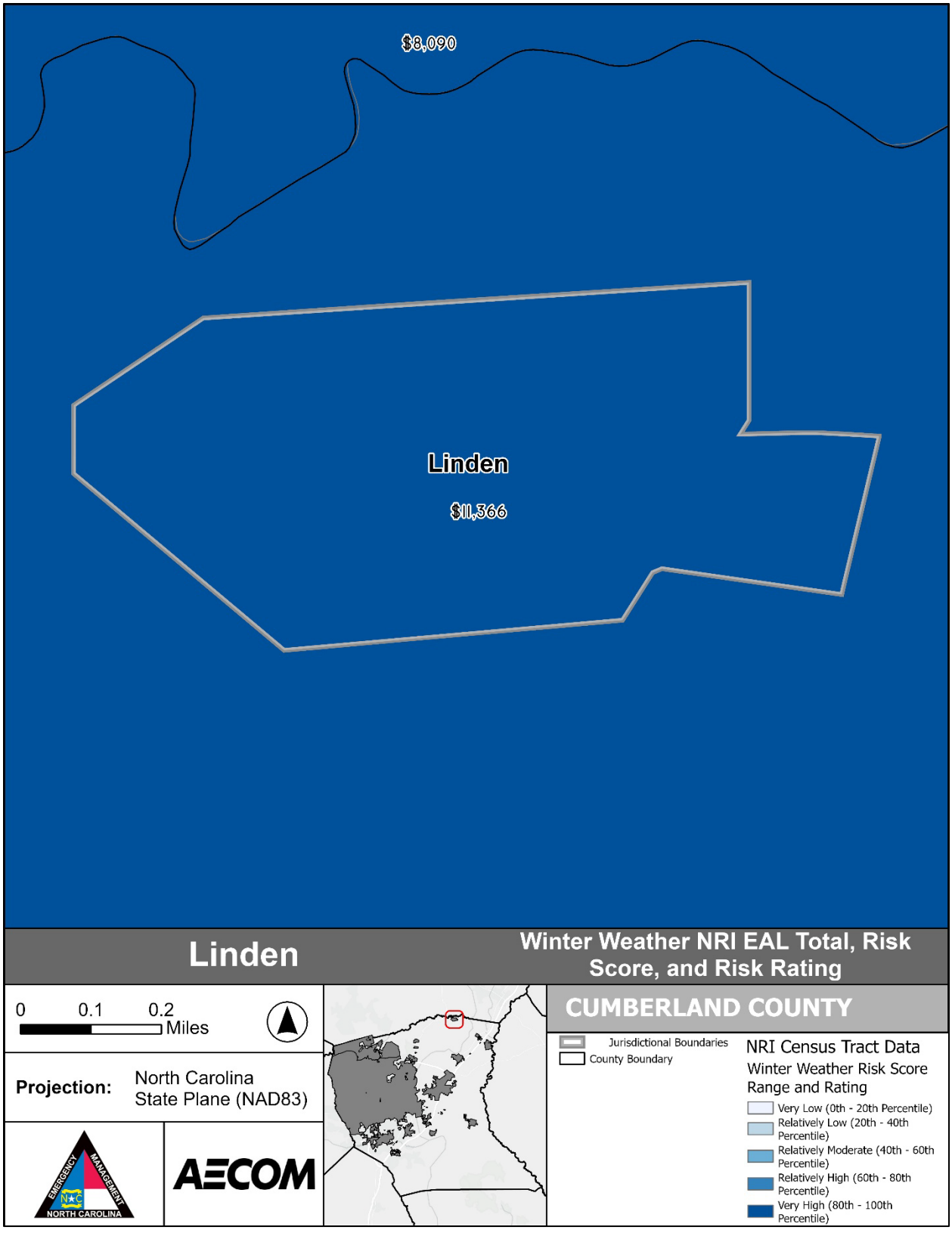


Figure 5-157: Town of Linden Winter Weather Hazard Map

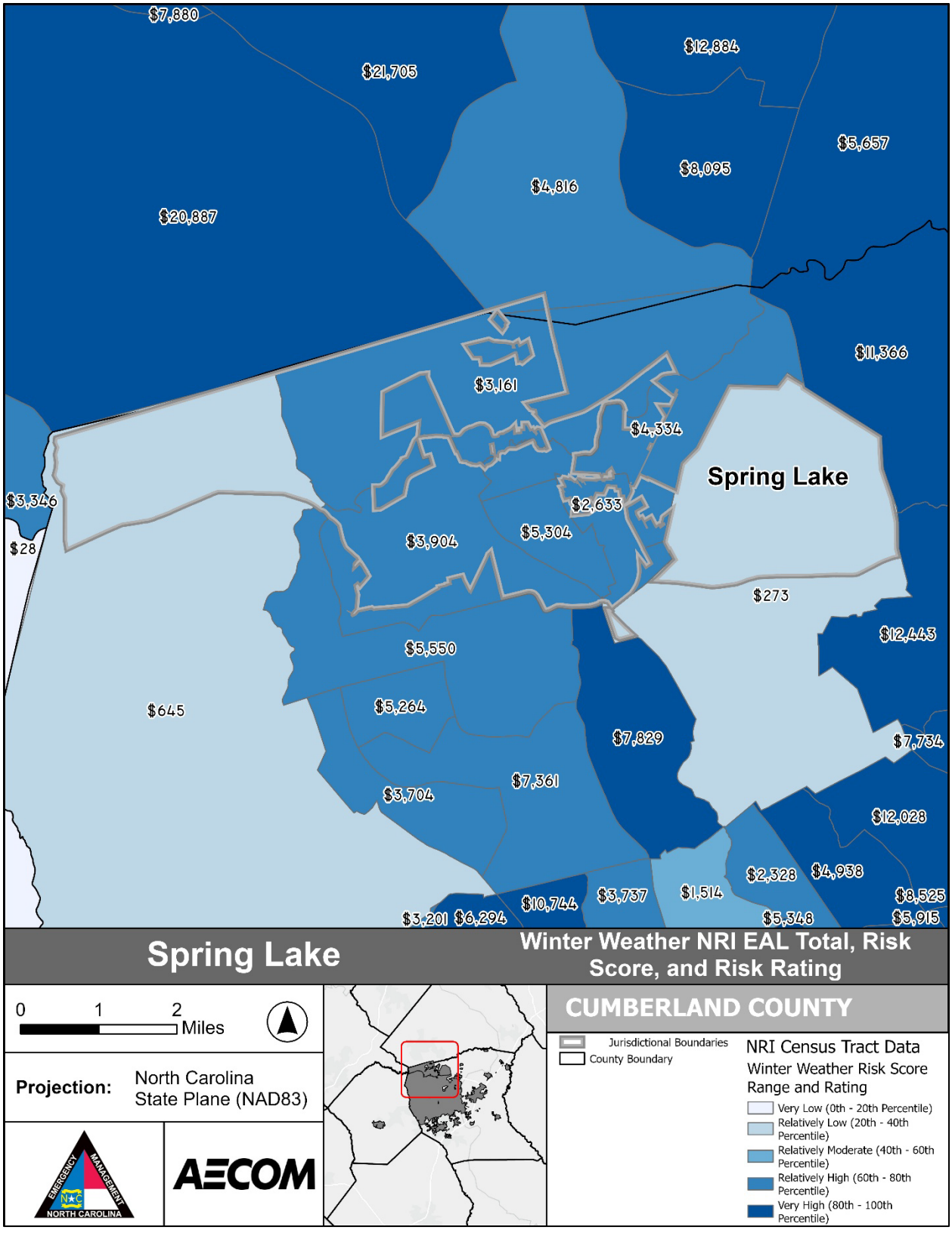


Figure 5-158: Town of Spring Lake Winter Weather Hazard Map

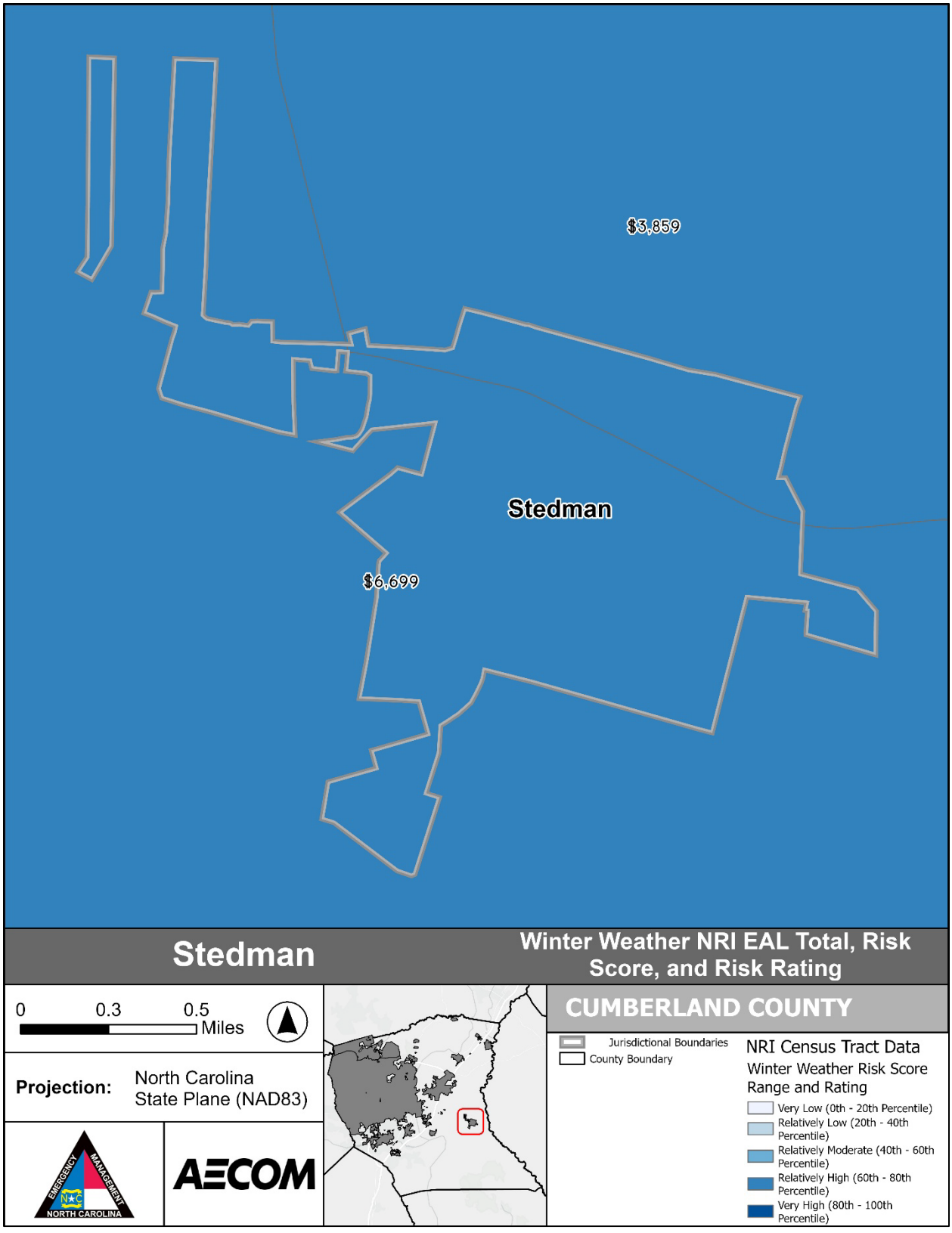


Figure 5-159: Town of Stedman Winter Weather Hazard Map

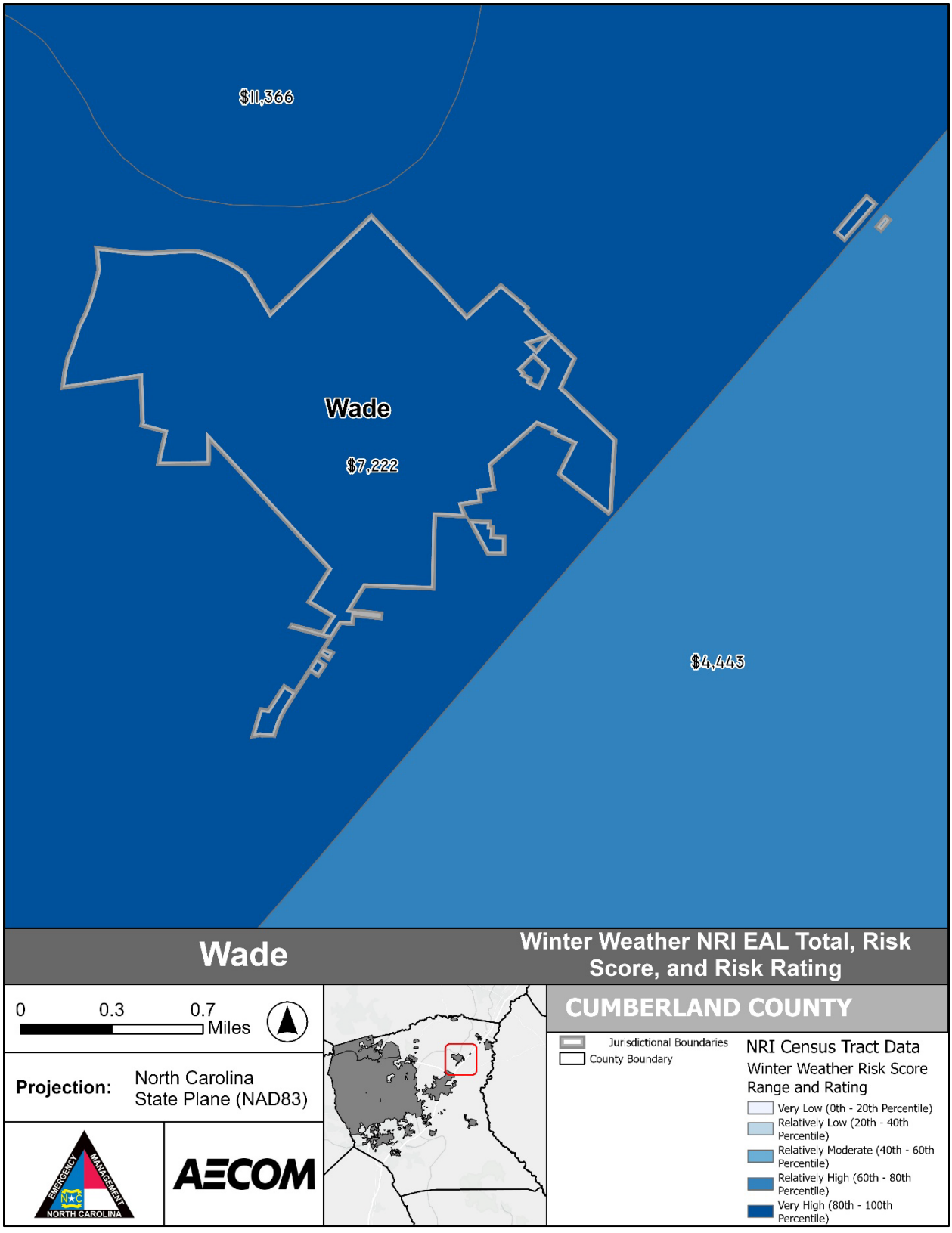


Figure 5-160: Town of Wade Winter Weather Hazard Map

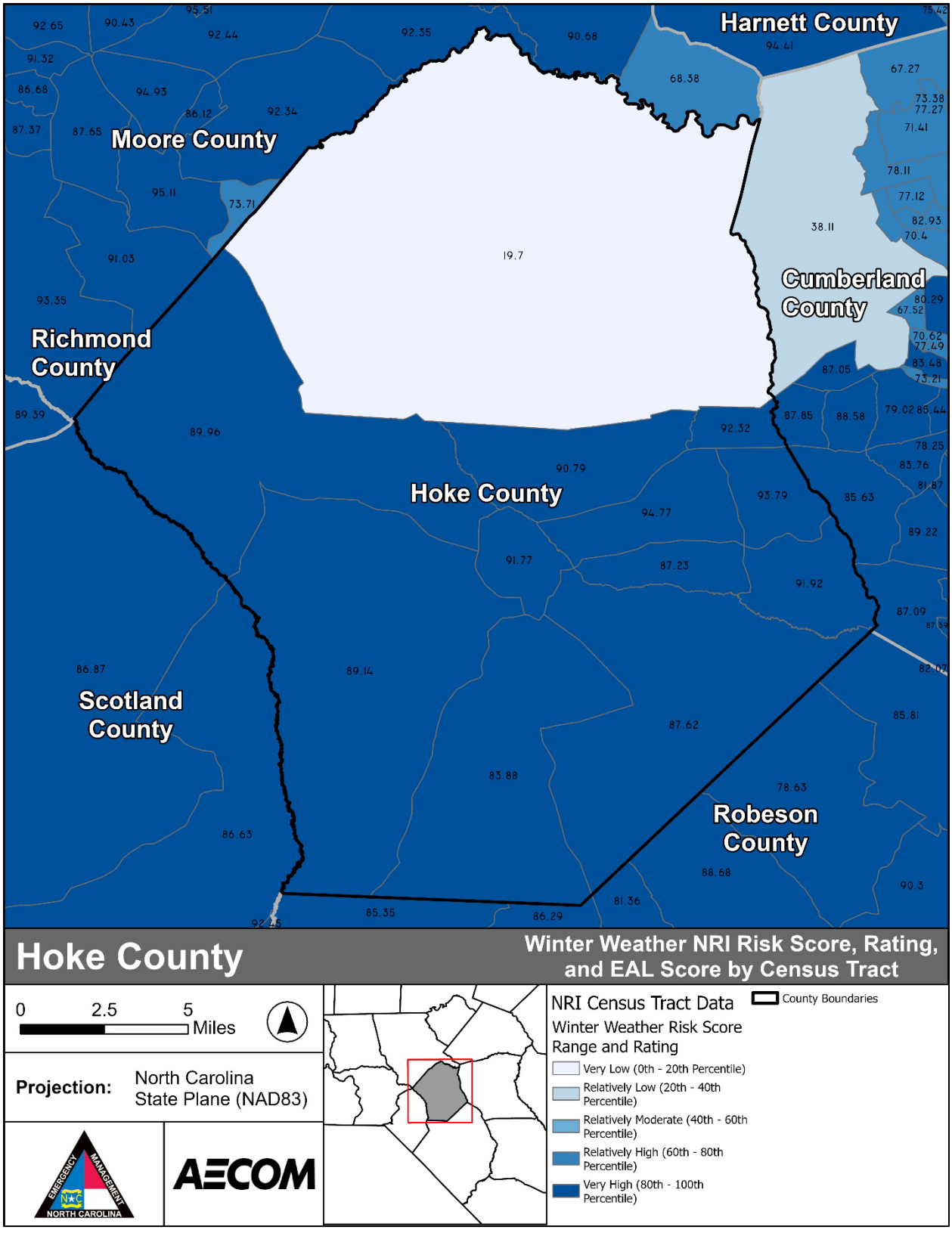


Figure 5-161: Hoke County Winter Weather Hazard Map

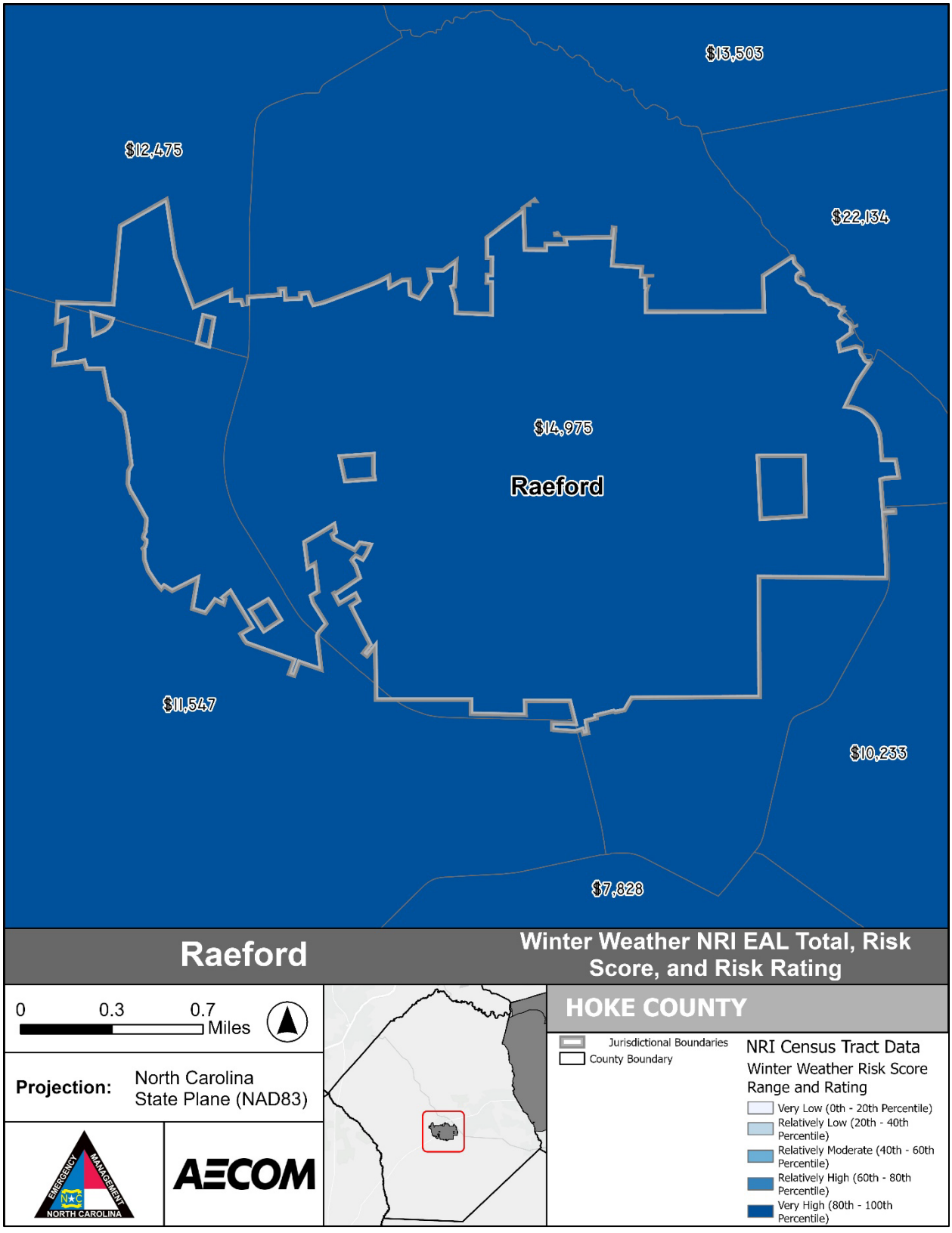


Figure 5-162: City of Raeford Winter Weather Hazard Map

5.11.3. Extent

Table 5-58 shows the region's worst recorded winter storm events.

Table 5-58: Cumberland-Hoke Maximum Snowfall from the NCEI Snowfall Extremes[106]

County	Jurisdiction	Maximum Snowfall Data	Date
Cumberland County	Fayetteville	24	3/2/1927
Hoke County	Unincorporated Area	18	3/2/1927

5.11.4. Past Occurrences

According to the NCEI Storm Events Database, the Region has experienced 76 winter storms, ice storms, heavy snows, and winter weather events since 1996, as reported in Table 5-59. These events are reported to have resulted in one death, zero injuries, $10,000 in property damage, and no crop damage.

Table 5-59: Winter Storm Events in the Region (1996-Present)[107]

County	Date	Event Type	Deaths	Property Damage
Cumberland	1/6/1996	Ice Storm	0	$0
Hoke	1/6/1996	Ice Storm	0	$0
Cumberland	1/11/1996	Ice Storm	0	$0
Hoke	1/11/1996	Ice Storm	0	$0
Cumberland	2/2/1996	Ice Storm	0	$0
Hoke	2/2/1996	Ice Storm	0	$0
Hoke	1/19/1998	Heavy Snow	0	$0
Cumberland	12/23/1998	Ice Storm	0	$0
Hoke	12/23/1998	Ice Storm	0	$0
Cumberland	1/18/2000	Winter Storm	0	$0
Hoke	1/18/2000	Winter Storm	0	$0
Cumberland	1/22/2000	Winter Storm	0	$0
Hoke	1/22/2000	Winter Storm	0	$0
Cumberland	1/24/2000	Winter Storm	0	$0
Hoke	1/24/2000	Winter Storm	0	$0
Cumberland	1/28/2000	Winter Storm	0	$0
Hoke	1/28/2000	Winter Storm	0	$0
Cumberland	12/3/2000	Winter Storm	0	$0
Cumberland	1/3/2002	Winter Storm	0	$0
Hoke	1/3/2002	Winter Storm	0	$0

[106] National Center for Environmental Information (NCEI). (2025). *North Carolina Snowfall Extremes* [Tabular]. National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/access/monitoring/snowfall-extremes/NC/1

[107] National Center for Environmental Information (NCEI). (2025). *Storm Events Database* [Tabular]. National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/stormevents/

Hoke	2/16/2003	Winter Storm	0	$0
Cumberland	1/26/2004	Winter Storm	0	$0
Hoke	1/26/2004	Winter Storm	0	$0
Cumberland	2/26/2004	Winter Storm	0	$0
Hoke	2/26/2004	Winter Storm	0	$0
Cumberland	12/26/2004	Winter Storm	0	$0
Hoke	12/26/2004	Winter Storm	0	$0
Cumberland	2/1/2007	Winter Weather	0	$0
Hoke	2/1/2007	Winter Weather	0	$0
Cumberland	1/17/2008	Winter Weather	0	$0
Hoke	1/17/2008	Winter Weather	0	$0
Cumberland	1/19/2008	Winter Weather	0	$0
Hoke	1/19/2008	Winter Weather	0	$0
Cumberland	1/20/2009	Winter Storm	0	$0
Hoke	1/20/2009	Winter Storm	0	$0
Cumberland	2/4/2009	Winter Weather	0	$0
Cumberland	1/29/2010	Winter Storm	0	$0
Hoke	1/30/2010	Winter Storm	0	$0
Cumberland	2/12/2010	Winter Storm	0	$0
Cumberland	2/12/2010	Winter Storm	0	$0
Hoke	2/12/2010	Winter Storm	0	$0
Cumberland	3/2/2010	Winter Weather	0	$0
Cumberland	12/16/2010	Winter Weather	1	$0
Hoke	12/16/2010	Winter Weather	0	$0
Cumberland	12/25/2010	Winter Storm	0	$0
Hoke	12/25/2010	Winter Storm	0	$0
Cumberland	1/10/2011	Winter Storm	0	$0
Hoke	1/10/2011	Winter Storm	0	$0
Cumberland	1/28/2014	Winter Storm	0	$0
Hoke	1/28/2014	Winter Storm	0	$0
Cumberland	2/11/2014	Winter Storm	0	$0
Hoke	2/11/2014	Winter Storm	0	$0
Cumberland	2/12/2014	Winter Storm	0	$0
Hoke	2/12/2014	Winter Storm	0	$0
Cumberland	2/16/2015	Winter Storm	0	$0
Hoke	2/16/2015	Winter Storm	0	$0
Cumberland	2/24/2015	Winter Weather	0	$0
Hoke	2/24/2015	Winter Weather	0	$0
Cumberland	1/22/2016	Winter Storm	0	$0
Hoke	1/22/2016	Winter Storm	0	$0
Cumberland	2/7/2016	Winter Weather	0	$10,000

Cumberland	1/7/2017	Winter Weather	0	$0
Cumberland	1/3/2018	Winter Storm	0	$0
Hoke	1/3/2018	Winter Storm	0	$0
Cumberland	1/17/2018	Winter Weather	0	$0
Cumberland	2/20/2020	Winter Weather	0	$0
Hoke	2/20/2020	Winter Weather	0	$0
Cumberland	1/16/2022	Winter Weather	0	$0
Hoke	1/16/2022	Winter Weather	0	$0
Hoke	1/16/2022	Winter Storm	0	$0
Cumberland	1/21/2022	Winter Storm	0	$0
Hoke	1/21/2022	Winter Storm	0	$0
Cumberland	1/29/2022	Winter Weather	0	$0
Hoke	1/29/2022	Winter Weather	0	$0
Cumberland	1/21/2025	Winter Storm	0	$0
Cumberland	2/19/2025	Winter Weather	0	$0
		Regional Total	**1**	**$10,000**

The following events are summarized from the NCEI Storm Events Database from the past five years of winter weather occurrence:

2/20/2020 - Winter Weather

Snowfall ranged from around half an inch across southwestern portions of Cumberland County to around 1 inch across northeastern portions of the County. Snowfall amounts ranged from a trace across southern portions of Hoke County to around 1 inch 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 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 by strong high pressure over the Great Lakes. A brief mix of rain and snow changed to snow as precipitation spread east across central NC during the late afternoon and early evening. Temperatures were near or slightly above freezing during the late afternoon, limiting accumulations. 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.

1/16/2022 - Winter Weather

A tenth to two-tenths of an inch of freezing rain was reported across both Cumberland and Hoke Counties. 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 Piedmont, with numerous accidents across northwest Piedmont, where heavy snow fell.

1/16/2022 – Winter Storm

Snow and sleet amounts ranged up to one inch across Hoke County, with up to a quarter of an inch of freezing rain. 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 northwest Piedmont, where heavy snow fell.

1/21/2022 - Winter Storm

Snowfall amounts range from 2 to 5 inches across Cumberland County and from 2 to 4 inches across Hoke 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.

1/29/2022 - Winter Weather

Snowfall amounts ranged from a trace to around one inch across both Cumberland and Hoke Counties. An upper low and associated arctic cold front brought precipitation to central North Carolina on the 28th and 29th. Precipitation began as rain in the afternoon of the 28th, gradually mixing and changing over 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 during this event, though some locations from Guilford to Randolph County saw over 3 inches.

1/21/2025 - Winter Storm

Snowfall of 2 to 3 inches across Cumberland County. A deep upper trough over much of the country brought cold air to our region, which, when combined with a weak surface low passing to our south, resulted in accumulating snow and ice. Snowfall totals ranged from less than an inch across the western Piedmont and Triad to as much as 2 to 4 inches across the Coastal Plain and I-95 corridor.

2/19/2025 - Winter Weather

Cumberland County received about a tenth of an inch of freezing rain, as well as a half inch or less of snowfall. An area of low pressure over the northeast Gulf and off the southeast coast of the United States tracked off the coast of the Carolinas. This system, combined with Arctic air, brought snowfall across the Piedmont and northern Coastal Plain, and freezing rain over the Sandhills and southern Coastal Plain.

5.11.5. Probability of Future Occurrences

The NRI reports on risk data for winter storm events, including precipitation such as snow, sleet, or freezing rain, generated from the NWS Winter Weather Alerts compiled by Iowa State University's Iowa Environmental Mesonet. These include the alert area and attributes for winter weather events 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 based on historical events from the USACE Cold Regions Research and Engineering Laboratory Damaging Ice Storm GIS, which documents ice-damaged, ice-sensitive structures between 1946 and 2014.

According to the NRI, all census tracts in Cumberland County have an annualized frequency of 0.99 winter storm events per year, with an EAL total of $502,602, an EAL Score of 92.91, and a Hazard Risk Index Score of 94.88. The EAL Score and Hazard Risk Index Score are both rated as Very High. Hoke County has the same annualized frequency as Cumberland County, at 0.99 events per year, but a lower total EAL of $152,882, an EAL Score of 77.13, and a Hazard Risk Index Score of 81.04. However, the EAL Score for Hoke County is rated as Relatively High, and the Hazard Risk Index Score is rated Very High.

Table 5-60: NRI Winter Weather Annualized Frequency, EAL, EAL Score, and Hazard Risk Index Score for the Planning Area

Jurisdiction	Annualized Frequency	EAL Total	Average EAL Score	Average EAL Rating	Average Hazard Risk Index Score	Average Hazard Risk Index Rating
Cumberland County (Unincorporated Area)	0.99	$15,827	81.00	Very High	82.14	Very High
Eastover	0.99	$25,294	79.60	Relatively High	82.55	Very High
Falcon	0.96	$10,639	76.94	Relatively High	79.67	Relatively High
Fayetteville	0.99	$464,104	76.99	Relatively High	80.11	Very High
Godwin	0.99	$7,222	82.61	Very High	86.27	Very High
Hope Mills	0.99	$120,894	81.59	Very High	84.90	Very High
Linden	0.99	$11,366	88.98	Very High	90.87	Very High
Spring Lake	1.00	$70,499	70.16	Relatively High	71.35	Relatively High
Stedman	0.99	$10,557	76.27	Relatively High	74.19	Relatively High
Wade	0.99	$11,665	78.21	Relatively High	81.73	Very High
Cumberland County Total	**0.99**	**$502,602**	**92.91**	**Very High**	**94.88**	**Very High**
Hoke County (Unincorporated Area)	0.99	$31,210	87.30	Very High	90.32	Very High
Raeford	0.99	$71,364	90.65	Very High	93.59	Very High
Hoke County Total	**0.99**	**$152,883**	**77.13**	**Relatively High**	**81.04**	**Very High**

The annualized frequency of Ice Storms is 1.05 events per year in Cumberland County and 1.14 events per year in Hoke County. Cumberland County has an EAL total of $339,826, while Hoke County has a lower EAL total of $37,034. Cumberland County has an EAL Score of 84.01 and a Hazard Risk Index Score of 86.71, both of which are Very High Hazard Ratings, while Hoke

County has a 42.04 EAL Score and a 47.1 Hazard Risk Index Score, both of which are rated as Relatively Moderate.

Table 5-61: NRI Ice Storm Annualized Frequency, EAL Score, EAL, 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
Cumberland County (Unincorporated Area)	0.86	$8,209	58.28	Relatively Moderate	60.08	Relatively High
Eastover	1.13	$18,948	64.50	Relatively High	68.39	Relatively High
Falcon	1.19	$4,924	50.02	Relatively Moderate	54.04	Relatively Moderate
Fayetteville	1.08	$302,816	59.21	Relatively Moderate	63.84	Relatively High
Godwin	1.19	$6,327	70.98	Relatively High	75.63	Relatively High
Hope Mills	0.86	$56,465	57.10	Relatively Moderate	62.71	Relatively High
Linden	1.19	$10,745	79.28	Relatively High	82.40	Very High
Spring Lake	1.24	$50,458	54.36	Relatively Moderate	56.70	Relatively Moderate
Stedman	1.08	$7,436	57.70	Relatively Moderate	55.35	Relatively Moderate
Wade	1.19	$9,391	63.44	Relatively High	68.08	Relatively High
Cumberland County Total	**1.05**	**$339,827**	**84.01**	**Very High**	**86.71**	**Very High**
Hoke County (Unincorporated Area)	0.91	$6,606	46.27	Relatively Moderate	53.31	Relatively Moderate
Raeford	0.92	$19,573	58.98	Relatively Moderate	66.74	Relatively High
Hoke County Total	**1.14**	**$37,035**	**42.04**	**Relatively Moderate**	**47.10**	**Relatively Moderate**

5.11.6. Consequence and Impact Analysis

People

Winter storms are deceptive killers because most deaths are indirectly related to the storm event. The leading cause of death during winter weather 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 by improperly ventilated heating sources, such as space or kerosene heaters, and by blocked chimneys. House fires also occur more frequently in the winter due to inadequate safety precautions when using alternative heating sources. All jurisdictions in the Region are susceptible to this type of impact.

Individuals with disabilities (16.9% in Cumberland County and 18.2% in Hoke County) or an independent living difficulty (7.3% in Cumberland County and 8.3% in Hoke County) may be at an increased risk of negative impacts because of winter weather events.[108] It is important that residents are informed about risks and are informed about how to safely heat their homes and remain safe during winter weather events.

Changes in Development

Localized impacts are expected for facilities and infrastructure in areas where winter weather events occur. Power lines and roads are most adversely affected and require extensive maintenance to keep them clear. As infrastructure continues to expand and development increases in the planning area, more infrastructure may be exposed to winter weather events. The development and expansion of infrastructure would require increased capabilities to prepare and clear roads during winter weather events.

Economy

The local economy and finances may be adversely affected, depending on the extent of 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.

Natural Environment

Winter weather 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 for being outside; significant injury may occur if a large limb snaps while a local resident is driving or walking beneath it.

First Responders

Adverse impact expected to be severe for unprotected personnel and moderate to light for trained, equipped, and protected personnel. Winter weather events can cause power outages, potentially impacting operations. Down trees, power lines, and icy road conditions may prevent access to critical facilities and/or emergency equipment. Fire suppression during winter weather may pose significant danger because water supplies can freeze, making it difficult for firefighting equipment to reach the fire. 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.

[108] U.S. Census Bureau. (2023). *Disability Characteristics* (No. ACSST5Y2023.S1810; Version 2023 ACS 5-Year Estimates) [Dataset]. data.census.gov. https://data.census.gov/table/ACSST5Y2023.S1810

Future Conditions

According to the NC Climate Science Report, it is likely that snowfall and the number of heavy snowstorms in NC will decrease as winter temperatures rise.[109]

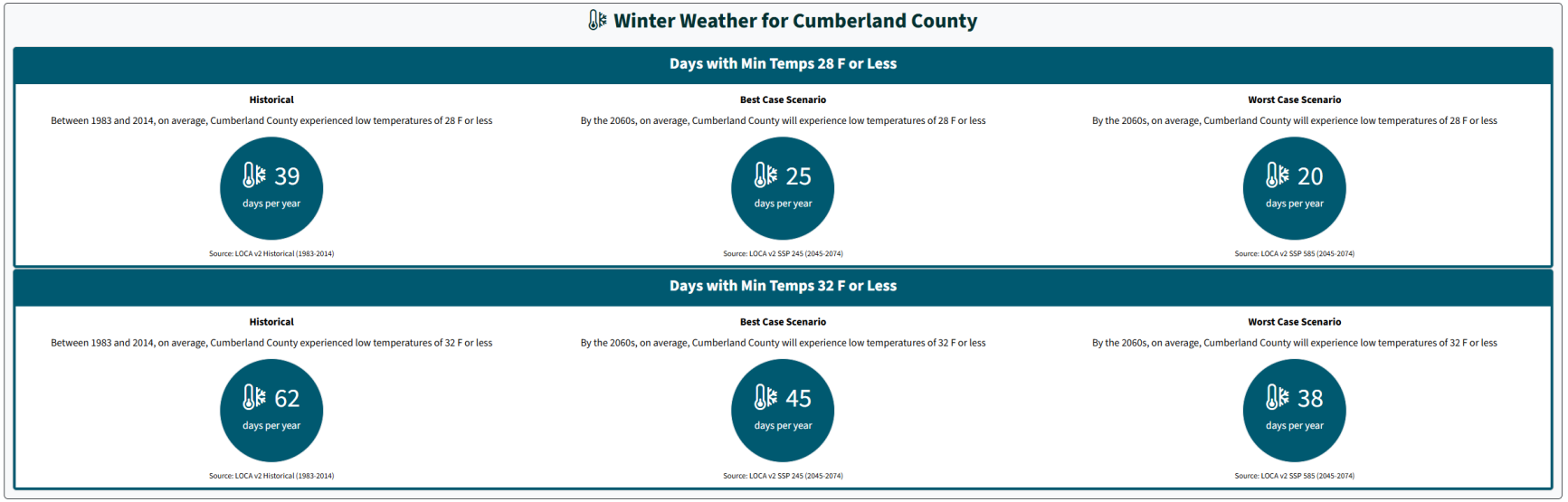


Figure 5-163: Winter Weather Climate Projections for Cumberland County[110]

[109] Kunkel, K. E., Easterling, D. R., Ballinger, A., Bililign, S., Champion, S. M., Corbett, D. R., Dello, K. D., Dissen, J., Lackmann, G. M., Luettich Jr., R. A., Perry, L. B., Robinson, W. A., Stevens, L. E., Stewart, B. C., & Terando, A. J. (2020). *North Carolina Climate Science Report* (p. 233). North Carolina Institute for Climate Studies. https://ncics.org/programs/nccsr/

[110] NC State Resilience Office. (2026). *Climate Projections*. NC Resilience Exchange. https://www.resilienceexchange.nc.gov/understand-your-vulnerabilities/climate-observations-and-projections

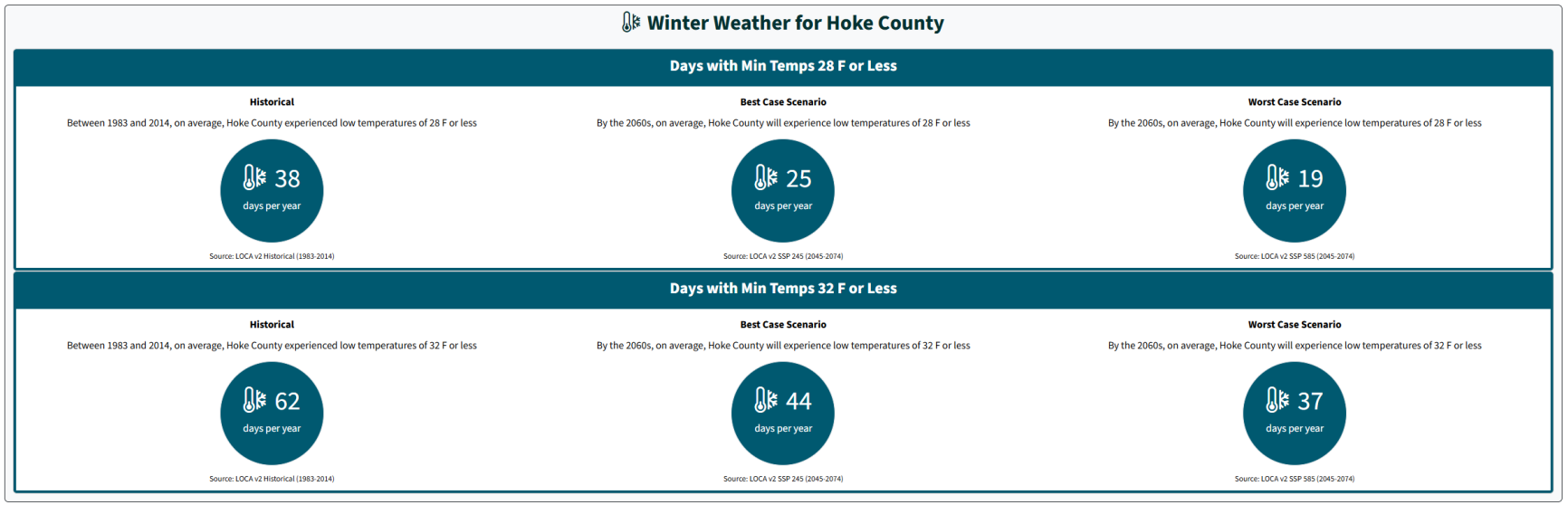


Figure 5-164: Winter Weather Climate Projects for Hoke County[110]

5.12. Hazard Profile Summary

The conclusions drawn from the Region's hazard profiling process, including the Priority Risk Index results and input from the Regional Hazard Mitigation Planning Team, resulted in the classification of each identified hazard into three categories: High Risk, Moderate Risk, and Low Risk (Table 5-62). For purposes of these classifications, risk is expressed in relative terms according to the estimated impact that a hazard will have on human life and property throughout the Region. A more quantitative analysis to assess potential dollar losses for each hazard has been performed separately and is described. It should be noted that although some hazards are classified below as posing low risk, their occurrence at varying or unprecedented magnitudes remains possible in some cases, and their assigned classification will continue to be evaluated during future updates to this Plan.

Table 5-62: NRI Summary of Hazard Risk Ratings for the Hazards in the Planning Area

Jurisdiction	Drought	Earthquake	Extreme Heat	Hurricane / Tropical Storm	Flooding	Severe Weather			Tornado	Wildfire	Winter Storm	
						Thunderstorm Wind	Lightning	Hail			Winter Weather	Ice Storm
Cumberland County	**Relatively High**	**Very High**	**Very High**	**Very High**	**Very High**	**Relatively High**	**Very High**	**Relatively High**	**Very High**	**Very High**	**Very High**	**Very High**
Eastover	Very High	Relatively Moderate	Relatively Moderate	Very High	Very High	Relatively Moderate	Very High	Relatively High	Relatively High	Very High	Very High	Relatively High
Falcon	Very High	Relatively Moderate	Relatively High	Very High	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High	Relatively Moderate	Relatively High	Relatively High	Relatively Moderate
Fayetteville	Relatively Moderate	Relatively Moderate	Relatively Moderate	Relatively High	Relatively High	Relatively Moderate	Relatively High	Relatively High	Relatively High	Relatively High	Very High	Relatively High
Godwin	Very High	Relatively High	Relatively Moderate	Very High	Very High	Relatively Moderate	Very High	Relatively High	Relatively High	Very High	Very High	Relatively High
Hope Mills	Relatively High	Relatively Moderate	Relatively Moderate	Very High	Relatively High	Relatively Moderate	Very High	Relatively High	Relatively High	Relatively High	Very High	Relatively High
Linden	Very High	Relatively High	Relatively High	Very High	Very High	Relatively High	Very High	Relatively High	Very High	Very High	Very High	Very High
Spring Lake	Very High	Relatively Moderate	Relatively Moderate	Relatively High	Relatively Moderate	Relatively Moderate	Relatively High	Relatively Moderate	Relatively High	Relatively High	Relatively High	Relatively Moderate
Stedman	Very High	Relatively Moderate	Relatively Moderate	Relatively High	Relatively Moderate	Relatively Low	Relatively High	Relatively Moderate	Relatively Moderate	Very High	Relatively High	Relatively Moderate
Wade	Very High	Relatively Moderate	Relatively Moderate	Very High	Very High	Relatively Moderate	Very High	Relatively High	Relatively High	Relatively High	Very High	Relatively High

Unincorporated Area	Very High	Relatively Moderate	Relatively Moderate	Very High	Relatively High	Relatively Moderate	Very High	Relatively High	Relatively High	Very High	Very High	Relatively High
Hoke County	**Relatively High**	**Relatively High**	**Very High**	**Very High**	**Relatively Low**	**Relatively High**	**Relatively Moderate**	**Relatively Moderate**	**Relatively High**	**Relatively High**	**Very High**	**Relatively Moderate**
Raeford	Very High	Relatively High	Very High	Very High	Relatively High	Very High	Relatively High	Relatively High	Very High	Very High	Very High	Relatively High
Unincorporated Area	Very High	Relatively Moderate	Relatively High	Relatively High	Relatively Moderate	Relatively High	Relatively Moderate	Relatively High	Relatively High	Very High	Very High	Relatively Moderate

SECTION 6: CAPABILITY ASSESSMENT

Section 6 discusses the mitigation capabilities, including planning, programs, policies, and land management tools, typically used by local jurisdictions to implement hazard mitigation activities. It consists of the following 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 a local jurisdiction's ability to implement a comprehensive mitigation strategy and to identify potential opportunities to establish or enhance 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 Cumberland-Hoke 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.

[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 its 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)).

6.2. Conducting the Capability Assessment

To facilitate the inventory and analysis of local government capabilities within the Cumberland-Hoke Region, a detailed Capability Assessment Survey was completed by each participating jurisdiction, based on information found in existing hazard mitigation plans and local government 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 Cumberland-Hoke 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 Cumberland-Hoke Regional Hazard Mitigation Planning Committee (HMPC). 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 Cumberland-Hoke 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 Cumberland-Hoke 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 Plan/Ordinance	Risk Assessment; Capability Assessment	Regulations or a plan 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 (EOP)	Risk Assessment; Capability Assessment	Data on hazards or events of concern and community vulnerabilities; coordination protocols and response responsibilities
Continuity of Operations Plan (COP)	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 (CIP)	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
Flood Damage Prevention Ordinance (FDPO)	Risk Assessment; Capability Assessment	Floodplain development standards, elevation requirements, permitting procedures, and National Flood Insurance Program (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 (UDO)	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 Cumberland-Hoke Region. This information will help identify opportunities to address existing gaps, weaknesses, or conflicts with other initiatives, and to integrate 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 Cumberland-Hoke 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 Cumberland-Hoke 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 Resources	Cumberland County	Eastover	Falcon	Fayetteville	Godwin	Hope Mills	Linden	Spring Lake	Stedman	Wade	Hoke County	Raeford
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 (EOP)	✓	–	✓	✓	–	✓	–	✓	–	–	✓	–
Continuity of Operations Plan (COP)	✓	–	–	✓	–	✓	–	–	–	–	✓	–
Evacuation Plan	–	–	✓	✓	–	✓	–	–	–	–	✓	–
Disaster Recovery Plan	✓	–	–	✓	✓	–	–	✓	–	–	✓	–
Capital Improvements Plan	✓	–	✓	✓	–	✓	–	✓	✓	–	–	✓
Economic Development Plan	–	–	–	✓	✓	✓	–	✓	–	–	✓	–
Historic Preservation Plan	–	–	–	✓	–	✓	–	–	–	–	–	✓
Flood Damage Prevention Ordinance (FDPO)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Zoning Ordinance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Subdivision Ordinance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Unified Development Ordinance (UDO)	–	–	–	✓	–	–	–	–	–	–	–	✓
Post-Disaster Redevelopment	–	–	–	–	–	–	–	–	–	–	–	–
Building Code	✓	–	✓	✓	–	✓	✓	✓	–	–	✓	✓
Fire Code	✓	–	✓	✓	–	✓	✓	✓	✓	–	✓	✓
National Flood Insurance Program (NFIP)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Other	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Community Notes

The bulleted list below captures additional community notes from participating jurisdictions that provide more details on their planning and regulatory capabilities.

- The Town of Eastover works through Cumberland County Planning.
- The Town of Falcon participates in or maintains: NE Land Use Plan, Mid Carolina Council of Governments Rural Transportation Planning, Community Development Block Grant Program, Cumberland County Multi-Jurisdictional Hazard Mitigation Plan Update, resolution adopting a Comprehensive Transportation Plan, and other resolutions adopting a Highway Plan, etc.
- The City of Fayetteville provides the majority of the planning and regulatory capabilities noted above, including comprehensive oversight of planning, zoning, subdivision regulations, stormwater management, floodplain administration, streets, historic preservation, area and comprehensive plans, and all building and trade code plan reviews and inspections in accordance with Chapter 160D. Additional relevant capabilities include the Erosion, Sedimentation, and Pollution Control Ordinance; Building Code Effectiveness Grading Schedule (BCEGS) Rating; Site Plan Review Requirements; and Elevation Certificates. The City's Traffic Services Division includes a Transportation Planner and staff knowledgeable in the Capital Improvement Plan and the UDO/Code of Ordinances. The City also maintains a Future Land Use Plan, adopted in 2019, which is due for an update to reflect current and future community needs.
- The Town of Hope Mills' capabilities are maintained through the Town's Stormwater, Public Works, Fire, Inspections, Planning & Zoning, and Finance Departments.
- Planning in the Town of Spring Lake is completed at the county level
- The Town of Steman's planning, zoning, and building code falls under Cumberland County.
- The Town of Wade relies on Cumberland County for planning matters, except for junk-filled properties, which are enforced by the Council of Governments (COG's) enforcement officer.
- Hoke County has a Planning and Zoning Team that oversees all new developments within the County.

Other

Both counties and the ten incorporated municipalities participating in this RHMP update also participated in the North Carolina Office of Recovery and Resiliency's Regions Innovating for Strong Economies and Environment Program (RISE). As a part of the RISE program, Cumberland County and its incorporated municipalities completed the Climate Change and Natural Hazard Vulnerability Assessment for the Mid-Carolina Region[2] in 2022, and Hoke County and its incorporated municipalities completed the Climate Change and Natural Hazard

[2] NCDEQ. (2022). *Climate Change and Natural Hazards Vulnerability Assessment for the Mid-Carolina Region*. North Carolina Department of Environmental Quality (NCDEQ). https://www.deq.nc.gov/energy-climate/resiliency/resilient-communities-program/regions-innovating-strong-economies-and-environment-program/regional-resilience-portfolios/mid-carolina-regional-resilience-portfolio

Vulnerability Assessment for the Lumber River Region[3], also in 2022. For more information, please refer to the Climate Change subsection of Section 5.1 in this plan.

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 preparation 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 Cumberland-Hoke 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.

- 12 of the 12 participating jurisdictions in this regional plan update effort have previously participated in and adopted the Cumberland-Hoke Regional Hazard Mitigation Plan

[3] NCDEQ. (2022). *Climate Change and Natural Hazards Vulnerability Assessment for the Lumber River Region*. North Carolina Department of Environmental Quality (NCDEQ). https://www.deq.nc.gov/energy-climate/resiliency/resilient-communities-program/regions-innovating-strong-economies-and-environment-program/regional-resilience-portfolios/lumber-river-regional-resilience-portfolio

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.

- Cumberland County, the City of Fayetteville, the Town of Godwin, the Town of Spring Lake, and Hoke County indicated that they maintain Disaster Recovery Plans.

Emergency Operations Plan (EOP): An EOP outlines the responsibilities of staff and departments and the deployment of resources during and after an emergency or disaster.

- Cumberland County, the Town of Falcon, the City of Fayetteville, the Town of Hope Mills, the Town of Spring Lake, and Hoke County indicated they maintain EOP.

Continuity of Operations Plan (COP): A COP 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.

- Cumberland County, the City of Fayetteville, the Town of Hope Mills, and Hoke County indicated they have COPs in place.

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 about general planning capabilities and the extent to which hazard mitigation is integrated into other ongoing planning efforts in the Cumberland-Hoke Region.

Comprehensive Land Use Plan: A comprehensive land use plan establishes the community's overall vision and guides future government decision-making. Typically, a comprehensive plan includes sections on demographics, land use, transportation, and community facilities. Given the broad scope 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 and objectives.

- All participating jurisdictions have a Comprehensive Land Use Plan in place.

Capital Improvements Plan (CIP): A CIP guides the scheduling of public improvement spending. CIPs 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.

- Cumberland County, the Town of Falcon, the City of Fayetteville, the Town of Hope Mills, the Town of Spring Lake, the Town of Stedman, and the City of Raeford indicated they each maintain a Capital Improvements Plan.

Historic Preservation Plan: A plan 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 Fayetteville, the Town of Hope Mills, and the City of Raeford indicated they have a Historic Preservation Plan 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 participating jurisdictions implement a Zoning Ordinance.

Subdivision Ordinance: A subdivision ordinance regulates the development of residential, commercial, industrial, or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future growth. Subdivision design that accounts for natural hazards can dramatically reduce future development's exposure to them.

- All participating jurisdictions implement a Subdivision Ordinance.

Unified Development Ordinance (UDO): A 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, including 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.

- The City of Fayetteville and the City of Raeford were the only jurisdictions to indicate that they have a UDO in place.

Building Codes, Permitting, and Inspections: Building codes regulate construction standards. In many communities, permits and inspections are required for new construction. Decisions regarding the adoption of building codes (that account for hazard risk), the type of permitting process needed before and after a disaster, and the enforcement of inspection protocols all affect the level of hazard risk a community faces.

- Cumberland County, the Town of Falcon, the City of Fayetteville, the Town of Hope Mills, the Town of Linden, the Town of Spring Lake, Hoke County, and the City of Raeford all indicated they implement a Building Code.

The adoption and enforcement of building codes by local jurisdictions is routinely assessed through the Building Code Effectiveness Grading Schedule, or BCEGS, program developed by the Insurance Services Office, Inc. (ISO).[4] 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.

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.

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 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, 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 FDPO 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.

Jurisdictions participating in the National Flood Insurance Program will continue to comply with the program's requirements and work toward full compliance in the future through several strategies. Floodplain management is managed through zoning ordinances, building code

[4] Participation in BCEGS is voluntary and may be declined by local governments if they do not wish to have their local building codes evaluated.

restrictions, and the county building inspection program. The jurisdictions will coordinate with the North Carolina Division of Emergency Management (NCEM) and FEMA to develop maps and regulations for Special Flood Hazard Areas within their jurisdictions and, through a consistent monitoring process, will design and improve their floodplain management programs to reduce the risk of flooding to people and property. Adoption of floodplain management requirements, including regulating new construction in the Special Flood Hazard Area, floodplain identification, and mapping, will continue. Each county and its municipalities, while participating in the National Flood Insurance Program, comply with regulations as demonstrated in regular Community Assessment Visits.

All jurisdictions in the Cumberland-Hoke Region participate in the NFIP. Godwin and Linden, both in Cumberland County, are the only jurisdictions in the planning area that participate in the NFIP but have no mapped Special Flood Hazard Area within their municipal boundaries. Fayetteville (Cumberland County) has the largest number of NFIP policies in force (1,041), the most insurance ($298,630,000) and written premiums ($913,214) in force, the largest number of closed losses (541), and the greatest amount of total payments ($14,692,182).

Table 6-3 provides NFIP policy and claim information for each participating jurisdiction.

Table 6-3: NFIP Policy and Claim Information by Jurisdiction

Jurisdiction	Date Joined NFIP	Current Effective Map Date	NFIP Policies in Force	Insurance in Force	Written Premium in Force	Closed Losses	Total Payments
Cumberland County							
Cumberland County (Unincorporated Area)	02/17/82	06/20/18	605	$189,908,000	$390,102	230	$8,993,644
Eastover	06/23/09	12/18/07	15	$4,864,000	$10,092	5	$156,871
Falcon	01/05/07	12/18/07	1	$350,000	$520	1	$690
Fayetteville	10/17/78	12/18/07	1,041	$298,630,000	$913,214	541	$14,692,182
Godwin	01/05/07	(NSFHA)	-	-	-	-	-
Hope Mills	11/04/81	12/18/07	17	$5,563,000	$22,408	8	$401,933
Linden	01/05/07	(NSFHA)	-	-	-	-	-
Spring Lake	02/14/97	12/18/07	19	$5,408,000	$16,050	8	$378,804
Stedman	01/05/07	12/18/07	10	$3,205,000	$6,467	1	$6,355
Wade	01/05/07	12/18/07	1	$350,000	$386	2	$31,132
Subtotal Cumberland	**-**	**-**	**1709**	**$508,278,000**	**$1,359,239**	**796**	**$24,661,611**
Hoke County							
Hoke County (Unincorporated Area)	03/02/89	07/07/14	113	$35,164,000	$65,030	32	$586,146
Raeford	06/03/86	12/18/07	10	$3,999,000	$6,013	3	$5,257
Subtotal Hoke	**-**	**-**	**123**	**$39,163,000**	**$71,043**	**35**	**$591,403**
TOTAL PLAN	**-**	**-**	**1832**	**$547,441,000**	**$1,430,282**	**831**	**$25,253,014**

*NSFHA: No Special Flood Hazard Area - All Zone C

Source: FEMA Flood Insurance Data's HUDEX Report (11/10/2025)

NFIP Policies in Force

Definition: the total number of policies reported within the community and/or county in force as of the given date. All condo units are counted for each condo master policy.

Increasing policies generally indicate improved flood risk awareness, greater mortgage compliance, or the expansion of insurable development within mapped flood risk areas.

Decreasing policies may reflect successful buyouts, reduced exposure, or negatively declining insurance participation and rising uninsured risk.

Trends must be interpreted alongside population growth and development patterns.

Ideal Trends:

Near term: moderate increases or stable participation showing strong insurance coverage uptake.

Long term: Stable or gradual decline paired with mitigation actions (buyouts, elevation, land-use controls), not coverage drop-off.

Insurance in Force

Definition: represents the total dollar value of flood insurance coverage provided by all active policies in effect within a community at a given time.

Increasing coverage value suggests higher asset exposure, rising property values, or improved insurance penetration. Rapid increases may signal growing financial exposure within flood hazard areas.

Decreasing coverage may indicate a loss of development and mitigation activities, or underinsurance.

Ideal Trends:

Near term: increasing or stable values reflecting adequate protection of existing assets.

Long term: stabilization or slower growth as exposure is reduced through resilience planning and risk-informed development.

Written Premium in Force

Definition: written premium in force represents the total annual premium associated with all active NFIP policies in effect within a community at a given time

Increasing premiums in force may reflect higher participation, updated FEMA Risk Rating 2.0 pricing, or increased exposure. Rising premiums without mitigation can create affordability pressures and policy drop-off risk.

Decreasing premiums in force may signal declining participation rather than reduced risk.

Idea Trends:

Near term: Stable or moderate increases tied to maintained participation.

Long term: Stabilized premiums resulting from reduced risk classifications and mitigation investments.

Closed Losses

Definition: represents the number of NFIP claims that have completed the adjustment process and have been finalized, including claims with and without payment.

Increasing closed losses indicate recurring flood damage and persistent vulnerability.

Declining closed losses typically reflect effective mitigation, improved standards, or fewer damaging events.

Must be **normalized against hazard frequency**.

Idea Trends:

Near term: event-driven fluctuations are expected.

Long term: clear downward trend demonstrating reduced repetitive loss and mitigation effectiveness.

Total Claim Payments

Definition: total claim payments represent the total dollar amount paid by the NFIP for insured flood losses within a community during a specified reporting period.

Increasing total claim payments indicate growing disaster costs and unresolved structural vulnerability.

Declining claim payments suggest successful risk reduction or fewer severe flood events.

High payouts concentrated geographically often **signal repetitive loss problem areas**.

Ideal Trends:

Near term: Payments may spike following major events.

Long term: Sustained reduction in payouts demonstrating measurable loss avoidance and mitigation return on investment.

Goals for NFIP Policy and Claims

- High or stable insurance participation
- Reduced flood losses and payouts over time
- Stabilized exposure growth
- Transition from recovery spending to risk reduction activities

Table 6-4: NFIP Policy & Claims Information - Percent Change Between Plan Updates (2020-2025)

Jurisdiction	No. of Policies in Force	Insurance in Force	No. of Paid Losses	Total Payments to Date
Cumberland Co	53.9%	92.0%	693.1%	3,027.7%
Eastover	Increased from 0 to 15	Increased from $0 to $4,864,000	Increased from 0 to 5	Increased from $0 to $156,871
Falcon	0.0%	150.0%	Increased from 0 to 1	Increased from $0 to $690
Fayetteville	36.6%	62.5%	559.8%	812.2%
Godwin	NA	NA	NA	NA
Hope Mills	1,600.0%	19,767.9%	100.0%	784.4%
Linden	NA	NA	NA	NA
Spring Lake	58.3%	128.7%	Increased from 0 to 8	Increased from $0 to $5,408,000
Stedman	66.7%	136.0%	Increased from 0 to 1	Increased from $0 to $6,355
Wade	0.0%	25.0%	Increased from 0 to 2	Increased from $0 to $31,132
Subtotal Cumberland	**45.3%**	**77.2%**	**592.2%**	**1,168.8%**
Hoke Co	48.7%	99.5%	3,100.0%	29,413.9%
Raeford	66.7%	123.4%	Increased from 0 to 3	Increased from $0 to $5,257
Subtotal Hoke	**50.0%**	**101.7%**	**3,400.0%**	**29,678.6%**
Total Plan	**45.6%**	**78.7%**	**616.4%**	**1,197.9%**

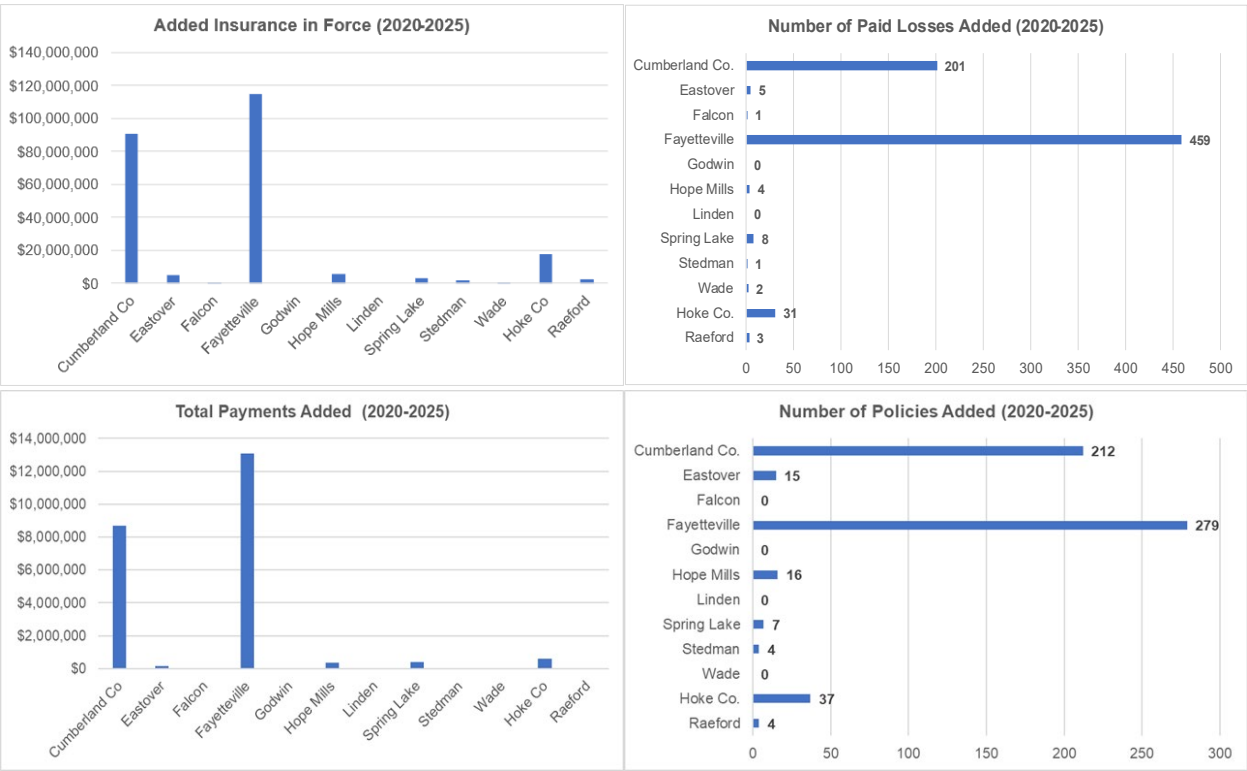


Figure 6-2: NFIP Policy & Claim Information Changes from 2020-2025

Community Rating System (CRS): An additional indicator of floodplain management capability is the active participation of local jurisdictions in the CRS. The CRS is an incentive-based program that encourages counties and municipalities to undertake defined flood mitigation activities that exceed the minimum NFIP requirements by implementing additional local measures to reduce flood impacts. 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 6-5. 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 6-5: 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 in response to community feedback. Changes have been made to make the CRS more user-friendly and to provide extensive technical assistance to communities upon request.

- Cumberland County is the only jurisdiction in the planning area that participates in the CRS. Cumberland County joined the Community Rating System (CRS) on 10/01/1996. The County currently has a CRS class of 8 (effective date: 10/01/2010), meaning residents in the unincorporated areas of Cumberland County receive a 10% discount on their NFIP premiums. Please review Cumberland County's entry in Appendix E for details on the CRS activities that Cumberland County receives points towards its overall CRS class.

Flood Damage Prevention Ordinance (FDPO): A FDPO establishes minimum building standards in the floodplain to minimize public and private losses from flooding.

- Cumberland County, the City of Fayetteville, the Town of Hope Mills, the Town of Linden, the Town of Spring Lake, the Town of Stedman, Hoke County, and the City of Raeford implement jurisdiction-specific FDPO.

- The Town of Eastover, the Town of Falcon, the Town of Godwin, and the Town of Wade have adopted the Cumberland County FDPO by resolution and maintain an inter-local agreement with the County for assistance with floodplain administrative duties.

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.

- The Town of Falcon, the City of Fayetteville, the Town of Godwin, the Town of Hope Mills, the Town of Linden, the Town of Spring Lake, and Hoke County indicated they have a Floodplain Management Plan in place.

Flood Response Plan: Procedures for flood monitoring, emergency response, communication, and resource deployment during flood events.

- The Town of Falcon, the City of Fayetteville, the Town of Spring Lake, and Hoke County indicated they have a Flood Response Plan in place.

Open Space Management Plan*:* An open space management plan is designed to preserve, protect, and restore largely undeveloped lands in their natural state and to expand or connect areas in the public domain such as parks, greenways, and other outdoor recreation areas. In many instances, open space management practices align to reduce hazard losses, such as preserving wetlands or other flood-prone areas in their natural state for perpetuity.

- The Town of Spring Lake was the only jurisdiction to indicate they have an Open Space Management Plan in place.

Stormwater Management Plan/Ordinance: A stormwater management plan addresses flooding caused by 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. A local (county or municipal) stormwater management ordinance is a legally adopted regulation that establishes requirements for managing runoff from new development and redevelopment to reduce flooding, erosion, and water quality impacts. It typically sets design standards, review procedures, and maintenance obligations for stormwater control measures to ensure consistency with state and federal requirements.

- Cumberland County, the City of Fayetteville, the Town of Hope Mills, the Town of Spring Lake, the Town of Stedman, Hoke County, and the City of Raeford indicated they have a Stormwater Management Plan and/or a Stormwater Management Ordinance in place.

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 assessing how mitigation-related activities are assigned to local departments and whether there are sufficient personnel to carry them out. The degree of interdepartmental coordination will also affect the administrative capacity to implement proposed mitigation activities.

Technical capability can generally be evaluated by assessing the level of knowledge and technical expertise among local government employees, such as those skilled in using Geographic Information Systems (GIS) to analyze 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 6-6 provides a summary of the capability assessment results for the Cumberland-Hoke 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 6-6: Relevant Staff / Personnel Resources

Staff / Personnel Resources	Cumberland County	Eastover	Falcon	Fayetteville	Godwin	Hope Mills	Linden	Spring Lake	Stedman	Wade	Hoke County	Raeford
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	✓	–	–	✓	–	–	–	–	–	–	✓	–
Personnel skilled in GIS and/or HAZUS	✓	–	–	✓	✓	–	✓	✓	–	–	✓	–
Resource development staff or grant writers	✓	–	–	✓	–	–	✓	–	–	–	✓	–

Community Notes

The bulleted list below captures additional community notes from participating jurisdictions that provide more details on their administrative and technical capabilities.

- The Town of Falcon has local agreements with Cumberland County and the Mid-Carolina Regional Council.
- The City of Fayetteville has Hazard Mitigation Plan (HMP) related staff and resources across multiple departments, including Public Services, Development Services, Emergency Management, Police, Fire, Economic and Community Development, and Marketing and Communications. Within Public Services, Transportation Planners, Traffic Engineers, and Land Surveyors contribute to identifying and addressing safety hazards, with some staff possessing GIS capabilities to support data-driven analysis. Development Services oversees both Building and Planning functions, ensuring that mitigation considerations are integrated into development review and regulatory processes.
- The Town of Linden relies on Cumberland County for planning assistance.
- The Town of Stedman has an on-call engineer that they are working with through contracts.
- The Town of Wade relies on Cumberland County for planning capabilities.
- Hoke County has a Planning and Zoning Department responsible for land use, a GIS Department responsible for accessing county GIS data that serves as a reference point for the Planning and Zoning team responsible for new developments. The County's Utilities Department is familiar with natural hazards for disaster recovery, and its Emergency Services Department also serves as the Fire Marshal's office, in-house Emergency Management, and grant writing.

Floodplain Managers

While local staffing changes are common in many communities, the following table highlights the Floodplain Administrators as of November 2025, along with their contact information for participating jurisdictions that completed this question in the Capability Assessment Survey.

Table 6-7: Floodplain Administrators Reported by Participating Jurisdictions

Jurisdiction	Floodplain Admin. Name	Title	Email Address
Cumberland County	**Wayne Dudley**	**Deputy Director of Engineering**	**wdudley@cumberlandcountync.gov**
Eastover	See Cumberland County		
Falcon	Samantha L. Wullenwaber	Deputy Executive Director of the Mid-Carolina Regional Council	swullenwaber@mccog.org
Fayetteville	Byron Reeves	Deputy Director of Public Services	ByronReeves@FayettevilleNC.gov

Godwin	See Cumberland County		
Hope Mills	Elisabeth Brown	Stormwater Administrator	eabrown@townofhopemills.com
Linden	See Cumberland County (Mayor assists County in administration)		
Spring Lake	Deanna Rosario	Water Resources Manager	Drosario@townofspringlake.com
Stedman	See Cumberland County		
Wade	See Cumberland County		
Hoke County	**Jackie Lowery**	**Zoning Clerk**	**jlowery@hokecounty.org**
Raeford	Felecia Locklear	City Clerk, Zoning Administrator, and Assistance City Manager	flocklear@raefordnc.org

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 assess the region’s fiscal capacity by identifying locally available financial resources. Table 6-8 provides a summary of the results for the Cumberland-Hoke 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 6-8: Relevant Fiscal Resources

Fiscal Resources	Cumberland County	Eastover	Falcon	Fayetteville	Godwin	Hope Mills	Linden	Spring Lake	Stedman	Wade	Hoke County	Raeford
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	✓	–	✓	✓	–	–	✓	–	–	–	✓	–
Partnering Arrangements or Intergovernmental Agreements	✓	–	✓	✓	–	–	✓	–	–	–	✓	–
Other: PDM, FMAP, HMGP, PA, SBA, and other Federal and state funding sources, etc.	–	–	–	–	–	–	–	–	–	–	–	–

Community Notes

The bulleted list below captures additional community notes from participating jurisdictions that provide more details on their fiscal capabilities.

- The Town of Falcon has an interlocal agreement with Cumberland County. Falcon also has a finance officer and a town clerk/administrator who are bonded and work with others.
- The City of Fayetteville utilizes multiple funding mechanisms to support hazard mitigation and infrastructure improvement projects. These include the existing stormwater utility, which provides dedicated stormwater funding, as well as federal and state grants and allocations from the City's general fund. Within Traffic Services, the Capital Improvement Plan (CIP) is updated annually to prioritize transportation and safety projects. Additional funding sources include the Municipal Service District (MSD) for downtown, development impact fees assessed when sidewalks cannot be constructed, and General Obligation (GO) Bonds for major infrastructure initiatives. The City also leverages municipal agreements and Locally Administered Projects Program (LAPP) funds through North Carolina Department of Transportation (NCDOT) and Fayette Area Metropolitan Planning Organization (FAMPO) to further advance mitigation and transportation goals.
- The Town of Hope Mills collects refuse and stormwater revenues through its property tax billing system.
- The Town of Wade operates its own water system and sets rates as well as plans major work that affects the budget.
- The Hoke County Tax Department is responsible for the collection of fees.

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 in Table 6-9. 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 6-9: Education & Outreach Capability

Education & Outreach Resources	Cumberland County	Eastover	Falcon	Fayetteville	Godwin	Hope Mills	Linden	Spring Lake	Stedman	Wade	Hoke County	Raeford
Local citizen groups or non-profit organizations focused on environmental protection, emergency preparedness, access, and functional needs populations, etc.	✓	–	✓	✓	–	✓	–	✓	✓	–	–	–
Ongoing public education or information program (e.g., responsible water use, fire safety, household preparedness, environmental education)	✓	–	–	✓	–	✓	–	✓	–	✓	✓	–
Natural disaster or safety-related school programs	✓	–	–	✓	–	✓	–	✓	–	–	✓	–
StormReady certification	✓	–	–	–	–	–	–	–	–	–	–	–
Firewise Communities certification	–	–	–	–	–	–	–	–	–	–	–	–
Public-private partnership initiatives addressing disaster-related issues	✓	–	–	✓	–	✓	–	–	–	–	–	–

Community Notes

The bulleted list below captures additional community notes from participating jurisdictions that provide more details on their education and outreach capabilities.

- The Town of Falcon has an Environmental Response Team (ERT) team and just completed the Community Emergency Response Team (CERT) program. They are working towards being sponsored by Cumberland County or Godwin/ Falcon Fire Department to become a standalone entity.
- Education and outreach efforts are coordinated by the City of Fayetteville's Public Information Office, Fire Department, Police Department, and other departments as needed to support community engagement and preparedness initiatives.
- Hope Mills' Public Works and Fire Department oversee most of the implementation.
- In the Town of Linden, actions of this type would most likely be handled through the Town Government and the Fire Department.
- The Town of Spring Lake's Fire Department teaches public safety in schools, and the Stormwater Department holds events in parks and events.
- The Town of Stedman's Volunteer Fire Department conducts these kinds of activities.
- The Town of Wade's Fire Department has workshops at a local elementary school and a presence at all community and town events. Cumberland County sets up booths representing its various departments during the Founder's Day event in June.
- The Hoke County Fire Departments go to each school annually to inform children of the dangers of natural disasters and how to protect themselves. The Hoke County Sheriff's Office runs a citizens' academy to assist community members concerned with disaster preparedness.

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 6-10: Local Capability Self-Assessment Results

Capability	Cumberland County	Eastover	Falcon	Fayetteville	Godwin	Hope Mills	Linden	Spring Lake	Stedman	Wade	Hoke County	Raeford
Planning and Regulatory Capabilities	**High**	Limited	High	High	High	High	Limited	High	Moderate	Limited	**High**	Moderate
Administrative and Technical Capabilities	**Moderate**	Limited	High	High	High	High	Limited	Moderate	Limited	Limited	**High**	Moderate
Fiscal Capability	**High**	Limited	High	High	High	Moderate	Moderate	Limited	Moderate	Limited	**Limited**	Moderate
Education and Outreach Capabilities	**Moderate**	Limited	Moderate	Moderate	Moderate	Moderate	Moderate	High	Limited	Limited	**Limited**	Moderate
Political Capability	**High**	Limited	Moderate	High	High	High	Limited	Moderate	Limited	High	**Moderate**	Moderate
Overall Capability Rating	**High**	Limited	Moderate	High	High	High	Limited	Moderate	Limited	Moderate	**Moderate**	Moderate
Overall Capability Score (1-10)	**7**	**1**	**9**	**8**	**10**	**6**	**3**	**5**	**5**	**3**	**6**	**5**

Community Notes

The bulleted list below captures additional community notes from participating jurisdictions that provide more details on their local self-assessment.

- The Town of Falcon works towards improving their capabilities by partnering with others and organizing it to meet the needs of its rural community. The Town's clerk constantly attends training held by North Carolina League of Municipalities (NCLM) and Mid Carolina to become more knowledgeable, which keeps the Town current and informed on hazard mitigation topics.
- The City of Fayetteville maintains comprehensive capabilities that support hazard mitigation across planning, regulatory, operational, financial, and community outreach functions. From a planning and regulatory standpoint, the City provides extensive capabilities through the implementation of Chapter 160D planning, zoning, and subdivision regulations, as well as stormwater management, floodplain administration, streets, historic preservation, and both area and comprehensive plans. Development Services oversees all building and trade code plan reviews and inspections, ensuring that mitigation principles are integrated into construction and land-use decisions. Supporting ordinances and tools such as Erosion, Sedimentation, and Pollution Control Ordinance, BCEGS Rating, Site Plan Review Requirements, and Elevation Certificates further strengthen the City's regulatory foundation. The City's Future Land Use Plan, adopted in 2019, guides growth and development patterns, though an update is needed to reflect current conditions, emerging risks, and long-term resilience goals. The City has hazard mitigation–related staff and expertise across several departments, including Public Services, Development Services, Emergency Management, Police, Fire, Economic and Community Development, and Marketing and Communications. Within Public Services, Transportation Planners, Traffic Engineers, and Land Surveyors play key roles in identifying safety hazards and supporting data-driven mitigation through GIS capabilities. Development Services ensures that building and planning processes align with mitigation objectives, reducing vulnerability through responsible development practices. In terms of financial capabilities, the City utilizes a diverse mix of funding mechanisms to support mitigation and infrastructure improvement projects. These include the dedicated stormwater utility, which provides a stable funding source, as well as federal and state grants and allocations from the City's general fund. Traffic Services supports mitigation through an annually updated Capital Improvement Plan (CIP) and additional resources such as the Municipal Service District (MSD) for downtown development impact fees, General Obligation (GO) Bonds, municipal agreements, and Locally Administered Projects Program (LAPP) funds through NCDOT and FAMPO. The City also emphasizes education and outreach to build public awareness and community resilience. These efforts are coordinated by the Public Information Office, the Fire Department, and other departments as needed, ensuring that residents and stakeholders receive timely, relevant information on preparedness, mitigation programs, and recovery initiatives. While the City has a strong foundation of planning, technical, and financial resources to support hazard mitigation, opportunities for improvement include updating the 2019 Future Land Use Plan to better incorporate resilience strategies and climate adaptation principles. Enhancing interdepartmental coordination by increasing

communication between Public Services, Emergency Management, and Development Services during project planning and permitting. Expanding GIS capabilities and data sharing to improve risk assessment and decision-making. Increasing public education and outreach to ensure broader community understanding of mitigation measures, personal preparedness, and available resources. Pursuing additional grant funding and partnerships to strengthen infrastructure resilience, particularly in flood-prone and vulnerable areas. Collectively, these actions will enhance the City of Fayetteville's ability to reduce long-term risk, strengthen community resilience, and align mitigation planning with future growth and development priorities.

- Hope Mills has the capability to implement the basics in mitigation planning, but with limited staff. More staff would help the Town better reach its goals and maximize its capabilities.
- Since the 2020 HMP update, the Town of Linden has approved a zoning ordinance and has participated in the planning/adoption of the North Central Comprehensive Land Use Plan. Generators have been installed at both the town hall and the community building, which will help maintain services or serve as staging areas for disaster response. The Town's website needs to be set up to better distribute information.
- The Town of Wade depends heavily on what Cumberland County has in place; the Town generally adopts the same policies that are county-wide. Wade has its own community standards policy and must use COG for enforcement due to very limited resources. Wade has a very capable Fire Department that can handle most emergencies, except Hazmat. With that, better working relationships and better communication across departments are always better for the County.
- In Hoke County, prioritization of actions and limited financial contributions are a main barrier to increasing mitigation planning capabilities.

6.4. Conclusions on Local Capability

The overall capability to implement hazard mitigation actions varies among the participating jurisdictions. For planning and regulatory capability, a majority (seven) of the jurisdictions rated themselves highly capable, two rated moderate, and three rated limited. In the administrative and technical capabilities category, five jurisdictions rated themselves highly capable, three rated themselves moderate, and four rated themselves limited. In the fiscal capability category, ratings were evenly split: four jurisdictions rated themselves high, four moderate, and four limited. The education and outreach capability category received the fewest high ratings (one) and the largest proportion of moderate ratings (seven), with four limited ratings. Only three jurisdictions rated their political capability to implement hazard mitigation actions as limited, with four rated moderate and five rated high. A majority (five) of the jurisdictions in the planning area rated their overall capability as moderate, followed by high (four), and limited (three). Participating jurisdictions were also asked to rate their community's overall capability to implement hazard mitigation actions between zero and ten. Across the 12 jurisdictions that completed the Survey, the average overall rating is 5.7/10 (rounded to 1 decimal place). For a complete depiction of the self-assessment results, please refer Figure 6-3.

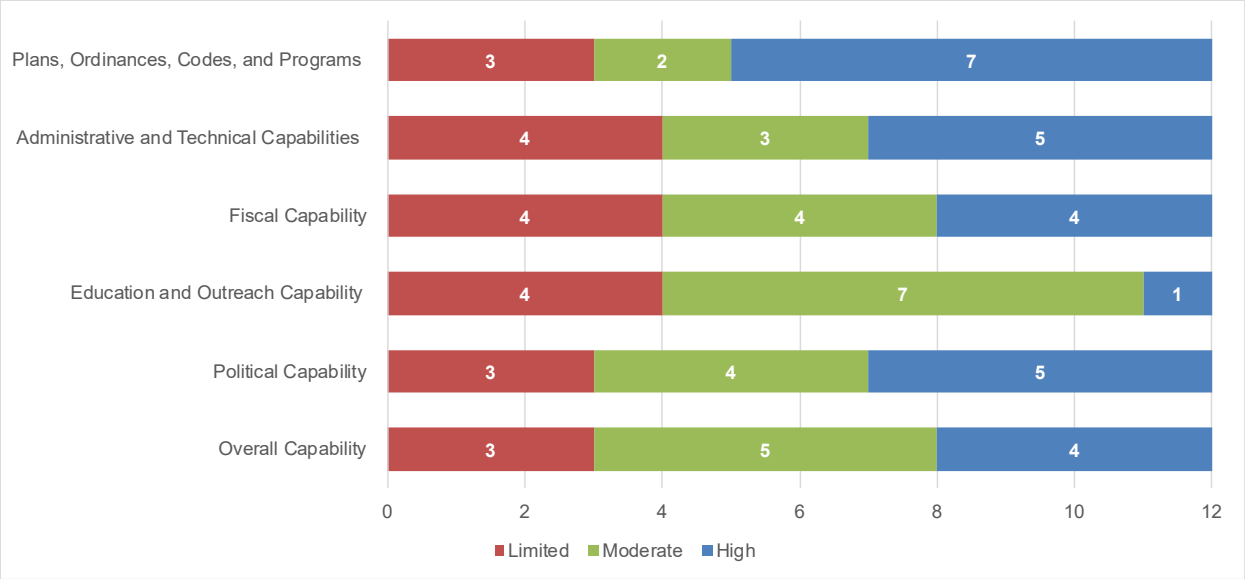


Figure 6-3: Local Capability Self-Assessment Results

6.4.1. Linking the Capability Assessment, Risk Assessment & Mitigation Plan

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 are identified for each jurisdiction in the tables throughout this section. The participating jurisdictions used the Capability Assessment as a basis for the mitigation actions identified in Section 8; therefore, each jurisdiction addresses its ability to expand and improve its existing capabilities by identifying its mitigation actions.

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, the HMPC considered not only each jurisdiction's hazard risk level but also its 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 Cumberland-Hoke Region to become less vulnerable to the identified hazards. It is based on the consensus of the Cumberland-Hoke Regional Hazard Mitigation Planning Committee (HMPC) 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 in the Cumberland-Hoke Region
- 7.5 Plan Update Requirement
- 7.6 Integrating the Mitigation Plan With Other Planning Mechanisms

7.1. Introduction

The Mitigation Strategy aims to provide the Cumberland-Hoke Region's 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 Cumberland-Hoke Region (provided separately in Section 8: 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 Cumberland and Hoke 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 Cumberland-Hoke 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, determining implementation status, and setting 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)

[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 identified as important community needs, but the community likely faced several potential implementation challenges (e.g., lack of funding, technical obstacles). A more detailed cost-benefit analysis will be conducted for specific projects before applying for or obligating funding, as appropriate.

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.

7.2. Mitigation Goals

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.

The primary goal of all local governments is to promote the public health, safety, and welfare of its citizens. In keeping with this standard, Cumberland and Hoke Counties, along with the participating municipalities, have developed four 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 HMPC at their third meeting. Each goal is deliberately broad and establishes the parameters for developing additional mitigation actions. The Cumberland-Hoke 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: Cumberland-Hoke Regional Mitigation Goals

Goals	
Goal #1	Protect properties and natural resources that are at risk of damage due to hazards and undertake cost-effective mitigation measures to minimize losses.
Goal #2	Reduce vulnerability of Cumberland and Hoke Counties and their municipalities to all hazards for existing development, future development, redevelopment and infrastructure.
Goal #3	Improve public awareness of hazards through a variety of education and outreach programs.
Goal #4	Establish and participate in local, state and federal mitigation-oriented and disaster-based programs and planning efforts to reduce damage and protect lives and property.

7.3. Identification and Analysis of Mitigation Techniques

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 Cumberland-Hoke Region, a wide range of activities were considered to help achieve the established mitigation goals and address specific hazard concerns. These activities were discussed during the HMPC meetings. In general, all activities considered by the HMPC 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's educational programs
- Hazard expositions

7.4. Selection of Mitigation Techniques in the Cumberland-Hoke Region

To determine the most appropriate mitigation techniques for communities in the Cumberland-Hoke Region, HMPC members thoroughly reviewed and considered the findings of the Capability and Risk Assessments 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 8: 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 HMPC integrated the previous version of the Cumberland-Hoke 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 input into the Blueprint Tool as pre-identified actions. By entering these actions into the Blueprint Tool platform, the HMPC 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

Requirement §201.6(c)(3)(ii)
The mitigation strategy section shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure. All plans approved by FEMA after October 1, 2008, must also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

This section lists the mitigation actions proposed by participating jurisdictions in the Cumberland-Hoke Region. It consists of the following two subsections:

- 8.1 Overview
- 8.2 Mitigation Action Plans

8.1. Overview

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 7: Mitigation Strategy and will be maintained regularly in accordance with the plan maintenance procedures established in Section 9: 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 lead agency or department responsible for carrying it out and 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 7.1.1. 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

was" 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	
Hazard(s) Addressed	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 be continued.
	Medium	Strategies that have at least two of the following characteristics (but not all three) and 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 getting worse and are typically administered through government programs or regulatory actions that influence the way land is developed, and buildings are built.
	Property Protection	Property protection measures involve the modification of existing buildings and structures to help them better withstand the forces of a hazard, or removal of the 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 environmental natural progression of the hazard event through construction.

	Public Education	Public education and awareness activities are used to advise 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 action or program; requires annual or periodic maintenance to continue the action.
	Complete:	No further action required for mitigation action to be implemented or used.
	In Progress:	Action is currently being implemented.
	Deferred:	Action will be reevaluated later.
	Deleted:	The Jurisdiction will no longer utilize the action as a viable mitigation action that can be implemented.
	New	The mitigation action has just been added to the HMP.
Estimated Cost	Low	Less than $10,000
	Moderate	$10,000 -$50,000
	High	More than $50,000
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 participating jurisdiction are listed on the following pages.

Table 8-2: Cumberland County Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
CC-1	Prevention	Conduct a countywide infrastructure vulnerability assessment regarding all hazards to identify priority needs for updating ill-designed or outdated critical structures.	It has been difficult to locate any comprehensive assessments of local infrastructure in Cumberland and Hoke Counties. With current and projected natural hazard occurrences, it is essential to have an accurate and comprehensive understanding of the current condition of critical facilities to ensure the ability to continue to provide for basic needs, such as water and electrical supplies, transportation routes, waste management, etc.	All Hazards	Medium	County/city structural & civil engineers, in partnership with the U.S. Army Corps of Engineers	Local Operating Budget & Federal	Low	In Progress	Medium-Term	The County continues to assess critical infrastructure vulnerabilities to identify priority needs. Internal Services, in collaboration with the Cumberland County School System and Emergency Management, has received American Rescue Plan Act (ARPA) and grant funding to install new generators at five County-designated shelter locations. The County has also worked with the Mid-Carolina Regional Council to identify critical infrastructure that could benefit from backup power through a clean energy initiative. New infrastructure improvements and critical facility updates will be implemented as opportunities arise or funding becomes available. This action will be updated as needed or during the next HMP update process.
CC-2	Prevention	Conduct social vulnerability analysis to identify priority needs and opportunities that will address the specific problems vulnerable populations face from all hazards, including barriers to evacuation, event-specific vulnerabilities, and	There exist various groups of individuals that have additional financial, social, and/or environmental barriers to being resilient in the face of natural hazard events. In Cumberland County, for example, groups with a significant number of people affected include about 10K outdoor workers with direct exposure to extreme heat days,	All Hazards	Medium	Cumberland County Social Services Department and/or County Health Department	Local Operating Budget	Low	In Progress	Medium-Term	As part of its ongoing efforts, Cumberland County continues to work with community partners and organizations to identify social vulnerabilities and community needs, and to implement programs that best benefit the community. In 2024, the Department of Health conducted a survey to better understand the health status and needs of the population it serves and to use the knowledge gained to inform program development. This survey is conducted triannually.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		impediments to recovery.	elderly people, and especially those with existing cardiovascular conditions, and other low-income and/or minority groups. As natural hazard events increase in intensity and frequency, these groups will find it harder to get out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities, and transportation to/from a place of work, etc.								
CC-3	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan.	To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency	All Hazards	Low	Sustainable Sandhills & the Planning Department/ Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Low	Complete	-	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains a North Carolina Climate Risk Assessment and Resilience Plan, which was last updated in June 2020.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			management should, at the very least, and by the very nature of the definition of "mitigation," acknowledge the changing climate and possibility of increased extreme weather and flooding events.								
CC-4	Public Education	Maintain an all-hazards public education program to educate and prepare residents for all the hazards that impact Cumberland County.	To educate, enhance preparedness, and resiliency of Cumberland County and its municipal residents through public education programs that include booths at fairs, festivals, and special events, websites, brochures, school programs, etc.	All Hazards	High	Cumberland County Emergency Management	Local Operating Budget	High	To Be Continued	Short-Term	Emergency Management continues to provide an all-hazards public education program. Through Emergency Operations Center (EOC) tours, Camp Ready—a summer camp for high school students—social media outreach, and radio and television interviews, Emergency Management promotes community resilience and encourages residents to sign up for Cumberland Alerts. Due to continuous outreach efforts and increased demand for participation in community events, the department has requested the addition of a public outreach position within the next one to two years. This action will be updated as needed or during the next HMP update process.
CC-5	Property Protection	Seek grant funding to install backup generators or quick-connect hookups for mobile generators on any county critical facilities.	Cumberland County will continue to seek funding to equip critical infrastructure, including emergency shelters and other annexes.	All Hazards	High	Cumberland County Emergency Services/ Board of Commissioners	Local, State, & Federal Grants. Capital Improvement projects	High	In Progress	Medium-Term	The county is in the process of adding emergency generators to some of its emergency shelters. This action will be implemented as funding becomes available and opportunities for new generators are identified.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
CC-6	Emergency Services	Purchase new 911 dispatch technology.	Cumberland County consistently searches for new ways to improve its emergency telecommunication system. Future improvement includes, but is not limited to, additional 911 consoles and other advance technologies.	All Hazards	Medium	Cumberland County Emergency Services	Private, State, Local, & Federal Grants	High	Complete	-	On December 14, 2022, Cumberland County Emergency Services moved into a new facility.
CC-7	Property Protection & Emergency Services	Relocate the EOC out of the 500-year flood plain.	Cumberland County's Emergency Operations Center (EOC) is in the 500-year flood plain. Cumberland County will continue to search for funding opportunities to aid the redevelopment of this critical infrastructure.	All Hazards	Medium	Cumberland County Emergency Services	Local, State, & Federal Grants.	High	Complete	-	Emergency Services and the EOC relocated to a new facility on December 14, 2022.
CC-8	Emergency Services	Provide financial assistance for low-income residents to help with power bills and support services during extended periods of high temperatures and other extreme weather.	Low-income households face challenges in keeping up with utility bills. Some low-income utility assistance programs are offered, but funds are limited. Extreme weather and increasing temperatures will place even greater pressure on these programs' ability to aid all those in need, and citizens' lives will be increasingly at stake.	Extreme Heat, Winter Storm	Medium	Cumberland County DSS	NC Department of Health & Human Services & County Department of Health	Low	To Be Continued	Medium-Term	Cumberland County participates in the statewide Crisis Intervention Program (CIP). CIP aids low-income families experiencing or in danger of heating and/or cooling household emergencies where there are life-threatening or health-related emergencies and timely or appropriate assistance is not available from any other source. This action is implemented and updated as needed.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
CC-9	Natural Resource Protection	Protect and enhance riparian zones around creeks and streams to control flooding.	The County will seek opportunities to protect and enhance riparian zones to not only control flooding but to also protect the natural and beneficial functions of floodplains.	Flooding	High	Cumberland County Engineering & Infrastructure	Non-profit land trusts; Clean Water Management Trust Fund; Department of Commerce - Habitat Conservation; Department of the Interior - Rivers, Trails, and Conservation Assistance	High	To Be Continued	Long-Term	This will be a continuous initiative and will be implemented as new projects are identified and funding becomes available. Progress to date includes debris removal and cleanup along the banks of the Cape Fear River, as well as within select creeks and streams.
CC-10	Property Protection	Complete flood mitigation projects (acquisitions, elevations), with FEMA-defined and locally verified “repetitive loss properties” receiving high priority.	Cumberland County will explore all grant programs available for flood mitigation projects, including acquisitions or elevations.	Flooding	Medium	Cumberland County Emergency Services/ Engineering & Infrastructure	FEMA mitigation grant programs such as Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation Program (PDM), Flood Mitigation Assistance Program (FMA), Repetitive Flood Claims Program (RFC), Severe Repetitive Loss Grant Program (SRL) & local funds.	Low	To Be Continued	Long-Term	This will be a continued initiative as grant funds become available and as eligible flood mitigation projects are identified. This action will be updated and reviewed as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
CC-11	Public Education	Encourage homeowners to purchase flood insurance.	During both hurricanes Matthew and Florence, multiple residential properties were impacted by flooding. Standard homeowners' insurance does not cover flooding, leaving homeowners to depend on federal assistance they may not qualify for. A federal disaster declaration does not have to be in place for flood insurance claims to be paid.	Flooding	Low	Cumberland County Emergency Services	FEMA	Low	In Progress	Short-Term	Cumberland County continuously encourages homeowners to purchase flood insurance through public education and outreach campaigns. This action will be reviewed and updated as needed or during the next HMP update cycle.
CC-12	Prevention	Augmented Flood Mapping	Augmented Flood Mapping	Flooding, Hurricane	High	Cumberland County Emergency Services	Grants, Local Operating Budget	High	Complete	-	The State implemented the Flood Risk Information System (FRIS), which contains digitally accessible flood hazard data, models, maps, risk assessment, and reports to help homeowners and businesses better prepare and predict for flood risks, which was a similar goal for this action.
CC-13	Natural Resource Protection	Develop a greenway program to protect natural areas along the rivers, streams, creeks, and drain ways.	Provides a buffer from urban encroachment and reduces flooding.	Flooding	High	Cumberland County & Fayetteville/ Cumberland County Parks & Recreation Department	Local Budget	Low	Complete	-	Fayetteville-Cumberland County Parks and Recreation adopted a new Center City Parks & Trails Master Plan in December 2020, and it was revised in May 2022. The County itself does not have an adopted greenways and trails master plan.
CC-14	Property Protection	Critical Infrastructure Elevation	During Hurricane Florence, flooding of the sewer lift stations along the Little River in the Manchester community resulted in failure of the sewer system and	Flooding	Medium	Cumberland County Emergency Services	Local, State, & Federal Grants	High	Deferred	Long-Term	The County has applied for grant funding to support this initiative; however, no funding has been awarded at this time. The initiative remains under review for consideration in future projects and will be updated as needed or

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			sewage spilling into the river. The lift stations were inundated, causing failure of the pumps, loss of power, and damage to electrical fixtures. Elevating the power supply, control equipment, back-up power equipment, and replacing the existing pumps with submersible pumps is critical to ensure continuous operation.								during the next HMP update process.
CC-15	Prevention & Emergency Services	Revise the Subdivision Ordinance to require additional access for emergency vehicles and to be used as an evacuation route for developments located near special flood hazard areas.	This will provide additional access for residents, public safety officials, and emergency services to those developments located near a special flood hazard area, while reducing the possibility of a life-threatening situation for residents, public officials, and emergency services.	Flooding	Medium	Cumberland County Board of Commissioners & Cumberland County Planning & Inspections Department	Local Operating Budget	Low	Deferred	Long-Term	This item has been placed on hold pending further discussion and direction from the County Management Office. This action will be reevaluated and updated during future HMP updates or as new progress has been made.
CC-16	Prevention & Emergency Services	Seek funding to install stream gauges with early notification systems to provide early warnings during future flood events.	Install gauges and build out an early-warning system to assist with management of flow from the interconnected and interdependent series of dams and water courses throughout the county, including Rockfish Creek, Little Rockfish	Flooding	Medium	Cumberland County Emergency Services	Local, State, & Federal Grants	High	In Progress	Medium-Term	The county has installed five stream gauges since 2020, and at this time, National Oceanic and Atmospheric Administration (NOAA) has not been able to identify any additional areas that would benefit from additional gauges. Through NCFIMAN, the county is capable of receiving flood notifications, but we are continuing to explore platforms

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			Creek, and Black River in Godwin, Bones Creek, The Little River, and Upchurch's Pond near Lake Upchurch Drive. Additional stream gauges and a warning system will mitigate the loss of life by providing ample warning for evacuation.								and additional technology that will further strengthen our early notification capabilities. This action will be updated and reviewed as needed or during the next HMP update process.
CC-17	Prevention	Restrict Residential and Non- Compatible Uses within the Special Flood Hazard Area.	Prohibit developing within the Special Flood Hazard Area and promote the flood area as an environmental corridor and open space, while reducing potential losses during a flood hazard.	Flooding	Low	Cumberland County Planning & Inspections Department & Cumberland County Board of Commissioners	Local Operating Budget	Low	To Be Continued	Long-Term	The county enforces a 2-foot freeboard for development within the floodplain continuously and as needed. This action will be updated and reviewed as needed.
CC-18	Natural Resource Protection	Use natural systems, more open space, and green surfaces to manage stormwater in a more resilient fashion.	Impervious surfaces, typically found in urban centers, such as paved roads, buildings, parking lots, and pavement, drastically increase flash floods and urban flooding, which seems to be a common occurrence in Cumberland County. Coupled with the naturally flat topography of the eastern portions of the County also helps to create excess runoff and subsequent urban flooding issues,	Flooding	Low	Zoning Department of each jurisdiction	Local Operating Budget	Low	To Be Continued	Long-Term	Cumberland County continues to create and update Land Use Plans that promote open space protection and support the development of newly protected areas, which helps mitigate excessive stormwater runoff. These plans are continuously reviewed, with most being updated, created, and adopted within a year. Cumberland County has 12 plan areas, and each plan is typically scheduled for an update every 8–12 years. This action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			especially in the Special Flood Hazard Areas (SFHA) of the County, and specifically around Blounts and Cross Creek, as referenced in various resources.								
CC-19	Prevention	Develop a tree ordinance to address clear-cutting.	Provide more pervious area for natural drainage, while reducing the vulnerability to localized flooding and extreme heat.	Flooding, Extreme Heat	Medium	Cumberland County Planning & Inspections Department & Cumberland County Board of Commissioners	Local Operating Budget	Low	Deferred	Long-Term	No measurable progress due to lack of staff and funding. There are no ordinances in unincorporated areas that address clear-cutting. This action will be reevaluated during the next HMP update process.
CC-20	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind and flooding, more energy and water-efficient, more tolerant of heat waves, and healthier to live in. Also, provide incentives for making buildings safer from wind, flooding, and more energy and water efficient.	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing temperatures and extreme heat days, and prolonged periods of drought. Climate projections also state that precipitation will continue to follow a seasonal pattern, whereby hot, Summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be	Flooding, Hurricane, Severe Weather, Extreme Heat, Winter Storm	Medium	Planning & Code Departments of each jurisdiction	Local Operating Budget	Low	In Progress	Medium-Term	Cumberland County has received updated preliminary flood maps and will begin the process of updating the Flood Damage Prevention Ordinance so it will be aligned with the new maps once they become effective. This action will be reviewed and updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			especially taxing on buildings with older Air Conditioning (A/C) systems or inadequate insulation and in low-income households where upkeep with rising utility costs could become a burden.								
CC-21	Prevention	Identify and map structures that are vulnerable to high winds.	Providing the location of structures that would be greatly impacted by high winds would assist in lessening the impact during a hazard event while also aiding emergency responders.	Hurricane, Severe Weather	Low	Cumberland County Emergency Services	Local Operating Budget	Low	Deleted	-	This action was reviewed and was determined to no longer align with current mitigation action priorities.
CC-22	Prevention	Explore the Fire Adapted Communities concept implementation in Cumberland County.	To enhance the preparedness and resiliency of Cumberland County and its municipalities to the effects of wildland fire and urban interface, through education, programs such as FireWise, Ready Set Go, Community Wildfire Protection Plan, Fuel Management, local codes, and ordinances.	Wildfire	Low	Emergency Management, NC Forest Service, & Fire Marshals	Local Operating Budget & Federal	Low	Deleted	-	After review staff determined that this mitigation action did not fit our current regional mitigation needs.
CC-23	Natural Resource Protection	Collaborate with NC Cooperative Extension and NC Agriculture and Forestry Adaptation Working Group to provide more local support and	Forests and farmland provide a multitude of social, economic, and environmental benefits that, when looked at comprehensively, far outweigh any profit/revenue projections of	Wildfire, Flooding	Low	County Board of Commissioners, Conservation District Programs, & other land preservation	NC Cooperative Extension, NC Forest Service, US Department of Agriculture, & NC Wildlife Resources Commission.	Low	To Be Continued	Short-Term	NC Cooperative Extension continues to promote the Present Use Value program, the Voluntary Agricultural District program, and cost-share programs for farms and forest landowners to help mitigate management costs. Cumberland County's Soil and Water Department supports

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		encouragement of forest conservation and farmland preservation measures.	residential or commercial properties. Outside of development pressure, some of the other major health risks include: (1) increasing wildfire risk, (2) increasing number and types of insects and pests, (3) lack of sufficient water during the growing season for crops, and (4) increasing damage from strong winds and flooding. It is vital, especially in the face of a changing climate, to preserve these working lands and to support higher-density development in already existing urban and suburban centers.			organizations .					conservation easements and writes conservation plans for landowners who are interested in easements. Some current conservation practices include prescribed burning and firebreaks, which help reduce wildfire risk. For wind, there is a cost share for windbreak/shelterbelt establishment practice, which works well for reducing wind erosion. Cost-share programs that assist landowners with implementing these practices are the State of North Carolina Agriculture Cost Share Program and the Federal Environmental Quality Incentives Program. For flooding, Clearing and Snagging practices have been implemented through programs such as the State Streamflow Rehabilitation Assistance Program (StRAP) and Emergency Watershed Protection Program (EWP) Funding. This action will be updated as needed or during the next HMP update process.
CC-24	Property Protection	Creating and updating Land Use Plans that promote open space protection and facilitate newly protected areas to mitigate excessive stormwater runoff.	-	All Hazards	High	Cumberland County Planning & Inspections	Local operating budget	High	New	Short-Term	Plans are maintained through an ongoing update process, with creation, revision, and adoption typically occurring within one year. Due to the scope of the 12 plan areas, comprehensive plan updates are generally anticipated on an 8–12-year cycle.
CC-25	Public Education	Provide environmental education,	-	All Hazards	Medium	Sustainable Sandhills	NC Department of Health & Human	Moderate	New	Long-Term	Sustainable Sandhills currently provides resources and supplies for heat-related illness mitigation

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		awareness, and resources to populations that are adversely affected by climate-related hazards.					Services & Fayetteville Area Metropolitan Planning Organization (Cumberland County entity)				and prescribed burn/wildfire smoke-related illness mitigation to vulnerable populations in Cumberland County, establishes cooling centers at publicly accessible locations and provides heat alerts to the public; Sustainable Sandhills continuously monitors air quality in Cumberland County and provides air quality alerts to the public; Sustainable Sandhills provides education and resources on public health considerations in the aftermath of floods (mold and mildew, vector-borne illnesses, carbon monoxide exposure, and water availability and contamination).

Table 8-3: Eastover Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
E-1	Prevention	Conduct a countywide infrastructure vulnerability assessment for all hazards to identify priority needs for updating ill-designed or outdated critical structures.	It has been difficult to locate any comprehensive assessments of local infrastructure in Cumberland and Hoke Counties. With current and projected natural hazard occurrences, it is essential to have an accurate and comprehensive understanding of the current condition of critical facilities to ensure the ability to continue to provide for basic needs, such as water and electrical supplies, transportation routes, waste management, etc.	All Hazards	Medium	County/city structural & civil engineers, in partnership with the U.S. Army Corps of Engineers	Local Operating Budget & Federal	Low	In Progress	Medium-Term	The County continues to assess critical infrastructure vulnerabilities to identify priority needs. Internal Services, in collaboration with the Cumberland County School System and Emergency Management, has received ARPA and grant funding to install new generators at five County-designated shelter locations. The County has also worked with the Mid-Carolina Regional Council to identify critical infrastructure that could benefit from backup power through a clean energy initiative. This action will be updated as needed or during the next HMP update process.
E-2	Prevention	Conduct social vulnerability analysis to identify priority needs and opportunities that will address the specific problems vulnerable populations face from all hazards, including barriers to evacuation, event-specific vulnerabilities, and impediments to recovery.	There exist various groups of individuals that have additional financial, social, and/or environmental barriers to being resilient in the face of natural hazard events. In Cumberland County, for example, groups with a significant number of people affected include about 10K outdoor workers with direct exposure to extreme heat days, elderly people, and especially those with existing cardiovascular conditions, and other low-	All Hazards	Medium	County Social Services Department and/or County Health Department & city officials	Local Operating Budget	Low	In Progress	Medium-Term	As part of its continuous efforts, Cumberland County continues to work with community partners and organizations to identify social vulnerabilities, and community needs to implement programs that best benefit the community. In 2024, the Department of Health conducted a survey to better understand the health status and needs of the population it serves and to use the knowledge gained to inform program development. This survey is conducted on a triannual basis. This action will

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			income and/or minority groups. As natural hazard events increase in intensity and frequency, these groups will find it harder to get out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities, and transportation to/from a place of work, etc.								be updated as needed or during the next HMP update process.
E-3	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan.	To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of "mitigation," acknowledge the changing climate and possibility of increased extreme	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Low	Complete	-	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of NC now maintains a North Carolina Climate Risk Assessment and Resilience Plan, which was last updated in June 2020.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			weather and flooding events.								
E-4	Public Education	Maintain an all-hazards public education program to educate and prepare residents for all the hazards that impact Cumberland County.	To educate, enhance preparedness, and resiliency of Cumberland County and its municipal residents through public education programs that include booths at fairs, festivals, and special events, websites, brochures, school programs, etc.	All Hazards	Low	Cumberland County Emergency Management & the Town of Eastover officials	Local Operating Budget	High	To Be Continued	Short-Term	Emergency Management continues to provide an all-hazards public education program. Through EOC tours, Camp Ready—a summer camp for high school students—social media outreach, and radio and television interviews, Emergency Management promotes community resilience and encourages residents to sign up for Cumberland Alerts. Due to continuous outreach efforts and increased demand for participation in community events, the department has requested the addition of a public outreach position within the next one to two years.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
											This action will be updated as needed or during the HMP update process.
E-5	Emergency Services	Provide financial assistance for low-income residents to help with power bills and support services during extended periods of high temperatures and other extreme weather.	Low-income households face challenges in keeping up with utility bills. Some low-income utility assistance programs are offered, but funds are limited. Extreme weather and increasing temperatures will place even greater pressure on these programs' ability to aid all those in need, and citizens' lives will be increasingly at stake.	Extreme Heat, Winter Storm	Medium	County Health Department	NC Department of Health & Human Services & County Department of Health	Low	To Be Continued	Medium-Term	Cumberland County participates in the statewide Crisis Intervention Program (CIP). CIP aids low-income families experiencing or in danger of heating and/or cooling household emergencies where there are life-threatening or health-related emergencies and timely or appropriate assistance is not available from any other source. This action is implemented and updated as needed.
E-6	Natural Resource Protection	Develop a greenway program to protect natural areas along the rivers, streams,	Provides a buffer from urban encroachment and reduces flooding.	Flooding	High	Town of Eastover & Fayetteville/Cumberland County Parks &	Local Operating Budget	Low	Complete	-	Fayetteville-Cumberland County Parks and Recreation adopted a new Center City Parks & Trails Master Plan in December 2020, and it was revised in May 2022. The

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		creeks, and drain ways.				Recreation Department					County itself does not have an adopted greenways and trails master plan.
E-7	Prevention & Emergency Services	Revise the Subdivision Ordinance to require additional access for emergency vehicles and to be used as an evacuation route for developments located near special flood hazard areas.	This will provide additional access for residents, public safety officials, and emergency services to those developments located near a special flood hazard area, while reducing the possibility of a life-threatening situation for residents, public officials, and emergency services.	Flooding	Medium	Town of Eastover & Cumberland County Planning & Inspections Department	Local Operating Budget	Low	To Be Continued	Long-Term	This item has been placed on hold pending further discussion and direction from the County Management Office. This action will be reevaluated and updated during future HMP updates or as progress has been made.
E-8	Prevention	Restrict Residential and Non-Compatible Uses within the Special Flood Hazard Area.	Prohibit developing within the Special Flood Hazard Area and promote the flood area as an environmental corridor and open space, while reducing potential losses during a flood hazard.	Flooding	Low	Cumberland County Planning & Inspections Department & Town of Eastover	Local Operating Budget	Low	To Be Continued	Long-Term	The county has an interlocal agreement between small towns to administer floodplain development. Development and activity in SFHA are regulated through existing floodplain management procedures. This action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
E-9	Natural Resource Protection	Use natural systems, more open space, and green surfaces to manage stormwater in a more resilient fashion.	Impervious surfaces, typically found in urban centers, such as paved roads, buildings, parking lots, and pavement, drastically increase flash floods and urban flooding, which seems to be a common occurrence in Cumberland County. For instance, within a 90-day period (March 1 – June 30, 2015), three flooding incidents were reported due to heavy rainfall events. Use of low impact development (LID) stormwater management practices is mentioned only in summary in the Growth Factor Analysis, stating it "…should be emphasized in sensitive areas…" This, coupled with the naturally flat topography of the eastern portions of the County, also helps to create excess runoff and subsequent urban flooding issues, especially in the Special Flood Hazard Areas (SFHA) of the County, and specifically around Blounts and Cross Creek, as referenced in various resources.	Flooding	Low	Engineering Department of each jurisdiction	Local Operating Budget	Low	To Be Continued	Long-Term	Cumberland County continues to create and update Land Use Plans that promote open space protection and support the development of newly protected areas, which helps mitigate excessive stormwater runoff. These plans are continuously reviewed, with most being updated, created, and adopted within a year. Cumberland County has 12 plan areas, and each plan is typically scheduled for an update every 8–12 years. This action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
E-10	Prevention	Develop a tree ordinance to address clear-cutting.	Provide more pervious areas for natural drainage, while reducing the vulnerability to localized flooding and extreme heat.	Flooding, Extreme Heat	Medium	Cumberland County Planning & Inspections Department & Town of Eastover	Local Operating Budget	Low	Deferred	Long-Term	No measurable progress. There are no ordinances in unincorporated areas that address clear-cutting. This action will be updated and reviewed as needed or during the next HMP update process.
E-11	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind and flooding, more energy and water-efficient, more tolerant of heat waves, and healthier to live in. Also, provide incentives for making buildings safer from wind, flooding, more energy, and water efficiency, and healthier to live in.	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing temperatures and extreme heat days, and prolonged periods of drought. Climate projections also state that precipitation will continue to follow a seasonal pattern, whereby hot, Summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be especially taxing on buildings with older A/C systems or inadequate insulation and in low-income households where upkeep with rising utility costs could become a burden.	Flooding, Hurricane, Severe Weather, Extreme Heat, Winter Storm	Medium	Planning & Code Departments of each jurisdiction	Local Operating Budget	Low	In Progress	Medium-Term	Cumberland County has received updated preliminary flood maps and will begin the process of updating the Flood Damage Prevention Ordinance so it will be aligned with the new maps once they become effective. This action will be reviewed and updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
E-12	Prevention	Explore the Fire Adapted Communities concept implementation in Cumberland County.	To enhance the preparedness and resiliency of Cumberland County and its municipalities to the effects of wildland fire and urban interface, through education, programs such as Fire Wise, Ready Set Go, Community Wildfire Protection Plan, Fuel Management, local codes, and ordinances.	Wildfire	Medium	Emergency Management, NC Forest Service, & Fire Marshals	Local Operating Budget & Federal	Low	Deleted	-	After review staff determined that this mitigation action did not fit our current regional mitigation needs.
E-13	Natural Resource Protection	Collaborate with NC Cooperative Extension and NC Agriculture and Forestry Adaptation Working Group to provide more local support and encouragement of forest conservation and farmland preservation measures.	Forests and farmland provide a multitude of social, economic, and environmental benefits, which, when looked at comprehensively, far outweigh any profit/revenue projections of residential or commercial properties. Outside of development pressure, some of the other major health risks include: (1) increasing wildfire risk, (2) increasing number and types of insects and pests, (3) lack of sufficient water during the growing season for crops, and (4) increasing damage from strong winds and flooding. It is vital, especially in the face of a changing climate, to	Wildfire, Flooding	Low	County Board of Commissioners, Conservation District Programs, & other land preservation organizations.	NC Cooperative Extension, NC Forest Service, US Department of Agriculture, & NC Wildlife Resources Commission.	Low	To Be Continued	Short-Term	NC Cooperative Extension continues to promote the Present Use Value program, the Voluntary Agricultural District program, and cost-share programs for farms and forest landowners to help mitigate management costs. Cumberland County's Soil and Water Department supports conservation easements and writes conservation plans for landowners who are interested in easements. Some current conservation practices include prescribed burning and firebreaks, which help reduce wildfire risk. For wind, there is a cost share for windbreak/ shelterbelt establishment practice, which works well for reducing wind erosion. Cost-share programs that assist landowners with implementing these practices

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			preserve these working lands and to support higher-density development in already existing urban and suburban centers.								are the State of North Carolina Agriculture Cost Share Program and the Federal Environmental Quality Incentives Program. For flooding, Clearing and Snagging practices have been implemented through programs such as the State Streamflow Rehabilitation Assistance Program (StRAP) and Emergency Watershed Protection Program (EWP) Funding. This action will be updated as needed or during the next HMP update process.

Table 8-4: Falcon Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
F-1	Prevention	Conduct a countywide infrastructure vulnerability assessment for all hazards to identify priority needs for updating ill-designed or outdated critical structures.	It has been difficult to locate any comprehensive assessments of local infrastructure in Cumberland and Hoke Counties. With current and projected natural hazard occurrences, it is essential to have an accurate and comprehensive understanding of the current condition of critical facilities to ensure the ability to continue to provide for basic needs, such as water and electrical supplies, transportation routes, waste management, etc.	All Hazards	Medium	County/city structural & civil engineers, in partnership with the U.S. Army Corps of Engineers	Local Operating Budget & Federal	Low	In Progress	Medium-Term	The County continues to assess critical infrastructure vulnerabilities to identify priority needs. Internal Services, in collaboration with the Cumberland County School System and Emergency Management, has received ARPA and grant funding to install new generators at five County-designated shelter locations. The County has also worked with the Mid-Carolina Regional Council to identify critical infrastructure that could benefit from backup power through a clean energy initiative. This action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
F-2	Prevention	Conduct social vulnerability analysis to identify priority needs and opportunities that will address the specific problems vulnerable populations face from all hazards, including barriers to evacuation, event-specific vulnerabilities, and impediments to recovery.	There exist various groups of individuals that have additional financial, social, and/or environmental barriers to being resilient in the face of natural hazard events. In Cumberland County, for example, groups with a significant number of people affected include about 10K outdoor workers with direct exposure to extreme heat days, elderly people, and especially those with existing cardiovascular conditions, and other low-income and/or minority groups. As natural hazard events increase in intensity and frequency, these groups will find it harder to get out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities, and transportation to/from a place of work, etc.	All Hazards	Medium	County Social Services Department and/or County Health Department	Local Operating Budget	Low	In Progress	Medium-Term	As part of its continuous efforts, Cumberland County continues to work with community partners and organizations to identify social vulnerabilities, and community needs to implement programs that best benefit the community. In 2024, the Department of Health conducted a survey to better understand the health status and needs of the population it serves and to use the knowledge gained to inform program development. This survey is conducted on a triannual basis. This action will be updated and reviewed as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
F-3	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan.	To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of "mitigation," acknowledge the changing climate and possibility of increased extreme weather and flooding events.	All Hazards	Low	The Planning Department/ Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Low	Complete	-	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains a North Carolina Climate Risk Assessment and Resilience Plan, which was last updated in June 2020.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
F-4	Public Education	Maintain an all-hazards public education program to educate and prepare residents for all the hazards that impact Cumberland County.	To educate, enhance preparedness, and resiliency of Cumberland County and its municipal residents through public education programs that include booths at fairs, festivals, and special events, websites, brochures, school programs, etc.	All Hazards	Low	Cumberland County Emergency Management & the Town of Falcon	Local Operating Budget	High	To Be Continued	Short-Term	Emergency Management continues to provide an all-hazards public education program. Through EOC tours, Camp Ready—a summer camp for high school students—social media outreach, and radio and television interviews, Emergency Management promotes community resilience and encourages residents to sign up for Cumberland Alerts. Due to continuous outreach efforts and increased demand for participation in community events, the department has requested the addition of a public outreach position within the next one to two years. This action will be reviewed and updated as needed or during the next HMP update process.
F-5	Emergency Services	Provide financial assistance for low-income residents to help with power bills and support services during extended periods of high temperatures and other extreme weather.	Low-income households face challenges in keeping up with utility bills. Some low-income utility assistance programs are offered, but funds are limited. Extreme weather and increasing temperatures will place even greater pressure on these programs' ability to aid all those in need, and citizens' lives will be increasingly at stake.	Extreme Heat, Winter Storm	Medium	County Health Department	NC Department of Health & Human Services & County Department of Health	Low	To Be Continued	Medium-Term	Cumberland County participates in the statewide CIP. CIP aids low-income families experiencing or in danger of heating and/or cooling household emergencies where there are life-threatening or health-related emergencies and timely or appropriate assistance is not available from any other source. This action is implemented and updated as needed.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
F-6	Prevention & Emergency Services	Revise the Subdivision Ordinance to require additional access for emergency vehicles and to be used as an evacuation route for developments located near special flood hazard areas.	This will provide additional access for residents, public safety officials, and emergency services to those developments located near a special flood hazard area, while reducing the possibility of a life-threatening situation for residents, public officials, and emergency services.	Flooding	Medium	Town of Falcon & Cumberland County Planning & Inspections Department	Local Operating Budget	Low	Deferred	Long-Term	This item has been placed on hold pending further discussion and direction from the County Management Office. This action will be reevaluated and updated during future HMP updates or as progress has been made.
F-7	Prevention	Restrict Residential and Non-Compatible Uses within the Special Flood Hazard Area	Prohibit developing within the Special Flood Hazard Area and promote the flood area as an environmental corridor and open space, while reducing potential losses during a flood hazard.	Flooding	Low	Cumberland County Planning & Inspections Department & Town of Falcon	Local Operating Budget	Low	To Be Continued	Medium-Term	The county has and enforces a 2-foot freeboard requirement for development within the floodplain continually. This action will be updated and reviewed as needed.
F-8	Natural Resource Protection	Use natural systems, more open space, and green surfaces to manage stormwater in a more resilient fashion.	Impervious surfaces, typically found in urban centers, such as paved roads, buildings, parking lots, and pavement, drastically increase flash floods and urban flooding, which seems to be a common occurrence in Cumberland County. For instance, within a 90-day period (March 1 – June 30, 2015), three flooding incidents were reported due to heavy rainfall events. Use of LID stormwater management practices is mentioned only in summary in the Growth Factor Analysis, stating it	Flooding	Low	Engineering Department of each jurisdiction	Local Operating Budget	Low	To Be Continued	Long-Term	Cumberland County continues to create and update Land Use Plans that promote open space protection and support the development of newly protected areas, which helps mitigate excessive stormwater runoff. These plans are continuously reviewed, with most being updated, created, and adopted within a year. Cumberland County has 12 plan areas, and each plan is typically scheduled for an update every 8–12 years. This action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			"…should be emphasized in sensitive areas…" This, coupled with the naturally flat topography of the eastern portions of the County, also helps to create excess runoff and subsequent urban flooding issues, especially in the Special Flood Hazard Areas (SFHA) of the County, and specifically around Blounts and Cross Creek, as referenced in various resources.								
F-9	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind and flooding, more energy and water-efficient, more tolerant of heat waves, and healthier to live in. Also, provide incentives for making buildings safer from wind, flooding, more energy, and water efficiency, and healthier to live in.	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing temperatures and extreme heat days, and prolonged periods of drought. Climate projections also state that precipitation will continue to follow a seasonal pattern, whereby hot, Summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be especially taxing on buildings with older A/C systems or inadequate insulation and in low-income households where upkeep with rising utility	Flooding, Hurricane, Severe Weather, Extreme Heat, Winter Storm	Medium	Planning & Code Departments of each jurisdiction	Local Operating Budget	Low	In Progress	Medium-Term	Cumberland County has received updated preliminary flood maps and will begin the process of updating the Flood Damage Prevention Ordinance so it will be aligned with the new maps once they become effective. This action will be reviewed and updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			costs could become a burden.								
F-10	Prevention	Explore the Fire Adapted Communities concept implementation in Cumberland County.	To enhance the preparedness and resiliency of Cumberland County and its municipalities to the effects of wildland fire and urban interface, through education, programs such as Fire Wise, Ready Set Go, Community Wildfire Protection Plan, Fuel Management, local codes, and ordinances.	Wildfire	Medium	Emergency Management, NC Forest Service, & Fire Marshals	Local Operating Budget & Federal	Low	Deleted	-	After review staff determined that this mitigation action did not fit our current regional mitigation needs.
F-11	Natural Resource Protection	Collaborate with NC Cooperative Extension and NC Agriculture and Forestry Adaptation Working Group to provide more local support and encouragement of forest conservation and farmland preservation measures.	Forests and farmland provide a multitude of social, economic, and environmental benefits, which, when looked at comprehensively, far outweigh any profit/revenue projections of residential or commercial properties. Outside of development pressure, some of the other major health risks include: (1) increasing wildfire risk, (2) increasing number and types of insects and pests, (3) lack of sufficient water during the growing season for crops, and (4) increasing damage from strong winds and flooding. It is vital, especially in the face of a changing climate, to preserve these working lands and to support	Wildfire, Flooding	Low	County Board of Commissioners, Conservation District Programs, & other land preservation organizations.	NC Cooperative Extension, NC Forest Service, US Department of Agriculture, & NC Wildlife Resources Commission.	Low	To Be Continued	Short-Term	NC Cooperative Extension continues to promote the Present Use Value program, the Voluntary Agricultural District program, and cost-share programs for farms and forest landowners to help mitigate management costs. Cumberland County's Soil and Water Department supports conservation easements and writes conservation plans for landowners who are interested in easements. Some current conservation practices include prescribed burning and firebreaks, which help reduce wildfire risk. For wind, there is a cost share for windbreak/shelterbelt establishment practice, which works well for reducing wind erosion. Cost-share programs that assist landowners with implementing these practices are the State of North Carolina

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			higher-density development in already existing urban and suburban centers.								Agriculture Cost Share Program and the Federal Environmental Quality Incentives Program. For flooding, Clearing and Snagging practices have been implemented through programs such as the State Streamflow Rehabilitation Assistance Program (StRAP) and Emergency Watershed Protection Program (EWP) Funding. This action will be updated as needed or during the next HMP update process.

Table 8-5: Fayetteville Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
FV-1	Public Education	Maintain an all-hazards public education program to educate and prepare residents for all the hazards that impact the City of Fayetteville.	To educate, enhance preparedness, and resiliency of the City of Fayetteville residents through public education programs that include booths at fairs, festivals, and special events, websites, brochures, school programs, etc.	All Hazards	Low	City of Fayetteville Emergency Management	Local Operating Budget	Low	In Progress	Long-Term	The City of Fayetteville uses a team-based approach that includes Emergency Management, Fire, Police, Stormwater (Public Services), and the Public Works Commission (PWC). Public education and outreach programs include booths at fairs, festivals, and special events; virtual sessions and social media engagement; website content; school-based programming; community watch meetings; and demonstrations and tours. This action is implemented as opportunities for outreach and education are identified, such as at community events. This will be updated as needed or during the next HMP update cycle.
FV-2	Prevention	Conduct social vulnerability analysis to identify priority needs and opportunities that will address the specific problems vulnerable populations face from all hazards, including barriers to evacuation, event-specific vulnerabilities, and impediments to recovery.	There exist various groups of individuals that have additional financial, social, and/or environmental barriers to being resilient in the face of natural hazard events, including the elderly, those with existing cardiovascular conditions, and low-income and/or minority groups. As natural hazard events increase in intensity and frequency, these groups will find it harder to get out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities,	All Hazards	Medium	City of Fayetteville Public Service Department	Local Operating Budget	Low	In Progress	Medium-Term	The city is continuing to explore this program. No measurable progress due to lack of funding. As part of its continuous efforts, Cumberland County continues to work with community partners and organizations to identify social vulnerabilities, and community needs to implement programs that best benefit the community. In 2024, the Department of Health conducted a survey to better understand the health status and needs of the population it serves and to use the knowledge gained to inform program development. This survey is conducted on a triannual basis. This action will be updated and reviewed as needed

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			and transportation to/from a place of work, etc. The City is exploring programs and tools to enhance resilience and support the needs of its entire population, especially vulnerable households. As natural hazard events increase in intensity and frequency, these groups will find it harder to get out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities, and transportation to/from a place of work, etc.								or during the next HMP update process.
FV-3	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan.	To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) more heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of "mitigation," acknowledge the changing climate and possibility of	All Hazards	Low	The Planning Department/ Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Low	Complete	-	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains a North Carolina Climate Risk Assessment and Resilience Plan, which was last updated in June 2020.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			increased extreme weather and flooding events. The City is exploring opportunities for the implementation of an Early Warning system to provide warning alerts to the public of flooded areas along roadways or hazardous conditions.								
FV-4	Natural Resource Protection	Use natural systems, more open space, and green surfaces to manage stormwater in a more resilient fashion.	Impervious surfaces typically found in urban centers, such as paved roads, buildings, parking lots, and pavement, drastically increased flash floods, and urban flooding, which seems to be a common occurrence in the City of Fayetteville. This, coupled with the naturally flat topography of sections of the City, generates excess runoff and subsequent urban flooding issues, especially in the Special Flood Hazard Areas (SFHA) of the County, and specifically around Blounts and Cross Creek, as referenced in various resources.	Flooding	Low	Engineering Department of each jurisdiction	Local Operating Budget	Low	In Progress	Short-Term	Implementation of this action involves continuing to incorporate natural systems, open space, and green surfaces into stormwater projects where feasible, while actively seeking opportunities to expand their use as additional funding becomes available. Current efforts integrate practices such as stream restoration, wetland restoration, floodplain reconnection, and vegetated buffers to improve stormwater storage, reduce runoff, and enhance overall system resilience. These nature-based solutions have been applied in select projects where budgets allowed, demonstrating measurable benefits in terms of flood mitigation, water quality improvement, and community co-benefits. This action will be reviewed and updated as needed or during the next HMP update cycle.
FV-5	Structural Projects	Provide stormwater infrastructure improvements to mitigate reported flooding.	The stormwater program provides drainage infrastructure improvements to protect property, health, and safety associated with reported	Flooding	Medium	City of Fayetteville Public Services Department	Local Operating Budget	High	In Progress	Short-Term	Stormwater mitigation projects identified as part of the City's Watershed Master Plan program include dam modifications to increase storage, roadway, improvements to eliminate single ingress/egress issues, and

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			flooding. The program includes four elements: • Spot Repair Program • Major CIP Projects • Watershed Master Planning • Drainage Assistance Programs Projects identified from the four programs above are scheduled based on priority and funding availability as part of the City's Capital Improvements Program (CIP). Funding is available through the Stormwater Utility Fee, though it is not sufficient to meet all needs, so acquisition of supplemental funding through grants and loans is often performed.								collection system and riverine improvements to reduce flooding. Proposed solutions will follow a phased, prioritization-based approach that maximizes limited funding resources while advancing projects currently in planning, design, and construction. The City currently ranks projects using criteria such as flood-risk reduction potential, design readiness, cost-effectiveness, multi-benefit outcomes, and eligibility for federal and state funding. High-priority projects will move forward first through phased planning, design, and permitting efforts, allowing partially designed or shovel-ready projects to remain competitive for grants such as FEMA Building Resilient Infrastructure and Communities (BRIC) and Hazard Mitigation Grant Program (HMGP), Environmental Protection Agency (EPA) funding programs, and state resilience initiatives. The top 15 prioritized projects are provided in Appendix L, which are subject to change based on the advancement of the watershed studies and prioritization efforts. This action to identify and prioritize flood mitigation projects will be updated as needed through the next HMP update cycle.
FV-6	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing	Flooding, Hurricane, Severe Weather, Extreme	Medium	City of Fayetteville Planning & Public Services Departments	Local Operating Budget	Low	In progress	Long-Term	Stricter development rules in drainage-sensitive areas. (DSA) and /or water supply watersheds (WSW) may be considered to reduce flood risk, protect water quality, and improve long-term

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		and flooding, more energy and water-efficient, more tolerant of heat waves, and healthier to live in. Also, provide incentives for making buildings safer from wind, flooding, more energy, and water efficient, and healthier to live in.	temperatures and extreme heat days, and prolonged periods of drought. Climate projections also state that precipitation will continue to follow a seasonal pattern, whereby hot, summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be especially taxing on buildings with older A/C systems or inadequate insulation and in low-income households where upkeep with rising utility costs could become a burden.	Heat, Winter Storm							resilience. New regulations will be considered as they are identified, and this action will be updated as needed or during the next HMP update process.
FV-7	Prevention	Explore the Fire Adapted Communities concept implementation in Cumberland County.	To enhance the preparedness and resiliency of Cumberland County and its municipalities to the effects of wildland fire and urban interface, through education, programs such as Fire Wise, Ready Set Go, Community Wildfire Protection Plan, Fuel Management, local codes, and ordinances.	Wildfire	Medium	Emergency Management, NC Forest Service, & Fire Marshals	Local Operating Budget & Federal	Low	Deleted	-	After review staff determined that this mitigation action did not fit our current regional mitigation needs.

Table 8-6: Godwin Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
GW-1	Prevention	Conduct a countywide infrastructure vulnerability assessment for all hazards to identify priority needs for updating ill-designed or outdated critical structures.	It has been difficult to locate any comprehensive assessments of local infrastructure in Cumberland and Hoke Counties. With current and projected natural hazard occurrences, it is essential to have an accurate and comprehensive understanding of the current condition of critical facilities to ensure the ability to continue to provide for basic needs, such as water and electrical supplies, transportation routes, waste management, etc.	All Hazards	Medium	County/ City structural & civil engineers, in partnership with the U.S. Army Corps of Engineers	Local Operating Budget & Federal	Low	In Progress	Medium-Term	The County continues to assess critical infrastructure vulnerabilities to identify priority needs. Internal Services, in collaboration with the Cumberland County School System and Emergency Management, has received ARPA and grant funding to install new generators at five County-designated shelter locations. The County has also worked with the Mid-Carolina Regional Council to identify critical infrastructure that could benefit from backup power through a clean energy initiative. This action will be updated as needed or during the next HMP update process.
GW-2	Prevention	Conduct social vulnerability analysis to identify priority needs and opportunities that will address the specific problems vulnerable populations face from all hazards, including barriers to evacuation, event-specific vulnerabilities, and impediments to recovery.	There exist various groups of individuals that have additional financial, social, and/or environmental barriers to being resilient in the face of natural hazard events. In Cumberland County, for example, groups with a significant number of people affected include about 10K outdoor workers with direct exposure to extreme heat days, elderly people, and especially those with existing cardiovascular conditions, and other low-income and/or minority groups. As natural hazard events increase in intensity and frequency, these	All Hazards	Medium	County Social Services Department and/or County Health Department	Local Operating Budget	Low	In Progress	Medium-Term	As part of its continuous efforts, Cumberland County continues to work with community partners and organizations to identify social vulnerabilities, and community needs to implement programs that best benefit the community. In 2024, the Department of Health conducted a survey to better understand the health status and needs of the population it serves and to use the knowledge gained to inform program development. This survey is conducted on a triannual basis. This action will be updated and reviewed as

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			groups will find it harder to get out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities, and transportation to/from a place of work, etc.								needed or during the next HMP update process.
GW-3	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan.	To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of "mitigation," acknowledge the changing climate and possibility of increased extreme weather and flooding events.	All Hazards	Low	The Planning Department/ Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Low	Complete	-	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains a North Carolina Climate Risk Assessment and Resilience Plan, which was last updated in June 2020.
GW-4	Public Education	Maintain an all-hazards public education program to educate and prepare residents for all the hazards	To educate, enhance preparedness, and resiliency of Cumberland County and its municipal residents through public education programs that include booths at fairs, festivals, and special events,	All Hazards	Low	Town of Goodwin Planning Department, Cumberland County	Local Operating Budget	High	To Be Continued	Short-Term	Emergency Management continues to provide an all-hazards public education program. Through EOC tours, Camp Ready—a summer camp for high school students—social media outreach, and

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		that impact Cumberland County.	websites, brochures, school programs, etc.			Emergency Management					radio and television interviews, Emergency Management promotes community resilience and encourages residents to sign up for Cumberland Alerts. Due to continuous outreach efforts and increased demand for participation in community events, the department has requested the addition of a public outreach position within the next one to two years. This action will be reviewed and updated as needed or during the next HMP update process.
GW-5	Emergency Services	Provide financial assistance for low-income residents to help with power bills and support services during extended periods of high temperatures and other extreme weather.	Low-income households face challenges in keeping up with utility bills. Some low-income utility assistance programs are offered, but funds are limited. Extreme weather and increasing temperatures will place even greater pressure on these programs' ability to aid all those in need, and citizens' lives will be increasingly at stake.	Extreme Heat, Winter Storm	Medium	County Health Department	NC Department of Health & Human Services & County Department of Health	Low	To Be Continued	Medium-Term	Cumberland County participates in the statewide CIP. CIP aids low-income families experiencing or in danger of heating and/or cooling household emergencies where there are life-threatening or health-related emergencies and timely or appropriate assistance is not available from any other source. This action is implemented and updated as needed.
GW-6	Natural Resource Protection	Use natural systems, more open space, and green surfaces to manage stormwater in a more resilient fashion.	Impervious surfaces, typically found in urban centers, such as paved roads, buildings, parking lots, and pavement, drastically increase flash floods and urban flooding, which seems to be a common occurrence in Cumberland County. For instance, within a 90-day period (March 1 – June 30, 2015), three flooding incidents were reported due to heavy rainfall	Flooding	Low	Engineering Department of each jurisdiction	Local Operating Budget	Low	To Be Continued	Long-Term	Cumberland County continues to create and update Land Use Plans that promote open space protection and support the development of newly protected areas, which helps mitigate excessive stormwater runoff. These plans are continuously reviewed, with most being updated, created, and adopted within a year. Cumberland County has 12 plan areas, and each plan is

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			events. Use of LID stormwater management practices is mentioned only in summary in the Growth Factor Analysis, stating it "…should be emphasized in sensitive areas…" This, coupled with the naturally flat topography of the eastern portions of the County, also helps to create excess runoff and subsequent urban flooding issues, especially in the Special Flood Hazard Areas (SFHA) of the County, and specifically around Blounts and Cross Creek, as referenced in various resources.								typically scheduled for an update every 8–12 years. This action will be updated as needed or during the next HMP update process.
GW-7	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind and flooding, more energy and water-efficient, more tolerant of heat waves, and healthier to live in. Also, provide incentives for making buildings safer from wind, flooding, more energy, and water efficient, and healthier to live in.	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing temperatures and extreme heat days, and prolonged periods of drought. Climate projections also state that precipitation will continue to follow a seasonal pattern, whereby hot, summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be especially taxing on buildings with older A/C systems or inadequate insulation and in low-income households where upkeep	Flooding, Hurricane, Severe Weather, Extreme Heat, Winter Storm	Medium	Planning & Code Departments of each jurisdiction	Local Operating Budget	Low	In Progress	Medium-Term	Cumberland County has received updated preliminary flood maps and will begin the process of updating the Flood Damage Prevention Ordinance so it will be aligned with the new maps once they become effective. This action will be reviewed and updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			with rising utility costs could become a burden.								
GW-8	Prevention	Explore the Fire Adapted Communities concept implementation in Cumberland County.	To enhance the preparedness and resiliency of Cumberland County and its municipalities to the effects of wildland fire and urban interface, through education, programs such as Fire Wise, Ready Set Go, Community Wildfire Protection Plan, Fuel Management, local codes, and ordinances.	Wildfire	Medium	Emergency Management, NC Forest Service, & Fire Marshals	Local Operating Budget & Federal	Low	Deleted	-	After review staff determined that this mitigation action did not fit our current regional mitigation needs.
GW-9	Natural Resource Protection	Collaborate with NC Cooperative Extension and NC Agriculture and Forestry Adaptation Working Group to provide more local support and encouragement of forest conservation and farmland preservation measures.	Forests and farmland provide a multitude of social, economic, and environmental benefits, which, when looked at comprehensively, far outweigh any profit/revenue projections of residential or commercial properties. Outside of development pressure, some of the other major health risks include: (1) increasing wildfire risk, (2) increasing number and types of insects and pests, (3) lack of sufficient water during the growing season for crops, and (4) increasing damage from strong winds and flooding. It is vital, especially in the face of a changing climate, to preserve these working lands and to support higher-density development in already existing urban and suburban centers.	Wildfire, Flooding	Low	County Board of Commissioners, Conservation District Programs, & other land preservation organizations.	NC Cooperative Extension, NC Forest Service, US Department of Agriculture, & NC Wildlife Resources Commission.	Low	To Be Continued	Short-Term	NC Cooperative Extension continues to promote the Present Use Value program, the Voluntary Agricultural District program, and cost-share programs for farms and forest landowners to help mitigate management costs. Cumberland County's Soil and Water Department supports conservation easements and writes conservation plans for landowners who are interested in easements. Some current conservation practices include prescribed burning and firebreaks, which help reduce wildfire risk. For wind, there is a cost share for windbreak/shelterbelt establishment practice, which works well for reducing wind erosion. Cost-share programs that assist landowners with implementing these practices are the State of North Carolina Agriculture Cost Share Program and the Federal

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
											Environmental Quality Incentives Program. For flooding, Clearing and Snagging practices have been implemented through programs such as the State Streamflow Rehabilitation Assistance Program (StRAP) and Emergency Watershed Protection Program (EWP) Funding. This action will be updated as needed or during the next HMP update process.

Table 8-7: Hope Mills Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
HM-1	Prevention	Conduct a countywide infrastructure vulnerability assessment to identify priority needs for updating ill-designed or outdated critical structures.	It has been difficult to locate any comprehensive assessments of local infrastructure in Cumberland and Hoke Counties. With current and projected natural hazard occurrences, it is essential to have an accurate and comprehensive understanding of the current condition of critical facilities to ensure the ability to continue to provide for basic needs, such as water and electrical supplies, transportation routes, waste management, etc.	All Hazards	Medium	County/city structural & civil engineers, in partnership with the U.S. Army Corps of Engineers	Local Operating Budget & Federal	Low	In Progress	Medium-Term	The County continues to assess critical infrastructure vulnerabilities to identify priority needs. Internal Services, in collaboration with the Cumberland County School System and Emergency Management, has received ARPA and grant funding to install new generators at five County-designated shelter locations. The County has also worked with the Mid-Carolina Regional Council to identify critical infrastructure that could benefit from backup power through a clean energy initiative. This action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
HM-2	Prevention	Conduct social vulnerability analysis to identify priority needs and opportunities that will address the specific problems vulnerable populations face from all of hazards, including barriers to evacuation, event-specific vulnerabilities, and impediments to recovery.	There exist various groups of individuals that have additional financial, social, and/or environmental barriers to being resilient in the face of natural hazard events. In Cumberland County, for example, groups with a significant number of people affected include about 10K outdoor workers with direct exposure to extreme heat days, elderly people, and especially those with existing cardiovascular conditions, and other low-income and/or minority groups. As natural hazard events increase in intensity and frequency, these groups will find it harder to get out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities, and transportation to/from a place of work, etc.	All Hazards	Medium	County Social Services Department and/or County Health Department	Local Operating Budget	Low	In Progress	Medium-Term	As part of its continuous efforts, Cumberland County continues to work with community partners and organizations to identify social vulnerabilities, and community needs to implement programs that best benefit the community. In 2024, the Department of Health conducted a survey to better understand the health status and needs of the population it serves and to use the knowledge gained to inform program development. This survey is conducted on a triannual basis. This action will be updated and reviewed as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
HM-3	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan.	To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of "mitigation," acknowledge the changing climate and possibility of increased extreme weather and flooding events.	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Low	Complete	-	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains a North Carolina Climate Risk Assessment and Resilience Plan, which was last updated in June 2020.
HM-4	Public Education	Maintain an all-hazards public education program to educate and prepare residents for all the hazards that impact Cumberland County.	To educate, enhance preparedness, and resiliency of the County and its municipal residents through public education programs included booths at fairs, festivals, and special events, websites, brochures, school programs, etc.	All Hazards	Low	Town of Hope Mills Planning Department, Cumberland County Emergency Management	Local Operating Budget	High	To Be Continued	Short-Term	Emergency Management continues to provide an all-hazards public education program. Through EOC tours, Camp Ready—a summer camp for high school students—social media outreach, and radio and television interviews, Emergency Management promotes community resilience and encourages residents to sign up for Cumberland Alerts. Due to continuous outreach efforts and increased demand for participation in community events, the department has requested the addition of a public outreach position within the next one to two years.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
											This action will be reviewed and updated as needed or during the next HMP update process.
HM-5	Natural Resource Protection	Creek restoration/ mitigation tied to Hope Mills Lake Dam	The Town of Hope Mills made repairs to the Hope Mills Lake Dam. The lake will fill back to historical levels, where there will then be a need for various activities tied to creek restoration/ mitigation. These activities assisted in the preservation of the creek bank while reducing erosion levels.	Dam Failure	Low	Town of Hope Mills Public Works Department	Local Operating Budget	Low	In Progress	Long-Term	The town marked the completion of the dam in early 2018. The town will continue to evaluate erosion issues downstream of the dam as project opportunities are identified and as funding becomes available. This action will be reviewed or updated as needed or during the next HMP update process.
HM-6	Emergency Services	Provide financial assistance for low-income residents to help with power bills and support services during extended periods of high temperatures and other extreme weather.	Low-income households face challenges in keeping up with utility bills. Some low-income utility assistance programs are offered, but funds are limited. Extreme weather and increasing temperatures will place even greater pressure on these programs' ability to aid all those in need, and citizens' lives will be increasingly at stake.	Extreme Heat, Winter Storm	Medium	County Health Department	NC Department of Health & Human Services & County Department of Health	Low	To Be Continued	Medium-Term	Cumberland County participates in the statewide CIP. CIP aids low-income families experiencing or in danger of heating and/or cooling household emergencies where there are life-threatening or health-related emergencies and timely or appropriate assistance is not available from any other source. This action is implemented and updated as needed.
HM-7	Prevention	Revised subdivision ordinance requiring additional access to be used as an evacuation route for developments located near	The Town of Hope Mills Subdivision Ordinance was recently updated to include sidewalk requirements for new construction. Evacuation routes should be studied, and language should be drafted to include requirements for evacuation routes where applicable.	Flooding	High	Town of Hope Mills Planning Department & Inspections Department	Local Operating Budget	High	Deferred	Long-Term	This item has been placed on hold pending further discussion and direction from the County Management Office. This action will be reevaluated and updated during future HMP updates or as progress has been made.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		special hazard areas.									
HM-8	Prevention	Restrict Residential and Non- Compatible Uses Within The 100-Year Floodplain.	Promote flood areas as an environmental corridor and open space, and prohibit development within the Special Flood Hazard Area, while reducing potential losses during a flood hazard.	Flooding	Low	Town of Hope Mills Planning Department & Storm Water Department	Local Operating Budget	Low	To Be Continued	Long-Term	In 2018, the Floodplain Ordinance was updated to include the requirement of an elevation certificate being required and the SFHA prior to development. The floodplain ordinance and elevation certificates will be updated as needed.
HM-9	Natural Resource Protection	Use natural systems, more open space, and green surfaces to manage stormwater in a more resilient fashion.	Impervious surfaces, typically found in urban centers, such as paved roads, buildings, parking lots, and pavement, drastically increase flash floods and urban flooding, which seems to be a common occurrence in Cumberland County. For instance, within a 90-day period (March 1 – June 30, 2015), three flooding incidents were reported due to heavy rainfall events. Use of LID stormwater management practices is mentioned only in summary in the Growth Factor Analysis, stating it "…should be emphasized in sensitive areas…" This, coupled with the naturally flat topography of the eastern portions of the County, also helps to create excess runoff and subsequent urban flooding issues, especially in the Special	Flooding	Low	Stormwater Department	Local Operating Budget	High	To Be Continued	Long-Term	Cumberland County continues to create and update Land Use Plans that promote open space protection and support the development of newly protected areas, which helps mitigate excessive stormwater runoff. These plans are continuously reviewed, with most being updated, created, and adopted within a year. Cumberland County has 12 plan areas, and each plan is typically scheduled for an update every 8–12 years. This action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			Flood Hazard Areas (SFHA) of the County, and specifically around Blounts and Cross Creek, as referenced in various resources.								
HM-10	Prevention	Develop a tree ordinance to address clear-cutting, protection of existing trees and vegetation.	Promote an amendment to the Town of Hope Mills Tree Ordinance that ties to the conditions of approvals for all developments that anticipate the removal of trees.	Flooding, Extreme Heat	Medium	Town of Hope Mills Planning Department & Inspections Department	Local Operating Budget	High	In Progress	Medium-Term	In 2025, the zoning ordinance was amended to require notification to both the Chief Building Official and the Stormwater Administrator before clear-cutting to address potential erosion issues. In 2025, the subdivision ordinance was amended to require more natural open space, along with usable open space in residential subdivisions and residential group developments. These ordinances will be reviewed and updated as needed. This action will be reviewed and updated as needed or during the next HMP update process.
HM-11	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind and flooding, more energy and water-efficient, more tolerant of heat waves, and healthier to live in. Also, provide incentives for making buildings safer from wind, flooding, more	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing temperatures and extreme heat days, and prolonged periods of drought. Climate projections also state that precipitation will continue to follow a seasonal pattern, whereby hot, Summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be especially taxing on buildings with older A/C systems	Flooding, Hurricane, Severe Weather, Extreme Heat, Winter Storm	Medium	Planning & Code Departments of each jurisdiction	Local Operating Budget	High	In Progress	Medium-Term	Cumberland County has received updated preliminary flood maps and will begin the process of updating the Flood Damage Prevention Ordinance so it will be aligned with the new maps once they become effective. This action will be reviewed and updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		energy, and water efficient, and healthier to live in.	or inadequate insulation and in low-income households where upkeep with rising utility costs could become a burden.								
HM-12	Prevention	Explore the Fire Adapted Communities concept implementation in Cumberland County.	To enhance the preparedness and resiliency of Cumberland County and its municipalities to the effects of wildland fire and urban interface, through education, programs such as Fire Wise, Ready Set Go, Community Wildfire Protection Plan, Fuel Management, local codes, and ordinances.	Wildfire	Medium	Emergency Management, NC Forest Service, & Fire Marshals	Local Operating Budget & Federal	Low	Deleted	-	After review staff determined that this mitigation action did not fit our current regional mitigation needs.
HM-13	Natural Resource Protection	Collaborate with NC Cooperative Extension and NC Agriculture and Forestry Adaptation Working Group to provide more local support and encouragement of forest conservation and farmland preservation measures.	Forests and farmland provide a multitude of social, economic, and environmental benefits, which, when looked at comprehensively, far outweigh any profit/revenue projections of residential or commercial properties. Outside of development pressure, some of the other major health risks include: (1) increasing wildfire risk, (2) increasing number and types of insects and pests, (3) lack of sufficient water during the growing season for crops, and (4) increasing damage from strong winds and flooding. It is vital, especially in the face of a changing climate, to preserve these working lands and to support higher-density development in already existing urban and suburban centers.	Wildfire, Flooding	Low	County Board of Commissioners, Conservation District Programs, & other land preservation organizations.	NC Cooperative Extension, NC Forest Service, US Department of Agriculture, & NC Wildlife Resources Commission.	Low	To Be Continued	Short-Term	NC Cooperative Extension continues to promote the Present Use Value program, the Voluntary Agricultural District program, and cost-share programs for farms and forest landowners to help mitigate management costs. Cumberland County's Soil and Water Department supports conservation easements and writes conservation plans for landowners who are interested in easements. Some current conservation practices include prescribed burning and firebreaks, which help reduce wildfire risk. For wind, there is a cost share for windbreak/shelterbelt establishment practice, which works well for reducing wind erosion. Cost-share programs that assist landowners with implementing these practices are the State of North Carolina Agriculture Cost

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
											Share Program and the Federal Environmental Quality Incentives Program. For flooding, Clearing and Snagging practices have been implemented through programs such as the State Streamflow Rehabilitation Assistance Program (StRAP) and Emergency Watershed Protection Program (EWP) Funding. This action will be updated as needed or during the next HMP update process.

Table 8-8: Linden Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
L-1	Prevention	Develop a zoning ordinance for the Town.	Zoning ordinance helps protect the health, safety, and welfare of its citizens as well as reduce vulnerability to natural hazards.	All Hazards	High	Town of Linden & Cumberland County Planning & Inspections Department	Local Operating Budget	Low	Complete	-	Zoning ordinance adopted.
L-2	Prevention	Conduct a countywide infrastructure vulnerability assessment to identify priority needs for updating ill-designed or outdated critical structures.	It has been difficult to locate any comprehensive assessments of local infrastructure in Cumberland and Hoke Counties. With current and projected natural hazard occurrences, it is essential to have an accurate and comprehensive understanding of the current condition of critical facilities to ensure the ability to continue to provide for basic needs, such as water and electrical supplies, transportation routes, waste management, etc.	All Hazards	Medium	County/city structural & civil engineers, in partnership with the U.S. Army Corps of Engineers	Local Operating Budget & Federal	Low	In Progress	Medium-Term	The County continues to assess critical infrastructure vulnerabilities to identify priority needs. Internal Services, in collaboration with the Cumberland County School System and Emergency Management, has received ARPA and grant funding to install new generators at five County-designated shelter locations. The County has also worked with the Mid-Carolina Regional Council to identify critical infrastructure that could benefit from backup power through a clean energy initiative. This action will be updated as needed or during the next HMP update process.
L-3	Prevention	Conduct social vulnerability analysis to identify priority needs and opportunities that will address the specific problems vulnerable populations face from all hazards, including barriers	There exist various groups of individuals that have additional financial, social, and/or environmental barriers to being resilient in the face of natural hazard events. In Cumberland County, for example, groups with a significant number of people affected include about 10K outdoor workers with direct exposure to extreme	All Hazards	Medium	County Social Services Department and/or County Health Department	Local Operating Budget	Low	In Progress	Medium-Term	As part of its continuous efforts, Cumberland County continues to work with community partners and organizations to identify social vulnerabilities, and community needs to implement programs that best benefit the community. In 2024, the Department of Health conducted a survey to better

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		to evacuation, event-specific vulnerabilities, and impediments to recovery.	heat days, elderly people, and especially those with existing cardiovascular conditions, and other low-income and/or minority groups. As natural hazard events increase in intensity and frequency, these groups will find it harder to get out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities, and transportation to/from a place of work, etc.								understand the health status and needs of the population it serves and to use the knowledge gained to inform program development. This survey is conducted on a triannual basis. This action will be updated and reviewed as needed or during the next HMP update process.
L-4	Property Protection	Provide Back-Up Power for Critical Facilities	The Town of Linden is looking to acquire generators to enhance its critical infrastructure. The generators will be used to supply power to both the town hall and the community building. The buildings provide essential services and house critical technology vital to the town's operation. The town was under mandatory evacuation orders during Hurricane Florence and experienced prolonged power outages during the event.	All Hazards	Medium	Town of Linden Administrators	Local Operating Budget & Grants	Moderate	To Be Continued	Medium-Term	Generators purchased for the Town Hall and Community building. Will consider purchasing more generators for critical facilities as new opportunities are identified and as funding becomes available. This action will be updated and reviewed as needed or during the next HMP update process.
L-5	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan.	To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) heavy rain/flooding, and (4) more frequent and	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Low	Complete	-	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains a North Carolina Climate Risk Assessment and Resilience Plan, which was last updated in June 2020.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of "mitigation," acknowledge the changing climate and possibility of increased extreme weather and flooding events.								
L-6	Public Education	Maintain an all-hazards public education program to educate and prepare residents for all the hazards that impact Cumberland County.	To educate, enhance preparedness, and resiliency of Cumberland County and its municipal residents through public education programs that include booths at fairs, festivals, and special events, websites, brochures, school programs, etc.	All Hazards	Low	Town of Linden Planning Department, Cumberland County Emergency Management	Local Operating Budget	High	To Be Continued	Short-Term	Emergency Management continues to provide an all-hazards public education program. Through EOC tours, Camp Ready—a summer camp for high school students—social media outreach, and radio and television interviews, Emergency Management promotes community resilience and encourages residents to sign up for Cumberland Alerts. Due to continuous outreach efforts and increased demand for participation in community events, the department has requested the addition of a public outreach position within the next one to two years. This action will be reviewed and updated as needed or during the next HMP update process.
L-7	Emergency Services	Provide financial assistance for low-income	Low-income households face challenges in keeping up with utility bills. Some low-income	Extreme Heat,	Medium	County Health Department	NC Department of Health &	Low	To Be Continued	Medium-Term	Cumberland County participates in the statewide CIP. CIP aids low-income

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		residents to help with power bills and support services during extended periods of high temperatures and other extreme weather.	utility assistance programs are offered, but funds are limited. Extreme weather and increasing temperatures will place even greater pressure on these programs' ability to aid all those in need, and citizens' lives will be increasingly at stake.	Winter Storm			Human Services & County Department of Health				families experiencing or in danger of heating and/or cooling household emergencies where there are life-threatening or health-related emergencies and timely or appropriate assistance is not available from any other source. This action is implemented and updated as needed.
L-8	Prevention, Structural Projects, & Natural Resource Protection	Explore programs that identify streams that are impacted by beaver dams and create a solution to the flooding caused by the dams.	The canal that runs through the Town of Linden is a natural habitat for beavers. As a result, beavers frequently make dams in sections of the canal, preventing it from naturally draining into the little river. The town plans to explore programs such as the North Carolina Beaver Management Assistance Program, an initiative designed to help manage problems caused by beavers on private and public lands.	Flooding	Medium	Town of Linden Administrators	NCEM/ FEMA/ Local Funds	Low	In Progress	Medium-Term	The Town has worked with the Beaver Management Assistance Program and will continue to monitor the beaver population. Currently, there are no beaver colonies that are active. This action will be updated and reviewed as needed or during the next HMP update process.
L-9	Structural Projects & Natural Resource Protection	Identify and remove large obstructions throughout the Town of Linden's streams and waterways.	The Town of Linden has a drainage canal that runs through the main thoroughfares of its jurisdiction. As a result of major storm systems such as Hurricane Florence, large pieces of debris have impacted the ability of the canal to naturally drain into the Little River. The town plans to identify grant programs and other sources of funding to remove debris.	Flooding	Medium	Town of Linden	NCEM/ FEMA/ Local Funds	Low	In Progress	Medium-Term	Work has been done to clear some of the debris from the canal, but some obstructions remain, and more clearage of trees, etc., needs to be completed. This action will be implemented as funding and projects are identified, and the action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
L-10	Natural Resource Protection	Use natural systems, more open space, and green surfaces to manage stormwater in a more resilient fashion.	Impervious surfaces, typically found in urban centers, such as paved roads, buildings, parking lots, and pavement, drastically increase flash floods and urban flooding, which seems to be a common occurrence in Cumberland County. For instance, within a 90-day period (March 1 – June 30, 2015), three flooding incidents were reported due to heavy rainfall events. Use of LID stormwater management practices is mentioned only in summary in the Growth Factor Analysis, stating it "…should be emphasized in sensitive areas…" This, coupled with the naturally flat topography of the eastern portions of the County, also helps to create excess runoff and subsequent urban flooding issues, especially in the Special Flood Hazard Areas (SFHA) of the County, and specifically around Blounts and Cross Creek, as referenced in various resources.	Flooding	Low	Engineering Department of each jurisdiction	Local Operating Budget	Low	To Be Continued	Long-Term	Cumberland County continues to create and update Land Use Plans that promote open space protection and support the development of newly protected areas, which helps mitigate excessive stormwater runoff. These plans are continuously reviewed, with most being updated, created, and adopted within a year. Cumberland County has 12 plan areas, and each plan is typically scheduled for an update every 8–12 years. This action will be updated as needed or during the next HMP update process.
L-11	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind and flooding, more energy and water-efficient, more tolerant of heat waves, and	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing temperatures and extreme heat days, and prolonged periods of drought. Climate projections also state that precipitation will continue to	Flooding, Hurricane, Severe Weather, Extreme Heat, Winter Storm	Medium	Planning & Code Departments of each jurisdiction	Local Operating Budget	Low	In Progress	Medium-Term	Cumberland County has received updated preliminary flood maps and will begin the process of updating the Flood Damage Prevention Ordinance so it will be aligned with the new maps once they become effective. This action will be reviewed and updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		healthier to live in. Also, provide incentives for making buildings safer from wind, flooding, more energy, and water efficient, and healthier to live in.	follow a seasonal pattern, whereby hot, Summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be especially taxing on buildings with older A/C systems or inadequate insulation and in low-income households where upkeep with rising utility costs could become a burden.								
L-12	Prevention	Explore the Fire Adapted Communities concept implementation in Cumberland County.	To enhance the preparedness and resiliency of Cumberland County and its municipalities to the effects of wildland fire and urban interface, through education, programs such as Fire Wise, Ready Set Go, Community Wildfire Protection Plan, Fuel Management, local codes, and ordinances.	Wildfire	Medium	Emergency Management, NC Forest Service, & Fire Marshals	Local Operating Budget & Federal	Low	Deleted	-	After review staff determined that this mitigation action did not fit our current regional mitigation needs.
L-13	Natural Resource Protection	Collaborate with NC Cooperative Extension and NC Agriculture and Forestry Adaptation Working Group to provide more local support and encouragement of forest conservation and farmland preservation measures.	Forests and farmland provide a multitude of social, economic, and environmental benefits that, when looked at comprehensively, far outweigh any profit/revenue projections of residential or commercial properties. Outside of development pressure, some of the other major health risks include: (1) increasing wildfire risk, (2) increasing number and types of insects and pests, (3) lack of sufficient water during the growing season for crops, and (4) increasing damage from strong winds and flooding. It is vital, especially in the face of a changing climate,	Wildfire, Flooding	Low	County Board of Commissioners, Conservation District Programs, & other land preservation organizations.	NC Cooperative Extension, NC Forest Service, US Department of Agriculture, & NC Wildlife Resources Commission.	Low	To Be Continued	Short-Term	NC Cooperative Extension continues to promote the Present Use Value program, the Voluntary Agricultural District program, and cost-share programs for farms and forest landowners to help mitigate management costs. Cumberland County's Soil and Water Department supports conservation easements and writes conservation plans for landowners who are interested in easements. Some current conservation practices include prescribed burning and firebreaks, which help reduce wildfire risk. For wind, there is a cost share for

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			to preserve these working lands and to support higher-density development in already existing urban and suburban centers.								windbreak/shelterbelt establishment practice, which works well for reducing wind erosion. Cost-share programs that assist landowners with implementing these practices are the State of North Carolina Agriculture Cost Share Program and the Federal Environmental Quality Incentives Program. For flooding, Clearing and Snagging practices have been implemented through programs such as the State Streamflow Rehabilitation Assistance Program (StRAP) and Emergency Watershed Protection Program (EWP) Funding. This action will be updated as needed or during the next HMP update process.

Table 8-9: Spring Lake Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
SL-1	Prevention	Conduct a countywide infrastructure vulnerability assessment for all hazards to identify priority needs for updating ill-designed or outdated critical structures.	It has been difficult to locate any comprehensive assessments of local infrastructure in Cumberland and Hoke Counties. With current and projected natural hazard occurrences, it is essential to have an accurate and comprehensive understanding of the current condition of critical facilities to ensure the ability to continue to provide for basic needs, such as water and electrical supplies, transportation routes, waste management, etc.	All Hazards	Medium	County/city structural & civil engineers, in partnership with the U.S. Army Corps of Engineers	Local Operating Budget & Federal	Low	In Progress	Medium-Term	The County continues to assess critical infrastructure vulnerabilities to identify priority needs. Internal Services, in collaboration with the Cumberland County School System and Emergency Management, has received ARPA and grant funding to install new generators at five County-designated shelter locations. The County has also worked with the Mid-Carolina Regional Council to identify critical infrastructure that could benefit from backup power through a clean energy initiative. This action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
SL-2	Prevention	Conduct social vulnerability analysis to identify priority needs and opportunities that will address the specific problems vulnerable populations face from all hazards, including barriers to evacuation, event-specific vulnerabilities, and impediments to recovery.	There exist various groups of individuals that have additional financial, social, and/or environmental barriers to being resilient in the face of natural hazard events. In Cumberland County, for example, groups with a significant number of people affected include about 10K outdoor workers with direct exposure to extreme heat days, elderly people, and especially those with existing cardiovascular conditions, and other low-income and/or minority groups. As natural hazard events increase in intensity and frequency, these groups will find it harder to get out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities, and transportation to/from a place of work, etc.	All Hazards	Medium	County Social Services Department and/or County Health Department	Local Operating Budget	Low	In Progress	Medium-Term	As part of its continuous efforts, Cumberland County continues to work with community partners and organizations to identify social vulnerabilities, and community needs to implement programs that best benefit the community. In 2024, the Department of Health conducted a survey to better understand the health status and needs of the population it serves and to use the knowledge gained to inform program development. This survey is conducted on a triannual basis. This action will be updated and reviewed as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
SL-3	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan.	To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of "mitigation," acknowledge the changing climate and possibility of increased extreme weather and flooding events.	All Hazards	Low	The Planning Department/ Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Low	Complete		The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains a North Carolina Climate Risk Assessment and Resilience Plan, which was last updated in June 2020.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
SL-4	Public Education	Maintain an all-hazards public education program to educate and prepare residents for all the hazards that impact Cumberland County.	To educate, enhance preparedness, and resiliency of Cumberland County and its municipal residents through public education programs that include booths at fairs, festivals, and special events, websites, brochures, school programs, etc.	All Hazards	Low	Spring Lake Planning Department, Cumberland County Emergency Management	Local Operating Budget	High	To Be Continued	Short-Term	Emergency Management continues to provide an all-hazards public education program. Through EOC tours, Camp Ready—a summer camp for high school students—social media outreach, and radio and television interviews, Emergency Management promotes community resilience and encourages residents to sign up for Cumberland Alerts. Due to continuous outreach efforts and increased demand for participation in community events, the department has requested the addition of a public outreach position within the next one to two years. This action will be reviewed and updated as needed or during the next HMP update process.
SL-5	Emergency Services	Provide financial assistance for low-income residents to help with power bills and support services during extended periods of high temperatures and other extreme weather.	Low-income households face challenges in keeping up with utility bills. Some low-income utility assistance programs are offered, but funds are limited. Extreme weather and increasing temperatures will place even greater pressure on these programs' ability to aid all those in need, and citizens' lives will be increasingly at stake.	Extreme Heat, Winter Storm	Medium	County Health Department	NC Department of Health & Human Services & County Department of Health	Low	To Be Continued	Medium-Term	Cumberland County participates in the statewide CIP. CIP aids low-income families experiencing or in danger of heating and/or cooling household emergencies where there are life-threatening or health-related emergencies and timely or appropriate assistance is not available from any other source. This action is implemented and updated as needed.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
SL-6	Prevention & Natural Resource Protection	Review and make necessary changes to the town stormwater ordinances. Enhance and expand the cleaning and improvement of existing streams and drainage ways.	Continue to annually review and amend the Stormwater Ordinances to provide additional provisions to clean and improve drainage ways and streams to reduce flooding.	Flooding	High	Spring Lake Utilities Department	Local Operating Budget	Low	To Be Continued	Long-Term	The stormwater administrator continually updates permits and regulations per North Carolina Department of Environmental Quality (NCDEQ) requirements as needed. This action will be reviewed and updated as needed or during the next HMP update process.
SL-7	Natural Resource Protection	Use natural systems, more open space, and green surfaces to manage stormwater in a more resilient fashion.	Impervious surfaces, typically found in urban centers, such as paved roads, buildings, parking lots, and pavement, drastically increase flash floods and urban flooding, which seems to be a common occurrence in Cumberland County. For instance, within a 90-day period (March 1 – June 30, 2015), three flooding incidents were reported due to heavy rainfall events. Use of LID stormwater management practices is mentioned only in summary in the Growth Factor Analysis, stating it "…should be emphasized in sensitive areas…" This, coupled with the naturally flat topography of the eastern portions of the County, also helps to create excess runoff and subsequent urban flooding issues, especially in the Special Flood Hazard Areas (SFHA) of the County, and specifically around Blounts and Cross Creek, as referenced in various resources.	Flooding	Low	Engineering Department of each jurisdiction	Local Operating Budget	Low	To Be Continued	Long-Term	Cumberland County continues to create and update Land Use Plans that promote open space protection and support the development of newly protected areas, which helps mitigate excessive stormwater runoff. These plans are continuously reviewed, with most being updated, created, and adopted within a year. Cumberland County has 12 plan areas, and each plan is typically scheduled for an update every 8–12 years. This action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
SL-8	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind and flooding, more energy and water-efficient, more tolerant of heat waves, and healthier to live in. Also, provide incentives for making buildings safer from wind, flooding, more energy, and water efficient, and healthier to live in.	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing temperatures and extreme heat days, and prolonged periods of drought. Climate projections also state that precipitation will continue to follow a seasonal pattern, whereby hot, Summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be especially taxing on buildings with older A/C systems or inadequate insulation and in low-income households where upkeep with rising utility costs could become a burden.	Flooding, Hurricane, Severe Weather, Extreme Heat, Winter Storm	Medium	Planning & Code Departments of each jurisdiction	Local Operating Budget	Low	In Progress	Medium-Term	Cumberland County has received updated preliminary flood maps and will begin the process of updating the Flood Damage Prevention Ordinance so it will be aligned with the new maps once they become effective. This action will be reviewed and updated as needed or during the next HMP update process.
SL-9	Prevention	Explore the Fire Adapted Communities concept implementation in Cumberland County.	To enhance the preparedness and resiliency of Cumberland County and its municipalities to the effects of wildland fire and urban interface, through education, programs such as Fire Wise, Ready Set Go, Community Wildfire Protection Plan, Fuel Management, local codes, and ordinances.	Wildfire	Medium	Emergency Management, NC Forest Service, & Fire Marshals	Local Operating Budget & Federal	Low	Deleted		After review staff determined that this mitigation action did not fit our current regional mitigation needs.
SL-10	Natural Resource Protection	Collaborate with NC Cooperative Extension and NC Agriculture and Forestry Adaptation Working Group to provide more local support and encouragement of	Forests and farmland provide a multitude of social, economic, and environmental benefits that, when looked at comprehensively, far outweigh any profit/revenue projections of residential or commercial properties. Outside of development pressure, some of	Wildfire, Flooding	Low	County Board of Commissioners, Conservation District Programs, & other land preservation	NC Cooperative Extension, NC Forest Service, US Department of Agriculture, & NC Wildlife	Low	To Be Continued	Short-Term	NC Cooperative Extension continues to promote the Present Use Value program, the Voluntary Agricultural District program, and cost-share programs for farms and forest landowners to help mitigate management costs. Cumberland County's

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		forest conservation and farmland preservation measures.	the other major health risks include: (1) increasing wildfire risk, (2) increasing number and types of insects and pests, (3) lack of sufficient water during the growing season for crops, and (4) increasing damage from strong winds and flooding. It is vital, especially in the face of a changing climate, to preserve these working lands and to support higher-density development in already existing urban and suburban centers.			organizations .	Resources Commission.				Soil and Water Department supports conservation easements and writes conservation plans for landowners who are interested in easements. Some current conservation practices include prescribed burning and firebreaks, which help reduce wildfire risk. For wind, there is a cost share for windbreak/shelterbelt establishment practice, which works well for reducing wind erosion. Cost-share programs that assist landowners with implementing these practices are the State of North Carolina Agriculture Cost Share Program and the Federal Environmental Quality Incentives Program. For flooding, Clearing and Snagging practices have been implemented through programs such as the State Streamflow Rehabilitation Assistance Program (StRAP) and Emergency Watershed Protection Program (EWP) Funding. This action will be updated as needed or during the next HMP update process.

Table 8-10: Stedman Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
S-1	Prevention	Conduct a countywide infrastructure vulnerability assessment to identify priority needs for updating ill-designed or outdated critical structures.	It has been difficult to locate any comprehensive assessments of local infrastructure in Cumberland and Hoke Counties. With current and projected natural hazard occurrences, it is essential to have an accurate and comprehensive understanding of the current condition of critical facilities to ensure the ability to continue to provide for basic needs, such as water and electrical supplies, transportation routes, waste management, etc.	All Hazards	Medium	County/city structural & civil engineers, in partnership with the U.S. Army Corps of Engineers	Local Operating Budget & Federal	Low	In Progress	Medium-Term	The County continues to assess critical infrastructure vulnerabilities to identify priority needs. Internal Services, in collaboration with the Cumberland County School System and Emergency Management, has received ARPA and grant funding to install new generators at five County-designated shelter locations. The County has also worked with the Mid-Carolina Regional Council to identify critical infrastructure that could benefit from backup power through a clean energy initiative. This action will be updated as needed or during the next HMP update process.
S-2	Prevention	Conduct social vulnerability analysis to identify priority needs and opportunities that will address the specific problems vulnerable populations face from all hazards, including barriers to evacuation, event-specific	There exist various groups of individuals that have additional financial, social, and/or environmental barriers to being resilient in the face of natural hazard events. In Cumberland County, for example, groups with a significant number of people affected include about 10K outdoor workers with direct exposure to extreme heat days, elderly people, and especially those with existing cardiovascular conditions, and other low-income and/or minority groups. As natural hazard events increase in intensity and frequency, these groups will find it harder to get	All Hazards	Medium	County Social Services Department and/or County Health Department	Local Operating Budget	Low	In Progress	Medium-Term	As part of its continuous efforts, Cumberland County continues to work with community partners and organizations to identify social vulnerabilities, and community needs to implement programs that best benefit the community. In 2024, the Department of Health conducted a survey to better understand the health status and needs of the population it serves and to use the knowledge gained to inform program development. This survey is conducted on a triannual basis. This action will

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		vulnerabilities, and impediments to recovery.	out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities, and transportation to/from a place of work, etc.								be updated and reviewed as needed or during the next HMP update process.
S-3	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan.	To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of "mitigation," acknowledge the changing climate and possibility of increased extreme weather and flooding events.	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Low	Complete	-	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains a North Carolina Climate Risk Assessment and Resilience Plan, which was last updated in June 2020.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
S-4	Public Education	Maintain an all-hazards public education program to educate and prepare residents for all of the hazards that impact Cumberland County.	To educate, enhance preparedness, and resiliency of Cumberland County and its municipal residents through public education programs that include booths at fairs, festivals, and special events, websites, brochures, school programs, etc.	All Hazards	Low	Town of Stedman Planning Department, Cumberland County Emergency Management	Local Operating Budget	High	To Be Continued	Short-Term	Emergency Management continues to provide an all-hazards public education program. Through EOC tours, Camp Ready—a summer camp for high school students—social media outreach, and radio and television interviews, Emergency Management promotes community resilience and encourages residents to sign up for Cumberland Alerts. Due to continuous outreach efforts and increased demand for participation in community events, the department has requested the addition of a public outreach position within the next one to two years. This action will be reviewed and updated as needed or during the next HMP update process.
S-5	Emergency Services	Provide financial assistance for low-income residents to help with power bills and support services during extended periods of high temperatures and other extreme weather.	Low-income households face challenges in keeping up with utility bills. Some low-income utility assistance programs are offered, but funds are limited. Extreme weather and increasing temperatures will place even greater pressure on these programs' ability to help all those in need, and citizens' lives will be increasingly at stake.	Extreme Heat, Winter Storm	Medium	County Health Department	NC Department of Health & Human Services & County Department of Health	Low	To Be Continued	Medium-Term	Cumberland County takes part in the statewide CIP. CIP aids low-income families experiencing or in danger of heating and/or cooling household emergencies where there are life-threatening or health-related emergencies and prompt or appropriate assistance is not available from any other source. This action is implemented and updated as needed.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
S-6	Prevention & Emergency Services	Revise the Subdivision Ordinance to require additional access for emergency vehicles and to be used as an evacuation route for developments located near special flood hazard areas.	This will provide additional access for residents, public safety officials, and emergency services to those developments located near a special flood hazard area, while reducing the possibility of a life-threatening situation for residents, public officials, and emergency services.	Flooding	Medium	Town of Stedman & Cumberland County Planning & Inspections Department	Local Operating Budget	Low	Deferred	Long-Term	This item has been placed on hold pending further discussion and direction from the County Management Office. This action will be reevaluated and updated during future HMP updates or as progress has been made.
S-7	Natural Resource Protection	Use natural systems, more open space, and green surfaces to manage stormwater in a more resilient fashion.	Impervious surfaces, typically found in urban centers, such as paved roads, buildings, parking lots, and pavement, drastically increase flash floods and urban flooding, which seems to be a common occurrence in Cumberland County. For instance, within a 90-day period (March 1 – June 30, 2015), three flooding incidents were reported due to heavy rainfall events. Use of LID stormwater management practices is mentioned only in summary in the Growth Factor Analysis, stating it "…should be emphasized in sensitive areas…" This, coupled with the naturally flat topography of the eastern portions of the County, also helps to create excess runoff and subsequent urban flooding issues, especially in the Special Flood Hazard Areas (SFHA) of the County, and specifically around Blounts and Cross Creek,	Flooding	Low	Engineering Department of each jurisdiction	Local Operating Budget	Low	To Be Continued	Long-Term	Cumberland County continues to create and update Land Use Plans that promote open space protection and support the development of newly protected areas, which helps mitigate excessive stormwater runoff. These plans are continuously reviewed, with most being updated, created, and adopted within a year. Cumberland County has 12 plan areas, and each plan is typically scheduled for an update every 8–12 years. This action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			as referenced in various resources.								
S-8	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind and flooding, more energy and water-efficient, more tolerant of heat waves, and healthier to live in. Also, provide incentives for making buildings safer from wind, flooding, more energy, and water efficient, and healthier to live in.	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing temperatures and extreme heat days, and prolonged periods of drought. Climate projections also state that precipitation will continue to follow a seasonal pattern, whereby hot, Summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be especially taxing on buildings with older A/C systems or inadequate insulation and in low-income households where upkeep with rising utility costs could become a burden.	Flooding, Hurricane, Severe Weather, Extreme Heat, Winter Storm	Medium	Planning & Code Departments of each jurisdiction	Local Operating Budget	Low	In Progress	Medium-Term	Cumberland County has received updated preliminary flood maps and will begin the process of updating the Flood Damage Prevention Ordinance so it will be aligned with the new maps once they become effective. This action will be reviewed and updated as needed or during the next HMP update process.
S-9	Prevention	Explore the Fire Adapted Communities concept implementation in Cumberland County.	To enhance the preparedness and resiliency of Cumberland County and its municipalities to the effects of wildland fire and urban interface, through education, programs such as Fire Wise, Ready Set Go, Community Wildfire Protection Plan, Fuel Management, local codes, and ordinances.	Wildfire	Medium	Emergency Management, NC Forest Service, & Fire Marshals	Local Operating Budget & Federal	Low	Deleted	-	After review staff determined that this mitigation action did not fit our current regional mitigation needs.
S-10	Natural Resource Protection	Collaborate with NC Cooperative Extension and NC Agriculture	Forests and farmland provide a multitude of social, economic, and environmental benefits, which, when looked at comprehensively, far outweigh	Wildfire, Flooding	Low	County Board of Commissioners, Conservation District	NC Cooperative Extension, NC Forest Service, US	Low	To Be Continued	Short-Term	NC Cooperative Extension continues to promote the Present Use Value program, the Voluntary Agricultural District program, and cost-

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		and Forestry Adaptation Working Group to provide more local support and encouragement of forest conservation and farmland preservation measures.	any profit/revenue projections of residential or commercial properties. Outside of development pressure, some of the other major health risks include: (1) increasing wildfire risk, (2) increasing number and types of insects and pests, (3) lack of sufficient water during the growing season for crops, and (4) increasing damage from strong winds and flooding. It is vital, especially in the face of a changing climate, to preserve these working lands and to support higher-density development in already existing urban and suburban centers.			Programs, & other land preservation organizations.	Department of Agriculture, & NC Wildlife Resources Commission.				share programs for farms and forest landowners to help mitigate management costs. Cumberland County's Soil and Water Department supports conservation easements and writes conservation plans for landowners who are interested in easements. Some current conservation practices include prescribed burning and firebreaks, which help reduce wildfire risk. For wind, there is a cost share for windbreak/shelterbelt establishment practice, which works well for reducing wind erosion. Cost-share programs that assist landowners with implementing these practices are the State of North Carolina Agriculture Cost Share Program and the Federal Environmental Quality Incentives Program. For flooding, Clearing and Snagging practices have been implemented through programs such as the State Streamflow Rehabilitation Assistance Program (StRAP) and Emergency Watershed Protection Program (EWP) Funding. This action will be updated as needed or during the next HMP update process.

Table 8-11: Wade Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
W-1	Prevention	Conduct a countywide infrastructure vulnerability assessment to identify priority needs for updating ill-designed or outdated critical structures.	It has been difficult to locate any comprehensive assessments of local infrastructure in Cumberland and Hoke Counties. With current and projected natural hazard occurrences, it is essential to have an accurate and comprehensive understanding of the current condition of critical facilities to ensure the ability to continue to provide for basic needs, such as water and electrical supplies, transportation routes, waste management, etc.	All Hazards	Medium	County/city structural & civil engineers, in partnership with the U.S. Army Corps of Engineers	Local Operating Budget & Federal	Low	In Progress	Medium-Term	The County continues to assess critical infrastructure vulnerabilities to identify priority needs. Internal Services, in collaboration with the Cumberland County School System and Emergency Management, has received ARPA and grant funding to install new generators at five County-designated shelter locations. The County has also worked with the Mid-Carolina Regional Council to identify critical infrastructure that could benefit from backup power through a clean energy initiative. This action will be updated as needed or during the next HMP update process.
W-2	Prevention	Conduct social vulnerability analysis to identify priority needs and opportunities that will address the specific problems vulnerable populations face from all of hazards, including barriers to evacuation, event-specific vulnerabilities, and impediments to recovery.	There exist various groups of individuals that have additional financial, social, and/or environmental barriers to being resilient in the face of natural hazard events. In Cumberland County, for example, groups with a significant number of people affected include about 10K outdoor workers with direct exposure to extreme heat days, elderly people, and especially those with existing cardiovascular conditions, and other low-income and/or minority groups. As natural hazard events increase in intensity and frequency, these	All Hazards	Medium	County Social Services Department and/or County Health Department	Local Operating Budget	Low	In Progress	Medium-Term	As part of its continuous efforts, Cumberland County continues to work with community partners and organizations to identify social vulnerabilities, and community needs to implement programs that best benefit the community. In 2024, the Department of Health conducted a survey to better understand the health status and needs of the population it serves and to use the knowledge gained to inform program development. This survey is conducted on a triannual basis.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			groups will find it harder to get out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities, and transportation to/from a place of work, etc.								
W-3	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan.	To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of "mitigation," acknowledge the changing climate and possibility of increased extreme weather and flooding events.	All Hazards	Low	The Planning Department/ Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Low	Complete	-	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains a North Carolina Climate Risk Assessment and Resilience Plan, which was last updated in June 2020.
W-4	Public Education	Maintain an all-hazards public education program to educate and prepare residents for all the hazards that impact	To educate, enhance preparedness, and resiliency of Cumberland County and its municipal residents through public education programs that include booths at fairs, festivals, and special events, websites, brochures, school programs, etc.	All Hazards	Low	Town of Wade Planning Department, Cumberland County Emergency Management	Local Operating Budget	High	To Be Continued	Short-Term	Emergency Management continues to provide an all-hazards public education program. Through EOC tours, Camp Ready—a summer camp for high school students—social media outreach, and radio and television interviews,

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		Cumberland County.									Emergency Management promotes community resilience and encourages residents to sign up for Cumberland Alerts. Due to continuous outreach efforts and increased demand for participation in community events, the department has requested the addition of a public outreach position within the next one to two years. This action will be reviewed and updated as needed or during the next HMP update process.
W-5	Emergency Services	Provide financial assistance for low-income residents to help with power bills and support services during extended periods of high temperatures and other extreme weather.	Low-income households face challenges in keeping up with utility bills. Some low-income utility assistance programs are offered, but funds are limited. Extreme weather and increasing temperatures will place even greater pressure on these programs' ability to aid all those in need, and citizens' lives will be increasingly at stake.	Extreme Heat, Winter Storm	Medium	County Health Department	NC Department of Health & Human Services & County Department of Health	Low	To Be Continued	Medium-Term	Cumberland County participates in the statewide CIP. CIP aids low-income families experiencing or in danger of heating and/or cooling household emergencies where there are life-threatening or health-related emergencies and timely or appropriate assistance is not available from any other source. This action is implemented and updated as needed.
W-6	Prevention & Emergency Services	Revise the Subdivision Ordinance to require additional access for emergency vehicles and to be used as an evacuation route for developments located near	This will provide additional access for residents, public safety officials, and emergency services to those developments located near a special flood hazard area, while reducing the possibility of a life-threatening situation for residents, public officials, and emergency services.	Flooding	Medium	Town of Wade & Cumberland County Planning & Inspections Department	Local Operating Budget	Low	Deferred	Long-Term	This item has been placed on hold pending further discussion and direction from the County Management Office. This action will be reevaluated and updated during future HMP updates or as progress has been made.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		special flood hazard areas.									
W-7	Natural Resource Protection	Use natural systems, more open space, and green surfaces to manage stormwater in a more resilient fashion.	Impervious surfaces, typically found in urban centers, such as paved roads, buildings, parking lots, and pavement, drastically increase flash floods and urban flooding, which seems to be a common occurrence in Cumberland County. For instance, within a 90-day period (March 1 – June 30, 2015), three flooding incidents were reported due to heavy rainfall events. Use of LID stormwater management practices is mentioned only in summary in the Growth Factor Analysis, stating it "…should be emphasized in sensitive areas…" This, coupled with the naturally flat topography of the eastern portions of the County, also helps to create excess runoff and subsequent urban flooding issues, especially in the Special Flood Hazard Areas (SFHA) of the County, and specifically around Blounts and Cross Creek, as referenced in various resources.	Flooding	Low	Engineering Department of each jurisdiction	Local Operating Budget	Low	To Be Continued	Long-Term	Cumberland County continues to create and update Land Use Plans that promote open space protection and support the development of newly protected areas, which helps mitigate excessive stormwater runoff. These plans are continuously reviewed, with most being updated, created, and adopted within a year. Cumberland County has 12 plan areas, and each plan is typically scheduled for an update every 8–12 years. This action will be updated as needed or during the next HMP update process.
W-8	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind and flooding, more energy and water-efficient,	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing temperatures and extreme heat days, and prolonged periods of drought. Climate	Flooding, Hurricane, Severe Weather, Extreme Heat, Winter Storm	Medium	Planning & Code Departments of each jurisdiction	Local Operating Budget	Low	In Progress	Medium-Term	Cumberland County has received updated preliminary flood maps and will begin the process of updating the Flood Damage Prevention Ordinance so it will be aligned with the new maps once they become effective. This action will be reviewed and updated

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		more tolerant of heat waves, and healthier to live in. Also, provide incentives for making buildings safer from wind, flooding, more energy, and water efficient, and healthier to live in.	projections also state that precipitation will continue to follow a seasonal pattern, whereby hot, Summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be especially taxing on buildings with older A/C systems or inadequate insulation and in low-income households where upkeep with rising utility costs could become a burden.								as needed or during the next HMP update process.
W-9	Prevention	Explore the Fire Adapted Communities concept implementation in Cumberland County.	To enhance the preparedness and resiliency of Cumberland County and its municipalities to the effects of wildland fire and urban interface, through education, programs such as Fire Wise, Ready Set Go, Community Wildfire Protection Plan, Fuel Management, local codes, and ordinances.	Wildfire	Medium	Emergency Management, NC Forest Service, & Fire Marshals	Local Operating Budget & Federal	Low	Deleted	-	After review staff determined that this mitigation action did not fit our current regional mitigation needs.
W-10	Natural Resource Protection	Collaborate with NC Cooperative Extension and NC Agriculture and Forestry Adaptation Working Group to provide more local support and encouragement of forest conservation and farmland preservation measures.	Forests and farmland provide a multitude of social, economic, and environmental benefits that, when looked at comprehensively, far outweigh any profit/revenue projections of residential or commercial properties. Outside of development pressure, some of the other major health risks include: (1) increasing wildfire risk, (2) increasing number and types of insects and pests, (3) lack of sufficient water during the growing season for crops, and (4) increasing damage from strong winds and	Wildfire, Flooding	Low	County Board of Commissioners, Conservation District Programs, & other land preservation organizations.	NC Cooperative Extension, NC Forest Service, US Department of Agriculture, & NC Wildlife Resources Commission.	Low	To Be Continued	Short-Term	NC Cooperative Extension continues to promote the Present Use Value program, the Voluntary Agricultural District program, and cost-share programs for farms and forest landowners to help mitigate management costs. Cumberland County's Soil and Water Department supports conservation easements and writes conservation plans for landowners who are interested in easements. Some current conservation practices include prescribed burning and firebreaks, which

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			flooding. It is vital, especially in the face of a changing climate, to preserve these working lands and to support higher-density development in already existing urban and suburban centers.								help reduce wildfire risk. For wind, there is a cost share for windbreak/shelterbelt establishment practice, which works well for reducing wind erosion. Cost-share programs that assist landowners with implementing these practices are the State of North Carolina Agriculture Cost Share Program and the Federal Environmental Quality Incentives Program. For flooding, Clearing and Snagging practices have been implemented through programs such as the State Streamflow Rehabilitation Assistance Program (StRAP) and Emergency Watershed Protection Program (EWP) Funding. This action will be updated as needed or during the next HMP update process.

Table 8-12: Hoke County Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
HC-1	Property Protection & Emergency Services	Upgrade the EOC building.	The EOC lacks some structural needs that modern operations centers typically have. Upgrading the building would make sure the center can be used for emergency operations in the event of a natural disaster.	All Hazards	Medium	Hoke County Emergency Management	Local Operating Budget	Low	Complete	Long-Term	Hoke County Emergency Services now has a fully functioning EOC located at our main office at 375 cc Steele Rd, Raeford, NC 28376. This center serves as our primary EOC for localized events within the county and does not require relocation to our previous EOC.
HC-2	Prevention & Property Protection	Conduct a survey of all county-owned structures to determine if there are any mitigation projects that can be undertaken to repair/upgrade them to withstand natural disasters.	County schools are inspected twice a year, but other county facilities are not. Conducting a survey of the building's county staff can identify areas that could be improved to help mitigate future issues brought about by natural disasters.	All Hazards	Medium	Hoke County Building Inspections, Fire Marshal, & Emergency Management	Local Operating Budget	Low	To Be Continued	Long-Term	Surveys are conducted at least annually, but more often if impacted by natural or manmade events. Action will be reviewed and updated as needed or during the next HMP update process.
HC-3	Prevention & Structural Projects	Maintain a countywide infrastructure vulnerability assessment program to identify priority needs for infrastructure and structures.	It has been difficult to locate any comprehensive assessments of local infrastructure in Hoke County and its jurisdiction. With current and projected natural hazard occurrences, it is essential to have an accurate and comprehensive understanding of the current condition of critical facilities to ensure the ability to continue to provide for basic needs, such as water and electrical supplies, transportation routes, waste management, etc.	All Hazards	Medium	County/City Code Enforcement Officials	Local Operating Budget & Federal	Low	In Progress	Long-Term	Current project priorities include upgrading water infrastructure and resiliency in areas lacking. Outdated infrastructure is being replaced and repaired as damaged components are identified. New projects will be implemented as they are identified and as funding becomes available. This action will be updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
HC-4	Prevention	Review zoning and subdivision ordinances in conjunction with the Fire Marshal's Office to ensure they are up to date and include appropriate mitigation measures.	The Hoke County Zoning Ordinance was last comprehensively reviewed and updated several years ago. The level of development in the county has grown significantly. The ordinances should be reviewed and updated to reflect current needs and expected growth.	All Hazards	Medium	Hoke County Planning Department/ Hoke County Fire Marshal's Office	Local Operating Budget	Low	In Progress	Medium-Term	Hoke County Fire Marshal and Zoning are working to revise ordinances. Ordinances will be reviewed and updated continually and as needed to include appropriate mitigation measures and reflect current needs. This action will be updated as needed or during the next HMP update process.
HC-5	Prevention	Survey social vulnerability analysis to identify priority needs and opportunities that will address the specific problems vulnerable populations face from all hazards, including barriers to evacuation, event-specific vulnerabilities, and impediments to recovery.	There exist various groups of individuals that have additional financial, social, and/or environmental barriers to being resilient in the face of natural hazard events. As natural hazard events increase in intensity and frequency, these groups will find it harder to get out of harm's way safely and efficiently. These groups will also have difficulty in obtaining and paying for essential components to sustain life, such as medications, utilities, and transportation to/from a place of work, etc.	All Hazards	Medium	County Social Services Department & County Health Department	Local Operating Budget	Low	In Progress	Long-Term	County staff are developing outreach programs to include individuals who have mobility issues in accessing resources within the county. Social Services is actively identifying citizens who cannot access care and Health Department personnel providing mobile services. This action will be updated and reviewed as needed or during the next HMP update process.
HC-6	Prevention	Conduct an annual progress meeting with the Hazard Mitigation steering committee.	Annual progress meetings keep projects on track and ensure the goals and objectives of the plan are met by the time of the next plan update.	All Hazards	Medium	Hazard Mitigation Steering Committee	Local Operating Budget	Low	To Be Continued	Long-Term	Hazard Mitigation Committee progress meetings are completed annually to ensure that the goals and objectives of the plan are up to date. This action will be reviewed or updated as needed or during the next HMP update process.
HC-7	Emergency Services	Provide financial assistance for low-	Low-income households face challenges in keeping up with	Extreme Heat,	Medium	County Health Department	NC Department	Low	In Progress	Short-Term	Every year, the County Grants Administrator secures

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		income residents to help with power bills and support services during extended periods of high temperatures and other extreme weather.	utility bills. Some low-income utility assistance programs are offered, but funds are limited. Extreme weather and increasing temperatures will place even greater pressure on these programs' ability to aid all those in need, and citizens' lives will be increasingly at stake.	Winter Storm			of Health & Human Services & County Department of Health				funding to pay for citizens' past payment deadline utility bills. This action will be updated as needed or during the next HMP update process.
HC-8	Public Education	Consider placing signs in flood-prone areas, identifying them as such	While a database and map available to the public is useful, placing signs at the location of flood-prone areas would alert those living in the area and drivers.	Flooding	Medium	NC Department of Transportation (NCDOT)	Local Operating Budget	Low	Complete	-	-
HC-9	Public Education	Create a website that makes flood insurance information available to the public.	Citizens should have an area they can go to find ready general information about the importance of flood insurance. The Planning Department has some brochures and information sheets available to the public, but an online resource would always be available.	Flooding	Medium	Hoke County Planning	Local Operating Budget	Low	To Be Continued	Long-Term	This information can be found on the county's emergency information page, readyhoke.org. This information will be updated and maintained on the website continually or as needed. This action will be updated and reviewed as needed or during the next HMP update process.
HC-10	Prevention	Update records for flood-prone areas in Unincorporated Hoke County and the City of Raeford. Also, create a database and GIS mapping available to the public.	Hoke County Emergency Management has in the past generated a list of flood-prone areas and has mapped them for internal use. The list should be updated, mapped, and the map made available to the public for their awareness.	Flooding	Medium	Hoke County Emergency Management & Hoke County GIS	Local Operating Budget	Low	Complete	-	-
HC-11	Natural Resource Protection	Use natural systems, more open space, and green surfaces to	Impervious surfaces, typically found in urban centers, such as paved roads, buildings, parking lots, and pavement,	Flooding	Medium	Engineering Department of each jurisdiction	Local Operating Budget	Low	In Progress	Long-Term	Hoke County Zoning is developing criteria to further address the impacts of these developments as they are

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		manage stormwater in a more resilient fashion.	drastically increase flash floods and urban flooding.								built and maintained. Green infrastructure to manage stormwater will be considered as opportunities are identified. This action will be reviewed and updated as needed or during the next HMP update process.
HC-12	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind and flooding, more energy and water-efficient, more tolerant of heat waves, and healthier to live in.	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing temperatures and extreme heat days, and prolonged periods of drought. Climate projections also state that precipitation will continue to follow a seasonal pattern, whereby hot, Summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be especially taxing on buildings with older A/C systems or inadequate insulation and in low-income households where upkeep with rising utility costs could become a burden.	Flooding, Hurricane Wind, Severe Weather, Extreme Heat, Winter Storm	Medium	Planning & Code Departments of each jurisdiction	Local Operating Budget	Low	Deleted	-	
HC-13	Property Protection	Pursue funding to relocate or demolish hazardous buildings	Rural areas of the county have abandoned or partially demolished residential and accessory structures that are potential fire hazards. Removing structures is a costly procedure. Finding a funding source to remove buildings would allow the county to remove at least one	Wildfire	Medium	Hoke County Emergency Management, Building Inspections, Planning	Local Operating Budget	Low	To Be Continued	Long-Term	County staff will continuously search for funding to relocate or demolish hazardous buildings that are potential fire hazards, partially demolished, or abandoned. As funding allows, the county aims to remove at least one hazardous structure per year. This action will be

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			(1) or more hazardous structures a year.								reviewed or updated as needed or during the next HMP update process.
HC-14	Natural Resource Protection	Collaborate with NC Cooperative Extension and NC Agriculture and Forestry Adaptation Working Group to provide more local support and encouragement of forest conservation and farmland preservation measures.	Forests and farmland provide a multitude of social, economic, and environmental benefits that, when looked at comprehensively, far outweigh any profit/revenue projections of residential or commercial properties. Outside of development pressure, some of the other major health risks include: (1) increasing wildfire risk, (2) increasing number and types of insects and pests, (3) lack of sufficient water during the growing season for crops, and (4) increasing damage from strong winds and flooding. It is vital, especially in the face of a changing climate, to preserve these working lands and to support higher-density development in already existing urban and suburban centers.	Wildfire, Flooding	Medium	County Board of Commissioners, Conservation District Programs, & other land preservation organizations.	NC Cooperative Extension, NC Forest Service, US Department of Agriculture, & NC Wildlife Resources Commission.	Low	In Progress	Long-Term	Hoke County, NC Cooperative Extension now has a new 17,000 sq. ft. facility. Opportunities for education about preservation and conservation are now more feasible but will be implemented as opportunities arise or as funding is available. This action will be updated as needed or during the next HMP update process.
HC-15	Public Education	Provide environmental education, awareness, and resources to populations that are adversely affected by climate-related hazards.	-	All Hazards	Medium	Sustainable Sandhills	NC Department of Health & Human Services & Fayetteville Area Metropolitan Planning Organization (Cumberland County entity)	Moderate	New	Long-Term	Sustainable Sandhills currently provides resources and supplies for heat-related illness mitigation and prescribed burn/wildfire smoke-related illness mitigation to vulnerable populations in Cumberland County, establishes cooling centers at publicly accessible locations and provides heat alerts to the public; Sustainable Sandhills continuously monitors air

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
											quality in Cumberland County and provides air quality alerts to the public; Sustainable Sandhills provides education and resources on public health considerations in the aftermath of floods (mold and mildew, vector-borne illnesses, carbon monoxide exposure, and water availability and contamination).

Table 8-13: Raeford Mitigation Action Plan

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
R-1	Prevention	Conduct a countywide infrastructure vulnerability assessment to identify priority needs for updating ill-designed or outdated critical structures.	It has been difficult to locate any comprehensive assessments of local infrastructure in Cumberland and Hoke Counties. With current and projected natural hazard occurrences, it is essential to have an accurate and comprehensive understanding of the current condition of critical facilities to ensure the ability to continue to provide for basic needs, such as water and electrical supplies, transportation routes, waste management, etc.	All Hazards	Medium	County/city structural & civil engineers, in partnership with the U.S. Army Corps of Engineers	Local Operating Budget & Federal	Low	To Be Continued	Long-Term	Assessments continue for various infrastructure projects. Projects will be implemented as funding allows and feasible projects are identified. This action will be reviewed and updated as needed or during the next HMP update process.
R-2	Public Education	Develop a public education and awareness campaign for print and/or social media for hazard mitigation strategies for all hazards.	Develop a public education and awareness campaign for print and/or social media for hazard mitigation strategies for all hazards.	All Hazards	High	Hoke County Emergency Management & Hoke County GIS, City Public Works Department	Local Operating Budget	Low	To Be Continued	Long-Term	Public awareness and education campaigns for hazard mitigation for all hazards are conducted as funding and staff availability allow. This action will be reviewed and updated as needed or during the next HMP update process.
R-3	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan.	To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any	All Hazards	Medium	City, The Planning Department/Planning Director	Existing FEMA grant	Low	In Progress	Long-Term	No measurable progress due to lack of staff and funding. This action will be reevaluated during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of "mitigation," acknowledge the changing climate and possibility of increased extreme weather and flooding events.								
R-4	Property Protection	Provide backup power to critical facilities.	Provide backup power to critical facilities.	All Hazards	High	Hoke County Emergency Management & Hoke County GIS, City Public Works Department	Local Operating Budget	Low	To Be Continued	Long-Term	Backup power will be provided to critical facilities as funding allows and as opportunities for backup power are identified. This action will be reviewed and updated as needed or during the next HMP update process.
R-5	Emergency Services	Provide financial assistance for low-income residents to help with power bills and support services during extended periods of high temperatures and other extreme weather.	Low-income households face challenges in keeping up with utility bills. Some low-income utility assistance programs are offered, but funds are limited. Extreme weather and increasing temperatures will place even greater pressure on these programs' ability to aid all those in need, and citizens' lives will be increasingly at stake.	Extreme Heat, Winter Storm	Medium	County Health Department, City Administrators	NC Department of Health & Human Services & County Department of Health	Low	In Progress	Long-Term	County departments are working with grant funding and other opportunities to address unmet needs. Financial assistance will be provided as funding allows and as opportunities for assistance are identified. This action will be updated and reviewed as needed or during the next HMP update process.
R-6	Property Protection	Acquire properties in the floodplain.	Acquire properties in the floodplain.	Flooding	High	Hoke County Emergency Management & Hoke County GIS, City Public Works Department	Local Operating Budget	Low	Deferred	Long-Term	Deferred due to lack of funding. This action will be reviewed and updated as needed or during the next HMP update process.
R-7	Prevention	Update records for flood-prone areas in	Hoke County Emergency Management has in the past generated a list of flood-prone	Flooding	Medium	Hoke County Emergency Management &	Local Operating Budget	Low	In Progress	Long-Term	No measurable progress due to a lack of funding. This action will be

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
		Unincorporated Hoke County and the City of Raeford. Also, create a database and GIS mapping available to the public.	areas and has mapped them for internal use. The list should be updated, mapped, and the map made available to the public for their awareness.			Hoke County GIS, City Public Works Department					implemented as funding allows and will be reviewed as needed or during the next HMP update process.
R-8	Natural Resource Protection	Use natural systems, more open space, and green surfaces to manage stormwater in a more resilient fashion.	Impervious surfaces, typically found in urban centers, such as paved roads, buildings, parking lots, and pavement, drastically increase flash floods and urban flooding.	Flooding	Medium	City Engineering Department	Local Operating Budget	Low	In Progress	Long-Term	Hoke County Zoning is developing criteria to further address the impacts of these developments as they are built and maintained. Green infrastructure to manage stormwater will be considered as opportunities are identified. This action will be reviewed and updated as needed or during the next HMP update process.
R-9	Prevention & Property Protection	Analyze and update local development ordinances to make buildings safer from wind and flooding, more energy and water-efficient, more tolerant of heat waves, and healthier to live in.	Energy and water efficiency will be increasingly important to a community's resiliency in the face of natural hazards, specifically because of projections of increasing temperatures and extreme heat days, and prolonged periods of drought. Climate projections also state that precipitation will continue to follow a seasonal pattern, whereby hot, Summer months are classified with less precipitation and Winters with more precipitation. Extreme heat days will be especially taxing on buildings with older A/C systems or inadequate insulation and in low-income	Hurricane, Severe Weather, Extreme Heat, Winter Storm, Flooding	Medium	Planning & Code Departments of each jurisdiction	Local Operating Budget	Low	Deferred	Long-Term	No measurable progress due to lack of funding. This action will be evaluated and updated as needed or during the next HMP update process.

Action #	Action Type	Action Description	Issue/ Background Statement	Hazard(s) Addressed	Relative Priority	Responsible Party	Potential Funding Sources	Estimated Cost	Action Status	Timeframe	Implementation Details
			households where upkeep with rising utility costs could become a burden.								
R-10	Natural Resource Protection	Collaborate with NC Cooperative Extension and NC Agriculture and Forestry Adaptation Working Group to provide more local support and encouragement of forest conservation and farmland preservation measures.	Forests and farmland provide a multitude of social, economic, and environmental benefits that, when looked at comprehensively, far outweigh any profit/revenue projections of residential or commercial properties. Outside of development pressure, some of the other major health risks include: (1) increasing wildfire risk, (2) increasing number and types of insects and pests, (3) lack of sufficient water during the growing season for crops, and (4) increasing damage from strong winds and flooding. It is vital, especially in the face of a changing climate, to preserve these working lands and to support higher-density development in already existing urban and suburban centers.	Wildfire, Flooding	Medium	County & City Board of Commissioners, Conservation District Programs, & other land preservation organizations.	NC Cooperative Extension, NC Forest Service, US Department of Agriculture, & NC Wildlife Resources Commission.	Low	In Progress	Long-Term	Hoke County, NC Cooperative Extension now has a new 17,000 sq. ft. facility. Opportunities for education about preservation and conservation are now more feasible but will be implemented as opportunities arise or as funding is available. This action will be updated as needed or during the next HMP update process.

SECTION 9: PLAN MAINTENANCE

CFR §201.6(c)(4):
The plan maintenance process shall include a section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.

This section provides an overall strategy for plan implementation, integration, and maintenance, and outlines the method and schedule for monitoring, evaluating, and updating the plan. The section also discusses incorporating the plan into existing planning mechanisms and addressing continued public involvement. It consists of the following subsections:

- **9.1 Implementation & Incorporation**
- **9.2 Plan Integration**
- **9.3 Role of the HMPC in Implementation & Maintenance**
- **9.4 Monitoring, Evaluating, and Updating**
- **9.5 Continued Public Involvement**

9.1. Implementation & Incorporation

Implementation and maintenance of the plan are critical to the overall success of hazard mitigation planning. Implementation of the Regional Hazard Mitigation Plan (RHMP) will commence upon the document's adoption by all participating jurisdictions. Resolutions of Adoption are provided in Appendix F of the plan.

Upon adoption, this RHMP faces its truest test – implementation. Implementation implies two closely related concepts: action and priority. While this plan offers many worthwhile and high-priority recommendations, the first task facing the Hazard Mitigation Planning Committee (HMPC) is deciding which action to undertake first. There are two factors to consider when making that decision: the item's priority and available funding. Thus, pursuing low or no-cost high-priority recommendations will have the greatest likelihood of success. Central to the success of this plan is the need for regional coordination in implementing some of the mitigation strategies.

Another highly effective and low-cost implementation mechanism is incorporating the hazard mitigation plan recommendations and their underlying principles into other county and municipal plans and regulatory mechanisms, such as Capital Improvement Plans and Land Use Plans. The Counties and participating municipalities will use this plan as a starting point for implementing policies and programs to reduce losses of life and property from natural hazards. Through the planning process, partnerships are formed, and sustained action can increase the community’s resilience to disasters. Cumberland and Hoke Counties will be charged with ensuring the implementation of strategies specific to their jurisdiction. If these efforts require intergovernmental coordination, the HMPC should also be involved. If a strategy has been documented as regional, all participating jurisdictions should assist in carrying out the function and/or strategy.

9.2. Plan Integration

Mitigation is most successful when it is incorporated into the day-to-day functions and priorities of government and development. This integration is accomplished through ongoing efforts to network, identify, and highlight the multi-objective benefits of each program and its stakeholders. This effort is achieved through routine actions such as monitoring implementation, attending meetings, and promoting a safe, sustainable community. Additional mitigation strategies could include consistent, ongoing enforcement of existing policies and the review of county and municipal programs to coordinate and identify multi-objective opportunities.

Along with these efforts, it is important to maintain a constant monitoring of funding opportunities that can be leveraged to implement some of the more costly recommended actions. This process will include creating and maintaining ideas on how any required local match or participation requirement can be met. When funding becomes available, HMPC members will be able to capitalize on the opportunity for their respective jurisdictions. Funding opportunities to be monitored include special pre- and post-disaster funds, special district budgeted funds, state- or federal-earmarked funds, and grant programs, including those that can support multi-objective implementing actions.

The HMPC, which meets at a minimum annually, will provide a mechanism to ensure that the actions identified in this plan are incorporated into ongoing County and municipal planning activities for each participating jurisdiction. The participating jurisdictions currently use comprehensive land-use planning and building codes to guide and control development in their communities. After all participating jurisdictions adopt the RHMP, these existing mechanisms will have hazard mitigation strategies integrated into them. The communities will utilize the planning tools outlined in Section 6 – Capability Assessments.

After the adoption of the RHMP, the participating jurisdictions will work with the State Building Code office to ensure they adopt and enforce the minimum standards established in the new State Building Code. This effort will ensure that life/safety criteria are met for new construction. The Regional HMPC and each respective County HMPC will carry out these efforts.

Future capital improvements will also contribute to the goals of the RHMP. The jurisdictions will work with capital improvements planners to secure high-hazard areas for low-risk uses. During the RHMP planning/implementation period, each participating jurisdiction will strive for the objective of formal adoption of the RHMP policies.

9.3. Role of the HMPC in Implementation & Maintenance

Upon adoption of this plan, the HMPC will be tasked with its implementation and maintenance. The HMPC, led by Chini Gault, Emergency Coordinator of Cumberland County, and Bryan Marley, Emergency Management Director of Hoke County, agree to:

- Act as a forum for hazard mitigation issues;
- Disseminate hazard mitigation ideas and activities to all participants;
- Pursue the implementation of high-priority, low/no-cost recommended actions;

- Keep the concept of mitigation at the forefront of community decision-making by identifying plan recommendations when other community goals, plans, and activities overlap, influence, or directly affect increased community vulnerability to disasters;
- Continuously monitor multi-objective cost-share opportunities to help the community implement the plan's recommended actions for which no current funding exists;
- Monitor and assist in the implementation and update of this plan;
- Report on the plan's progress and recommended changes to the Boards of Commissioners; and
- Inform and solicit input from the public.

The HMPC will have no power over County or municipal staff; it will be a purely advisory body. Its primary duty is to see the plan successfully carried out and to report to the community governing boards and the public on the status of plan implementation and mitigation opportunities for the county and participating municipal jurisdictions. Other duties include reviewing and promoting mitigation proposals, considering stakeholder concerns about hazard mitigation, passing concerns on to appropriate entities, and posting relevant information on the County websites.

9.4. Monitoring, Evaluating, and Updating

Since the previous plan was adopted, each jurisdiction has worked to ensure the Plan is integrated into local activities and appropriately implemented. Each jurisdiction outlined a process in the previous mitigation plan for monitoring, evaluating, and updating the plan during the interim period between updates. Each jurisdiction ultimately succeeded in implementing the monitoring, evaluation, and update processes outlined in the previous plan, as jurisdictions held annual meetings to discuss the mitigation plan and the priorities outlined and tracked in it. The specific method is outlined below, including an explanation of how the monitoring, evaluating, and updating process was and will be carried out, as well as any changes identified by the jurisdictions that would be useful to implement during the next update.

Plan maintenance implies an ongoing effort to monitor and evaluate plan implementation and to update the plan as progress, roadblocks, or changing circumstances are recognized. To track progress and update the mitigation strategies identified in the policy section of the plan, the HMPC will revisit the plan annually and after a hazard event. Chini Gault, Emergency Coordinator of Cumber Land County, and Bryan Marley, Emergency Management Director of Hoke County, acting as chairs of the HMPC, are responsible for initiating this review and will consult with HMPC members. This monitoring and updating will take place through a formal review by the HMPC annually and a written update every five years, to be submitted to the North Carolina Division of Emergency Management (NCEM) and the Federal Emergency Management Agency (FEMA) Region IV, unless disaster or other circumstances (e.g., changing regulations) require a change to this schedule.

The RHMP will be thoroughly reviewed by the HMPC every five years to determine whether there have been any significant changes in the region that may, in turn, necessitate changes 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 RHMP review provides county and municipal officials with an opportunity to evaluate successful actions and to document potential losses avoided through the implementation of specific mitigation measures. The RHMP review also provides the opportunity to address mitigation actions that may not have been successfully implemented as assigned. Participants will be responsible for reconvening the HMPC and conducting the five-year review. During the five-year plan review 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?

Progress can be evaluated by monitoring changes in the vulnerabilities identified in the plan. Changes in vulnerability can be identified by noting:

- Decreased vulnerability as a result of implementing recommended actions;
- Increased vulnerability as a result of failed or ineffective mitigation actions; and/or
- Increased vulnerability as a result of new development (and/or annexation).

Updates to this plan will:

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

Evaluation Process

To best evaluate any changes in vulnerability as a result of plan implementation, the HMPC will use the following process:

- A representative from the responsible office identified in each mitigation strategy will be requested to report on an annual basis to the HMPC on project status and provide input

on whether the project, as implemented, meets the defined objectives and is likely to be successful in reducing vulnerabilities.

- If the project does not meet identified objectives, the HMPC may recommend additional measures to be implemented, and an assigned individual will be responsible for defining project scope, implementing the project, monitoring the success of the project, and making any required modifications to the plan.

Changes will be made to the plan to accommodate projects that have failed or are not considered feasible after a review of their consistency with established criteria, the time frame, county priorities, and/or funding resources. Priorities identified as potential mitigation strategies will also be reviewed during the monitoring and updating of this plan to determine their feasibility for future implementation.

Updates to the plan will be made through written changes and submissions as the HMPC deems appropriate and necessary, and as approved by the Board of Commissioners or the participating municipalities' governing boards, if applicable. In keeping with the plan adoption process, a public involvement process to receive public comments on plan maintenance and updates will be held annually, and the Counties will adopt the final product, along with all participating municipalities. The plan will be updated every five years, as required.

9.5. Continued Public Involvement

Public participation is an integral component of the new mitigation planning process and will remain essential as the RHMP evolves. Significant changes or amendments to the Plan shall require the involvement of the general community as deemed appropriate.

Efforts to involve the general community in the RHMP's maintenance, implementation, monitoring, evaluation, and review will be made, as necessary. These efforts may include:

- Advertising meetings of the HMPC with an invitation for public participation;
- Designating knowledgeable and willing members of the community to serve as official representatives on the HMPC;
- Use local media to update the community on any maintenance and/or periodic review activities taking place;
- Use the Cumberland and Hoke Counties' government website to advertise any maintenance and/or periodic review activities taking place;
- Keeping copies of the RHMP in local libraries; and
- Soliciting public feedback via social media surveys.

APPENDIX A: ACRONYMS

Acronym	Definition
ACS	American Community Survey
AMS	American Meteorological Society
ARPA	American Rescue Plan Act
BCEGS	Building Code Effectiveness Grading Schedule
BFE	Base Flood Elevations
BP	Burn Probability
BRIC	Building Resilient Infrastructure and Communities
CDC	Centers for Disease Control and Prevention
CFR	Code of Federal Regulations
CIP	Crisis Intervention Program
CISA	Cybersecurity and Infrastructure Security Agency
COG	Council of Government
COP	Continuity of Operations
CRREL	Cold Regions Research and Engineering Laboratory
CRS	Community Rating System
DFIRM	Digital Flood Insurance Rate Map
DMA	Disaster Mitigation Act Of 2000
DMA	Disaster Mitigation Act Of 2000
DSA	Drainage Sensitive Areas
EAL	Expected Annual Loss
EAP	Emergency Action Plan
ECD	Economic And Community Development
EMC	Electrical Membership Corporation
EMP	Electromagnetic Pulses
EMS	Emergency Medical Services
EOC	Emergency Operations Centers
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency
ETJ	Extraterritorial Jurisdictions
EWP	Emergency Watershed Protection Program
FAST	Fayetteville Area System of Transit
FEMA	Federal Emergency Management Agency
FIL	Fire Intensity Level
FIRM	Flood Insurance Rate Map
FIS	Fire Intensity Scale
FMA	Flood Mitigation Assistance Program
FRIS	Flood Risk Information System
FSIM	Fire Simulation System

Acronym	Definition
GEM	Global Earthquake Model
GIS	Geographic Information System
HATS	Hoke Area Transit System
HMGP	Hazard Mitigation Grant Program
HMP	Hazard Mitigation Plan
HMPC	Hazard Mitigation Planning Committee
HRI	Heat-Related Illness
HVA	Hazard Vulnerability Analysis
IBTRACS	International Best Track Archive for Climate Stewardship
ISO	Insurance Services Office, Inc.
IT	Internet-Technology
LID	Low Impact Development
MAP	Mitigation Action Plan
NC	North Carolina
NCCSR	North Carolina Climate Science Report
NCDC	National Climatic Data Center
NCDEQ	North Carolina Department of Environmental Quality
NCDFR	North Carolina Division of Forest Resources
NCDOT	North Carolina Department of Transportation
NCEI	National Center for Environmental Information
NCEM	North Carolina Division of Emergency Management
NCGS	North Carolina General Statute
NCLGISA	North Carolina Local Government Information Systems Association
NCSCO	North Carolina State Climate Office
NCSU	North Carolina State University
NDMC	U.S. Drought Monitor and the University Of Nebraska-Lincoln National Drought Mitigation Center
NFIP	National Flood Insurance Program
NHC	National Hurricane Center
NID	National Inventory of Dams
NLD	National Levee Database
NOAA	National Oceanic and Atmospheric Administration
NORCRESS	Northern Cumberland Regional Sewer System
NRI	National Risk Index
NWS	National Weather Service
NWSFO	National Weather Service Forecast Office
PDI	Palmer Drought Index
PDM	Pre-Disaster Mitigation Program
PDSI	Palmer Drought Severity Index
PGA	Predicted Ground Acceleration
PWC	Public Works Committee

Acronym	Definition
RFC	Repetitive Loss Claim Program
RHMP	Regional Hazard Mitigation Plan
RISE	Regions Innovating for Strong Economies and Environment Program
RL	Repetitive Loss
SCADA	Water/Wastewater Supervisory Control and Data Acquisition
SFHA	Special Flood Hazard Area
SLTT	State, Local, Tribal, and Territorial
SPC	National Weather Service Storm Prediction Center
SPI	Standardized Precipitation Index
SRL	Severe Repetitive Loss
StRAP	State Streamflow Rehabilitation Assistance Program
SWRAP	Southern Wildfire Risk Assessment Portal
THIRA	Threat and Hazard Identification and Risk Assessment
UDO	Unified Development Ordinance
U.S.	United States
USACE	U.S. Army Corps Of Engineers
USDA	U.S. Department Of Agriculture
USGS	U.S Geological Survey
WFSI	Wildland Fire Susceptibility Index
WMD	Weapons of Mass Destruction
WSW	Water Supply Watershed
WUI	Wildland Urban Interface

APPENDIX B: PARTICIPATION AND MEETINGS

Table B-1: Hazard Mitigation Planning Pre Kick-off Meeting August 28th, 2025, Virtual Attendance

Name	Organization	Title	Role
Kelly Keefe	AECOM	Lead Planner	Organizer
Mckenzie Houston	AECOM	Resilience Planner	Organizer
Peyton Campbell	AECOM	Environmental Planner	Organizer
Amanda Scheck	Cumberland County	Emergency Management Coordinator	Attendee
Garry Crumpler	Cumberland County	Interim Emergency Services Director	Attendee
Chini Gault	Hoke County	Emergency Management Planner	Attendee
Charles "Andrew" Jacobs	Hoke County	Deputy Director	Attendee

	REMINDER: CUMBERLAND-HOKE: Regional Hazard Mitigation Planning Pre
Meeting title	Kick-off Meeting
Attended participants	7
Start time	8/28/25, 10:57:13 AM
End time	8/28/25, 11:46:25 AM
Meeting duration	49m 11s
Average attendance time	43m 16s

Name	Organization	Title	First Join
Mckenzie Houston	AECOM	Resilience Planner	8/28/25, 10:57:36 AM
Peyton Campbell	AECOM	Environmental Planner	8/28/25, 10:58:00 AM
Kelly Keefe	AECOM	Lead Planner	8/28/25, 10:59:54 AM
Amanda Scheck	Cumberland County	Emergency Management Coordinator	8/28/25, 10:57:15 AM
Charles "Andrew" Jacobs	Hoke County	Deputy Director	8/28/25, 10:57:31 AM
Chini Gault	Hoke County	Emergency Management Planner	8/28/25, 10:59:29 AM
Garry Crumpler	Cumberland County	Interim Emergency Services Director	8/28/25, 11:07:31 AM

Figure B-1: August 28th, 2025 Microsoft Teams virtual attendance record for Pre Kick-off Meeting

Table B-2: Regional Hazard Mitigation Planning Kick-off Meeting on September 25th, 2025

Name	Organization	Title	Role
Ashley Ervin	AECOM	Resilience Planner	Organizer
Kelly Keefe	AECOM	Lead Planner	Organizer
Kelsey Peterson	AECOM	Environmental Planner	Organizer
Mckenzie Houston	AECOM	Resilience Planner	Organizer

Name	Organization	Title	Role
Peyton Campbell	AECOM	Environmental Planner	Organizer
Caroline Hamilton	Cumberland County	Deputy Sheriff Detective	Attendee
Clarence Grier	Cumberland County	County Manager	Attendee
Kim Cannizzaro	Cumberland County	Chief Building Cumber County Planning & Inspections	Attendee
Greg Phillips	Cumberland County	Public Health Preparedness Coordinator	Attendee
Rawls Howard	Cumberland County	Director of Planning and Inspections	Attendee
Rufus Smith III	Cumberland County	Planning Manager	Attendee
Amanda Scheck	Cumberland County	Planner	Attendee
Garry Crumpler	Cumberland County	Emergency Services Director	Attendee
Amy Hall	Cumberland County	Public Utilities Project Manager	Attendee
Chini Gault	Cumberland County	Emergency Management	Attendee
Tyler Blackburn	Cumberland County	Emergency Management Intern	Attendee
Diane B. Rice	Cumberland County	Communications Director	Attendee
Amanda Cummings	Cumberland County	Administrative Coordinator II	Attendee
Trey Smith	Cumberland County	Planning Manager	Attendee
James Talian	City of Fayetteville	Capital Projects Program Manager	Attendee
Daniel L. Edwards	City of Fayetteville	Public Services Assistant Director	Attendee
David Steinmetz	City of Fayetteville	Development Services Assistant Director	Attendee
Chavonda D. Pighet	City of Fayetteville	Engineer I	Attendee
Haven J. Cashwell	City of Fayetteville	Project Manager	Attendee
Laura B. Smith	City of Fayetteville	Emergency Management Coordinator	Attendee
Byron Reeves	City of Fayetteville	Deputy Public Services Director	Attendee
Sheila Thomas-Ambat	City of Fayetteville	Public Services Director	Attendee
Loren Bymer	City of Fayetteville	CoF Marketing and Communications Director	Attendee
Willie L. Henry (IT CIO)	City of Fayetteville	Information Officer	Attendee
Craig Allen	City of Fayetteville	Streets and Right of Way Infrastructure Maintenance Manager	Attendee
Brian McGill	City of Fayetteville	Interim Assistant Public Services Director	Attendee
Frances Collier	Town of Linden	Mayor	Attendee
Deanna L Rosario	Town of Spring Lake	Water Resources Administrator	Attendee
Stephanie Hutchins	Town of Spring Lake	Building Inspector	Attendee

Name	Organization	Title	Role
Jason Williams	Town of Spring Lake	Fire Chief	Attendee
Mardy Jones	Town of Stedman	Mayor	Attendee
Connie Veeder	Town of Stedman	Town Administrator/Clerk	Attendee
Charles "Andrew" Jacobs	Hoke County	Grants Manager	Attendee
Robert Godwin	Cape Fear Valley Health System	Corporate Director of Safety and Emergency Management	Attendee
Emily Tucker	Duke Energy	District Manager	Attendee
Abiodun Gabriel Awoyemi	Fayetteville State University	Director of Emergency Management	Attendee
Awoyemi, Abiodun G.	Fayetteville State University	Director of Emergency Management	Attendee
Justin T. McLaurin	Fayetteville Fire Department	Fire Marshal	Attendee
Alisa Werbelow	Methodist University	Director of Public Safety	Attendee
Brent Fisher	North Carolina Emergency Management	Area Coordinator	Attendee
Carl Baker	North Carolina Emergency Management	Plans Manager	Attendee
Colby Foster	Red Cross	Community Disaster Program Manager	Attendee
Aaron Jeffers	Team Rubicon, Cumberland County	Fayetteville Metro Administrator	Attendee
Mike Kendrat	Team Rubicon, Cumberland County	Fayetteville Metro Planner	Attendee
Jason Hughes	Salvation Army of the Sandhills	Corps Officer	Attendee
Norman Zanders	The Salvation Army Sandhills	Emergency Disaster Services & Volunteer Coordinator	Attendee
Jason Hughes	The Salvation Army of Sandhills	Corps Officer	Attendee
Creshawn Wilkes	The Salvation Army of the Sandhills	Development Director	Attendee

Meeting title	CUMBERLAND-HOKE: Regional Hazard Mitigation Planning Kick-Off Meeting
Attended participants	53
Start time	9/25/25, 10:30 AM
End time	9/25/25, 11:30 PM
Average attendance time	57m 55s

Name	Organization	Title	First Join	Role
Mckenzie Houston	AECOM	Resilience Planner	9/25/25, 10:29:42 AM	Organizer
Kelsey Peterson	AECOM	Environmental Planner	9/25/25, 10:27:59 AM	Organizer
Kelly Keefe	AECOM	Lead Planner	9/25/25, 10:29:42 AM	Organizer
Ashley Ervin	AECOM	Resilience Planner	9/25/25, 10:30:27 AM	Organizer
Peyton Campbell	AECOM	Resilience Planner	9/25/25, 10:30:07 AM	Organizer
Caroline Hamilton	Cumberland County	Deputy Sheriff Detective	9/25/25, 10:19:53 AM	Attendee
Clarence Grier	Cumberland County	County Manager	9/25/25, 10:20:39 AM	Attendee
Aaron Jeffers	Team Rubicon, Cumberland County	Fayetteville Metro Administrator	9/25/25, 10:23:19 AM	Attendee
Colby Foster	Red Cross	Community Disaster Program Manager	9/25/25, 10:23:33 AM	Attendee
Kim Cannizzaro	Cumberland County	Chief Building Cumber County Planning & Inspections	9/25/25, 10:24:41 AM	Attendee
Greg Phillips	Cumberland County	Public Health Preparedness Coordinator	9/25/25, 10:25:46 AM	Attendee
Deanna L Rosario	Town of Spring Lake	Water Resources Administrator	9/25/25, 10:26:23 AM	Attendee
Mike Kendrat	Team Rubicon, Cumberland County	Fayetteville Metro Planner	9/25/25, 10:26:29 AM	Attendee
James Talian	City of Fayettville	Capital Projects Program Manager	9/25/25, 10:26:54 AM	Attendee
Daniel L. Edwards	City of Fayettville	Public Services Assistant Director	9/25/25, 10:27:07 AM	Attendee
David Steinmetz	City of Fayettville	Development Services Assistant Director	9/25/25, 10:27:14 AM	Attendee
Frances Collier	Town of Linden	Mayor	9/25/25, 10:27:25 AM	Attendee
Stephanie Hutchins	Town of Spring Lake	Building Inspector	9/25/25, 10:27:38 AM	Attendee
Rufus Smith III	Cumberland County	Planning Manager	9/25/25, 10:27:44 AM	Attendee
Chavonda D. Pighet	City of Fayettville	Engineer I	9/25/25, 10:28:24 AM	Attendee
Carl Baker	North Carolina Emergency Management	Plans Manager	9/25/25, 10:28:54 AM	Attendee
Abiodun Gabriel Awoyemi	Fayetteville State University	Director of Emergency Management	9/25/25, 10:29:12 AM	Attendee
Martin Jones	Town of Stedman	Mayor	9/25/25, 10:29:31 AM	Attendee
Haven J. Cashwell	City of Fayetteville	Project Manager	9/25/25, 10:29:50 AM	Attendee

Figure B-2: September 25th, 2025 Microsoft Teams virtual attendance record for Kick-off Meeting

Awoyemi, Abiodun G.	Fayetteville State University	Director of Emergency Management	9/25/25, 10:29:54 AM	Attendee
Rawls Howard	Cumberland County	Director of Planning and Inspections	9/25/25, 10:30:03 AM	Attendee
Charles "Andrew" Jacobs	Hoke County	Grants Manager	9/25/25, 10:30:08 AM	Attendee
Jason Hughes	Salvation Army of the Sandhills	Corps Officer	9/25/25, 10:30:17 AM	Attendee
Laura B. Smith	City of Fayetteville	Emergency Management Coordinator	9/25/25, 10:30:34 AM	Attendee
Emily Tucker	Duke Energy	District Manager	9/25/25, 10:30:43 AM	Attendee
Norman Zanders	The Salvation Army Sandhills	Emergency Disaster Services & Volunteer Coordinator	9/25/25, 10:30:53 AM	Attendee
Jason Hughes	Salvation Army of the Sandhills	Corps Officer	9/25/25, 10:30:58 AM	Attendee
Robert Godwin	Cape Fear Valley Health System	Corporate Director of Safety and Emergency Management	9/25/25, 10:31:02 AM	Attendee
Amy Hall	Cumberland County Public Utilities	Public Utilities Project Manager	9/25/25, 10:31:07 AM	Attendee
Byron Reeves	City of Fayetteville	Deputy Public Services Director	9/25/25, 10:31:16 AM	Attendee
Sheila Thomas-Ambat	City of Fayetteville	Public Services Director	9/25/25, 10:31:21 AM	Attendee
Amanda Scheck	Cumberland County	Planner	9/25/25, 10:31:40 AM	Attendee
Garry Crumpler	Cumberland County	Emergency Services Director	9/25/25, 10:32:07 AM	Attendee
Justin T. McLaurin	Fayetteville Fire Department	Fire Marshal	9/25/25, 10:32:18 AM	Attendee
Chini Gault	Cumberland County	Emergency Management	9/25/25, 10:32:50 AM	Attendee
Tyler Blackburn	Cumberland County	Emergency Management Intern	9/25/25, 10:33:37 AM	Attendee
Alisa Werbelow	Methodist University	Director of Public Safety	9/25/25, 10:33:55 AM	Attendee
Diane B. Rice	Cumberland County	Communications Director	9/25/25, 10:34:16 AM	Attendee
Loren Bymer	City of Fayetteville	CoF Marketing and Communications Director	9/25/25, 10:34:45 AM	Attendee
Willie L. Henry (IT CIO)	City of Fayetteville	Information Officer	9/25/25, 10:35:33 AM	Attendee
Craig Allen	City of Fayetteville	Streets and Right of Way Infrastructure Maintenance Manager	9/25/25, 10:37:37 AM	Attendee
Brian . McGill	City of Fayetteville	Interim Assistant Public Services Director	9/25/25, 10:37:58 AM	Attendee
Creshawn Wilkes	The Salvation Army Sandhills	Development Director	9/25/25, 10:40:42 AM	Attendee
Amanda Cummings	Cumberland County	Administrative Coordinator II	9/25/25, 10:45:06 AM	Attendee
Connie Veeder	Town of Stedman	Town Adminstrator/Clerk	9/25/25, 11:19:25 AM	Attendee
Brent Fisher	North Carolina Emergency Management	Area Coordinator	9/25/25, 11:20:01 AM	Attendee
Trey Smith	Cumberland County	Planning Manager		Attendee
Jason Williams	Town of Spring Lake	Fire Chief		Attendee

Figure B-3: September 25th, 2025 Microsoft Teams virtual attendance record for Kick-off Meeting (continued)

Table B-3: Hazard Identification and Risk Assessment Meeting on October 23rd, 2025

Name	Organization	Title	Roles
Kelly Keefe	AECOM	Lead Planner	Organizer
Kelsey Peterson	AECOM	Environmental Planner	Organizer
Mckenzie Houston	AECOM	Resilience Planner	Organizer
Wayne Dudley	Cumberland County	CFM, Engineer	Attendee
Caroline Hamilton	Cumberland County	Deputy Sheriff Detective	Attendee
Amanda Scheck	Cumberland County	Emergency Management Planner	Attendee
Diane B. Rice	Cumberland County	Communications Director	Attendee
Chini Gault	Cumberland County	Emergency Management Planner	Attendee
Amanda Lee	Cumberland County	General Manager of Natural Resources and Interim Engineering Director	Attendee
Marc Dedeaux	Cumberland County	Deputy Sheriff	Attendee
Luis Fermin	Cumberland County	Deputy Sheriff	Attendee

Name	Organization	Title	Roles
James Fortune	Cumberland County	Deputy Sheriff	Attendee
Steven Adam	Cumberland County	Deputy Sheriff	Attendee
Kim Cannizzaro	Cumberland County	Planning & Inspection	Attendee
Kevin Lowther	Cumberland County	Fire Marshal	Attendee
Paul Spiegler	Cumberland County	Deputy Sheriff	Attendee
Amanda Scheck	Cumberland County	Emergency Management Planner	Attendee
Tyler Blackburn	Cumberland County	Intern	Attendee
Garry Crumpler	Cumberland County	Emergency Services Director	Attendee
Sarahgrace Mitchell	Cumberland County Planning & Inspections Department	Planner III Comprehensive Planning	Attendee
Craig Allen	City of Fayetteville	Streets & RoW Manager	Attendee
Laura B. Smith	City of Fayetteville	Emergency Management Coordinator	Attendee
Brian McGill	City of Fayetteville	Assistant Public Services Director	Attendee
David Steinmetz	City of Fayetteville	Development Services Assistant Director	Attendee
Willie L. Henry	City of Fayetteville	Chief Information Officer	Attendee
Haven J. Cashwell	City of Fayetteville	Project Manager - Water	Attendee
Sheila Thomas-Ambat	City of Fayetteville	Public Services Director	Attendee
Byron Reeves	City of Fayetteville	Assistant Public Services Director	Attendee
Daniel Edwards	City of Fayetteville	Assistant Director	Attendee
Emily Weidner	Town of Hope Mills	Planning & Economic Development Services Director	Attendee
Deanna Rosario	Town of Spring Lake	Water Resources Manager	Attendee
Jason Williams	Town of Spring Lake	Fire Chief	Attendee
Stephanie Hutchins	Town of Spring Lake	Building Inspector	Attendee
Connie Veeder	Town of Stedman	Town Clerk	Attendee
Johnny Lanthorn	Town of Wade	Town Commissioner	Attendee
James McQueen	Hoke County	Utilities Director	Attendee
Donovan Dennis	Hoke County	Operations Manager	Attendee
Scott Maness	Hoke County Schools	Director of Maintenance	Attendee
Daniel Wood	Hoke County Epidemiology	Preparedness Coordinator	Attendee
Mark Van Auken	Arcadis	Stormwater and Green Infrastructure Practice Leader	Attendee
Robert Godwin	Cape Fear Hospital	Corporate Director Safety and Emergency Management	Attendee

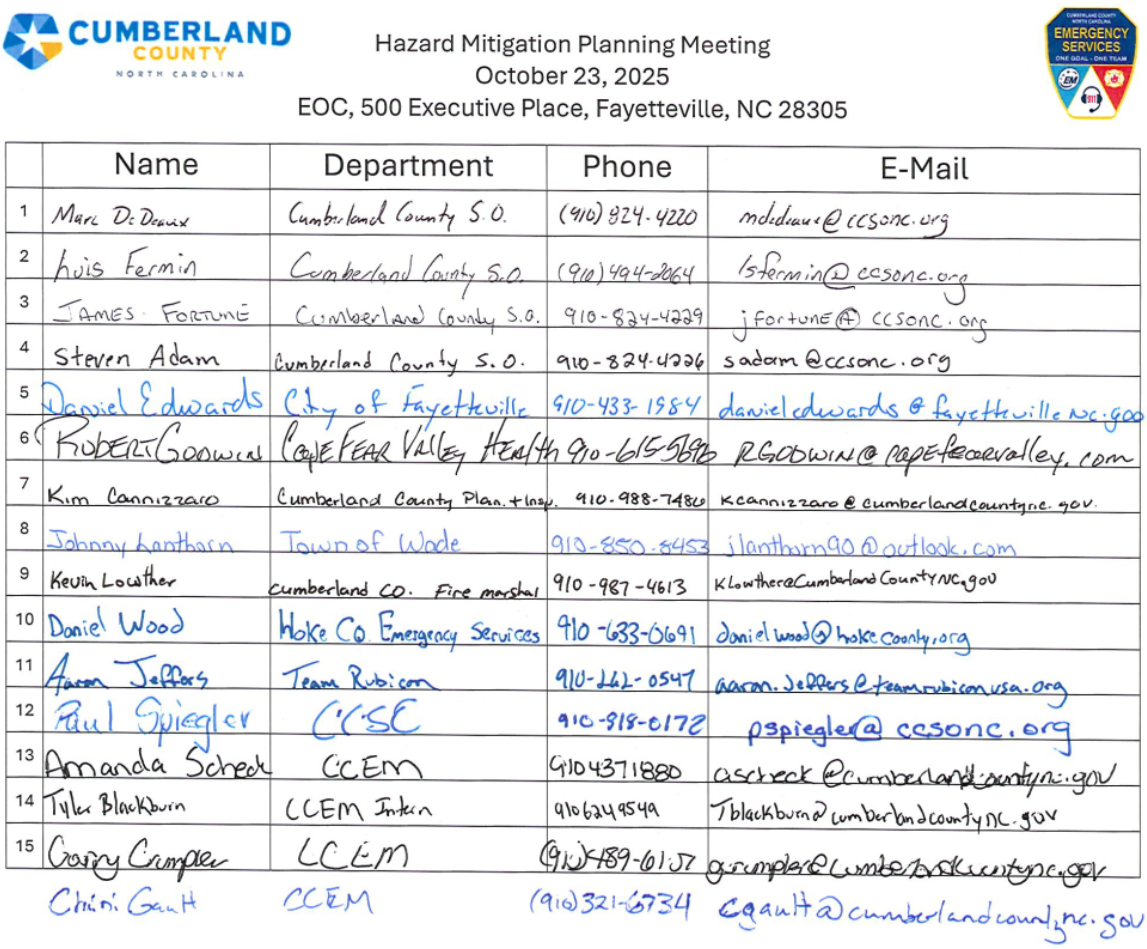
Name	Organization	Title	Roles
Carl Baker	North Carolina Emergency Management	Mitigation Plans Manager	Attendee
Aaron Jeffers	Team Rubicon	--	Attendee
David Farmer	Sandhills Community College	EVP	Attendee
David Farmer	Sandhills Community College	EVP	Attendee
Diane Reynolds	Sandhills Community College Hoke Center	Director of Operations	Attendee
Aaron Jeffers	Team Rubicon	--	Attendee

Sarahgrace Mitchell	Cumberland County Planning & Inspections Department	Planner III Comprehensive Planning	10/23/25, 1:30:07 PM	Attendee
Chini Gault	Cumberland County	Emergency Management Planner	10/23/25, 1:30:38 PM	Attendee
Connie Veeder	Town of Stedman	Town Clerk	10/23/25, 1:31:12 PM	Attendee
Mark Van Auken	Arcadis	Stormwater and Green Infrastructure Practice Leader	10/23/25, 1:32:02 PM	Attendee
Stephanie Hutchins	Town of Spring Lake	Building Inspector	10/23/25, 1:32:10 PM	Attendee
James McQueen	Hoke County	Utilities Director	10/23/25, 1:32:37 PM	Attendee
Sheila Thomas-Ambat	City of Fayetteville	Public Services Director	10/23/25, 1:32:59 PM	Attendee
Byron Reeves	City of Fayetteville	Assistant Public Services Director	10/23/25, 1:40:09 PM	Attendee
Diane Reynolds	Sandhills Community College Hoke Center	Director of Operations	10/23/25, 1:41:38 PM	Attendee
Amanda Lee	Cumberland County	General Manager of Natural Resources and Interin Engineering Director	10/23/25, 2:08:42 PM	Attendee
Marc Dedeaux	Cumberland County	Deputy Sheriff	10/23/25, 1:30:38 PM	Attendee
Luis Fermin	Cumberland County	Deputy Sheriff	10/23/25, 1:30:38 PM	Attendee
James Fortune	Cumberland County	Deputy Sheriff	10/23/25, 1:30:38 PM	Attendee
Steven Adam	Cumberland County	Deputy Sheriff	10/23/25, 1:30:38 PM	Attendee
Daniel Edwards	City of Fayetteville	Assistant Director	10/23/25, 1:30:38 PM	Attendee
Robert Godwin	Cape Fear Hosptial	Corporate Director Safety and Emergency Management	10/23/25, 1:30:38 PM	Attendee
Kim Cannizzaro	Cumberland County	Planning & Inspection	10/23/25, 1:30:38 PM	Attendee
Johnny Lanthorn	Town of Wade	Town Commissioner	10/23/25, 1:30:38 PM	Attendee
Kevin Lowther	Cumberland County	Fire Marshal	10/23/25, 1:30:38 PM	Attendee
Daniel Wood	Hoke County Epidemiology	Preparedness Coordinator	10/23/25, 1:30:38 PM	Attendee
Aaron Jeffers	Team Rubicon		10/23/25, 1:30:38 PM	Attendee
Paul Spiegler	Cumberland County	Deputy Sheriff	10/23/25, 1:30:38 PM	Attendee
Amanda Scheck	Cumberland County Emergency Management	Emergency Management Planner	10/23/25, 1:30:38 PM	Attendee
Tyler Blackburn	Cumberland County	Intern	10/23/25, 1:30:38 PM	Attendee
Garry Crumpler	Cumberland County Emergency Management	Emergency Services Director	10/23/25, 1:30:38 PM	Attendee

Meeting title	CUMBERLAND-HOKE: Hazard Identification and Risk Assessment Meeting
Attended participants	46
Start time	10/23/25, 1:14:28 PM
End time	10/23/25, 2:23:24 PM
Meeting duration	1h 8m 55s
Average attendance time	49m 11s

Name	Organization	Title	First Join	Role
Mckenzie Houston	AECOM	Resilience Planner	10/23/25, 1:26:46 PM	Organizer
Peyton Campbell	AECOM	Environmental Planner	10/23/25, 1:26:41 PM	Organizer
Kelsey Peterson	AECOM	Environmental Planner	10/23/25, 1:27:05 PM	Organizer
Kelly Keefe	AECOM	Lead Planner	10/23/25, 1:27:22 PM	Organizer
Emily Weidner	Town of Hope Mills	Planning & Economic Development Services Director	10/23/25, 1:15:06 PM	Attendee
Craig Allen	City of Fayetteville	Streets & RoW Manager	10/23/25, 1:15:17 PM	Attendee
Laura B. Smith	City of Fayetteville	Emergency Management Coordinator	10/23/25, 1:20:51 PM	Attendee
Brian McGill	City of Fayetteville	Assistant Public Services Director	10/23/25, 1:21:41 PM	Attendee
Wayne Dudley	Cumberland County	CFM, Engineer	10/23/25, 1:23:18 PM	Attendee
David Farmer	Sandhills Community College	EVP	10/23/25, 1:26:31 PM	Attendee
Donovan Dennis	Hoke County	Operations Manager	10/23/25, 1:26:31 PM	Attendee
Carl Baker	North Carolina Emergency Management	Mitigation Plans Manager	10/23/25, 1:27:04 PM	Attendee
David Steinmetz	City of Fayetteville	Development Services Assistant Director	10/23/25, 1:27:44 PM	Attendee
Caroline Hamilton	Cumberland County	Deputy Sheriff Detective	10/23/25, 1:27:46 PM	Attendee
Willie L. Henry	City of Fayetteville	Chief Information Officer	10/23/25, 1:27:53 PM	Attendee
Deanna Rosario	Town of Spring Lake	Water Resources Manager	10/23/25, 1:27:57 PM	Attendee
Amanda Scheck	Cumberland County	Emergency Management Planner	10/23/25, 1:28:44 PM	Attendee
Jason Williams	Town of Spring Lake	Fire Chief	10/23/25, 1:29:03 PM	Attendee
Haven J. Cashwell	City of Fayetteville	Project Manager - Water	10/23/25, 1:29:12 PM	Attendee
Scott Maness	Hoke County Schools	Director of Maintenance	10/23/25, 1:29:20 PM	Attendee
Diane B. Rice	Cumberland County	Communications Director	10/23/25, 1:29:23 PM	Attendee

Figure B-4: October 23rd, 2025 Microsoft Teams virtual attendance record for Hazard Identification and Risk Assessment Meeting



Hazard Mitigation Planning Meeting
October 23, 2025
EOC, 500 Executive Place, Fayetteville, NC 28305

	Name	Department	Phone	E-Mail
1	Marc DeDeaux	Cumberland County S.O.	(910) 824-4220	mdedeaux@ccsonc.org
2	Luis Fermin	Cumberland County S.O.	(910) 494-2064	lfermin@ccsonc.org
3	JAMES FORTUNE	Cumberland County S.O.	910-824-4229	jfortune@ccsonc.org
4	Steven Adam	Cumberland County S.O.	910-824-4226	sadam@ccsonc.org
5	Daniel Edwards	City of Fayetteville	910-433-1984	daniel.edwards@fayettevillenc.gov
6	ROBERT GOODWIN	CAPE FEAR VALLEY HEALTH	910-615-5686	RGODWIN@capefearvalley.com
7	Kim Cannizzaro	Cumberland County Plan. + Insp.	910-988-7486	kcannizzaro@cumberlandcountync.gov
8	Johnny Lanthorn	Town of Wade	910-850-8453	jlanthorn90@outlook.com
9	Kevin Lowther	Cumberland CO. Fire Marshal	910-987-4613	KLowther@CumberlandCountyNC.gov
10	Daniel Wood	Hoke Co Emergency Services	910-633-0691	daniel.wood@hokecounty.org
11	Aaron Jeffers	Team Rubicon	910-242-0547	aaron.jeffers@teamrubiconusa.org
12	Paul Spiegler	CCSE	910-818-0172	pspiegler@ccsonc.org
13	Amanda Scheck	CCEM	9104371880	ascheck@cumberlandcountync.gov
14	Tyler Blackburn	CCEM Intern	9106249549	Tblackburn@cumberlandcountync.gov
15	Garry Crumpler	CCEM	(910)489-6157	gcrumpler@cumberlandcountync.gov
	Chini Gault	CCEM	(910)321-6734	cgault@cumberlandcounty.nc.gov

Figure B-5: October 23rd, 2025 Cumberland County in-person attendance for Hazard Mitigation and Risk Assessment Meeting

Table B-4: Mitigation Action Strategy Meeting Attendance on December 18th, 2025

Name	Organization	Title	Roles
Kelly Keefe	AECOM	Lead Planner	Organizer
Mckenzie Houston	AECOM	Resilience Planner	Organizer
Peyton Campbell	AECOM	Environmental Planner	Organizer
Amanda Scheck	Cumberland County	Emergency Management Planner	Attendee
Chini Gault	Cumberland County	Emergency Management Planner	Attendee
Greg Phillips	Cumberland County	Department of Public Health	Attendee
Garry Crumpler	Cumberland County	Emergency Services Director	Attendee
Caroline Hamilton	Cumberland County	Deputy Sheriff Detective	Attendee
Sarahgrace Mitchell	Cumberland County	Planner III	Attendee
Diane B. Rice	Cumberland County	Communications Director	Attendee

Name	Organization	Title	Roles
Cheryl F. Reed	Town of Falcon	Town Administrator	Attendee
Brian McGill	City of Fayetteville	Assistant Public Services Director	Attendee
Laura B. Smith	City of Fayetteville	Emergency Management Coordinator	Attendee
Craig Allen	City of Fayetteville	Streets and RoQ Manager	Attendee
David Steinmetz	City of Fayetteville	Development Services Assistant Director	Attendee
Justin T. McLaurin	City of Fayetteville	Fire Marshal	Attendee
James Talian	City of Fayetteville	Capital Projects Program Manager	Attendee
Daniel L. Edwards	City of Fayetteville	Public Services Assistant Director	Attendee
Frances Collier	Town of Linden	Mayor Pro Tem	Attendee
Johnny Lanthorn	Town of Stedman	Mayor	Attendee
Connie Veeder	Town of Stedman	Town Clerk	Attendee
Haven J. Cashwell	Town of Stedman	Project Manager	Attendee
Stephanie Hutchins	Town of Spring Lake	Building Inspector	Attendee
Stephanie Hutchins	Town of Spring Lake	Building Inspector	Attendee
Johhny Lanthorn	Town of Wade	Mayor	Attendee
Daniel Wood	Hoke County	Emergency Management Specialist	Attendee
Ike Copeland	Fayetteville Public Works Commission	Director of Risk Management	Attendee
Abiodun G. Awoyemi	Fayetteville State University	Director of Emergency Management	Attendee
Carl Baker	North Carolina Emergency Management	Mitigation Plans Manager	Attendee
Robin Lorenzen	North Carolina Emergency Management	Assistant Director of Emergency Management	Attendee
Creshawn Wilkes	Salvation Army of the Sandhills	Development Director	Attendee
Carson Walker	South River EMC	Manager of Corporate Safety	Attendee
Mark Van Auken	Stormwater Practice Leader	Arcadis	Attendee
Jonelle Kimbrough	Sustainable Sandhills (501c3)	Executive Director	Attendee
Hope	--	--	Attendee

	CUMBERLAND-HOKE: Mitigation
Meeting title	Action Strategy Meeting
Attended participants	33
Start time	12/18/25, 1:17:56 PM
End time	12/18/25, 2:06:38 PM

Name	Organization	Title	First Join	Role
Mckenzie Houston	AECOM	Resilience Planner	12/18/25, 1:24:46 PM	Organizer
Peyton Campbell	AECOM	Environmental Planner	12/18/25, 1:23:51 PM	Organizer
Kelly Keefe	AECOM	Resilience Planner	12/18/25, 1:27:33 PM	Organizer
Brian McGill	City of Fayetteville	Assistant Public Services Director	12/18/25, 1:19:49 PM	Attendee
Frances Collier	Town of Linden	Mayor Pro Tem	12/18/25, 1:19:57 PM	Attendee
Carson Walker	South River EMC	Manager of Corporate Safety	12/18/25, 1:20:05 PM	Attendee
Laura B. Smith	City of Fayetteville	Emergency Management Coordinator	12/18/25, 1:21:43 PM	Attendee
Daniel Wood	Hoke County	Emergency Management Specialist	12/18/25, 1:22:25 PM	Attendee
Chini Gault	Cumberland County	Emergency Management Planner	12/18/25, 1:23:14 PM	Attendee
Greg Phillips	Cumberland County	Department of Public Health	12/18/25, 1:23:53 PM	Attendee
Amanda Scheck	Cumberland County	Emergency Management Planner	12/18/25, 1:24:37 PM	Attendee
Abiodun G. Awoyemi	Fayetteville State University	Director of Emergency Management	12/18/25, 1:24:57 PM	Attendee
Johnny Lanthorn	Town of Stedman	Mayor	12/18/25, 1:25:29 PM	Attendee
Carl Baker	North Carolina Emergency Management	Mitigation Plans Manager	12/18/25, 1:26:13 PM	Attendee
Craig Allen	City of Fayetteville	Streets and RoQ Manager	12/18/25, 1:26:19 PM	Attendee
Caroline Hamilton	Cumberland County	Deputy Sheriff Detective	12/18/25, 1:26:21 PM	Attendee
Ike Copeland	FayPWC	Director of Risk Management	12/18/25, 1:26:48 PM	Attendee
Garry Crumpler	Cumberland County	Emergency Services Director	12/18/25, 1:27:02 PM	Attendee
Daniel L. Edwards	City of Fayetteville	Public Services Assistant Director	12/18/25, 1:27:42 PM	Attendee
Robin Lorenzen	North Carolina Emergency Management	Assistant Director of Emergency Management	12/18/25, 1:27:54 PM	Attendee
David Steinmetz	City of Fayetteville	Development Services Assistant Director	12/18/25, 1:28:05 PM	Attendee
Creshawn Wilkes	Salvation Army of the Sandhills	Development Director	12/18/25, 1:29:16 PM	Attendee
Sarahgrace Mitchell	Cumberland County	Planner III	12/18/25, 1:29:25 PM	Attendee
Connie Veeder	Town of Stedman	Town Clerk	12/18/25, 1:29:37 PM	Attendee
Haven J. Cashwell	Town of Stedman	Project Manager	12/18/25, 1:30:00 PM	Attendee
Diane B. Rice	Cumberland County	Communications Director	12/18/25, 1:30:57 PM	Attendee
Mark Van Auken	Stormwater Practice Leader	Arcadis	12/18/25, 1:31:43 PM	Attendee
Stephanie Hutchins	Town of Spring Lake	Building Inspector	12/18/25, 1:32:30 PM	Attendee
Justin T. McLaurin	City of Fayetteville	Fire Marshal	12/18/25, 1:42:20 PM	Attendee
James Talian	City of Fayetteville	Capital Projects Program Manager	12/18/25, 1:43:07 PM	Attendee
Jonelle Kimbrough	Sustainable Sandhills (501c3)	Executive Director		Attendee
Johhny Lanthorn	Town of Wade	Mayor		Attendee
Cheryl F. Reed	Town of Falcon	Town Administrator		Attendee

Figure B-6: December 18th, 2025 Microsoft Teams virtual attendance record for Mitigation Action Strategy Meeting

Table B-5: Draft Plan Review Meeting Attendance on February 26th, 2026

Name	Organization	Title	Roles
Kelly Keefe	AECOM	Lead Planner	Organizer
Kelsey Peterson	AECOM	Environmental Planner	Organizer
Mckenzie Houston	AECOM	Resilience Planner	Organizer
Peyton Campbell	AECOM	Environmental Planner	Organizer
Frances Collier	Town of Linden	--	Attendee

Name	Organization	Title	Roles
Connie Veeder	Town of Stedman	Town Administrator	Attendee
Amanda Scheck	Cumberland County	Emergency Management Planner	Attendee
Connie Veeder	Town of Stedman	Town Administrator	Attendee
Ray Crumpler	City of Raeford	City of Raeford Police	Attendee
Daniel Wood	Hoke County Emergency Services	Management Specialist	Attendee
Montavia Heath	Hoke County	Director of Transportation	Attendee
Willie L. Henry	City of Fayetteville	CIO	Attendee
Greg Phillips	Cumberland County Department of Public Health	Preparedness Coordinator	Attendee
Carl Baker	North Carolina Emergency Management	Mitigation Plans Manager	Attendee
Richard Whiteside	City of Raeford	Cire Chief	Attendee
Rufus Smith III	Cumberland County	Planning Manager	Attendee
Chini Gault	Cumberland County Emergency Services	Emergency Planner	Attendee
Chad Hunt	Hoke County Schools	Assistant Superintendent of Operations & Information Systems	Attendee
Laura B. Smith	City of Fayetteville	Emergency Management Coordinator	Attendee
Caroline Hamilton	CCS	Safety Security Specialist	Attendee
Jon Soles	Cumberland County Public Information Office	Senior Public Information Specialist	Attendee
Amanda Scheck	Cumberland County Emergency Services	Emergency Management Coordinator	Attendee
David Steinmetz	City of Fayetteville	Assistant Director	Attendee
Alexandra Sargent	Red Cross	Community Disaster Program Specialist	Attendee
Charles “Andrew” Jacobs	Hoke County Emergency Services	Deputy Director	Attendee
Brian McGill	City of Fayetteville	Assistant Public Services Director	Attendee
Abiodun G. Awoyemi	Fayetteville State University	Director of Emergency Management	Attendee
Emily Weidner	Town of Hope Mills	Planning & Economic Development Director	Attendee
Jonelle Kimbrough	Sustainable Sandhills	Executive Director	Attendee
Haven J. Cashwell	City of Fayetteville	Project Manager	Attendee
Mark Van Auken	Arcadis	Stormwater Practice Leader	Attendee
John Mello	North Carolina Emergency Management	Mitigation Specialist	Attendee
Sheila Thomas-Ambat	City of Fayetteville	Public Services Director	Attendee

Name	Organization	Title	Roles
Deanna Rosario	Town of Spring Lake	Water Resources Department Manager	Attendee
Kim Cannizzaro	Cumberland County	Interim Chief Building Official	Attendee
Johnny Lanthorn	Fayetteville Public Works Commission	L&C Coordinator	Attendee
Willie Burnette	City of Godwin	Mayor	Attendee
Byron Reeves	City of Fayetteville	Assistant Public Services Director	Attendee
Gwendolyn D. Baker	Fayetteville Public Works Commission	Risk Management Administration	Attendee
Scott Maness	Hoke County Schools	Director Maintenance	Attendee
Elizabeth Bass	Town of Eastover	Town Clerk	Attendee

Meeting title	CUMBERLAND-HOKE: Draft Plan Review
Attended participants	39
Start time	2/26/26, 1:46:11 PM
End time	2/26/26, 3:02:00 PM
Meeting duration	1h 15m 49s
Average attendance time	41m 5s

Name	Organization	Title	First Join	Role
Mckenzie Houston	AECOM	Resilience Planner	2/26/26, 1:57:59 PM	Organizer
Peyton Campbell	AECOM	Environmental Planner	2/26/26, 1:52:41 PM	Organizer
Kelsey Peterson	AECOM	Environmental Planner	2/26/26, 1:53:20 PM	Organizer
Kelly Keefe	AECOM	Lead Planner	2/26/26, 1:56:45 PM	Organizer
Frances Collier	Town of Linden	Mayor	2/26/26, 1:49:46 PM	Attendee
Connie Veeder	Town of Stedman	Town Administrator	2/26/26, 1:50:35 PM	Attendee
Ray Crumpler	City of Raeford	City of Raeford Police	2/26/26, 1:50:50 PM	Attendee
Daniel Wood	Hoke County Emergency Services	Hoke County Emergency Management Specialist	2/26/26, 1:52:55 PM	Attendee
Montavia Heath	Hoke County	Director of Transportation	2/26/26, 1:53:30 PM	Attendee
Willie L. Henry	City of Fayetteville	CIO	2/26/26, 1:53:32 PM	Attendee
Greg Phillips	Cumberland County Department of Public Health	Preparedness Coordinator	2/26/26, 1:54:17 PM	Attendee
Carl Baker	North Carolina Emergency Management	Mitigation Plans Manager	2/26/26, 1:54:20 PM	Attendee
Richard Whiteside	City of Raeford	Fire Chief	2/26/26, 1:55:00 PM	Attendee
Rufus Smith III	Cumberland County	Planning Manager	2/26/26, 1:55:49 PM	Attendee
Chini Gault	Cumberland County Emergency Services	Emergency Planner	2/26/26, 1:56:04 PM	Attendee
Chad Hunt	Hoke County Schools	Assistant Superintendent of Operations & Information Systems	2/26/26, 1:56:11 PM	Attendee
Laura B. Smith	City of Fayetteville	Emergency Management Coordinator	2/26/26, 1:56:37 PM	Attendee
Caroline Hamilton	CCS	Safety & Security Specialist	2/26/26, 1:56:55 PM	Attendee

Jon Soles	Cumberland County Public Information Office	Senior Public Information Specialist	2/26/26, 1:57:14 PM	Attendee
Amanda Scheck	Cumberland County Emergency Services	Emergency Management Coordinator	2/26/26, 1:58:08 PM	Attendee
David Steinmetz	City of Fayetteville	Assistant Director	2/26/26, 1:58:15 PM	Attendee
Alexandra Sargent	Red Cross	Community Disaster Program Specialist	2/26/26, 1:59:27 PM	Attendee
Charles "Andrew" Jacobs	Hoke County Emergency Services	Deputy Director	2/26/26, 1:59:57 PM	Attendee
Brian McGill	City of Fayetteville	Assistant Public Services Director	2/26/26, 2:00:09 PM	Attendee
Abiodun G. Awoyemi	Fayetteville State University	Director of Emergency Management	2/26/26, 2:00:17 PM	Attendee
Emily Weidner	Town of Hope Mills	Planning & Economic Development Director	2/26/26, 2:00:29 PM	Attendee
Jonelle Kimbrough	Sustainable Sandhills	Executive Director	2/26/26, 2:01:02 PM	Attendee
Haven J. Cashwell	City of Fayetteville	Project Manager	2/26/26, 2:01:10 PM	Attendee
Mark Van Auken	Arcadis	Stormwater Practice Leader	2/26/26, 2:01:29 PM	Attendee
John Mello	North Carolina Emergency Management	Mitigation Specialist	2/26/26, 2:02:22 PM	Attendee
Sheila Thomas-Ambat	City of Fayetteville	Public Services Director	2/26/26, 2:02:33 PM	Attendee
Deanna Rosario	Town of Spring Lake	Water Resources Department Manager	2/26/26, 2:02:34 PM	Attendee
Kim Cannizzaro	Cumberland County	Interim Chief Building Official	2/26/26, 2:03:06 PM	Attendee
Johnny Lanthorn	Fayetteville Public Works Commission	L&C Coordinator	2/26/26, 2:04:57 PM	Attendee
Willie Burnette	City of Godwin	Mayor	2/26/26, 2:05:34 PM	Attendee
Byron Reeves	City of Fayetteville	Assistant Public Services Director	2/26/26, 2:14:31 PM	Attendee
Gwendolyn D Baker	Fayetteville Public Works Commission	Risk Management Administrator	2/26/26, 2:59:50 PM	Attendee
Scott Maness	Hoke County Schools	Director Maintenance		Attendee
Elizabeth Bass	Town of Eastover	Town Clerk		Attendee

Figure B-7: February 26th, 2025 Microsoft Teams virtual attendance record for Draft Plan Review Meeting

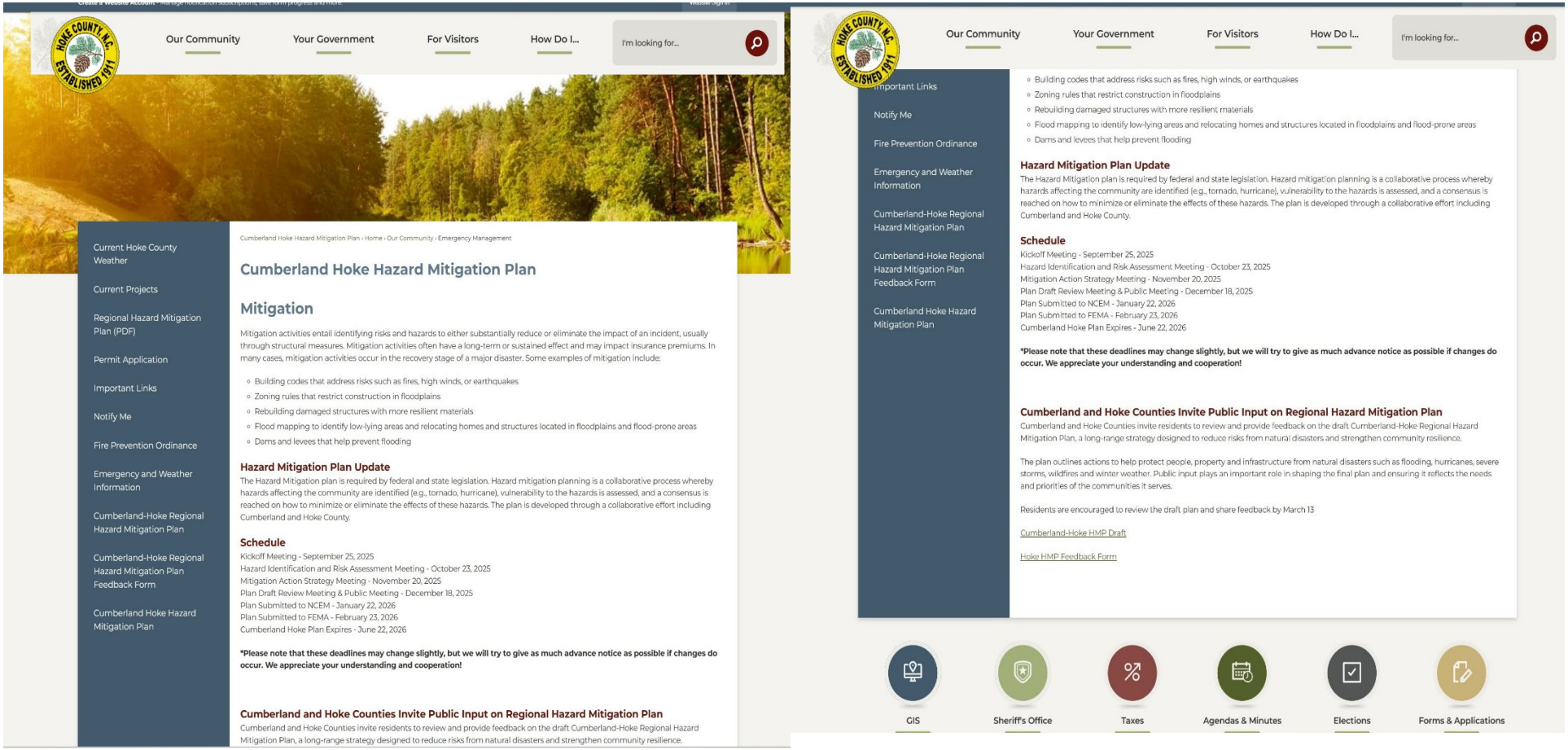


Figure B- 8: Hoke County Website Post about HMP Availability and Seeking Public Comments on the Draft

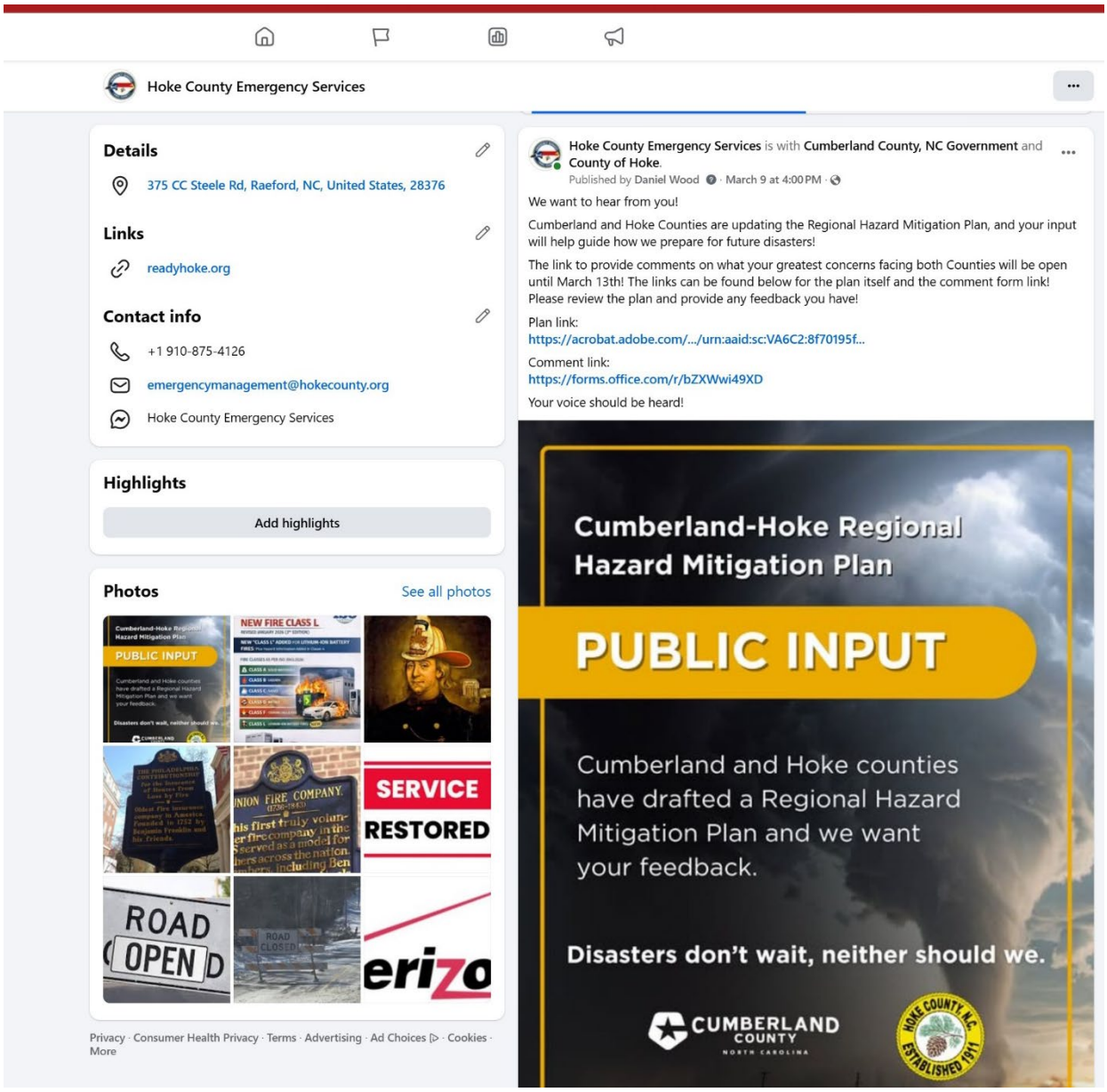


Figure B- 9: Hoke County Facebook Post about HMP Availability and Seeking Public Comments on the Draft

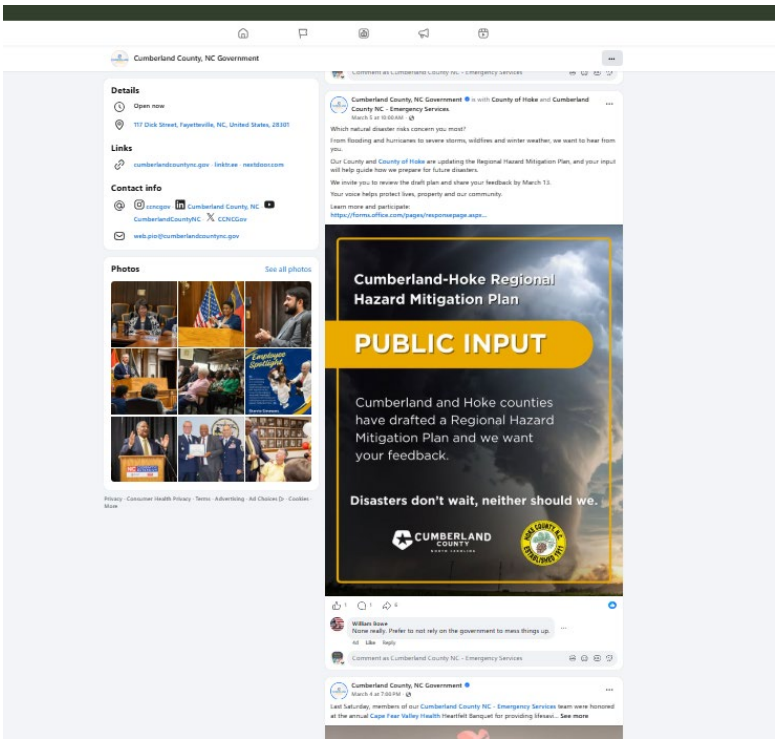


Figure B- 10: Cumberland County Facebook Post Seeing Public Input on the Cumberland Hoke HMP Draft Plan

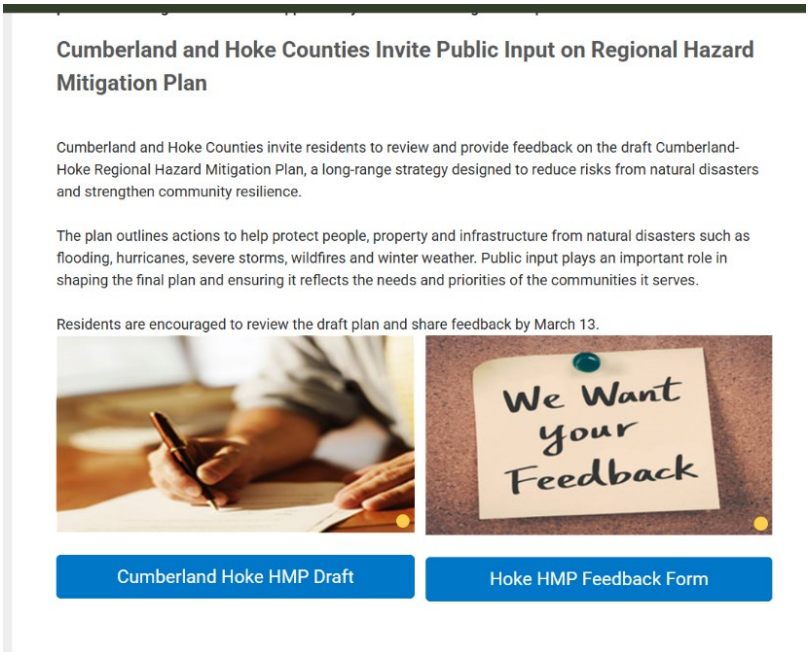
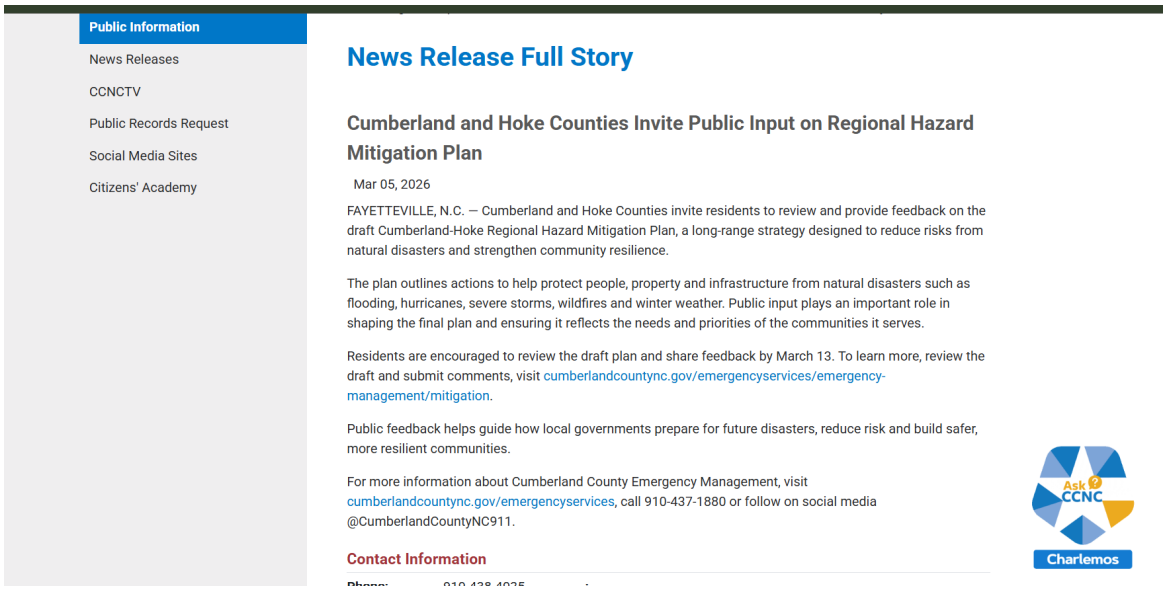


Figure B- 11: Cumberland County Website Post about the Cumberland Hoke HMP Draft Seeking Public Input



Public Information

News Releases

CCNCTV

Public Records Request

Social Media Sites

Citizens' Academy

News Release Full Story

Cumberland and Hoke Counties Invite Public Input on Regional Hazard Mitigation Plan

Mar 05, 2026

FAYETTEVILLE, N.C. — Cumberland and Hoke Counties invite residents to review and provide feedback on the draft Cumberland-Hoke Regional Hazard Mitigation Plan, a long-range strategy designed to reduce risks from natural disasters and strengthen community resilience.

The plan outlines actions to help protect people, property and infrastructure from natural disasters such as flooding, hurricanes, severe storms, wildfires and winter weather. Public input plays an important role in shaping the final plan and ensuring it reflects the needs and priorities of the communities it serves.

Residents are encouraged to review the draft plan and share feedback by March 13. To learn more, review the draft and submit comments, visit cumberlandcountync.gov/emergencyservices/emergency-management/mitigation.

Public feedback helps guide how local governments prepare for future disasters, reduce risk and build safer, more resilient communities.

For more information about Cumberland County Emergency Management, visit cumberlandcountync.gov/emergencyservices, call 910-437-1880 or follow on social media @CumberlandCountyNC911.

Contact Information

Ask CCNC

Charlemos

Figure B- 12: Cumberland County Website News Release Story Seeking Public Input on the Cumberland Hoke HMP Draft

From: Houston, McKenzie M
Sent: Friday, March 13, 2026 10:17 AM
To: 'zshean@harnett.org'; 'mbritt@leecountync.gov'; 'sbrooks@moorecountync.gov'; Dawson McLamb; 'jcoleman@bladenco.org'; 'justin.hunt@robesoncountync.gov'; 'nakela.deese@robesoncountync.gov'; 'casey.locklear@robesoncountync.gov'; 'brandy.oxendine@robesoncountync.gov'; 'rsampson@scotlandcounty.org'; 'mattlocklear@scotlandcounty.org'; 'bob.smith@richmondnc.com'
Cc: Chini Gault; 'bmarley@hokecounty.org'; 'gcrumpler@cumberlandcountync.gov'; Keefe, Kelly; Campbell, Peyton; Peterson, Kelsey
Subject: Neighboring Community Awareness of Cumberland-Hoke Regional Hazard Mitigation Planning Update

Good morning,

I hope this message finds you well! We are reaching out to inform you that a regional Hazard Mitigation Plan (HMP) is currently in progress for the Cumberland-Hoke region. This collaborative effort is aimed at identifying risks, assessing vulnerabilities, and developing strategies to reduce the impact of future disasters across our communities.

As neighboring communities, your awareness and potential involvement are important to the success of this initiative. The planning process is designed to be inclusive and transparent. While there is no immediate action needed on your end, we welcome any input or questions you may have about the Plan as we move forward.

https://acrobat.adobe.com/id/urn:aaid:sc:VA6C2:8f70195f-07ac-4335-8065-6d2846ddfb02

Thanks!

Mckenzie

Mckenzie Houston, RMCP®, MPH, CFM
Resilience Planner
Programming Lead, **BeBOLD** – AECOM's ERG
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mckenzie.houston@aecom.com

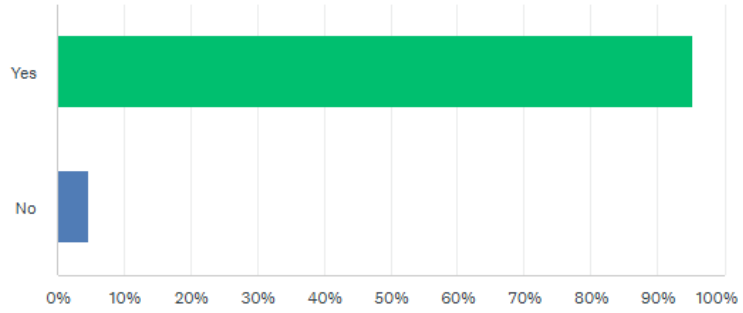
Figure B-12: Email to neighboring Cumberland-Hoke communities

APPENDIX C: Public Survey Results

Q1

Have you ever experienced or been impacted by a natural disaster?

Answered: 21 Skipped: 0

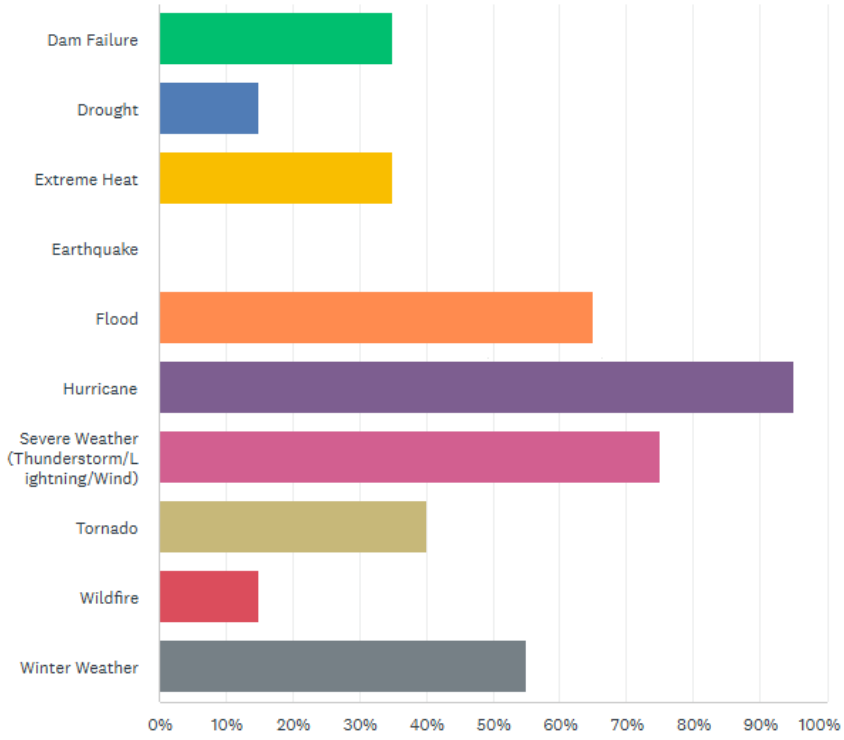


ANSWER CHOICES	RESPONSES	
Yes	95.24%	20
No	4.76%	1
TOTAL		21

Q2

If yes, Which of these natural hazards have you experienced or been impacted by? (Check all that apply.)

Answered: 20 Skipped: 1

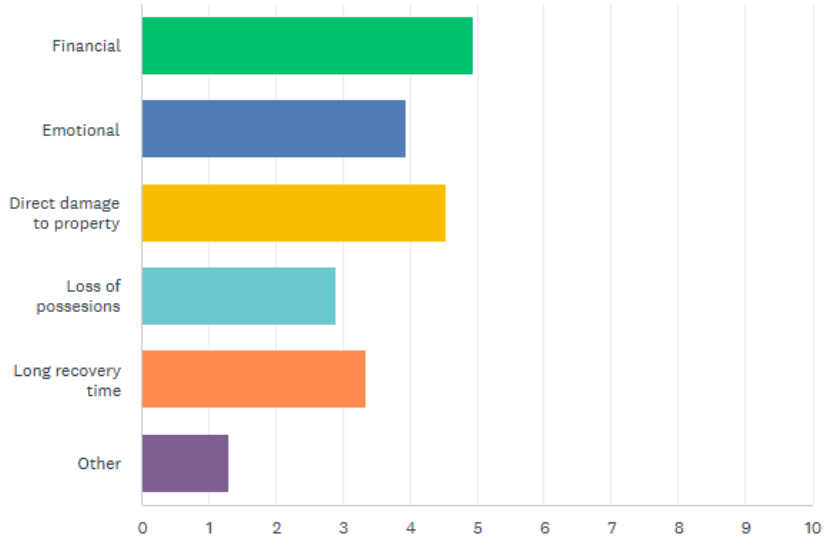


ANSWER CHOICES	RESPONSES	
Dam Failure	35.00%	7
Drought	15.00%	3
Extreme Heat	35.00%	7
Earthquake	0.00%	0
Flood	65.00%	13
Hurricane	95.00%	19
Severe Weather (Thunderstorm/Lightning/Wind)	75.00%	15
Tornado	40.00%	8
Wildfire	15.00%	3
Winter Weather	55.00%	11
Total Respondents: 20		

Q3

What was the most difficult part for you in recovering from past disasters that you have experienced? (1 being most difficult and 6 being least difficult.)

Answered: 20 Skipped: 1



	1	2	3	4	5	6	TOTAL	SCORE
Financial	35.00% 7	40.00% 8	10.00% 2	15.00% 3	0.00% 0	0.00% 0	20	4.95
Emotional	25.00% 5	10.00% 2	30.00% 6	5.00% 1	30.00% 6	0.00% 0	20	3.95
Direct damage to property	25.00% 5	30.00% 6	20.00% 4	25.00% 5	0.00% 0	0.00% 0	20	4.55
Loss of possesions	0.00% 0	5.00% 1	20.00% 4	40.00% 8	30.00% 6	5.00% 1	20	2.90
Long recovery time	10.00% 2	15.00% 3	20.00% 4	15.00% 3	35.00% 7	5.00% 1	20	3.35
Other	5.00% 1	0.00% 0	0.00% 0	0.00% 0	5.00% 1	90.00% 18	20	1.30

Q4

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: 21 Skipped: 0

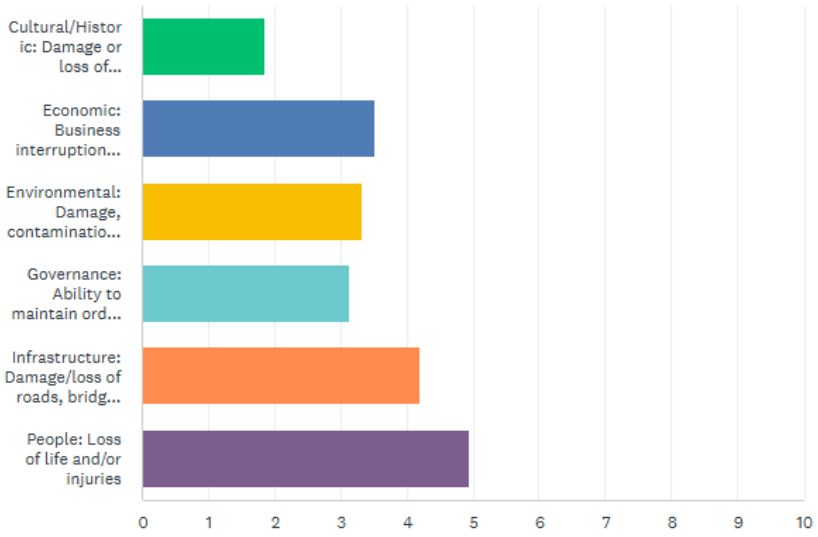


	NOT CONCERNED	SOMEWHAT CONCERNED	VERY CONCERNED	TOTAL	WEIGHTED AVERAGE
Dam Failure	33.33% 7	42.86% 9	23.81% 5	21	1.90
Drought	28.57% 6	47.62% 10	23.81% 5	21	1.95
Extreme Heat	14.29% 3	52.38% 11	33.33% 7	21	2.19
Earthquake	80.95% 17	14.29% 3	4.76% 1	21	1.24
Flood	9.52% 2	33.33% 7	57.14% 12	21	2.48
Hurricane/Tropical Storm	0.00% 0	19.05% 4	80.95% 17	21	2.81
Sinkhole	33.33% 7	52.38% 11	14.29% 3	21	1.81
Severe Weather (Thunderstorm/Lightning/Wind)	0.00% 0	52.38% 11	47.62% 10	21	2.48
Tornado	5.00% 1	60.00% 12	35.00% 7	20	2.30
Wildfire	42.86% 9	47.62% 10	9.52% 2	21	1.67
Winter Weather	33.33% 7	38.10% 8	28.57% 6	21	1.95

Q5

Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. In your opinion, which of the following categories are most at risk to the impacts caused by natural hazards within the county? (Please rank the community assets in order of vulnerability, 1 being most at risk and 6 least at risk.) Please note, the list will automatically re-order itself as you make your selections.

Answered: 21 Skipped: 0

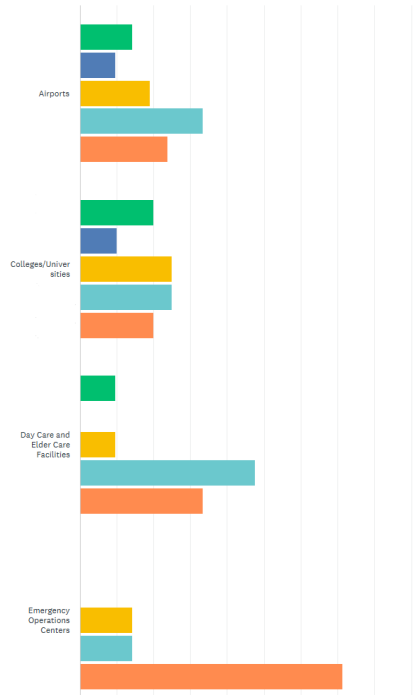


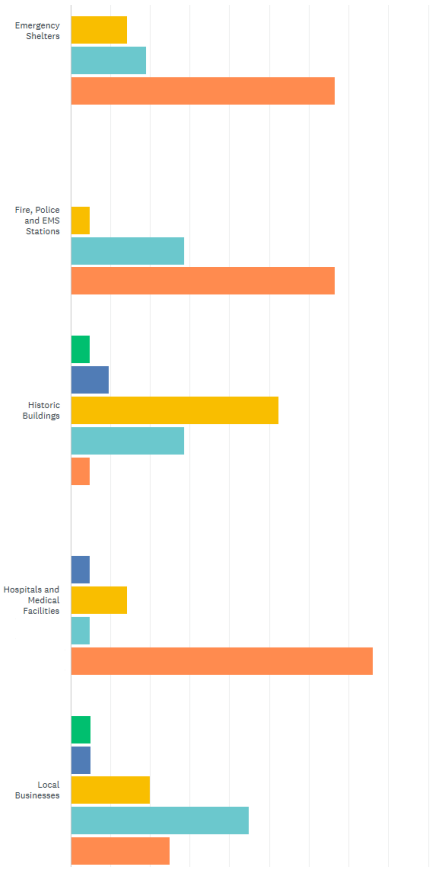
	1	2	3	4	5	6	TOTAL	SCORE
Cultural/Historic: Damage or loss of libraries, museums, historic properties, etc.	4.76% 1	0.00% 0	4.76% 1	14.29% 3	19.05% 4	57.14% 12	21	1.86
Economic: Business interruptions/closures, job losses, etc.	4.76% 1	19.05% 4	23.81% 5	28.57% 6	23.81% 5	0.00% 0	21	3.52
Environmental: Damage, contamination or loss of forests, wetlands, waterways, etc.	9.52% 2	14.29% 3	23.81% 5	19.05% 4	19.05% 4	14.29% 3	21	3.33
Governance: Ability to maintain order and/or provide public amenities and services	4.76% 1	23.81% 5	9.52% 2	23.81% 5	19.05% 4	19.05% 4	21	3.14
Infrastructure: Damage/loss of roads, bridges, utilities, schools, etc.	9.52% 2	33.33% 7	38.10% 8	4.76% 1	14.29% 3	0.00% 0	21	4.19
People: Loss of life and/or injuries	66.67% 14	9.52% 2	0.00% 0	9.52% 2	4.76% 1	9.52% 2	21	4.95

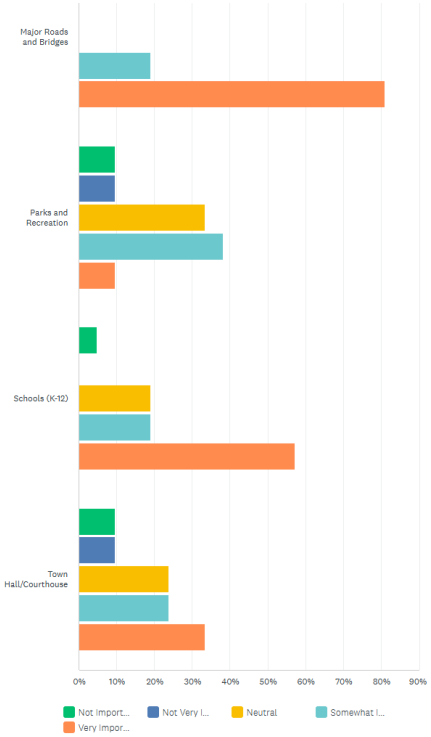
Q6

How important is each of the following specific community assets to you? (Check the appropriate circle for each asset.)

Answered: 21 Skipped: 0





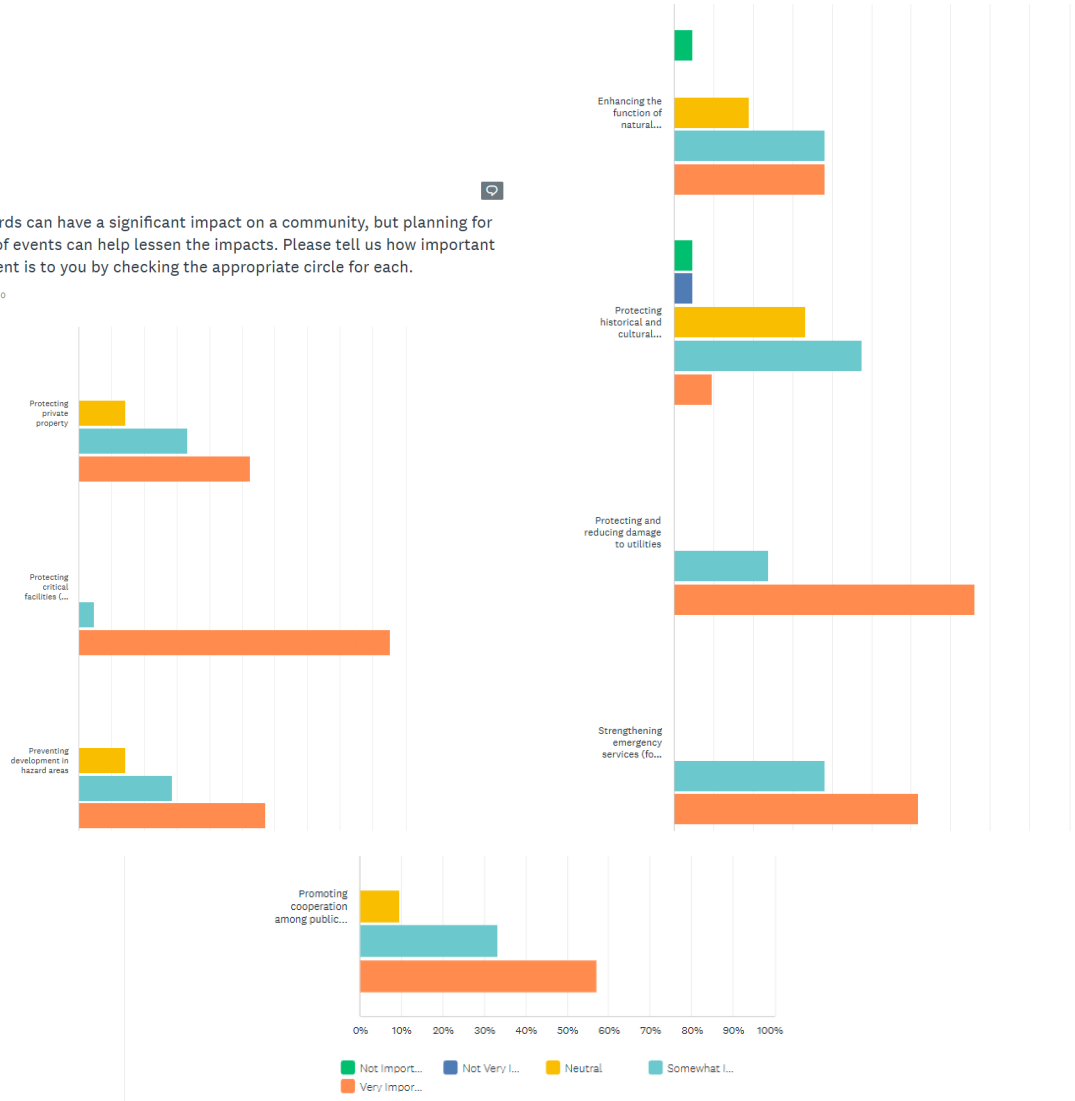


	NOT IMPORTANT	NOT VERY IMPORTANT	NEUTRAL	SOMEWHAT IMPORTANT	VERY IMPORTANT	TOTAL	WEIGHTED AVERAGE
Airports	14.29% 3	9.52% 2	19.05% 4	33.33% 7	23.81% 5	21	3.43
Colleges/Universities	20.00% 4	10.00% 2	25.00% 5	25.00% 5	20.00% 4	20	3.15
Day Care and Elder Care Facilities	9.52% 2	0.00% 0	9.52% 2	47.62% 10	33.33% 7	21	3.95
Emergency Operations Centers	0.00% 0	0.00% 0	14.29% 3	14.29% 3	71.43% 15	21	4.57
Emergency Shelters	0.00% 0	0.00% 0	14.29% 3	19.05% 4	66.67% 14	21	4.52
Fire, Police and EMS Stations	0.00% 0	0.00% 0	4.76% 1	28.57% 6	66.67% 14	21	4.62
Historic Buildings	4.76% 1	9.52% 2	52.38% 11	28.57% 6	4.76% 1	21	3.19
Hospitals and Medical Facilities	0.00% 0	4.76% 1	14.29% 3	4.76% 1	76.19% 16	21	4.52
Local Businesses	5.00% 1	5.00% 1	20.00% 4	45.00% 9	25.00% 5	20	3.80
Major Roads and Bridges	0.00% 0	0.00% 0	0.00% 0	19.05% 4	80.95% 17	21	4.81
Parks and Recreation	9.52% 2	9.52% 2	33.33% 7	38.10% 8	9.52% 2	21	3.29
Schools (K-12)	4.76% 1	0.00% 0	19.05% 4	19.05% 4	57.14% 12	21	4.24
Town Hall/Courthouse	9.52% 2	9.52% 2	23.81% 5	23.81% 5	33.33% 7	21	3.62

Q7

Natural hazards can have a significant impact on a community, but planning for these types of events can help lessen the impacts. Please tell us how important each statement is to you by checking the appropriate circle for each.

Answered: 21 Skipped: 0

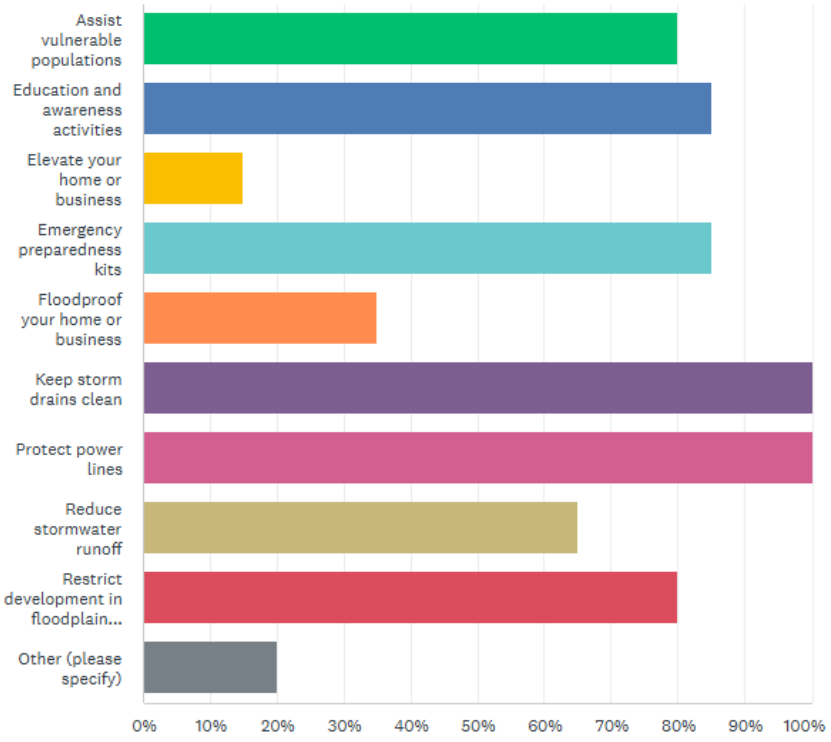


	NOT IMPORTANT	NOT VERY IMPORTANT	NEUTRAL	SOMEWHAT IMPORTANT	VERY IMPORTANT	TOTAL	WEIGHTED AVERAGE
Protecting private property	0.00% 0	0.00% 0	14.29% 3	33.33% 7	52.38% 11	21	4.38
Protecting critical facilities (for example, hospitals, police stations, fire stations, etc.)	0.00% 0	0.00% 0	0.00% 0	4.76% 1	95.24% 20	21	4.95
Preventing development in hazard areas	0.00% 0	0.00% 0	14.29% 3	28.57% 6	57.14% 12	21	4.43
Enhancing the function of natural features (for example, streams, wetlands, etc.)	4.76% 1	0.00% 0	19.05% 4	38.10% 8	38.10% 8	21	4.05
Protecting historical and cultural landmarks	4.76% 1	4.76% 1	33.33% 7	47.62% 10	9.52% 2	21	3.52
Protecting and reducing damage to utilities	0.00% 0	0.00% 0	0.00% 0	23.81% 5	76.19% 16	21	4.76
Strengthening emergency services (for example, police, fire, ambulance)	0.00% 0	0.00% 0	0.00% 0	38.10% 8	61.90% 13	21	4.62
Promoting cooperation among public agencies, citizens, non-profit organizations, and businesses	0.00% 0	0.00% 0	9.52% 2	33.33% 7	57.14% 12	21	4.48

Q8

What are some steps that you and/or your local government could take to reduce or eliminate the risk of future natural hazard damages in your neighborhood? (Check all that apply)

Answered: 20 Skipped: 1

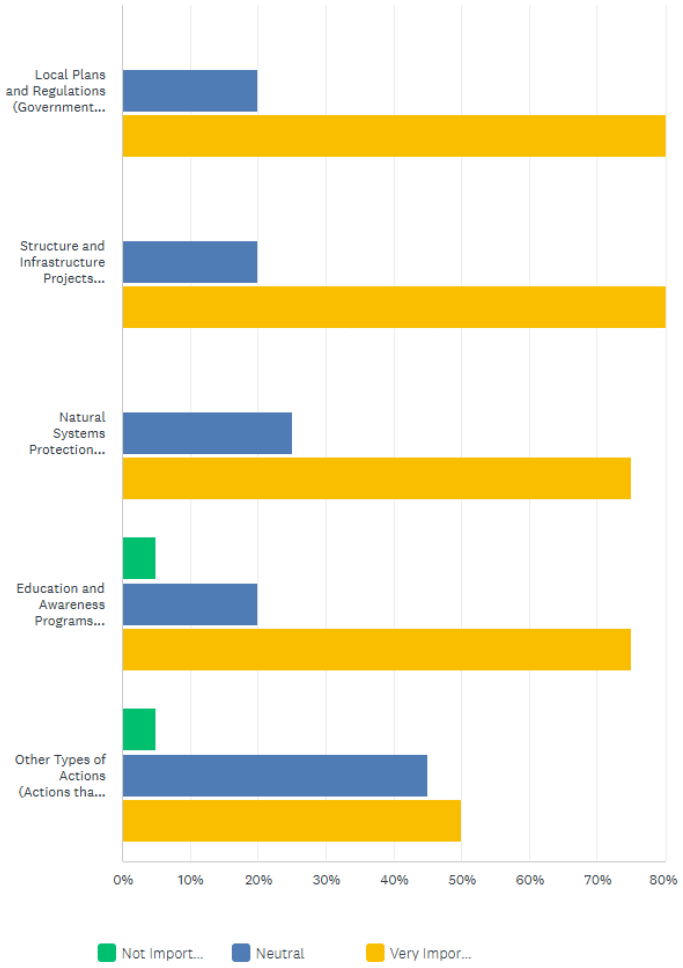


ANSWER CHOICES	RESPONSES	
Assist vulnerable populations	80.00%	16
Education and awareness activities	85.00%	17
Elevate your home or business	15.00%	3
Emergency preparedness kits	85.00%	17
Floodproof your home or business	35.00%	7
Keep storm drains clean	100.00%	20
Protect power lines	100.00%	20
Reduce stormwater runoff	65.00%	13
Restrict development in floodplain areas	80.00%	16
Other (please specify)	20.00%	4
Total Respondents: 20		

Q9

A number of community-wide activities can reduce risk from natural hazards. Please tell us how important you think each one is for your community to consider pursuing.

Answered: 20 Skipped: 1

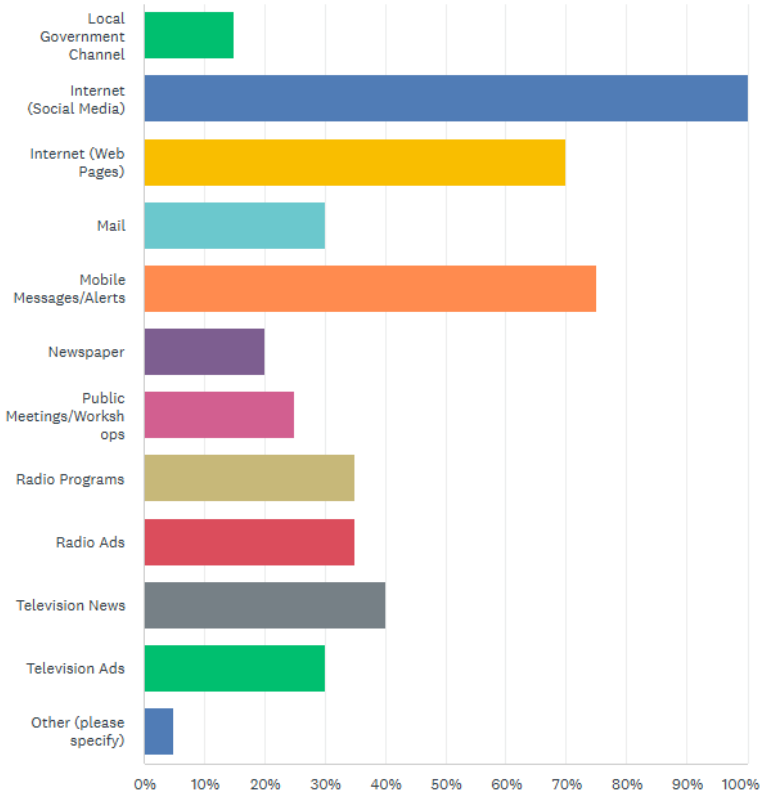


	NOT IMPORTANT	NEUTRAL	VERY IMPORTANT	TOTAL	WEIGHTED AVERAGE
Local Plans and Regulations (Government policies or codes that influence the way land and buildings are developed and built.)	0.00% 0	20.00% 4	80.00% 16	20	2.80
Structure and Infrastructure Projects (Modifying existing structures and infrastructure to protect them from a hazard or remove them from a hazard area.)	0.00% 0	20.00% 4	80.00% 16	20	2.80
Natural Systems Protection (Actions that minimize damage and losses and also preserve or restore the functions of natural systems.)	0.00% 0	25.00% 5	75.00% 15	20	2.75
Education and Awareness Programs (Actions that inform and educate citizens, elected officials and property owners about hazards and potential ways to mitigate them.)	5.00% 1	20.00% 4	75.00% 15	20	2.70
Other Types of Actions (Actions that are related to mitigation in ways that make sense to the local government that do not fall into one of the categories above.)	5.00% 1	45.00% 9	50.00% 10	20	2.45

Q10

What are the most effective ways for you to receive information about how to make your home and neighborhood more resistant to natural hazards? (Check all that apply)

Answered: 20 Skipped: 1

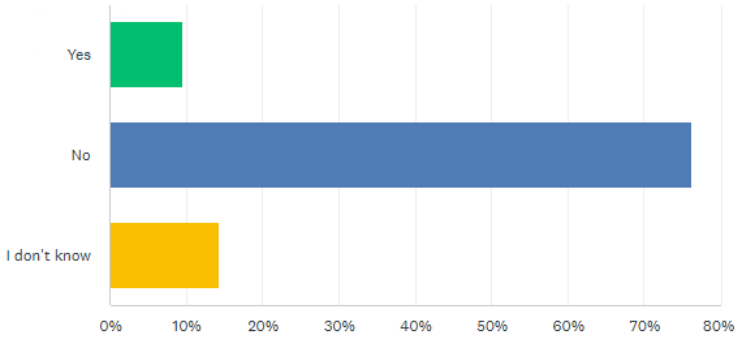


ANSWER CHOICES	RESPONSES	
Local Government Channel	15.00%	3
Internet (Social Media)	100.00%	20
Internet (Web Pages)	70.00%	14
Mail	30.00%	6
Mobile Messages/Alerts	75.00%	15
Newspaper	20.00%	4
Public Meetings/Workshops	25.00%	5
Radio Programs	35.00%	7
Radio Ads	35.00%	7
Television News	40.00%	8
Television Ads	30.00%	6
Other (please specify)	5.00%	1
Total Respondents: 20		

Q11

Is your home located in a floodplain?

Answered: 21 Skipped: 0

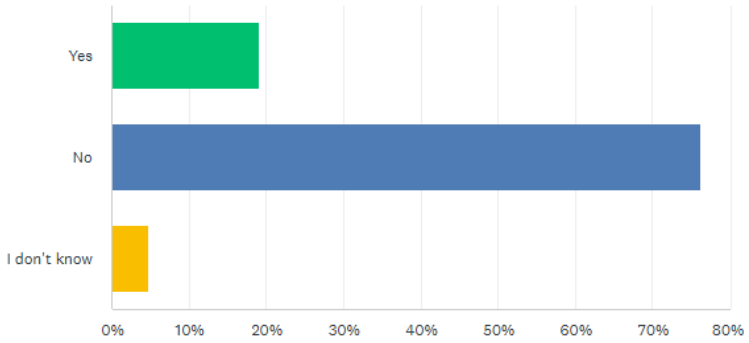


ANSWER CHOICES	RESPONSES	
Yes	9.52%	2
No	76.19%	16
I don't know	14.29%	3
TOTAL		21

Q12

Do you have flood insurance?

Answered: 21 Skipped: 0

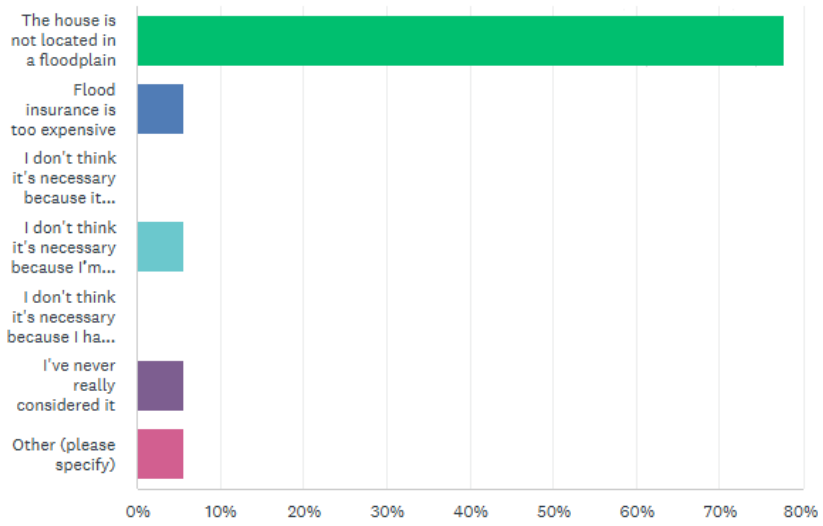


ANSWER CHOICES	RESPONSES	
Yes	19.05%	4
No	76.19%	16
I don't know	4.76%	1
TOTAL		21

Q13

If you answered "No" to the previous question, why not?

Answered: 18 Skipped: 3

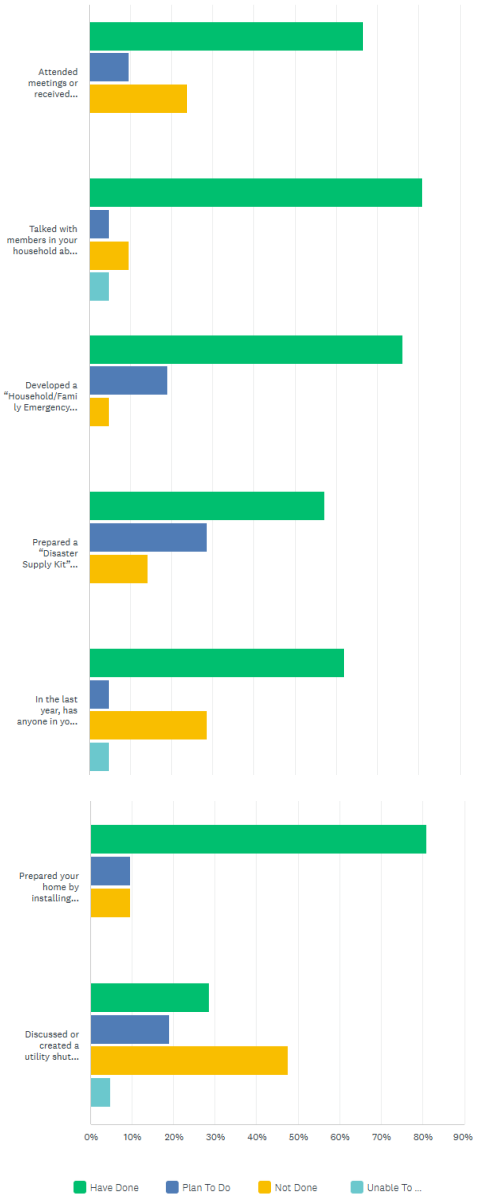


ANSWER CHOICES	RESPONSES	
The house is not located in a floodplain	77.78%	14
Flood insurance is too expensive	5.56%	1
I don't think it's necessary because it never floods	0.00%	0
I don't think it's necessary because I'm elevated or otherwise protected	5.56%	1
I don't think it's necessary because I have homeowners insurance	0.00%	0
I've never really considered it	5.56%	1
Other (please specify)	5.56%	1
TOTAL		18

Q14

In the following list, please check the activities that you have done in your household, plan to do in the near future, have not done, or are unable to do. (Please check one response for each preparedness activity.)

Answered: 21 Skipped: 0

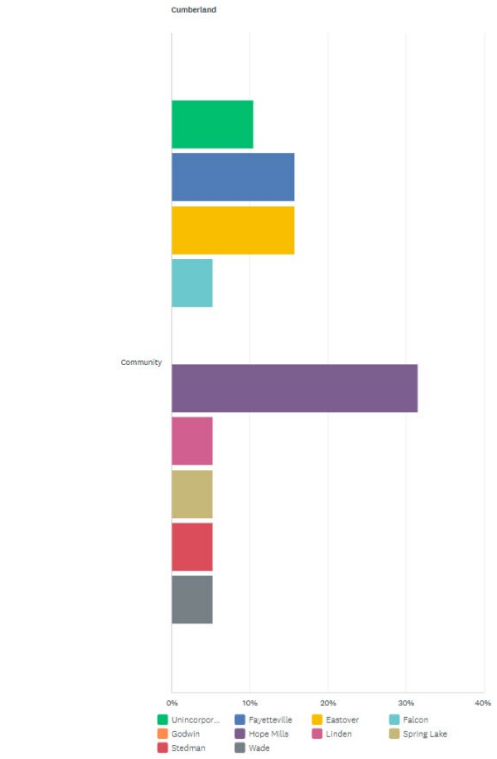


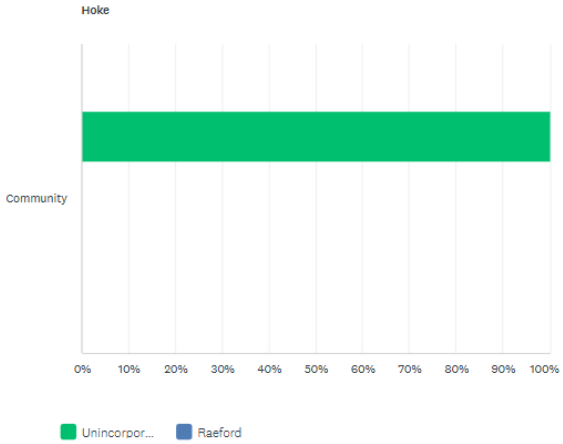
	HAVE DONE	PLAN TO DO	NOT DONE	UNABLE TO DO	TOTAL
Attended meetings or received written information on natural disasters or emergency preparedness?	66.67% 14	9.52% 2	23.81% 5	0.00% 0	21
Talked with members in your household about what to do in case of a natural disaster or emergency?	80.95% 17	4.76% 1	9.52% 2	4.76% 1	21
Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster?	76.19% 16	19.05% 4	4.76% 1	0.00% 0	21
Prepared a "Disaster Supply Kit" (stored extra food, water, batteries or other emergency supplies)?	57.14% 12	28.57% 6	14.29% 3	0.00% 0	21
In the last year, has anyone in your household been trained in First Aid or Cardio-Pulmonary Resuscitation (CPR)?	61.90% 13	4.76% 1	28.57% 6	4.76% 1	21
Prepared your home by installing smoke detectors on each level of the house?	80.95% 17	9.52% 2	9.52% 2	0.00% 0	21
Discussed or created a utility shutoff procedure in the event of a natural disaster?	28.57% 6	19.05% 4	47.62% 10	4.76% 1	21

Q15

In which community do you live?

Answered: 20 Skipped: 1





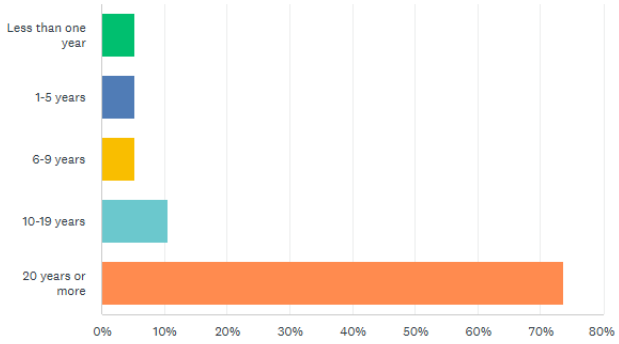
Cumberland											
	UNINCORPORATED	FAYETTEVILLE	EASTOVER	FALCON	GODWIN	HOPE MILLS	LINDEN	SPRING LAKE	STEDMAN	WADE	TOTAL
Community	10.53% 2	15.79% 3	15.79% 3	5.26% 1	0.00% 0	31.58% 6	5.26% 1	5.26% 1	5.26% 1	5.26% 1	19

Hoke			
	UNINCORPORATED	RAEFORD	TOTAL
Community	100.00% 1	0.00% 0	1

Q16

How long have you lived in the Cumberland-Hoke region?

Answered: 19 Skipped: 2

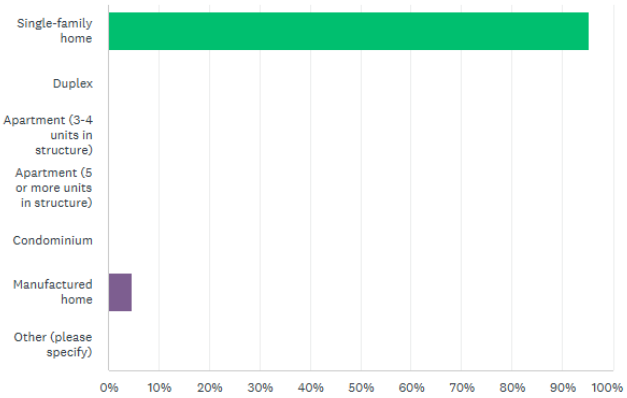


ANSWER CHOICES	RESPONSES	
Less than one year	5.26%	1
1-5 years	5.26%	1
6-9 years	5.26%	1
10-19 years	10.53%	2
20 years or more	73.68%	14
TOTAL		19

Q17

What type of building do you live in?

Answered: 21 Skipped: 0



ANSWER CHOICES	RESPONSES	
Single-family home	95.24%	20
Duplex	0.00%	0
Apartment (3-4 units in structure)	0.00%	0
Apartment (5 or more units in structure)	0.00%	0
Condominium	0.00%	0
Manufactured home	4.76%	1
Other (please specify)	0.00%	0
TOTAL		21

APPENDIX D: CRITICAL FACILITIES

Table D1: Critical Facilities in the Cumberland-Hoke Region

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Eastover Volunteer Fire Department, Inc.	3405 Dunn Rd	Eastover	28312	Cumberland	-	Fire Stations	X
Hope Rest Home, Inc.	2967 Dunn Road	Eastover	28301	Cumberland	Home for the Aged	Medical Facilities	X
Bethesda Health Care Facility	3532 Dunn Road	Eastover	28301	Cumberland	Nursing Home Facility	Medical Facilities	X
Eastover Central Elementary	5174 Dunn Road	Eastover	28312	Cumberland	Regular School	Public Schools	X
Armstrong Elementary	3395 Dunn Road	Eastover	28312	Cumberland	Regular School	Public Schools	X
Godwin-Falcon Fire Department	7793 Godwin Falcon Road	Falcon	28344	Cumberland	Ambulance and Fire Service Combined	EMS	X
Godwin-Falcon Fire Department, Inc.	7723 Godwin Falcon Rd	Falcon	28342	Cumberland	-	Fire Stations	X
Golden Years Nursing Home	7348 North West Street; PO Box 40	Falcon	28342	Cumberland	Nursing Home Facility	Medical Facilities	X
Falcon Christian Academy	7555 N. West St.	Falcon	28342	Cumberland	-	Non-Public Schools	X
Fayetteville Technical Community College	2201 Hull Rd	Fayetteville	28303	Cumberland	Technical and Trade Schools	Colleges & Universities	X
Fayetteville State University	1200 Murchison Rd	Fayetteville	28301	Cumberland	Universities	Colleges & Universities	X
Methodist College	5400 Ramsey St	Fayetteville	28311	Cumberland	Theological Seminaries Offering Baccalaureate or Graduate Degrees	Colleges & Universities	X
Fayetteville Fire Department Station 1	607 Person Street	Fayetteville	28301	Cumberland	Ambulance and Fire Service Combined	EMS	0.2 PCT Annual Chance Flood Hazard

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Fayetteville Fire Department Station 5	3040 Boone Trail Extension	Fayetteville	28304	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 4	406 Stamper Road	Fayetteville	28303	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 9	5091 Santa Fe Drive	Fayetteville	28303	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 14	632 Langdon Street	Fayetteville	28301	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 7	301 Stacy Weaver Drive	Fayetteville	28311	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 17	6701 Bailey Lake Road	Fayetteville	28304	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 6	4439 Cliffdale Road	Fayetteville	28314	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 10	400 Airport Road	Fayetteville	28306	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 2	101 North Olive Road	Fayetteville	28305	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 8	1116 71st School Road	Fayetteville	28314	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 3	3225 Rosehill Road	Fayetteville	28301	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 15	8434 Cliffdale Road	Fayetteville	28314	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fort Bragg Fire and Emergency Services - Headquarters-Dod	1556 Knox Street	Fayetteville	28307	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 11	7690 Raeford Road	Fayetteville	28304	Cumberland	Ambulance and Fire Service Combined	EMS	X
Stoney Point Fire Department	7221 Stoney Point Road	Fayetteville	28306	Cumberland	Ambulance and Fire Service Combined	EMS	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Cumberland County Emergency Medical Services	610 Gillespie Street	Fayetteville	28306	Cumberland	Ambulance Services, Air or Ground	EMS	X
Westarea Fire Department	4820 Rosehill Road	Fayetteville	28311	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fayetteville Fire Department Station 12	307 Hope Mills Road	Fayetteville	28304	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fort Bragg Fire and Emergency Services Station 4-Dod	Glider Street	Fayetteville	28307	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fort Bragg Fire and Emergency Services Station 2-Dod	1003 Parham Boulevard	Fayetteville	28310	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fort Bragg Fire and Emergency Services Station 3-Dod	Longstreet Road	Fayetteville	28310	Cumberland	Ambulance and Fire Service Combined	EMS	X
Fort Bragg Fire and Emergency Services Station 5-Dod	1309 Canopy Lane	Fayetteville	28307	Cumberland	Ambulance and Fire Service Combined	EMS	X
Cumberland County Emergency Management	131 Dick St	Fayetteville	28301	Cumberland	Emergency Planning and Management Offices, Government	EOC	X
Fayetteville Fire Department	607 Person St.	Fayetteville	28301	Cumberland	-	Fire Stations	0.2 PCT Annual Chance Flood Hazard
Fayetteville Fire Department	1126 Cedar Creek Rd	Fayetteville	28312	Cumberland	-	Fire Stations	0.2 PCT Annual Chance Flood Hazard
Fayetteville Fire Department	101 N. Olive St	Fayetteville	28301	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	3225 Rose Hill Rd	Fayetteville	28301	Cumberland	-	Fire Stations	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Fayetteville Fire Department	406 Stamper Rd	Fayetteville	28303	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	3040 Boone Trail Ext.	Fayetteville	28303	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	4439 Cliffdale Rd	Fayetteville	28303	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	301 Stacey Weaver Rd	Fayetteville	28311	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	1116 71st School Rd	Fayetteville	28314	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	5091 Santa Fe Dr	Fayetteville	28314	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	3059 Control Tower Rd	Fayetteville	28306	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	7690 Raeford Rd	Fayetteville	28314	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	911 Hope Mills Rd	Fayetteville	28314	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	632 Langdon St	Fayetteville	28301	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	8434 Cliffdale Rd	Fayetteville	28314	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	6701 Bailey Lake Rd	Fayetteville	28314	Cumberland	-	Fire Stations	X
Fayetteville Fire Department	3481 Walsh Parkway	Fayetteville	28311	Cumberland	-	Fire Stations	X
Stoney Point Fire Department, Inc.	7221 Stoney Point Rd	Fayetteville	28306	Cumberland	-	Fire Stations	X
United States Marshals Service - Fayetteville	301 Green Street	Fayetteville	28301	Cumberland	Marshals' Offices	Law Enforcement	AE
Bureau of Alcohol Tobacco Firearms and	225 Green Street	Fayetteville	28301	Cumberland	Alcohol, Tobacco, and Firearms Control	Law Enforcement	AE

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Explosives - Fayetteville Field Office							
Alcohol Law Enforcement District V - Fayetteville Station	420 Chicago Drive	Fayetteville	28306	Cumberland	Alcohol, Tobacco, and Firearms Control	Law Enforcement	X
Fayetteville State University Police Department	601 Grace Black Circle	Fayetteville	28301	Cumberland	Police Departments (Except American Indian or Alaska Native)	Law Enforcement	X
Cumberland County Alcohol Beverage Control Board Law Enforcement	1705 Owen Drive	Fayetteville	28304	Cumberland	Alcohol, Tobacco, and Firearms Control	Law Enforcement	X
North Carolina State Highway Patrol Troop B Headquarters / Troop B District I	2435 Gillespie Street	Fayetteville	28306	Cumberland	Highway Patrols, Police	Law Enforcement	X
Cumberland County Sheriffs Department	131 Dick Street	Fayetteville	28301	Cumberland	Sheriffs' Offices (Except Court Functions Only)	Law Enforcement	X
City of Fayetteville Police Department	467 Hay Street	Fayetteville	28301	Cumberland	Police Departments (Except American Indian or Alaska Native)	Law Enforcement	X
Heritage Suites	240 Ann Street	Fayetteville	28301	Cumberland	Home for the Aged	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Len-Care of Cedar Creek, Inc.	1124 Cedar Creek Road	Fayetteville	28301	Cumberland	Home for the Aged	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Spigner's Residential Care Facility #2	610 Mann St	Fayetteville	28301	Cumberland	Home for the Aged	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Changing Lifestyles Residential Treatment Center	613 Dunn Road	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Dwi Complete Services	227 South Cool Springs Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Mccall Therapeutic Home	341 Bahama Loop	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
T & S Home Place #1	724 Cedar Creek Road	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Unlimited Destinations II	521 School Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Whitfield Home	708 Deep Creek Road	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Willows Group Home	503 Old Wilmington Road	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
L&M Group Home	936 Waterless Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	AE
Sharon Allen	229 Weeping Willow Way	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	AE
Stoneykirk Group Home	868 Stoneykirk Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	AE
Hidden Pond	304 Hidden Pond Drive Apt. 104	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	AE - FLOODWAY
Fayetteville Ambulatory Surgery Center	1781 Metromedical Dr	Fayetteville	28304	Cumberland	Ambulatory Surgery	Medical Facilities	X
Cape Fear Valley Health System Cardiac Rehabilitation	1638 Owen Dr	Fayetteville	28301	Cumberland	Cardiac Rehabilitation	Medical Facilities	X
A Touch of Grace #2	7028 Kittridge Street	Fayetteville	28314	Cumberland	Family Care	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Brandin Manor Family Care Home	220 Davis Street	Fayetteville	28303	Cumberland	Family Care	Medical Facilities	X
Butler Memorial Center #3	927 Shannon Drive	Fayetteville	28301	Cumberland	Family Care	Medical Facilities	X
Jean's Rest Home	114 University Avenue	Fayetteville	28301	Cumberland	Family Care	Medical Facilities	X
Leach's Fch - Taft's Creative Service Council, Inc.	413 Country Club Drive	Fayetteville	28304	Cumberland	Family Care	Medical Facilities	X
Loving Care Family Care Center	1404 Stansfield Drive	Fayetteville	28303	Cumberland	Family Care	Medical Facilities	X
Magby's Tender Care	1903 Bridger Street	Fayetteville	28301	Cumberland	Family Care	Medical Facilities	X
Mclean Family Care Home	6487 Pleasant Street	Fayetteville	28314	Cumberland	Family Care	Medical Facilities	X
Mcleod Family Care Center of Fayetteville	248 Livermore Drive	Fayetteville	28314	Cumberland	Family Care	Medical Facilities	X
Mcleod's Family Care Home #2	121 Andy Street	Fayetteville	28303	Cumberland	Family Care	Medical Facilities	X
Parker House #2	811 Lakeland Avenue	Fayetteville	28301	Cumberland	Family Care	Medical Facilities	X
Parker House #3	513 Mechanic Street	Fayetteville	28301	Cumberland	Family Care	Medical Facilities	X
Parker House Family Care Home #1	334 Moore Street	Fayetteville	28301	Cumberland	Family Care	Medical Facilities	X
Southern Avenue Rest Home	1124 Southern Avenue	Fayetteville	28306	Cumberland	Family Care	Medical Facilities	X
Taft's Creative Service Council, Inc. - Barbie's Fc	1720 Bridger Street	Fayetteville	28301	Cumberland	Family Care	Medical Facilities	X
The Alternative House	313 Vernon Court	Fayetteville	28301	Cumberland	Family Care	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Alpha & Omega Home Care Inc.	111 Lamon Street; Suite 216	Fayetteville	28301	Cumberland	Home Care	Medical Facilities	X
Alternative Home Care Agency	4620 Murchison Road	Fayetteville	28311	Cumberland	Home Care	Medical Facilities	X
Alternative Home Care Solutions, Inc.	111 Lamon Street Suite 203	Fayetteville	28301	Cumberland	Home Care	Medical Facilities	X
Angel's Home Health	814 Hope Mills Road	Fayetteville	28304	Cumberland	Home Care	Medical Facilities	X
At Arms Reach	1014-D Robeson Street	Fayetteville	28301	Cumberland	Home Care	Medical Facilities	X
Cape Fear Valley Home Health & Hospice	3418 Village Drive	Fayetteville	28304	Cumberland	Home Care	Medical Facilities	X
Carrieing Home Health Care, Inc.	1410 Farwell Drive	Fayetteville	28304	Cumberland	Home Care	Medical Facilities	X
Community Home Care and Hospice	5301 Morganton Road	Fayetteville	28314	Cumberland	Home Care	Medical Facilities	X
Cumberland County Coor. Council On Older Adults, IN	339 Devers Street	Fayetteville	28303	Cumberland	Home Care	Medical Facilities	X
Cumberland County DSS	1225 Ramsey Street	Fayetteville	28301	Cumberland	Home Care	Medical Facilities	X
Easter Seals North Carolina - Fayetteville	351 Wagoner Drive	Fayetteville	28303	Cumberland	Home Care	Medical Facilities	X
Family Medical Supply, Inc.	1637 Owen Drive	Fayetteville	28304	Cumberland	Home Care	Medical Facilities	X
Home Caregivers, Inc.	3639 A Sycamore Dairy Road	Fayetteville	28303	Cumberland	Home Care	Medical Facilities	X
Home Health and Hospice Care, Inc.	100 Westlake Road	Fayetteville	28314	Cumberland	Home Care	Medical Facilities	X
Home Health Services of Cumberland County, Inc.	235 N. Mcpherson Church Road, Suite 210	Fayetteville	28301	Cumberland	Home Care	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Inman Home Health	3724 Sycamore Dairy Road Suite 116	Fayetteville	28303	Cumberland	Home Care	Medical Facilities	X
Interim Healthcare	2401 Robeson Street	Fayetteville	28305	Cumberland	Home Care	Medical Facilities	X
Liberty Home Care	2175 Village Drive	Fayetteville	28304	Cumberland	Home Care	Medical Facilities	X
Maxim Healthcare Services, Inc.	2915 Raeford Road, Suite 204	Fayetteville	28303	Cumberland	Home Care	Medical Facilities	X
Mother's Helper Home Care Agency	2504b Raeford Road	Fayetteville	28305	Cumberland	Home Care	Medical Facilities	X
On-Call Nursing	3724 Sycamore Dairy Road Suite 112	Fayetteville	28303	Cumberland	Home Care	Medical Facilities	X
Outreach Home Health Services	3274 Rosehill Rd., Suite 2	Fayetteville	28301	Cumberland	Home Care	Medical Facilities	X
Paradise Professional Health Care Agency	1448 Pamalee Drive	Fayetteville	28303	Cumberland	Home Care	Medical Facilities	X
Pediatric Services of America, Inc.	1208 Cedar Creek Road	Fayetteville	28301	Cumberland	Home Care	Medical Facilities	X
Pelham Home Health Services	1804 Murchison Road	Fayetteville	28301	Cumberland	Home Care	Medical Facilities	X
Professional Family Care Services, Inc.	1205 Murchison Road	Fayetteville	28301	Cumberland	Home Care	Medical Facilities	X
Rha Health Services, Inc.	2248 Wingate Road	Fayetteville	28304	Cumberland	Home Care	Medical Facilities	X
Southern Hospitality	2310 Southern Avenue	Fayetteville	28306	Cumberland	Home Care	Medical Facilities	X
Tar Heel Home Health	1643 Owen Drive	Fayetteville	28304	Cumberland	Home Care	Medical Facilities	X
Unity and Diversity Home Health Care	6149 Santa Fe Drive	Fayetteville	28303	Cumberland	Home Care	Medical Facilities	X
We Care Home Health Agency	333 Hay Street	Fayetteville	28301	Cumberland	Home Care	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Carolina Inn at Village Green	405 Forsyth Street	Fayetteville	28303	Cumberland	Home for the Aged	Medical Facilities	X
Kozy Kottage	1125 Southern Avenue	Fayetteville	28306	Cumberland	Home for the Aged	Medical Facilities	X
The Meadows of Fayetteville, Inc.	231 Treetop Drive	Fayetteville	28301	Cumberland	Home for the Aged	Medical Facilities	X
Carolina Hospice and Palliative Care	1800 Skibo Road Suite 228	Fayetteville	28301	Cumberland	Hospice	Medical Facilities	X
Cape Fear Valley Medical Center	1638 Owen Dr	Fayetteville	28304	Cumberland	Hospital	Medical Facilities	X
Fayetteville Specialty Hospital	150 Robeson Street	Fayetteville	28301	Cumberland	Hospital	Medical Facilities	X
Highsmith-Rainey Memorial Hospital	150 Robeson St	Fayetteville	28302	Cumberland	Hospital	Medical Facilities	X
A Brighter Future	2001 Blackfriars Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
A Positive Life	6033 Concho Court	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
A.J.'S Services	1918 Blake Street	Fayetteville	28302	Cumberland	Mental Health Homes	Medical Facilities	X
Able	314 Jasper Street	Fayetteville	28302	Cumberland	Mental Health Homes	Medical Facilities	X
Adrian House	7874 Adrian Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Advanced Treatment Systems of NC, Inc.	3423-A Melrose Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Alexander Home	4415 Moonstone Court	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Alpha # 1	5430 Sandstone Dr.	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Alston Therapeutic Home	1494 Pierdot Court	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Alternative Day Program	4620 Murchison Road	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Always Angels	983 Wayside Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Angel Place	601 Raynor Street	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Angels Outreach	6895 Sandridge Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Arbor Residential Treatment Facility	4710 Arbor Road	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Armwood Therapeutic Home	5136 Wichita Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Arrieux Home	1116 Nan Street	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Arrowridge Home for Children	1759 Arrowridge Way	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
At Arms Reach	2231 Wingate Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Aunt Omie's	1088 Southern Avenue	Fayetteville	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Avery Therapeutic Home	323 Richmond Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Baggett Therapeutic Home	5721 Randleman Street	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Barbie's Home	3514 Village Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Barnes Therapeutic Home	1719 Elridge Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Bennett Home	6506 Portsmouth Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Bessant Therapeutic Home	7145 Canary Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Better Living Group Home	4906 Redwood Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Bettis Therapeutic Home	429 Dunmore Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Bibby's Group Home	673 Walker Street	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Bivens Therapeutic Home	1900 Torey Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Blair Household	590 Castle Rising Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Blandin Therapeutic Home	650 Georgetown Circle	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Bloch Home	7505 Paxton Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Blue Place #1	5302 Lowery Court	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Bluestone Home for Children	709 Bluestone Court	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Boney Home	4715 Flintcastle Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Bowman Therapeutic Home	4139 Dellwood Dr.	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Brenda Murphy	5138 Hewitt St.	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Briarwood Group Home	7424 April Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Bright Haven Residential and Community Care	3608 Thorndike Drive	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Brown Home	6205 Fanning Circle	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Brown Therapeutic Home	604 Monagan Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Brown-Swift Therapeutic Home	6979 Bostick Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Bryant Therapeutic Home	6405 Greyfield Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Bryant's Place	5268 Hornbeam Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Butler Memorial Center #2	2305 Slater Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Butler's Therapeutic Home	331 Silvers Oaks Dr.	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
C.R.E.S.T. Group Home #1	1533 Mintz Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
C.R.E.S.T. Group Home #2	323 Sinclair Street	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
C.R.E.S.T. Group Home #3	635 Dashland Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
C.R.E.S.T. Group Home #4	224 Randolph Avenue	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
C.R.E.S.T. Group Home #5	250 Prince Charles Drive	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
C.R.E.S.T., Inc.	3426 Bragg Boulevard	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Camp Sunshine-Summer Developmental Day Program	4533 Raeford Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Cardinal Clinic L.L.C.	4155 Ferncreek Dr., Ste. 201	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Carlson Bay	910 Casting Court # 101	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Carol's Dda Group Home	334 Moore Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Carreia Home	512 Jennings Farm Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Carrillo Home	1520 Grandview Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Carter Therapeutic Home	853 Durwood Dr.	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Cassia	310 Penn. Ave	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Castle Home	1641 Woodfield Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Chambersburg	4528 Chambersburg Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Chestnut Hills Group Home	709 Edgehill Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Christian Home	1178 Hollberry Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Clara's Place	2487 Celtic Drive	Fayetteville	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Cleveland Therapeutic Home	4406 Garnet Drive	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Colonial	105 Colonial Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Cooke Therapeutic Home	648 Prestige Blvd.	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Coralisa T. Palmer and Cecelia Coursey	6766 Cedar Chest Court	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Corine's Therapeutic Home	1178 Curry Ford Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Cromartie Therapeutic Home	1511 Trevino Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Cumberland Co. Mental Health Center-Rainbow Camp	711 Executive Place	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Cumberland County Day Reporting Center (Tasc Service)	412 West Russell Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Cumberland County Mental Health-Family Recovery SVC	109 Bradford Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Cumberland House	519 Oakridge Avenue	Fayetteville	28305	Cumberland	Mental Health Homes	Medical Facilities	X
Curry Therapeutic Home	9377 Castle Falls Circle	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Daniely's Home	1136 Acorn St.	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Davis & Associates, ADVP	822 Bunce Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Davis Home	6517 Ryefield Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Diyah's Home, Inc.	218 University Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Dodson's Therapeutic Home	809 Rim Rd.	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Doncaster Home for Children	1513 Doncaster Street	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Dynamic Care	739 Amber Drive	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
East End	1825 Broadell Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Elliott's Care Home #3	6762 Buttermere Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Elliott's Care Home #4	6838 Buttermere Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Employment Source	600 Ames Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
English Court	801-1 English Court	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
English Court II	818-5 English Court	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Extra Special Care	6214 Kilmory Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
F.Y. Group Care Facility	6121 Hilco Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
F.Y. Group Care II	975 Comet Circle	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Falconcrest Clinic	907 Hay Street; Suite 100	Fayetteville	28305	Cumberland	Mental Health Homes	Medical Facilities	X
Faust Home	1509 Diplomat Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Fayetteville Day Program	214 Hay Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Ferncreek Manor-Therapeutic Home	4165 Ferncreek Dr.	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Fields Therapeutic Home	5120 Foxfire Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Flo's Group Home	115 Brainerd Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
for Us	705 Varsity Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Fulmore Therapeutic Home	6534 Portsmouth Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Garnett House	4388 Garnett Drive	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Gattis Therapeutic Home	6604 Bonnie Bell	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
George L. and Bertha M. Butler Memorial Center	2267 Slater Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Glensford	633 Glensford Dr.	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Graceland Manor Dda #3	408 Pelt Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Graceland Manor Dda #1	600 Dowfield Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Grandview Residential Facility	1622 Grandview Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Granger's Therapeutic Home	1977 Culpepper Lane	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Great Expectations Group Home	6611 Carloway Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Greenland Home for Children	1504 Doncaster Street	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Griffith Therapeutic Home	5140 Wichita Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Guardian Angel I	4407 Moonstone Court	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Gutierrez Residential Service	881 Sunbury Drive	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Habiba, Inc.	7376 Stoney Point Road	Fayetteville	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Hales Therapeutic Home	3490 Hastings Drive	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Hancock Therapeutic Home	571-F Winding Creek Road	Fayetteville	28305	Cumberland	Mental Health Homes	Medical Facilities	X
Heavenly Care	5308 Trampas Court	Fayetteville	28302	Cumberland	Mental Health Homes	Medical Facilities	X
Highland Clinic	823 Elm Street Suite 205	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Hill Therapeutic Home	1838 Eichelberger Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Hill Therapeutic Home	1002-48 Wildwood Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Holley Therapeutic Home-Cumberland	7436 Coleridge Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Holliday's Place Group Home	1108 Quail-Meadow Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Honeysuckle Group Home	6561 Honeysuckle Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Horsey Home	1088 Strathdon Ave.	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Hosanna Youth Facility	2703 Fort Bragg Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Jackson Home	1641 Banbury Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Johnson Therapeutic Home	5506 Dodge Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Johnson Therapeutic Home	2004 Gillingham Circle	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Jones Therapeutic Home	7305 Hyannis Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Jones Therapeutic Home	5138 Wichita Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Jordan Home	522 Lennox Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Joseph Therapeutic Home	8489 Cliffdale Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Kelly's Home	389 Bahama Loop	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Kemper House	6305 Kemper Court	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
King Arthur	827-2 King Arthur Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Kirby Therapeutic Home	2020 Calista Circle	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
KV Consultants and Associates	2606 Raeford Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
L.I.F.E. Concepts	2520 Murhcison Road Ste 5-A	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Lafayette Home for Children	4565 Rosehill Road	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Lafayette Relapse Prevention Services	2410 Gary Street	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Lake Trail Home for Children	6356 Lake Trail Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Lakewood Treatment Facility	5231 Mawood Street	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Law Road Group Home	519 Law Road	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Lee Therapeutic Home	6833 Woodmark Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Libeth Place	421 Libeth Place	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Love Home	1953 Culpepper Lane	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Lovelace Therapeutic Home	6380 Lake Trail Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Luv-N-Arms	6777 Candlewood Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Magby Group Home #1	1511 Seabrook Road	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Magby Group Home #2	1181 Torrey Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Magby Group Home #5	1450 Thelbert Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Magby Group Home #6	3130 Lakecrest Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Magby's Group Home #4	1700 Bridger Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Mahogany	6852 Mahogany Rd.	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Mamie Lewis Therapeutic Home	6111 Hilco Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Manigo Therapeutic Home	1799 Hampton Oaks Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Mannsur Home	1707 Swann Street	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Maranatha House	208 Campbell Avenue	Fayetteville	28302	Cumberland	Mental Health Homes	Medical Facilities	X
Martin Home	324 Mcfayden Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Martindale	1921 Martindale Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Mary Rebecca Home	1398 Mcarthur Road	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Mcarthur Home	4704 Pamlico Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Mccall Therapeutic Home	301 Reid Court	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Mcduffie DDA Group Home	1826 Wendover Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Mcduffie Therapeutic Home	601 Mclamb Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Mclean Home	5702 Lochness Court	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Mcleod Home	5222 Long Branch Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Mcleod Home	7712 Ancon Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Mcmichael Home	544 Rock Canyon Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Mcmillian Therapeutic Home	9320 Castle Falls Circle	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Melvin Therapeutic Home	5050 Waterford Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Mixon Therapeutic Home	5825 Lagu Place	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Montclair Home for Children	804 Montclair Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Morgan's Home	1749 Nuthatch Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Mouton's Therapeutic Home	953 Louise Circle	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Murphy Therapeutic Home	565 Andover Road	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Murray Fork Facility	508 Murray Fork Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Murray Fork Home Care	209 Murray Fork Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Murray Therapeutic Home	623 Hermosa Court	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
My Brother's Place	1116 Quail-Meadow Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
My Place	1050 Hogan Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Myrover-Reese Fellowship Home	613 Quality Road	Fayetteville	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Naomi Group Home #4	6125 Louise Street	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Naomi's Brown Stone	1951 Ireland Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Naomi's Group Home #1	911 Henderson Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Naomi's Group Home #2	1504 Pamalee Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
New Generation Youth Treatment Center	820 Wilbertforce Court	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
New Hope Group Home	1323 Worstead Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
New Image Group Home	7526 Bridgeman Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
New Life Youth Home	9361 Castle Falls Circle	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
New Love Group Home	1712 Shiloh Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Newble Therapeutic Home	9368 Castle Falls Circle	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Nicholson Therapeutic Home	6620 Burgenfield Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Northside Group Home	3301 Barksdale Road	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Nova House	6427 Northfield Court	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
O'byrne Therapeutic Home	1012 Belmont Avenue	Fayetteville	28305	Cumberland	Mental Health Homes	Medical Facilities	X
Obie Therapeutic Home	5135 Fox Fire Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Our House	5201 Hornbeam Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Our House II	5636 Pepperbush Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Our Place Group Home	1767 Rim Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Palama Therapeutic Home	6759 Long Parrish Court	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Parker Home	1955 Windlock Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Patterson's Group Home	5212 Merritt Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Pearil Therapeutic Home	340 West Water Way	Fayetteville	28307	Cumberland	Mental Health Homes	Medical Facilities	X
Pearl's Angel Care, Inc.	1423 Grandview Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Pettiford Home	1048 Kingsley Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Pezzullo Home	1267 Bingham Dr.	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Philyaw Home	240 Livermore Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Pilot Therapeutic Home	6219 Milford Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Pleasant Meadow	4590 Zinc Court	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Porter Therapeutic Home	6518 Bonnie Bell Lane	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Positive Image	6436 Rutherglen Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Precious Haven	532 Wayland Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Professional Family Care Home #2	1016 Patrick Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Q&S Group Home	205 Preston Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Quick Home	7720 Gaelic Dr.	Fayetteville	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Rainey Therapeutic Home	5921 Mcdougal Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Raintree Clinic	804 Stamper Road, Ste. 201	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Reeves Therapeutic Home	635 Randinita Drive	Fayetteville	29311	Cumberland	Mental Health Homes	Medical Facilities	X
Reid Therapeutic Home	6547 Brookshire Street	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Release It & Let It Go	872 Hilton Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Reneau Home	4205 Edgedale Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Rising Stars Residential Facility, Inc.	2809 Eldorado Road	Fayetteville	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Robbins Home	1633 Cawder Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Rockford 1	6416 Rockford Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Roxie Avenue Center	1724 Roxie Avenue	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Rudolph Therapeutic Home	2473 Caithness Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
S&G Group Home	1122 Brenda Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Sapphires	401 Cumbrian Court	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Savage Home	1717 Eldridge Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Schacht Therapeutic Home	5100 Birch Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Schuh's Therapeutic Home	7220 Shady Grove Lane	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Scott Therapeutic Home	2305 Vestal Avenue	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Second Chance Group Home	316 Murray Fork Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Shads Ford	118 Shads Ford Boulevard	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Shads Ford II	105 Shads Ford Boulevard	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Sharper Images	529 Albany Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Shaw Therapeutic Home	6612 Burgenfield Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Sheffield Therapeutic Home	278 Buhmann Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Shepard's House	6959 Bostic Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Smith Home	9597 Mountain Home Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Smith Therapeutic Home	743 Ashbrook Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Someone Who Cares	2842 Coronada Parkway	Fayetteville	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Soteria	4502 Belford Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
South of Rae	7529 Southgate Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Southern Avenue Home	2001 Southern Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Southside Group Home	904 Southview Circle	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Spigner Dda Group Home	205 Scott Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Sprucewood Group Home	5670 Livingston Drive	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Stanberry Place	1909 Stanberry Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Strickland Bridge Homes A & B	1818 Strickland Bridge Rd.	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Strickland Bridge Road Treatment Facility	1041 Strickland Bridge Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Sunflower Enrichment Center	226 Bradford Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Sunny Acres Group Home	611 Country Club Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Sunrise Group Home	7237 Godfrey Dr.	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
T & S Group Home #2	1808 Conover Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Taylor Home	1027 Deep Creek Road	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
The Campbell Group Home	5290 Grimes Road	Fayetteville	28306	Cumberland	Mental Health Homes	Medical Facilities	X
The Dwi Center	916 Hay Street	Fayetteville	28302	Cumberland	Mental Health Homes	Medical Facilities	X
The Learning Center	3625 Sycamore Dairy Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
The M Co., LLC	6576 Cliffdale Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
The Val-Perry Home	6005 Shearwater Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Thomas B. Bacote Center	2130 Burnett Avenue	Fayetteville	28306	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Thomas Home	6100 Dandy Loop Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Thomas S. Decatur Home	7559 Decatur Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Thomas S. Edgehill	736 Edgehill Road	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Thomas S. Kinlaw	235 Kinlaw Street	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Thomas Therapeutic Home	418 Preston Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Thompson Therapeutic Home	1705 Nuthatch Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Thompson Therapeutic Home	924 Orchard Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Tiffany Home for Children	5491 Lazybrook Court	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Torbay Residential Program	3581 Torbay Drive	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Trucare Home	5628 Birch Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Unlimited Destinations I	403 Rodie Avenue	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Vereen Therapeutic Home	920 Brookridge Drive	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Waters Edge Group Home	409 Lynn Avenue	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Watson Therapeutic Home	6631 Keeler Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Wiggins Therapeutic Home	5222 Brookfield Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Wilburn Home	2530 Huntington Road	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Williams Home	5371 Silver Pine Drive	Fayetteville	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Williams Therapeutic Home	1833 Eichelberger Drive	Fayetteville	28303	Cumberland	Mental Health Homes	Medical Facilities	X
Williams Therapeutic Home	1621 Inverness Drive	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Wilson Home	3959 Loufield Drive	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Wingate Road Day Program	2248 Wingate Road	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Woodbridge Home for Children & Adolescents	303 Cadmium Court	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Woodcrest Home for Children	607 Platinum Street	Fayetteville	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Woodglen Home for Children	1225 Faison Avenue	Fayetteville	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Worsley Home	7000 Redding Court	Fayetteville	28314	Cumberland	Mental Health Homes	Medical Facilities	X
Wright Home	1060 Strickland Bridge Rd.	Fayetteville	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Behavioral Health Care of Cape Fear Valley Health S	3425 Melrose Rd	Fayetteville	28304	Cumberland	Mental Health Hospital	Medical Facilities	X
Century Care of Fayetteville, Inc.	707 Murchison Road	Fayetteville	28301	Cumberland	Nursing Home Facility	Medical Facilities	X
Highland House of Fayetteville, Inc.	1700 Pamalee Drive	Fayetteville	28301	Cumberland	Nursing Home Facility	Medical Facilities	X
IHS of Fayetteville	2461 Legion Road	Fayetteville	28301	Cumberland	Nursing Home Facility	Medical Facilities	X
North Carolina State Veterans Nursing Home	214 Cochran Avenue	Fayetteville	28301	Cumberland	Nursing Home Facility	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
The Rehabilitation and Health Care Ctr at Village G	1601 Purdue Drive	Fayetteville	28301	Cumberland	Nursing Home Facility	Medical Facilities	X
Whispering Pines Nursing Home	523 Country Club Drive	Fayetteville	28301	Cumberland	Nursing Home Facility	Medical Facilities	X
Woodlands Assisted Living & Rehabilitation Center	400 Pelt Drive	Fayetteville	28301	Cumberland	Nursing Home Facility	Medical Facilities	X
Care Finders First, LP	7510 Hammersley Road	Fayetteville	28806	Cumberland	Nursing Pool	Medical Facilities	X
Maxim Healthcare Services, Inc.	2915 Raeford Road, Suite 204	Fayetteville	28303	Cumberland	Nursing Pool	Medical Facilities	X
Mega Force Staffing	1001 Hay Street	Fayetteville	28305	Cumberland	Nursing Pool	Medical Facilities	X
Riverside Christian Academy	2010 Middle River Loop	Fayetteville	28312	Cumberland	-	Non-Public Schools	0.2 PCT Annual Chance Flood Hazard
St. Ann Catholic School	365 N. Cool Spring Street	Fayetteville	28301	Cumberland	-	Non-Public Schools	0.2 PCT Annual Chance Flood Hazard
The Academy 1	429 Person St	Fayetteville	28301	Cumberland	-	Non-Public Schools	0.2 PCT Annual Chance Flood Hazard
The School of Hope	111 Burns St.	Fayetteville	28301	Cumberland	-	Non-Public Schools	0.2 PCT Annual Chance Flood Hazard
Academy of Unique Learners	937 South Mcpherson Church Road	Fayetteville	28314	Cumberland	-	Non-Public Schools	X
Agape Achievement Academy	3421 Murchison Rd. Suite-O	Fayetteville	28311	Cumberland	-	Non-Public Schools	X
Bal Perazim Christian Academy	4921 Bragg Boulevard	Fayetteville	28303	Cumberland	-	Non-Public Schools	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Berean Baptist Academy	518 Glensford Drive	Fayetteville	28314	Cumberland	-	Non-Public Schools	X
Birds Nest Montessori School	6867 Raeford Road	Fayetteville	28304	Cumberland	-	Non-Public Schools	X
Community Life Christian Academy	7828 Raeford Rd.	Fayetteville	28304	Cumberland	-	Non-Public Schools	X
Cornerstone Christian Academy	3000 Scotty Hill Road	Fayetteville	28303	Cumberland	-	Non-Public Schools	X
Destiny Now Academy	6974 Raeford Road	Fayetteville	28304	Cumberland	-	Non-Public Schools	X
Empact One Academy	2400 Murchison Road	Fayetteville	28301	Cumberland	-	Non-Public Schools	X
Fayetteville Academy	3200 Cliffdale Road	Fayetteville	28303	Cumberland	-	Non-Public Schools	X
Fayetteville Christian School	1422 Ireland Drive	Fayetteville	28304	Cumberland	-	Non-Public Schools	X
First Impressions Academy	6965 Nexus Court	Fayetteville	28304	Cumberland	-	Non-Public Schools	X
Freedom Christian Academy	3130 Gillespie Street	Fayetteville	28306	Cumberland	-	Non-Public Schools	X
Genesis Christian School	1713 Royal Gorge Rd.	Fayetteville	28304	Cumberland	-	Non-Public Schools	X
God's Heritage Christian Academy	5204 Hodge St.	Fayetteville	28303	Cumberland	-	Non-Public Schools	X
Grace Community School	5117 Cliffdale Road	Fayetteville	28314	Cumberland	-	Non-Public Schools	X
Greater Fayetteville Adventist Acad.	2601 Lone Pine Drive	Fayetteville	28306	Cumberland	-	Non-Public Schools	X
JCW Thrive	5948 Fisher Rd	Fayetteville	28303	Cumberland	-	Non-Public Schools	X
Kid Stars Rising Christian Learning Academy	2122 Hope Mills Road	Fayetteville	28304	Cumberland	-	Non-Public Schools	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
New Life Christian Acad & Prep Sch	1420 Hoke Loop Road	Fayetteville	28314	Cumberland	-	Non-Public Schools	X
Northwood Temple Academy	4200 Ramsey Street	Fayetteville	28311	Cumberland	-	Non-Public Schools	X
Renaissance Classical Academy	6427 Cliffdale Road	Fayetteville	28314	Cumberland	-	Non-Public Schools	X
St. Patrick Catholic School	1620 Marlborough Road	Fayetteville	28304	Cumberland	-	Non-Public Schools	X
Trinity Christian School of Fayetteville Incorporated	3727 Rosehill Road	Fayetteville	28311	Cumberland	-	Non-Public Schools	X
True Vine Academy	5319 Morganton Rd	Fayetteville	28314	Cumberland	-	Non-Public Schools	X
Village Christian Academy	908 S Mcpherson Church Rd	Fayetteville	28303	Cumberland	-	Non-Public Schools	X
Bordeaux Branch Library	3711 Village Drive	Fayetteville	28304	Cumberland	Branch	Public Library	X
Cliffdale Branch Library	6882 Cliffdale Road	Fayetteville	28314	Cumberland	Branch	Public Library	X
North Regional Branch Library	855 Mcarthur Road	Fayetteville	28311	Cumberland	Branch	Public Library	X
Law Library	117 Dick Street	Fayetteville	28301	Cumberland	Branch	Public Library	X
Cumberland Co. Public Library & Info. Center	300 Maiden Lane	Fayetteville	28301	Cumberland	Headquarters	Public Library	X
Pauline Jones Elementary	225 B Street	Fayetteville	28301	Cumberland	Regular School	Public Schools	0.2 PCT Annual Chance Flood Hazard
Walkerspivey	500 Fisher Street	Fayetteville	28301	Cumberland	Alternative Education	Public Schools	0.2 PCT Annual Chance Flood Hazard
William T Brown Elementary	2522 Andrews Church Road	Fayetteville	28390	Cumberland	Regular School	Public Schools	X
Alma O Easom Elementary	1610 Westlawn Avenue	Fayetteville	28305	Cumberland	Regular School	Public Schools	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Ashley Elementary	810 Trainer Drive	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Loyd E Auman Elementary	6882 Raeford Road	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Brentwood Elementary	1115 Bingham Drive	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Douglas Byrd Middle	1616 Ireland Drive	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Douglas Byrd High	1624 Ireland Drive	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Anne Chesnutt Middle	2121 Skibo Road	Fayetteville	28314	Cumberland	Regular School	Public Schools	X
Cliffdale Elementary	6450 Cliffdale Road	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
College Lakes Elementary	4963 Rosehill Road	Fayetteville	28311	Cumberland	Regular School	Public Schools	X
J W Coon Elementary	913 Hope Mills Road	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Cumberland Road Elementary	2700 Cumberland Road	Fayetteville	28306	Cumberland	Regular School	Public Schools	X
Luther "Nick" Jeralds Middle	2517 Ramsey Street	Fayetteville	28301	Cumberland	Regular School	Public Schools	X
E E Smith High	1800 Seabrook Road	Fayetteville	28301	Cumberland	Regular School	Public Schools	X
Fergusoneasley Elementary	1857 Seabrook Road	Fayetteville	28301	Cumberland	Regular School	Public Schools	X
Glendale Acres Elementary	2915 Skycrest Drive	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
R Max Abbott Middle	590 Winding Creek Road	Fayetteville	28305	Cumberland	Regular School	Public Schools	X
Bill Hefner Elementary	7059 Calamar Drive	Fayetteville	28314	Cumberland	Regular School	Public Schools	X
Lewis Chapel Middle	2150 Skibo Road	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Long Hill Elementary	6490 Ramsey Street	Fayetteville	28311	Cumberland	Regular School	Public Schools	X
Lucile Souders Elementary	128 Hillview Avenue	Fayetteville	28301	Cumberland	Regular School	Public Schools	X
Margaret Willis Elementary	1412 Belvedere Avenue	Fayetteville	28305	Cumberland	Regular School	Public Schools	X
Massey Hill Classical High	1062 Southern Avenue	Fayetteville	28306	Cumberland	Regular School	Public Schools	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Mary Mcarthur Elementary	3809 Village Drive	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
E E Miller Elementary	1361 Rim Road	Fayetteville	28314	Cumberland	Regular School	Public Schools	X
Montclair Elementary	555 Glensford Drive	Fayetteville	28314	Cumberland	Regular School	Public Schools	X
Morganton Road Elementary	102 Bonanza Drive	Fayetteville	28303	Cumberland	Regular School	Public Schools	X
William H Owen Elementary	4533 Raeford Road	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Ponderosa Elementary	311 Bonanza Drive	Fayetteville	28303	Cumberland	Regular School	Public Schools	X
Reid Ross Classical	3200 Ramsey Street	Fayetteville	28301	Cumberland	Regular School	Public Schools	X
Ramsey St Middle	117 Quincy Street	Fayetteville	28301	Cumberland	Alternative Education	Public Schools	X
Benjamin J Martin Elementary	430 N Reilly Road	Fayetteville	28303	Cumberland	Regular School	Public Schools	X
Seventyfirst Classical Middle	6830 Raeford Road	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Seventyfirst High	6764 Raeford Road	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Sherwood Park Elementary	2115 Hope Mills Road	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Teresa C Berrien Elementary	800 North Street	Fayetteville	28301	Cumberland	Regular School	Public Schools	X
Terry Sanford High	2301 Fort Bragg Road	Fayetteville	28303	Cumberland	Regular School	Public Schools	X
Vanstory Hills Elementary	400 Foxhall Road	Fayetteville	28303	Cumberland	Regular School	Public Schools	X
Warrenwood Elementary	4618 Rosehill Road	Fayetteville	28311	Cumberland	Regular School	Public Schools	X
Westarea Elementary	941 Country Club Drive	Fayetteville	28301	Cumberland	Regular School	Public Schools	X
Westover Middle	275 Bonanza Drive	Fayetteville	28303	Cumberland	Regular School	Public Schools	X
Westover High	277 Bonanza Drive	Fayetteville	28303	Cumberland	Regular School	Public Schools	X
Alger B Wilkins Elementary	1429 Skibo Road	Fayetteville	28303	Cumberland	Regular School	Public Schools	X
Albritton Junior High	Normandy Dr Bldg 43331	Fayetteville	28307	Cumberland	Regular School	Public Schools	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Murray Elementary	Normany Dr Bldg B6036	Fayetteville	28307	Cumberland	Regular School	Public Schools	X
Butner Elementary	Normandy/Baslogne Dr B5356	Fayetteville	28307	Cumberland	Regular School	Public Schools	X
Bowley Elementary	Randolph St Bldg 13479	Fayetteville	28307	Cumberland	Regular School	Public Schools	X
Irwin Middle	Knox St Bld 14865	Fayetteville	28307	Cumberland	Regular School	Public Schools	X
Holbrook Elementary	Sharp Dr/S Lucus Ave	Fayetteville	28307	Cumberland	Regular School	Public Schools	X
Mcnair Elementary	Honeycutt Rd Bldg B7556	Fayetteville	28307	Cumberland	Regular School	Public Schools	X
Alpha Academy	907 Hay Street	Fayetteville	28305	Cumberland	Regular School	Public Schools	X
Ireland Drive Middle	1606 Ireland Drive	Fayetteville	28304	Cumberland	Regular School	Public Schools	X
Lake Rim Elementary	1455 Hoke Loop Road	Fayetteville	28314	Cumberland	Regular School	Public Schools	X
Cross Creek Early College	1200 Murchison Road	Fayetteville	28301	Cumberland	Regular School	Public Schools	X
Howard Health & Life Sciences	1608 Camden Rd	Fayetteville	28306	Cumberland	Regular School	Public Schools	X
Fuller Performance Learning Center	314 Jasper St	Fayetteville	28301	Cumberland	Alternative Education	Public Schools	X
Cumberland International Early Collegehs	1307 Hillsboro St.	Fayetteville	28301	Cumberland	Regular School	Public Schools	X
New Century International Elementary	7465 Century Circle	Fayetteville	28306	Cumberland	Regular School	Public Schools	X
Cumberland Reg Detention Ctr	1911 Coliseum Drive	Fayetteville	28306	Cumberland	Alternative Education	Public Schools	X
Reid Ross Classical Middle	3200 Ramsey Street	Fayetteville	28301	Cumberland	Regular School	Public Schools	X
New Century International Middle	7455 Century Circle	Fayetteville	28306	Cumberland	Regular School	Public Schools	X
Hope Mills Fire Department	5788 Rockfish Road	Hope Mills	28348	Cumberland	Ambulance and Fire Service Combined	EMS	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Hope Mills Fire Department	5788 Rockfish Rd	Hope Mills	28348	Cumberland	-	Fire Stations	X
City of Hope Mills Police Department	5776 Rockfish Road	Hope Mills	28348	Cumberland	Police Departments (Except American Indian or Alaska Native)	Law Enforcement	X
Happy Valley Retirement Center	1800 Cameron Road	Hope Mills	28348	Cumberland	Home for the Aged	Medical Facilities	X
C&S Residential Services, Inc.	5723 Crenshaw Drive	Hope Mills	28348	Cumberland	Mental Health Homes	Medical Facilities	X
Dunham Therapeutic Home	2928 Rosemeade Road	Hope Mills	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Golden Opportunity Home for Children & Adolescents	3317 Davis Street	Hope Mills	28348	Cumberland	Mental Health Homes	Medical Facilities	X
Hope Mills Home	5713 Newton Street	Hope Mills	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Lyles Home	4206 Achilles Drive	Hope Mills	28348	Cumberland	Mental Health Homes	Medical Facilities	X
New Directions Group Home	6213 Rockfish Road	Hope Mills	28348	Cumberland	Mental Health Homes	Medical Facilities	X
New Hope Residential Facility	3222 Glenmore Drive	Hope Mills	28348	Cumberland	Mental Health Homes	Medical Facilities	X
The Learning Center	3721 Legion Rd.	Hope Mills	28348	Cumberland	Mental Health Homes	Medical Facilities	X
YCT (You Can Too Inc.)	3501 Hanover Drive	Hope Mills	28348	Cumberland	Mental Health Homes	Medical Facilities	X
Cumberland Co. Christian Sch.	2587 Hope Mills Road	Hope Mills	28304	Cumberland	-	Non-Public Schools	X
TJR Leadership Academy	4221 Black Bridge Road	Hope Mills	28348	Cumberland	-	Non-Public Schools	X
Hope Mills	3411 Golfview Road	Hope Mills	28348	Cumberland	Branch	Public Library	X
Rockfish Elementary	5763 Rockfish Road	Hope Mills	28348	Cumberland	Regular School	Public Schools	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
South View Middle	4100 Elk Road	Hope Mills	28348	Cumberland	Regular School	Public Schools	X
C Wayne Collier Elementary	3522 Sturbridge Drive	Hope Mills	28348	Cumberland	Regular School	Public Schools	X
Cumberland Mills Elementary	2576 Hope Mills Road	Hope Mills	28306	Cumberland	Regular School	Public Schools	X
Hope Mills Middle	4975 Cameron Road	Hope Mills	28348	Cumberland	Regular School	Public Schools	X
Ed V Baldwin Elementary	4441 Legion Road	Hope Mills	28348	Cumberland	Regular School	Public Schools	X
South View High	4184 Elk Road	Hope Mills	28348	Cumberland	Regular School	Public Schools	X
Linden Fire Department	Main Street	Linden	28356	Cumberland	Ambulance and Fire Service Combined	EMS	X
Westarea Volunteer Fire Department, Inc.	4731 Main St.	Linden	28356	Cumberland	-	Fire Stations	X
Pope Air Force Base Fire Department-Dod	265 Boxcar Street	Spring Lake	28308	Cumberland	Ambulance and Fire Service Combined	EMS	X
Spring Lake Fire Department	300 Ruth Street	Spring Lake	28390	Cumberland	Ambulance and Fire Service Combined	EMS	X
Spring Lake Fire Department	300 Ruth St	Spring Lake	28390	Cumberland	-	Fire Stations	X
Spring Lake Police Department	300 Ruth Street	Spring Lake	28390	Cumberland	Police Departments (Except American Indian or Alaska Native)	Law Enforcement	X
Cumberland County Mental Health Spring Lake Center	103 Laketree Boulevard	Spring Lake	28390	Cumberland	Mental Health Homes	Medical Facilities	X
Deerfield Home	206 Wapiti Drive	Spring Lake	28390	Cumberland	Mental Health Homes	Medical Facilities	X
Spring Lake	101 Laketree Blvd	Spring Lake	28390	Cumberland	Branch	Public Library	X
Lillian Black Elementary	125 S 3rd Street	Spring Lake	28390	Cumberland	Regular School	Public Schools	X
Manchester Elementary	611 Spring Avenue	Spring Lake	28390	Cumberland	Regular School	Public Schools	X
Spring Lake Middle	612 Spring Avenue	Spring Lake	28390	Cumberland	Regular School	Public Schools	X
Pope Elementary	Armistead St Bldg 9000	Spring Lake	28307	Cumberland	Regular School	Public Schools	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Devers Elementary	Varsity Dr Bldg 95536	Spring Lake	28307	Cumberland	Regular School	Public Schools	X
Stedman Fire Department	7595 Clinton Road	Stedman	28391	Cumberland	Ambulance and Fire Service Combined	EMS	X
Stedman Volunteer Fire Department, Inc.	5256 Front St	Stedman	28931	Cumberland	-	Fire Stations	X
Stedman Police Department - Headquarters	5110 Front Street	Stedman	28391	Cumberland	Police Departments (Except American Indian or Alaska Native)	Law Enforcement	X
Stedman Primary	155 E First Street	Stedman	28391	Cumberland	Regular School	Public Schools	X
Stedman Elementary	7370 Clinton Road Hwy 24	Stedman	28391	Cumberland	Regular School	Public Schools	X
Wade Community Fire Department	7130 Powell Street	Wade	28395	Cumberland	Ambulance and Fire Service Combined	EMS	X
Wade Community Fire Department, Inc.	7130 Powell St.	Wade	28395	Cumberland	-	Fire Stations	X
Vander Fire District	3509 Clinton Road	Unincorporated Area	28312	Cumberland	Ambulance and Fire Service Combined	EMS	X
Cedar Creek Fire Department	4960 Tabor Church Road	Unincorporated Area	28312	Cumberland	Ambulance and Fire Service Combined	EMS	X
Stoney Point Fire District - Lake Upchurch Station	Lake Upchurch Drive	Unincorporated Area	28371	Cumberland	Ambulance and Fire Service Combined	EMS	X
Pearces Mill Fire Department	165 Dedication Drive	Unincorporated Area	28306	Cumberland	Ambulance and Fire Service Combined	EMS	X
Carvers Creek Fire Department	6787 Ramsey Street	Unincorporated Area	28311	Cumberland	Ambulance and Fire Service Combined	EMS	X
Bethany Fire Department	2140 Wade Stedman Road	Unincorporated Area	28391	Cumberland	Ambulance and Fire Service Combined	EMS	X
Beaver Dam Volunteer Fire Department	11042 State Highway 210 South	Unincorporated Area	28382	Cumberland	Ambulance and Fire Service Combined	EMS	X
Cumberland Road Fire Department	3543 Cumberland Road	Unincorporated Area	28306	Cumberland	Ambulance and Fire Service Combined	EMS	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Beaver Dam Volunteer Fire Department of Cumberland County	11042 NC Hwy 210 S	Unincorporated Area	28382	Cumberland	-	Fire Stations	X
Beaver Dam Volunteer Fire Department of Cumberland County	9236 Turnbull Rd.	Unincorporated Area	28312	Cumberland	-	Fire Stations	X
Bethany Rural Fire Department, Inc.	2140 Wade-Stedman Rd	Unincorporated Area	28391	Cumberland	-	Fire Stations	X
Cotton Volunteer Fire Department, Inc.	4618 Calico St.	Unincorporated Area	28348	Cumberland	-	Fire Stations	X
Cumberland Road Volunteer Fire Department, Inc.	3543 Cumberland Rd.	Unincorporated Area	28306	Cumberland	-	Fire Stations	X
Grays Creek Volunteer Fire Department, Inc.	6975 Fire Department Rd	Unincorporated Area	28348	Cumberland	-	Fire Stations	X
Grays Creek Volunteer Fire Department, Inc.	2661 Sand Hill Rd	Unincorporated Area	28306	Cumberland	-	Fire Stations	X
Pearces Mill Volunteer Fire Department, Inc.	168 Dedication Drive	Unincorporated Area	28306	Cumberland	-	Fire Stations	X
Spring Lake Fire Department	2355 Lillington Hwy	Unincorporated Area	28390	Cumberland	-	Fire Stations	X
Stoney Point Fire Department, Inc.	2190 Lake Upchurch Rd	Unincorporated Area	28371	Cumberland	-	Fire Stations	X
Vander Volunteer Fire Department, Inc.	3509 Clinton Rd	Unincorporated Area	28312	Cumberland	-	Fire Stations	X
Vander Volunteer Fire Department, Inc.	4960 Tabor Church Rd	Unincorporated Area	28312	Cumberland	-	Fire Stations	X
Westarea Volunteer Fire Department, Inc.	6789 Ramsey St.	Unincorporated Area	28311	Cumberland	-	Fire Stations	X
North Carolina Division of Forest Resources - District Six	221 Airport Road	Unincorporated Area	28306	Cumberland	Park Police	Law Enforcement	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Preferred Alternatives, Inc.	224 Elizabethtown Road	Unincorporated Area	28306	Cumberland	Home Care	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Ashton W. Lilly Home	560 Wilkes Road	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Crossroads Treatment Facility	573 Christmasberry Court	Unincorporated Area	28301	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Eutsler Residential Treatment Facility	3271 Coleman Road	Unincorporated Area	28301	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
New Vision Group Home	3002 Brinkley Road	Unincorporated Area	28390	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Pat Reese Fellowship Home	560 Wilkes Road	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Shelton Norris Hall	560 Wilkes Road	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Wilmington Road Group Home	800 Wilmington Road	Unincorporated Area	28304	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
YCT (You Can Too) #2	2205 Clinton Road	Unincorporated Area	28301	Cumberland	Mental Health Homes	Medical Facilities	0.2 PCT Annual Chance Flood Hazard
Forest Hill Group Home	3510 Camden Road	Unincorporated Area	28306	Cumberland	Family Care	Medical Facilities	X
Graceland Manor	1720 Shaw Road	Unincorporated Area	28303	Cumberland	Family Care	Medical Facilities	X
Apria Healthcare, Inc.	4859 Cumberland Road	Unincorporated Area	28306	Cumberland	Home Care	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Agnes Adcox Home #1	6360 Nc Hwy 87 South	Unincorporated Area	28306	Cumberland	Home for the Aged	Medical Facilities	X
Countryside Villa	8100 Dunn Road	Unincorporated Area	28395	Cumberland	Home for the Aged	Medical Facilities	X
Forest Hills Rest Home	3522 Camden Road	Unincorporated Area	28306	Cumberland	Home for the Aged	Medical Facilities	X
Hillside Rest Home	2521 Muriel Drive	Unincorporated Area	28306	Cumberland	Home for the Aged	Medical Facilities	X
Hope Mills Retirement Center	4217 Elk Road	Unincorporated Area	28348	Cumberland	Home for the Aged	Medical Facilities	X
Algood Home	791 Algood Avenue	Unincorporated Area	28348	Cumberland	Mental Health Homes	Medical Facilities	X
Ashton Home for Children	4224 Forestview Drive	Unincorporated Area	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Boahn Therapeutic Home	3338 Clemson Drive	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Boys 2 Men Residential Facility	122 Nantahala Drive	Unincorporated Area	28356	Cumberland	Mental Health Homes	Medical Facilities	X
Bridge's Home	8492 Cedar Creek Road	Unincorporated Area	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Brothers Helping Brothers	8619 Tangletree Drive	Unincorporated Area	28356	Cumberland	Mental Health Homes	Medical Facilities	X
Building Joy in Heatlhcare	2305 Cleveland Avenue	Unincorporated Area	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Carter Therapeutic Home	4318 Black Ridge Road	Unincorporated Area	28371	Cumberland	Mental Health Homes	Medical Facilities	X
Catherine Kirk Therapeutic Home	4635 Kirk Shaw Road	Unincorporated Area	28348	Cumberland	Mental Health Homes	Medical Facilities	X
Changing Lifestyles	2310 Enloe Street	Unincorporated Area	28304	Cumberland	Mental Health Homes	Medical Facilities	X
Daniels Therapeutic Home	2204 Rustic Trail	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Davis Home	310 Interchange Drive	Unincorporated Area	28311	Cumberland	Mental Health Homes	Medical Facilities	X
El Elyon Care Services	5315 Parkton Road	Unincorporated Area	28348	Cumberland	Mental Health Homes	Medical Facilities	X
Elliott's Care Home #2	305 Longhill Drive	Unincorporated Area	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Elliott's Care Inc./Group Home #1	445 Slocomb Road	Unincorporated Area	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Elms Assisted Living Inc.	3905 Dolittle Road	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Fergie's Behavioral Center	2605 Keats Place	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Guardian Services	4486 Cumberland Road	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Healthplus Therapeutic Services Inc.	746 Appalachin Drive	Unincorporated Area	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Ingram Home	4661 Pennystone Drive	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Johnson Therapeutic Home	5712 Prospector Ct.	Unincorporated Area	28348	Cumberland	Mental Health Homes	Medical Facilities	X
Jomet Company	4712 Dominion Road	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Jones Group Home #1	4055 Dudley Road	Unincorporated Area	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Jones Therapeutic Home	4620 Esteem Court	Unincorporated Area	28348	Cumberland	Mental Health Homes	Medical Facilities	X
Kelly Hills Home for Children	173 Bethune Drive	Unincorporated Area	28311	Cumberland	Mental Health Homes	Medical Facilities	X
Kinder Home	2469 Culbreth Road	Unincorporated Area	28314	Cumberland	Mental Health Homes	Medical Facilities	X
King Therapeutic Home	129 Wild Horse Road	Unincorporated Area	28356	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Motley Therapeutic Home	8205 Ramsey Street	Unincorporated Area	28356	Cumberland	Mental Health Homes	Medical Facilities	X
Neal/Peterson Therapeutic Home	6840 Thames Drive	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
New Beginnings Group Home	1017 Appalachin Drive	Unincorporated Area	28311	Cumberland	Mental Health Homes	Medical Facilities	X
New Bethel Group Home	7471 Ramsey Street	Unincorporated Area	28311	Cumberland	Mental Health Homes	Medical Facilities	X
New Faith Group Home	1542 Colonial Park Drive	Unincorporated Area	28311	Cumberland	Mental Health Homes	Medical Facilities	X
No Place Like Home	4309 Nc Hwy 87 South	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Odessa Services for Children and Adolescents	4050 Doc Bennett Road	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Open Arms	3413 Sanderosa Road	Unincorporated Area	28301	Cumberland	Mental Health Homes	Medical Facilities	X
Potters House Deliverance Center	2639 Dumbarton Road	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Professional Family Care Home	6324 Stoney Point Loop	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Ralm III	4702 Dominion Road	Unincorporated Area	28306	Cumberland	Mental Health Homes	Medical Facilities	X
Rittenhouse Home	4826 Miranda Drive	Unincorporated Area	28348	Cumberland	Mental Health Homes	Medical Facilities	X
Seymore Home	133 Buie Road	Unincorporated Area	28356	Cumberland	Mental Health Homes	Medical Facilities	X
Skipper Home	9681 Giles Road	Unincorporated Area	28356	Cumberland	Mental Health Homes	Medical Facilities	X
Wings of Angels	901 Buck Nell Road	Unincorporated Area	28311	Cumberland	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Carolina Health Care Center of Cumberland County, L	4600 Cumberland Road	Unincorporated Area	28301	Cumberland	Nursing Home Facility	Medical Facilities	X
Flaming Sword Christian Academy	3230 Legion Rd	Unincorporated Area	28348	Cumberland	-	Non-Public Schools	X
Liberty Christian Academy	6548 Rockfish Road	Unincorporated Area	28306	Cumberland	-	Non-Public Schools	X
Northview Baptist Academy	7459 Ramsey Street	Unincorporated Area	28311	Cumberland	-	Non-Public Schools	X
PH&L Academy	620 Rainforest Rd	Unincorporated Area	28348	Cumberland	-	Non-Public Schools	X
East Regional Branch Library	4809 Clinton Road	Unincorporated Area	28314	Cumberland	Branch	Public Library	X
Beaver Dam Elementary	12059 Hwy 210 S	Unincorporated Area	28382	Cumberland	Regular School	Public Schools	X
Raleigh Road Elementary	8330 Ramsey Street	Unincorporated Area	28356	Cumberland	Regular School	Public Schools	X
J W Seabrook Elementary	4619 Nc Hwy 210 South	Unincorporated Area	28301	Cumberland	Regular School	Public Schools	X
District No 7 Elementary	5721 Smithfield Road	Unincorporated Area	28395	Cumberland	Regular School	Public Schools	X
Sunnyside Elementary	3876 Sunnyside School Road	Unincorporated Area	28312	Cumberland	Regular School	Public Schools	X
Mac Williams Middle	4644 Clinton Road	Unincorporated Area	28312	Cumberland	Regular School	Public Schools	X
E Melvin Honeycutt Elementary	4665 Lakewood Drive	Unincorporated Area	28306	Cumberland	Regular School	Public Schools	X
Cape Fear High	4762 Clinton Road	Unincorporated Area	28301	Cumberland	Regular School	Public Schools	X
Elizabeth M Cashwell Elementary	2970 Legion Road	Unincorporated Area	28306	Cumberland	Regular School	Public Schools	X
Howard L Hall Elementary	526 Andrews Road	Unincorporated Area	28311	Cumberland	Regular School	Public Schools	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Pine Forest Middle	6901 Ramsey Street	Unincorporated Area	28311	Cumberland	Regular School	Public Schools	X
Pine Forest High	525 Andrews Road	Unincorporated Area	28311	Cumberland	Regular School	Public Schools	X
John R Griffin Middle	5551 Fisher Road	Unincorporated Area	28304	Cumberland	Regular School	Public Schools	X
Jack Britt High	7403 Rockfish Road	Unincorporated Area	28306	Cumberland	Regular School	Public Schools	X
Stoney Point Elementary	7411 Rockfish Road	Unincorporated Area	28306	Cumberland	Regular School	Public Schools	X
Gray's Creek Middle	5151 Celebration Drive	Unincorporated Area	28348	Cumberland	Regular School	Public Schools	X
Alderman Road Elementary	2860 Alderman Road	Unincorporated Area	28306	Cumberland	Regular School	Public Schools	X
Gallberry Farm Elementary	8019 Byerly Drive	Unincorporated Area	28348	Cumberland	Regular School	Public Schools	X
Gray's Creek High	5301 Celebration Drive	Unincorporated Area	28348	Cumberland	Regular School	Public Schools	X
Gray's Creek Elementary	2964 School Rd	Unincorporated Area	28348	Cumberland	Regular School	Public Schools	X
North Raeford Fire Department Incorporated	1106 Turnpike Road	Raeford	28376	Hoke	Ambulance and Fire Service Combined	EMS	X
Hoke County Rescue Squad	112 Adams Street	Raeford	28376	Hoke	Rescue Services, Medical	EMS	X
Hoke County Emergency Management	423 E Central Ave	Raeford	28376	Hoke	Emergency Planning and Management Offices, Government	EOC	X
Raeford Fire Department	415 East Prospect Ave	Raeford	28376	Hoke	-	Fire Stations	X
City of Raeford Police Department	315 North Main Street	Raeford	28376	Hoke	Police Departments (Except American Indian or Alaska Native)	Law Enforcement	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Hoke County Fire Marshal	429 East Central Avenue	Raeford	28376	Hoke	Fire Marshals' Offices	Law Enforcement	X
Hoke County Sheriffs Department	429 East Central Avenue	Raeford	28376	Hoke	Sheriffs' Offices (Except Court Functions Only)	Law Enforcement	X
Firsthealth of the Carolinas Cardiac Rehab-Raeford	313 Teal Drive, Suite 100	Raeford	28376	Hoke	Cardiac Rehabilitation	Medical Facilities	X
Carrieing Home Health Care, Inc.	1410 Farwell Drive	Raeford	28304	Hoke	Home Care	Medical Facilities	X
Healthcare Connections Home Care	109 Elwood Avenue	Raeford	28376	Hoke	Home Care	Medical Facilities	X
Healthkeeperz	P. O. Box 29	Raeford	28376	Hoke	Home Care	Medical Facilities	X
Interim Healthcare	321 N Main St	Raeford	28376	Hoke	Home Care	Medical Facilities	X
Liberty Home Care	336 South Main Street	Raeford	28376	Hoke	Home Care	Medical Facilities	X
National Senior Living of Raeford	110 Campus Avenue	Raeford	28376	Hoke	Home for the Aged	Medical Facilities	X
Carolina Hospice & Palliative Care	336 South Main Street	Raeford	28376	Hoke	Hospice	Medical Facilities	X
CHC of Hoke County Group Home	400 West 8th Street	Raeford	28376	Hoke	Mental Health Homes	Medical Facilities	X
Cherry Therapeutic Home	506 College Drive	Raeford	28376	Hoke	Mental Health Homes	Medical Facilities	X
Hoke County Group Home #1	228 East Franklin St.	Raeford	28379	Hoke	Mental Health Homes	Medical Facilities	X
Hoke County Group Home #2	228 East Franklin Street	Raeford	28379	Hoke	Mental Health Homes	Medical Facilities	X
Mcrae Therapeutic Home	109 Cole Avenue	Raeford	28376	Hoke	Mental Health Homes	Medical Facilities	X
Monroe Home	802 Saunders Street	Raeford	28376	Hoke	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Old Farm Road	2248 Wingate Road	Raeford	28304	Hoke	Mental Health Homes	Medical Facilities	X
Prospect Avenue Group Home	163 New Hampshire Avenue	Raeford	28387	Hoke	Mental Health Homes	Medical Facilities	X
Sandhills Center for Mental Health-Hoke Unit	121 E. Elwood Avenue	Raeford	28376	Hoke	Mental Health Homes	Medical Facilities	X
The Reaves House	106 Reaves Street	Raeford	28376	Hoke	Mental Health Homes	Medical Facilities	X
Autumn Care of Raeford	1206 North Fulton Street	Raeford	28376	Hoke	Nursing Home Facility	Medical Facilities	X
Canyon Hills Treatment Facility Academy	769 Aberdeen Road	Raeford	28376	Hoke	-	Non-Public Schools	X
Hope Gardens Treatment Center	1958 Turnpike Road	Raeford	28376	Hoke	-	Non-Public Schools	X
Silver Linings Treatment Center	1892 Turnpike Rd	Raeford	28376	Hoke	-	Non-Public Schools	X
Hoke County Public Library	334 N. Main Street	Raeford	28376	Hoke	Branch	Public Library	X
West Hoke Middle	200 Nc 211 W	Raeford	28376	Hoke	Regular School	Public Schools	X
Hoke County High	505 S Bethel Road	Raeford	28376	Hoke	Regular School	Public Schools	X
J W Mclauchlin Elementary	326 N Main St	Raeford	28376	Hoke	Regular School	Public Schools	X
J W Turlington	116 W Prospect Ave	Raeford	28376	Hoke	Alternative Education	Public Schools	X
Upchurch Elementary	730 Turnpike Road	Raeford	28376	Hoke	Regular School	Public Schools	X
Sandhoke Early College High	1110 East Central Avenue	Raeford	28376	Hoke	Regular School	Public Schools	X
West Hoke Fire Department Incorporated	6650 Turnpike Road	Unincorporated Area	28376	Hoke	Ambulance and Fire Service Combined	EMS	X
Tylertown Fire Department	2214 Doc Brown Road	Unincorporated Area	28376	Hoke	Ambulance and Fire Service Combined	EMS	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Puppy Creek Fire Department Incorporated	440 Pittman Grove Church Road	Unincorporated Area	28376	Hoke	Ambulance and Fire Service Combined	EMS	X
Antioch Volunteer Fire Department Incorporated	6931 Red Springs Road	Unincorporated Area	28377	Hoke	Ambulance and Fire Service Combined	EMS	X
Hillcrest Fire Department	2909 United States Highway 401 Business	Unincorporated Area	28376	Hoke	Ambulance and Fire Service Combined	EMS	X
Stonewall Rural Fire Department Incorporated	5569 Saint Pauls Road	Unincorporated Area	28386	Hoke	Ambulance and Fire Service Combined	EMS	X
Hoke County Rescue Squad Substation - Pine Hill Fire Department	6390 Calloway Road	Unincorporated Area	28315	Hoke	Fire and Rescue Service	EMS	X
Rockfish Fire Department	7600 Phillippi Church Road	Unincorporated Area	28376	Hoke	Ambulance and Fire Service Combined	EMS	X
Hillcrest Fire Department	2909 Hwy 401 Bus	Unincorporated Area	28376	Hoke	-	Fire Stations	X
North Raeford Fire Department, Inc.	1106 Turnpike Rd	Unincorporated Area	28376	Hoke	-	Fire Stations	X
Pine Hill Fire Department, Inc.	2685 Ashemont Rd	Unincorporated Area	28315	Hoke	-	Fire Stations	X
Puppy Creek Fire Department, Inc.	445 Pittman Grove Church Rd	Unincorporated Area	28376	Hoke	-	Fire Stations	X
Rockfish Fire Department, Inc.	7600 Philippi Church Rd	Unincorporated Area	28376	Hoke	-	Fire Stations	X
South Antioch Volunteer Fire Department, Inc.	6931 Red Springs Rd	Unincorporated Area	28377	Hoke	-	Fire Stations	X
Stonewall Rural Fire Department, Inc.	5569 St. Pauls Rd	Unincorporated Area	28386	Hoke	-	Fire Stations	X
Tylertown Fire Department, Inc.	2214 Doc Brown Rd	Unincorporated Area	28376	Hoke	-	Fire Stations	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
West Hoke Fire Department, Inc.	6650 Turnpike Rd	Unincorporated Area	28376	Hoke	-	Fire Stations	X
401 Group Home	4155 Ferncreek Dr. Ste. 201	Unincorporated Area	28314	Hoke	Mental Health Homes	Medical Facilities	X
A Home Away From Home	PO Box 274	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Bethune Home	4155 Ferncreek Drive	Unincorporated Area	28314	Hoke	Mental Health Homes	Medical Facilities	X
Centipede Lane	PO Box 44105	Unincorporated Area	28309	Hoke	Mental Health Homes	Medical Facilities	X
Christian Therapeutic Home	4600 New Bern Avenue	Unincorporated Area	27610	Hoke	Mental Health Homes	Medical Facilities	X
Concordia Group Home #1	PO Box 26108	Unincorporated Area	28314	Hoke	Mental Health Homes	Medical Facilities	X
Core Therapeutic Home	196 Crosswinds Drive	Unincorporated Area	28373	Hoke	Mental Health Homes	Medical Facilities	X
Dockery Therapeutic Home	PO Box 634	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Faison Home	242 Major Evans Rd.	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Galberth Home	109 Cumberland Avenue	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Graham Therapeutic Home	8260 Arabia Rd.	Unincorporated Area	28357	Hoke	Mental Health Homes	Medical Facilities	X
Great Expectations at Darby	PO Box 40353	Unincorporated Area	28309	Hoke	Mental Health Homes	Medical Facilities	X
Guide Right, Inc.	314 Doc Brown Road	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
King Therapeutic Home	P.O. Box 963	Unincorporated Area	28359	Hoke	Mental Health Homes	Medical Facilities	X
Life More Abundantly, Inc.	4372 Cameo Court	Unincorporated Area	28311	Hoke	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Lloyd Home	416 Dunrobin Drive	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Lots of Love	481 Dockery Road	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Lots of Love Group Home #2	481 Dockery Road	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Love's Home	4298 Turnpike Road	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Mcintyre Home	7070 Rockfish Road	Unincorporated Area	28358	Hoke	Mental Health Homes	Medical Facilities	X
Mclauchlin Home	481 Dockery Road	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Mclaughlin Home	675 Dockery Road	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Mclean Therapeutic Home	4779 Blue Spring Rd.	Unincorporated Area	28377	Hoke	Mental Health Homes	Medical Facilities	X
Mcphatter Home	109 Cumberland Ave.	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
New Voice Group Home	PO Box 70823	Unincorporated Area	28307	Hoke	Mental Health Homes	Medical Facilities	X
Palama House	3268 Lindsay Road	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Purcell Therapeutic Home	160-J Pinehurst Avenue	Unincorporated Area	28387	Hoke	Mental Health Homes	Medical Facilities	X
Sinclair Therapeutic Home	595 N Duffie Rd.	Unincorporated Area	28377	Hoke	Mental Health Homes	Medical Facilities	X
Southerland Home	635 Vass Rd.	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Sparrow Drive	305 Sparrow Drive	Unincorporated Area	28306	Hoke	Mental Health Homes	Medical Facilities	X
Tanner's Loving Care	294 Greentree Drive	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X

Facility Name	Address	Jurisdiction	Zip Code	County	Facility Type Description	Type	Flood Hazard Zone
Vocational Options of Hoke County	P.O. Box 1187	Unincorporated Area	28376	Hoke	Mental Health Homes	Medical Facilities	X
Carr Preparatory Academy	7110 Fayetteville Rd	Unincorporated Area	28376	Hoke	-	Non-Public Schools	X
Delight Christian Academy	506 Doc Brown Road	Unincorporated Area	28376	Hoke	-	Non-Public Schools	X
Dominion Christian Academy	8332 Fayetteville Road	Unincorporated Area	28376	Hoke	-	Non-Public Schools	X
Precious Haven Learning Academy	181 Bostic Road	Unincorporated Area	28376	Hoke	-	Non-Public Schools	X
Rockfish Country Kids	2456 Lindsay Road	Unincorporated Area	28376	Hoke	-	Non-Public Schools	X
Rockfish Christian Academy	7604 Rockfish Rd	Unincorporated Area	28376	Hoke	-	Non-Public Schools	X
Sandy Grove Christian Academy	6800 Arabia Rd.	Unincorporated Area	28357	Hoke	-	Non-Public Schools	X
Hawk Eye Elementary	4321 Old Maxton Road	Unincorporated Area	28377	Hoke	Regular School	Public Schools	X
East Hoke Middle	4702 Fayetteville Rd	Unincorporated Area	28376	Hoke	Regular School	Public Schools	X
Scurlock Elementary	775 Rockfish Rd	Unincorporated Area	28376	Hoke	Regular School	Public Schools	X
West Hoke Elementary	6050 Turnpike Road	Unincorporated Area	28376	Hoke	Regular School	Public Schools	X
Rockfish Hoke Elementary	6251 Rockfish Rd	Unincorporated Area	28376	Hoke	Regular School	Public Schools	X
Sandy Grove Elementary	8452 North Old Wire Road	Unincorporated Area	28357	Hoke	Regular School	Public Schools	X
Don D Steed Elementary	800 Phillipi Church Rd	Unincorporated Area	28376	Hoke	Regular School	Public Schools	X

APPENDIX E: NFIP INFORMATION

Table E-1: Summary of Identified Flood Ordinances in the Cumberland-Hoke Region

Jurisdiction	Participates in the NFIP?	Jurisdiction-Specific Ordinance or Resolution to Adopt the County's Ordinance?	Documented Interlocal Agreement with County?	Most Recent Adoption/Update
Cumberland County	**Yes**	**County Ordinance**	**NA**	**1/20/2026**
Eastover	Yes	Resolution to Adopt County Ordinance	Yes	2/7/2008 (Agreement)
Falcon	Yes	Resolution to Adopt County Ordinance	Yes	10/18/2006 (Agreement)
Fayetteville	Yes	Jurisdiction-Specific Ordinance	NA	10/23/2006
Godwin	Yes	Resolution to Adopt County Ordinance	Yes	5/15/2000 (Agreement)
Hope Mills	Yes	Jurisdiction-Specific Ordinance	NA	12/18/2006
Linden	Yes	Resolution to Adopt County Ordinance	Yes	8/15/2000 (Agreement)
Spring Lake	Yes	Jurisdiction-Specific Ordinance	NA	1/8/2007
Stedman	Yes	Resolution to Adopt County Ordinance	Yes	6/5/2000 (Agreement)
Wade	Yes	Resolution to Adopt County Ordinance	Yes	4/11/2000 (Agreement)
Hoke County	**Yes**	**County Ordinance**	**NA**	**7/2025**
Raeford	Yes	Jurisdiction-Specific Ordinance	NA	11/2021

Table E-2: Summarized Flood Ordinances and NFIP/CRS Information, Including Substantial Damage and Substantial Improvement Procedures

Jurisdiction	Floodplain Management & NFIP Administration
Cumberland County	1) The ordinance assigns responsibility for floodplain management to the Director of Planning and Inspections, who is designated as the Floodplain Administrator and is charged with administering and implementing all provisions of the Flood Damage Prevention chapter. This includes provisions for substantial improvement and substantial damage. 2) Cumberland County implements its substantial improvement and substantial damage provisions by requiring the Floodplain Administrator to evaluate all proposed repairs, reconstructions, additions, and improvements against the ordinance's formal definitions. The ordinance specifies that a structure is substantially improved when the cost of work within any one-year period equals or exceeds 50 percent of the structure's market value. Further, it applies a cumulative ten-year provision that requires the Floodplain Administrator to total all improvements made over a rolling ten-year window to determine whether the 50-percent threshold has been met. For substantial damage, the ordinance requires comparing the cost to restore a structure to its pre-damage condition with its pre-event market value. If that cost exceeds 50 percent, the structure must be fully compliant with all requirements for new construction, regardless of the repair scope. After a flood, the same definitions apply, meaning the Floodplain Administrator must review damage assessments, confirm market values, evaluate cost estimates, and require that the structure be elevated or floodproofed to the Regulatory Flood Protection Elevation before any repair permit may be finalized. All such determinations are tied directly to the development permitting process, and no structure may receive a certificate of compliance until the substantial improvement or substantial damage requirements have been fully met. 3) The ordinance meets, and in some cases, exceeds state minimum requirements by adopting cumulative substantial improvement over a ten-year period. It also applies a two-foot freeboard, incorporates detailed certification requirements for elevation and floodproofing, and requires engineering analysis for any encroachments in floodways or non-encroachment areas. Additionally, the ordinance applies the "more stringent restriction prevails" rule, ensuring that the highest standard governs development where regulations overlap. 4) Before any development occurs in the Special Flood Hazard Area, applicants must submit a floodplain development application to the Floodplain Administrator containing a detailed plot plan, elevation information, utility protection plans, foundation details, certifications, and descriptions of any proposed

	watercourse alterations. The Floodplain Administrator reviews the information to ensure compliance with all regulatory requirements, including floodway and non-encroachment restrictions, and issues a development permit containing specific regulatory flood protection elevation requirements and certification timelines. Elevation certificates must be submitted and approved both during and after construction before a certificate of compliance or occupancy can be issued. 5) Compliance is monitored through on-site inspections, review of mandatory elevation and floodproofing certifications, and recordkeeping responsibilities held by the Floodplain Administrator, who is authorized to enter premises at reasonable hours to ensure work is performed according to permit conditions. Enforcement includes issuing stop-work orders, revoking permits, conducting corrective action proceedings, and holding hearings that may result in orders to alter, vacate, or demolish structures. Violations of the ordinance are classified as misdemeanors, punishable by fines or imprisonment, and each day a violation continues is treated as a separate offense. 6) Cumberland County has no (identified) outstanding compliance issues with the National Flood Insurance Program (NFIP). 7) Cumberland County joined the Community Rating System (CRS) on 10/01/1996. The County currently has a CRS class of 8 (effective date: 10/01/2010), meaning residents in the unincorporated areas of Cumberland County receive a 10% discount on their NFIP premiums. According to FEMA's CRS Communities Credit File (2025), Cumberland County receives points towards its overall CRS class through implementing the following activities: • Construction Certificate Management (2020) ○ Maintaining Elevation Certificates for post-FIRM buildings • Map Information Service (2020) ○ Providing basic information found on a Flood Insurance Rate Map (FIRM) that is needed to write a flood insurance policy. ○ Providing information that is shown on most FIRMs, such as protected coastal barriers, floodways, or lines demarcating wave action. ○ Providing information about flood depths ○ Providing information about past flooding at or near the site in question • Outreach Projects (2020)

	• Hazard Disclosures (2020)
	  ○ Enforce two methods of disclosure required by law or ordinance
	• Flood Protection Information (2020)
	  ○ Has a state publication instead of the FEMA version, cataloged and available in the County's public library
	  ○ Has seven locally pertinent documents cataloged in the County's public library
	  ○ Provides flood protection information via the County's website
	• Open Space Preservation (2020)
	  ○ Regulations that allow cluster development through a planned unit development (PUD) or otherwise
	  ○ County's land use plan recommends open space use or low-density development of flood-prone areas
	• Higher Regulatory Standards (2020)
	  ○ Adopted regulations that allow hazardous materials to be stored indoors in the floodplain, but must be elevated above the base flood elevation
	  ○ Adopted regulations that require improvements, modifications, and additions to existing buildings to be counted cumulatively for at least 10 years
	  ○ Adopted regulations that require reconstruction and repairs to damaged buildings to be counted cumulatively for at least 10 years
	  ○ Adopted regulatory language that qualifies properties for Increased Cost of Compliance insurance coverage for repetitive losses (regulatory language that qualifies properties for ICC coverage for repetitive losses)
	  ○ Adopted current editions of some International Building Code Chapters
	  ○ Building Code Effectiveness Grading Schedule (BCEGS) classification of 4/4
	  ○ Adopted local drainage protection regulations that require the applicant to provide positive drainage away from the building site.
	  ○ All proposed development projects in the floodplain and all final inspections and project approvals are reviewed and approved by a Certified Floodplain Manager

	(CFM). No new floodplain development project is used or occupied without the review and approval of a CFM.
	• Flood Data Maintenance (2020)
	  ○ Maintain digital or other systems that improve access, quality, and/or ease of updating flood and FIRM data.
	  ○ There are three Continuously Operating Reference Stations (CORS) that provide Global Navigation Satellite System data in support of three-dimensional positioning and geophysical applications within 30 miles (50 km) of the credited portion of the County's Special Flood Hazard Area (SFHA).
	• Stormwater Management (2020)
	  ○ Adopted erosion and sediment control regulations that control erosion and soil loss from any disturbed land greater than one acre.
	  ○ Adopted stormwater management regulations that require new developments of one acre or more to include in the design of their stormwater management facilities appropriate "best management practices" that will improve the quality of surface water.
	• Floodplain Management Planning (2020)
	  ○ Maintain a community-wide floodplain management plan that was prepared by following a standard planning process.
	  ○ See Appendix J for more details on the Community Rating System's 10-Step Planning Process applied to this RHMP update.
	• Natural Floodplain Functions Plan (2020)
	  ○ Maintain a single comprehensive inventory of the natural floodplain habitat within the community. It identifies areas that warrant protection or preservation to maintain a fully functioning habitat for the species of interest. It also identifies whether threatened or endangered species are present and addresses each species. A restoration plan is also included.
	• Dams (2020)
	  ○ The State Dam Safety Program credit earned by the state dam safety office is provided to all communities (including Cumberland County) that would be affected by a

	flood from the failure of a high-hazard-potential dam and meet state dam safety standards. This is documented with a description and a map.
Fayetteville	1) Fayetteville's ordinance designates the Inspection Director, or designee, as the Floodplain Administrator. This individual is formally appointed to administer and implement all provisions of the flood damage prevention chapter on behalf of the City of Fayetteville, including oversight of floodplain development, permitting, inspections, and coordination required to maintain compliance with the National Flood Insurance Program. 2) The Floodplain Administrator, identified as the Inspection Director or designee, is responsible for making substantial damage and substantial improvement determinations. The ordinance assigns this responsibility as part of the administrator's duty to review floodplain development applications, evaluate existing structures, obtain and review elevation data, and determine whether proposed work or flood-related repairs trigger compliance with substantial improvement or substantial damage standards. 3) Fayetteville implements substantial improvement and substantial damage provisions by evaluating the cost of repairs, reconstruction, rehabilitation, additions, or other improvements to a structure over any one-year period and comparing that cost to the structure's market value before the start of construction or before flood damage. If the cost equals or exceeds 50 percent of the market value, the work is classified as a substantial improvement or repair of substantial damage. Structures that have incurred substantial damage are treated as substantial improvements regardless of the scope of repairs. Following flood events, damaged structures may only be repaired or reconstructed if they are brought into full compliance with current flood hazard reduction standards, including elevation of the reference level to the Regulatory Flood Protection Elevation, flood-resistant construction methods, anchoring requirements, and protection of utilities, before a certificate of compliance or occupancy may be issued. 4) Fayetteville's ordinance meets, and in some cases, exceeds minimum requirements by establishing a Regulatory Flood Protection Elevation equal to the Base Flood Elevation plus two (2) feet of freeboard, or two feet above the highest adjacent grade where no Base Flood Elevation is available. The ordinance also strictly regulates floodways and non-encroachment areas by prohibiting encroachments unless certified hydrologic and hydraulic analyses demonstrate that flood levels will not increase during the base flood. In addition, it requires elevation or floodproofing of structures and utilities to the regulatory elevation and applies cumulative floodplain standards where more restrictive provisions govern.

	5) Fayetteville requires a floodplain development permit before any development activity occurs within a Special Flood Hazard Area. Applicants must submit detailed documentation to the Floodplain Administrator, including scaled plot plans showing flood zones and floodways, Base Flood Elevation data, proposed reference level elevations, foundation designs, utility protection measures, and copies of all required local, state, and federal permits. Permits specify required Regulatory Flood Protection Elevations, floodway restrictions, certification submittal timelines, and limitations on below-elevation enclosures. Elevation and floodproofing certifications are required before construction and again after construction is completed, and deficiencies must be corrected before occupancy approval is granted. 6) Compliance is monitored through mandatory recordkeeping, review of elevation and floodproofing certifications, and on-site inspections conducted by the Floodplain Administrator, who is authorized to enter properties at reasonable hours. The ordinance establishes formal corrective procedures that include written notices of violation, hearings, and written orders requiring corrective action within specified timeframes. Enforcement mechanisms include stop-work orders, permit revocation, orders to alter, vacate, or demolish structures, or to remove fill, and criminal penalties, with each day a violation continues treated as a separate offense. 7) Fayetteville has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Fayetteville does not participate in the Community Rating System.
Eastover	1) Eastover has adopted Cumberland County's Flood Damage Prevention Ordinance and relies on the County's assistance for administration of its floodplain management regulations. Please see Cumberland County's entry for more details. 2) Eastover has no (identified) outstanding compliance issues with the National Flood Insurance Program. 3) Eastover does not participate in the Community Rating System.
Falcon	1) Falcon has adopted Cumberland County's Flood Damage Prevention Ordinance and relies on the County's assistance for administration of its floodplain management regulations. Please see Cumberland County's entry for more details. 2) Falcon has no (identified) outstanding compliance issues with the National Flood Insurance Program. 3) Falcon does not participate in the Community Rating System.

Godwin	1) Godwin has adopted Cumberland County's Flood Damage Prevention Ordinance and relies on the County's assistance for administration of its floodplain management regulations. Please see Cumberland County's entry for more details. 2) There is no mapped Special Flood Hazard Area in the municipal boundaries of Godwin. 3) Godwin has no (identified) outstanding compliance issues with the National Flood Insurance Program. 4) Godwin does not participate in the Community Rating System.
Hope Mills	1) Hope Mills' ordinance designates the Town Manager, or the Manager's designee, as the Floodplain Administrator. This individual is formally appointed to administer and implement all provisions of the Flood Damage Prevention ordinance on behalf of the Town of Hope Mills, including permit review, inspections, recordkeeping, and overall coordination to ensure community compliance with the National Flood Insurance Program. 2) The Floodplain Administrator, identified as the Town Manager or designee, is responsible for making substantial improvement and substantial damage determinations. The ordinance assigns this responsibility through the administrator's duties to review floodplain development applications, obtain market-value information, evaluate repair and improvement costs, and determine whether proposed work or post-flood repairs meet the ordinance's thresholds for compliance with flood-resistant construction standards. 3) Hope Mills implements substantial improvement and substantial damage provisions by comparing the cost of repairs, reconstruction, rehabilitation, additions, or other improvements to a structure against its market value before the start of construction or prior to the damage occurring. If the cost equals or exceeds 50 percent of the market value during any one-year period, the work is classified as a substantial improvement or repair of substantial damage, and the structure must be brought into full compliance with current floodplain standards. The ordinance specifies that structures that have incurred substantial damage are considered substantial improvements regardless of the actual repair work performed. Following a flood event, damaged structures may only be repaired or reconstructed if the work complies with all flood hazard reduction provisions, including elevation of the reference level to the Regulatory Flood Protection Elevation, flood-resistant construction materials, anchoring requirements, and protection of utilities, before a certificate of compliance or occupancy may be issued. 4) Hope Mills' regulations meet, and in some cases, exceed minimum requirements by establishing a Regulatory Flood Protection Elevation equal to the Base Flood Elevation plus two (2) feet of freeboard in

	areas where Base Flood Elevations are available. The ordinance also strictly regulates floodways and non-encroachment areas by prohibiting encroachments unless certified engineering analyses demonstrate that no increase in flood levels will occur during the base flood. In addition, the ordinance applies cumulative substantial improvement provisions over a ten-year period, requires that utilities be elevated or floodproofed to the regulatory elevation, and mandates that where floodplain regulations conflict with other local requirements, the more restrictive standard prevails. 5) Hope Mills requires a floodplain development permit before the commencement of any development activity within a Special Flood Hazard Area. Applicants must submit detailed materials to the Floodplain Administrator, including scaled plot plans showing floodplain and floodway boundaries, Base Flood Elevation data, proposed reference level elevations, foundation plans, utility protection details, and documentation of all required local, state, and federal permits. Issued permits specify the required Regulatory Flood Protection Elevation, floodway limitations, flood opening requirements, certification submittal timelines, and restrictions on below-elevation enclosures. Elevation or floodproofing certifications must be submitted and approved before a certificate of compliance or occupancy is issued. 6) Compliance is monitored through required recordkeeping, mandatory submission and review of elevation and floodproofing certifications, and on-site inspections conducted by the Floodplain Administrator, who is authorized to enter properties at reasonable hours. The ordinance establishes corrective procedures that include written notices of violation, administrative hearings, and written orders requiring violations to be remedied within specified timeframes. Enforcement mechanisms include stop-work orders, permit revocation, orders to alter, vacate, or demolish structures, or to remove fill, and misdemeanor penalties, with each day a violation continues treated as a separate offense. 7) Hope Mills has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Hope Mills does not participate in the Community Rating System.
Linden	1) Linden has adopted Cumberland County's Flood Damage Prevention Ordinance and relies on the County's assistance for administration of its floodplain management regulations. Please see Cumberland County's entry for more details. 2) There is no mapped Special Flood Hazard Area in the municipal boundaries of Linden. 3) Linden has no (identified) outstanding compliance issues with the National Flood Insurance Program. 4) Linden does not participate in the Community Rating System.

Spring Lake	1) Spring Lake's ordinance explicitly appoints the Town Manager as the Floodplain Administrator. The Town Manager is responsible for administering and implementing all provisions of the flood damage prevention chapter on behalf of the Town of Spring Lake, including oversight of floodplain development, permit review, inspections, and coordination necessary to maintain compliance with the National Flood Insurance Program. 2) The Floodplain Administrator, identified as the Town Manager, is responsible for making substantial damage and substantial improvement determinations. These determinations are part of the administrator's assigned duties to review floodplain development applications, obtain and evaluate market value information, review repair and improvement costs, and determine whether proposed work or post-flood repairs meet the ordinance's thresholds. 3) Spring Lake implements its substantial improvement and substantial damage provisions by comparing the cost of repairs, reconstruction, rehabilitation, additions, or other improvements occurring within any one-year period to the market value of the structure before the damage occurred or before construction began. When the cost equals or exceeds 50 percent of the market value, the work is classified as a substantial improvement or repair of a substantially damaged structure. Structures that have incurred substantial damage are automatically treated as substantial improvements regardless of the scope of the proposed repairs. Following a flood event, damaged structures may only be repaired or reconstructed if the entire structure is brought into compliance with current floodplain standards, including elevation of the reference level to the Regulatory Flood Protection Elevation, use of flood-resistant materials, proper anchoring, and protection of utilities, before issuance of a certificate of compliance or occupancy. 4) Spring Lake's regulations meet, and in some cases, exceed minimum requirements by establishing a Regulatory Flood Protection Elevation equal to the Base Flood Elevation plus two (2) feet of freeboard, or at least two (2) feet above the highest adjacent grade where Base Flood Elevations are not available. The ordinance also imposes strict limitations on development within floodways and non-encroachment areas, prohibiting encroachments unless certified engineering analyses demonstrate that proposed development will not increase flood levels during the base flood. In addition, cumulative standards apply where structures are partially located within Special Flood Hazard Areas, requiring the entire structure to comply with floodplain requirements. 5) Spring Lake requires a floodplain development permit before the commencement of any development activity within a Special Flood Hazard Area. Applicants must submit detailed information to the Floodplain Administrator, including a scaled plot plan, flood zone and floodway boundaries, Base Flood Elevation

	data, proposed reference level elevations, foundation and utility protection details, and copies of all required local, state, and federal permits. Permits specify the required Regulatory Flood Protection Elevation, floodway and non-encroachment restrictions, flood opening requirements, and certification submittal timelines. Final elevation or floodproofing certifications must be reviewed and approved before a certificate of compliance or occupancy may be issued. 6) Compliance is monitored through required recordkeeping, review of elevation and floodproofing certifications, and on-site inspections conducted by the Floodplain Administrator, who is authorized to enter properties at reasonable hours. When violations are identified, the ordinance requires written notification to the property owner, followed by hearings if corrective action is not taken. Enforcement tools include stop-work orders, permit revocation, written orders to alter, vacate, demolish structures, or remove fill, and misdemeanor penalties, with each day a violation continues treated as a separate offense. 7) Spring Lake has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Spring Lake does not participate in the Community Rating System.
Stedman	1) Stedman has adopted Cumberland County's Flood Damage Prevention Ordinance and relies on the County's assistance for administration of its floodplain management regulations. Please see Cumberland County's entry for more details. 2) Stedman has no (identified) outstanding compliance issues with the National Flood Insurance Program. 3) Stedman does not participate in the Community Rating System.
Wade	1) Wade has adopted Cumberland County's Flood Damage Prevention Ordinance and relies on the County's assistance for administration of its floodplain management regulations. Please see Cumberland County's entry for more details. 2) Wade has no (identified) outstanding compliance issues with the National Flood Insurance Program. 3) Wade does not participate in the Community Rating System.
Hoke County	1) Hoke County recognizes the State of North Carolina, through the NCFMP, as the official authority for floodplain mapping and administration within unincorporated areas of the County. The County enforces relevant portions of the Flood Damage Prevention Ordinance as required for participation in the NFIP, but does not designate a local Floodplain Administrator. All inquiries related to base flood elevations,

	flood zones, Letter of Map Changes (LOMCs), and development within flood hazard areas shall be directed to the NCFMP and the FRIS portal. 2) Hoke County implements its substantial improvement and substantial damage provisions by requiring that any alteration, repair, reconstruction, or improvement to a structure comply with the same standards as new construction when those actions meet the ordinance's criteria. The ordinance specifies that alterations or improvements to structures already in compliance must meet new-construction standards, and that repairs, reconstruction, or replacement of structures located wholly or partially within floodways, non-encroachment areas, or stream setbacks are only permitted if there is no additional encroachment below the regulatory flood protection elevation and all other ordinance requirements are met. Following flood events, damaged structures may only be repaired or reconstructed if the work complies with all applicable flood hazard reduction provisions, including elevation, anchoring, use of flood-resistant materials, and utility protection, ensuring that post-flood recovery results in structures that meet current floodplain standards. 3) Hoke County's regulations meet, and in some cases, exceed minimum requirements by establishing a Regulatory Flood Protection Elevation that governs elevation and floodproofing standards for residential, non-residential, and manufactured homes, rather than relying solely on Base Flood Elevation. The ordinance also imposes stringent restrictions on development within floodways, non-encroachment areas, and streams without established floodways, including prohibiting encroachments unless certified engineering analyses demonstrate that no increase in flood levels will result. In addition, the ordinance applies enhanced setback and buffer standards in flood-prone areas. It treats its provisions as minimum requirements that must be liberally construed in favor of the governing body, with the more protective standards prevailing in the event of conflict. 4) Hoke County requires a Floodplain Development Permit before the commencement of any development activity within a Special Flood Hazard Area. Applicants must submit a detailed application to the Floodplain Administrator, including a certified plot plan, flood zone and floodway boundaries, Base Flood Elevation data where available, proposed reference level elevations, foundation plans, utility protection details, floodproofing documentation if applicable, and copies of all required local, state, and federal permits. The permit specifies the required regulatory flood protection elevations, certification submittal timelines, flood opening requirements, and restrictions on encroachments. Elevation and floodproofing certifications are required before, during, and after construction, and deficiencies must be corrected before a certificate of compliance or occupancy is issued.

	5) Compliance is monitored through required recordkeeping, mandatory submission and review of elevation and floodproofing certifications, and on-site inspections conducted by the Floodplain Administrator, who is authorized to enter properties at reasonable hours. When violations are identified, the ordinance requires written notice to the property owner and provides for administrative hearings. The Floodplain Administrator may issue written orders requiring corrective action, including alteration, removal of fill, vacating, or demolition of structures when necessary. Failure to comply with corrective orders constitutes a misdemeanor offense, with penalties applied through the court system, and each day a violation continues is treated as a separate offense. 6) Hoke County has no (identified) outstanding compliance issues with the National Flood Insurance Program. 7) Hoke County does not participate in the Community Rating System.
Raeford	1) Raeford's ordinance designates the Ordinance Administrator as the official responsible for administering and implementing the flood damage prevention regulations. The Ordinance Administrator, in coordination with the local Emergency Management Coordinator, acts on behalf of the City of Raeford and is responsible for reviewing floodplain development, administering permits, maintaining records, and overseeing the City's implementation of floodplain management requirements within the corporate limits and extraterritorial jurisdiction. 2) The Ordinance Administrator, in coordination with the local Emergency Management Coordinator, is the same official responsible for administering all floodplain development standards, including those that apply to new construction and substantial improvements. Because the ordinance applies flood hazard reduction standards specifically to substantial improvements and repairs, the Ordinance Administrator is responsible for determining when proposed work or post-flood repairs constitute substantial improvement or substantial damage and therefore trigger full compliance with the ordinance. 3) Raeford implements its substantial improvement and substantial damage provisions by applying flood hazard reduction standards to all new construction and substantial improvements within Special Flood Hazard Areas. Any alteration, repair, reconstruction, or improvement to a structure that meets the ordinance's criteria must be treated as new construction and brought into compliance with current floodplain requirements. Following flood events, damaged structures may be repaired, reconstructed, or replaced only if the work does not create additional encroachment below the Regulatory Flood Protection Elevation in floodways, non-encroachment areas, or stream setbacks and meets all other applicable

	ordinance standards. Where work qualifies as a substantial improvement or repair of substantial damage, the entire structure must comply with elevation, anchoring, flood-resistant construction, and utility protection requirements before redevelopment may proceed. 4) Raeford's regulations meet, and in some cases, exceed minimum requirements by establishing a Regulatory Flood Protection Elevation above the Base Flood Elevation, which governs elevation and floodproofing standards for residential, non-residential, and manufactured homes. The ordinance imposes strict limitations on development in floodways and non-encroachment areas, prohibiting encroachments unless certified engineering analyses demonstrate that no increase in flood levels will occur during the base flood. In areas without established Base Flood Elevations, the ordinance requires conservative stream setbacks and limits encroachments unless engineering certification is provided. Additional enhanced standards apply in shallow flooding areas, where structures must be elevated several feet above the highest adjacent grade, further increasing flood protection. 5) Raeford requires a Floodplain Development Permit before the commencement of any development activity within a Special Flood Hazard Area. Permit applications must be submitted to the Ordinance Administrator and include detailed information, such as flood zone identification, Base Flood Elevation data (where available), proposed structure and utility elevations, foundation details, and documentation that all required federal and state permits have been obtained. The Ordinance Administrator reviews each application to ensure compliance with flood hazard reduction standards, specifies the applicable Regulatory Flood Protection Elevation, and requires professional certifications for elevation or floodproofing as appropriate before allowing construction to proceed or occupancy to be approved. 6) Compliance is monitored through permit review, required professional certifications, and inspection of development activities by the Ordinance Administrator. The ordinance authorizes the City to ensure that development complies with approved permits and floodplain standards and to take corrective action when violations are identified. Enforcement measures include withholding or revoking permits, requiring modifications to bring development into compliance, and preventing the continuation of non-compliant development. These tools allow the City to ensure adherence to floodplain regulations and maintain compliance with floodplain management requirements. 7) Raeford has no (identified) outstanding compliance issues with the National Flood Insurance Program. 8) Raeford does not participate in the Community Rating System.

APPENDIX G: HHPD REPORT

Placeholder left intentionally blank. Will be revised as necessary in the future to support HHPD risk assessment or grant applications.

APPENDIX H: COMPLETED MITIGATION ACTIONS

The following table contains mitigation actions that participating jurisdictions have completed since the last Cumberland-Hoke Regional Hazard Mitigation Plan update (August 2021). 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 August 2021 and November 2025

Jurisdiction	Action Type	Description	Hazard(s) Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Details
Cumberland County	Prevention	Augmented Flood Mapping	Flood, Hurricane	High	Cumberland County Emergency Services	Grants, Local Operating Budget	High	The State implemented the Flood Risk Information System (FRIS), which contains digitally accessible flood hazard data, models, maps, risk assessment, and reports to help homeowners and businesses better prepare for and predict flood risks, a similar goal to this action.
Cumberland County	Natural Resource Protection	Develop a greenway program to protect natural areas along rivers, streams, creeks, and ditches. Provides a buffer from urban encroachment and reduces flooding.	Flooding	High	Cumberland County and Fayetteville/ Cumberland County Parks and Recreation Department	Local Budget	TBD, Staff Hours	Fayetteville-Cumberland County Parks and Recreation adopted a new Center City Parks & Trails Master Plan in December 2020, and it was revised in May 2022. The County itself does not have an adopted greenways and trails master plan.
Cumberland County	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan. To	All Hazards	Low	Sustainable Sandhills and the Planning Department /	Existing FEMA grant	TBD, Staff Hours	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains the North

Jurisdiction	Action Type	Description	Hazard(s) Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Details
		properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) more heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of "mitigation", acknowledge the changing climate and possibility of increased extreme weather and flooding events.			Planning Director for each jurisdiction in Cumberland County			Carolina Climate Risk Assessment and Resilience Plan, last updated in June 2020.
Cumberland County	Emergency Services	Purchase new 911 dispatch technology. Cumberland County consistently seeks new ways to improve its emergency telecommunications system. Future improvements include, but are not limited to, additional 911 consoles and other advanced technologies.	All Hazards	Medium	Cumberland County Emergency Services	Private, State, Local, and Federal Grants	$ 4 Million	On December 14, 2022, Cumberland County Emergency Services moved into a new facility.

Jurisdiction	Action Type	Description	Hazard(s) Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Details
Cumberland County	Property Protection	Relocate the Emergency Operations Center out of the 500-year flood plain. Cumberland County's Emergency Communication Center is in the 500-year flood plain. Cumberland County will continue to seek funding opportunities to support the redevelopment of this critical infrastructure.	All Hazards	Medium	Cumberland County Emergency Services	Local, State, and Federal Grants.	$16 Million	Emergency Services and the Emergency Operations Center (EOC) relocated to a new facility on December 14, 2022.
Eastover	Natural Resource Protection	Develop a greenway program to protect natural areas along rivers, streams, creeks, and ditches. Provides a buffer from urban encroachment and reduces flooding.	Flooding	High	Town of Eastover and Fayetteville/Cumberland County Parks and Recreation Department	Local Operating Budget	Staff Hours	Fayetteville-Cumberland County Parks and Recreation adopted a new Center City Parks & Trails Master Plan in December 2020, and it was revised in May 2022. The County itself does not have an adopted greenways and trails master plan.
Eastover	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan. To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) more heavy	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Staff Hours	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains the North Carolina Climate Risk Assessment and Resilience Plan, last updated in June 2020.

Jurisdiction	Action Type	Description	Hazard(s) Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Details
		rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of “mitigation”, acknowledge the changing climate and possibility of increased extreme weather and flooding events.						
Falcon	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan. To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) more heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	None	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains the North Carolina Climate Risk Assessment and Resilience Plan, last updated in June 2020.

Jurisdiction	Action Type	Description	Hazard(s) Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Details
		for emergency management should, at the very least, and by the very nature of the definition of “mitigation”, acknowledge the changing climate and possibility of increased extreme weather and flooding events.						
Fayetteville	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan. To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) more heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of “mitigation”, acknowledge the changing climate and possibility of increased extreme weather	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Staff Hours	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains the North Carolina Climate Risk Assessment and Resilience Plan, last updated in June 2020.

Jurisdiction	Action Type	Description	Hazard(s) Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Details
		and flooding events. The City is exploring opportunities to implement an Early Warning system to alert the public to flooded roadways or hazardous conditions.						
Godwin	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan. To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) more heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of “mitigation”, acknowledge the changing climate and possibility of increased extreme weather and flooding events.	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Staff Hours	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains the North Carolina Climate Risk Assessment and Resilience Plan, last updated in June 2020.

Jurisdiction	Action Type	Description	Hazard(s) Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Details
Hope Mills	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan. To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) more heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of “mitigation”, acknowledge the changing climate and possibility of increased extreme weather and flooding events.	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Staff Hours	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains the North Carolina Climate Risk Assessment and Resilience Plan, last updated in June 2020.
Linden	Prevention	Develop a zoning ordinance for the Town. A zoning ordinance helps protect the health, safety, and welfare of its citizens and reduces vulnerability to natural hazards.	All Hazards	High	Town of Linden and Cumberland County Planning &	Local Operating Budget	Staff Hours $5,000 - $10,000	Zoning ordinance adopted.

Jurisdiction	Action Type	Description	Hazard(s) Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Details
					Inspections Department			
Linden	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan. To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) more heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of “mitigation”, acknowledge the changing climate and possibility of increased extreme weather and flooding events.	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Staff Hours	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains the North Carolina Climate Risk Assessment and Resilience Plan, last updated in June 2020.
Spring Lake	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan. To	All Hazards	Low	The Planning Department/Planning Director for	Existing FEMA grant	Staff Hours	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains the North

Jurisdiction	Action Type	Description	Hazard(s) Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Details
		properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) more heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of “mitigation”, acknowledge the changing climate and possibility of increased extreme weather and flooding events.			each jurisdiction in Cumberland County			Carolina Climate Risk Assessment and Resilience Plan, last updated in June 2020.
Stedman	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan. To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	Staff Hours	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains the North Carolina Climate Risk Assessment and Resilience Plan, last updated in June 2020.

Jurisdiction	Action Type	Description	Hazard(s) Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Details
		and strength of severe weather events, (3) more heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of “mitigation”, acknowledge the changing climate and possibility of increased extreme weather and flooding events.						
Wade	Prevention	Include climate predictions from the Cumberland County Climate Resiliency Plan in the Regional Hazard Mitigation Plan. To properly prepare for natural hazard occurrences, it is important to include predictions that warn of: (1) increasing temperatures and extreme heat days, (2) increasing frequency and strength of severe weather events, (3) more heavy rain/flooding, and (4) more frequent and prolonged drought. Although some climate projections do not pose an	All Hazards	Low	The Planning Department/Planning Director for each jurisdiction in Cumberland County	Existing FEMA grant	TBD, Staff Hours	The Cumberland County Climate Resiliency Plan was last updated in 2016. The State of North Carolina now maintains the North Carolina Climate Risk Assessment and Resilience Plan, last updated in June 2020.

Jurisdiction	Action Type	Description	Hazard(s) Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Details
		immediate threat, any comprehensive mitigation plan for emergency management should, at the very least, and by the very nature of the definition of “mitigation”, acknowledge the changing climate and possibility of increased extreme weather and flooding events.						
Hoke County	Emergency Services	Upgrade the Emergency Operations Center building. The Emergency Operations Center lacks some structural needs that modern operations centers typically have. Upgrading the building would make sure the center can be used for emergency operations in the event of a natural disaster.	All Hazards	Medium	Hoke County Emergency Management	Local Operating Budget	TBD, Staff Hours	Hoke County Emergency Services now has a fully functioning Emergency Operations Center (EOC) located at our main office at 375 cc Steele Rd, Raeford, NC 28376. This center serves as our primary EOC for localized events within the county and does not require relocation to our previous EOC.

APPENDIX I: Mitigation Action Implementation & Monitoring

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:	

APPENDIX J: CRS 10-STEP PLANNING PROCESS

The 10-Step Planning Process

The planning process for preparing the Cumberland-Hoke Regional Hazard Mitigation Plan was based on the Disaster Mitigation Act (DMA) planning requirements and FEMA's associated guidance. This guidance is structured around a four-phase process:

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

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

Table J-1 shows how the 10-step CRS planning process aligns with the four phases of hazard mitigation planning pursuant to the Disaster Mitigation Act of 2000.

Table J-1: Planning Steps for Mitigation and for the CRS

Phase	Multi-Hazard Mitigation Planning	CRS
Phase I – Planning Process	§201.6(c)(1)	1. Organize
	§201.6(b)(1)	2. Involved the public
	§201.6(b)(2) & (3)	3. Coordinate
Phase II – Risk Assessment	§201.6(c)(2)(i)	4. Assess the hazard
	§201.6(c)(2)(ii) & (iii)	5. Assess the problem
Phase III – Mitigation Strategy	§201.6(c)(3)(i)	6. Set goals
	§201.6(c)(3)(ii)	7. Review possible activities
	§201.6(c)(3)(iii)	8. Draft an action plan
Phase IV – Plan Maintenance	§201.6(c)(5)	9. Adopt the plan
	§201.6(c)(4)	10. Implement, evaluate, revise

Phase I – Planning Process

In alignment with the commitment to participate in the DMA planning process and the CRS, community officials worked to establish the framework and organization for development of the plan. An initial meeting was held with key community representatives to discuss the organizational aspects of the plan development process. The formal HMPC meetings followed the 10 CRS Planning Steps. Meeting agendas, minutes, and sign-in sheets for the HMPC

meetings are included in Appendix B. The meeting dates and topics discussed are summarized in Table J-2 below.

Table J-2: Summary of HMPC Meeting Dates

Meeting Type	Meeting Topic	Meeting Date & Time	Meeting Location
HMPC # (Pre-Kick-Off)	1. Introducing the Cumberland & Hoke County RHMP leaders to the planning process 2. Organizing resources; role of the county RHMP leaders; planning for public involvement; planning schedule; & coordinating with participating municipal jurisdictions, agencies, & other stakeholders.	August 28th, 2025 11:00 am – 11:30 am	Microsoft Teams
HMPC #2 (Regional Kick-Off)	1. Introducing the HMPC to the DMA, CRS & RHMP planning process 2. Organizing resources; the role of the HMPC; planning for public involvement; planning schedule; & coordinating with other agencies & stakeholders	September 25th, 2025 10:30 am – 11:30 am	Microsoft Teams
HMPC #3 (Hazard ID and Risk Assessment)	1. Review & discussion of the Risk Assessment (Assess the Hazards) 2. Review & discussion of the Vulnerability Assessment (Assess the Problem)	October 23rd, 2025 1:30 pm – 2:30 pm	Microsoft Teams
HMPC #4 (Mitigation Action Strategy)	1. Review goals for the existing Cumberland & Hoke RHMP 2. Reaffirm and/or revise existing goals for RHMP 3. Review & update progress on mitigation actions 4. Create new actions	December 18th, 2025 1:30 pm – 2:30 pm	Microsoft Teams
HMPC #5 (Draft Review)	1. Review and update progress on mitigation actions 2. Review Draft RHMP 3. Review of public participation and adoption requirements	February 26th, 2026 2:00 pm – 3:00 pm	Microsoft Teams

Planning Step 2: Involve the Public

A public meeting to review the final plan will be held at subsequent adoption resolution meetings. As documented in Appendix B, a public notice was posted on the Cumberland County Emergency Services website prior to the public meeting, inviting members of the public to attend.

Table J-3: Summary of Public Meetings

Meeting Type	Meeting Topic	Meeting Date & Time	Meeting Location
Public Meetings for Adoptions	Public meetings are held in each jurisdiction during local government adoption of the RHMP.	Review Appendix F – Adoption Resolutions to identify specific dates.	Local Jurisdictions

Involving the Public Beyond Attending Public Meetings

Early discussions with the HMPC established the initial plan for public involvement. The HMPC agreed to an approach using established public information mechanisms and resources within the communities. Public involvement activities for this plan update included the public survey during the planning process, stakeholder/public meetings, and the draft plan review comment-response form. Public outreach activities beyond formal public meetings are summarized in Table J-4 below.

Table J-4: Public Outreach Efforts

Location	Event/Message	Date
Cumberland County, NC Emergency Services' Website	1. Posting the RHMP Update Schedule 2. Posting the HMPC Regional Kick-Off Meeting slideshow	9/25/2025
Cumberland County, NC Emergency Services' Website	1. Posting the HMPC Hazard ID and Risk Assessment Meeting slideshow 2. Posting a link to the 2025 Regional Hazard Mitigation Plan Public Survey	10/23/2025
Cumberland County, NC Emergency Services' Facebook	1. Requesting the public complete the 2025 Cumberland-Hoke RHMP Update Public Survey 2. Included a flyer introducing the RHMP and Public Survey (including Survey QR code)	10/30/2025
Cumberland County, NC Government's Facebook		
Cumberland County, NC Emergency Services' Facebook	1. Second request for the public to complete the 2025 Cumberland-Hoke RHMP Update Public Survey 2. Included a 1-minute video from Cumberland County Emergency Service Staff	11/14/2025
Cumberland County, NC Government's Facebook		
Cumberland County, NC Emergency Services' Website	1. Requesting the public review the Draft Plan (linked) and provide any feedback through the Draft Plan Review Comment-Response Form.	3/9/2026
Cumberland County, NC Emergency Services' Facebook		

Cumberland County, NC Government Facebook		
Cumberland County Public Information Group Website		

Planning Step 3: Coordinate

Early in the planning process, the HMPC determined that risk assessment, mitigation strategy development, and plan approval would be greatly enhanced by inviting other local, state, and federal agencies and organizations to participate. Coordination involved sending these stakeholders emails, asking for their assistance and input, and explaining how to become involved in the plan development process. The HMPC contacted the following agencies and organizations with specific data requests and a request for their input into the planning process:

1) NC Emergency Management
   a) Natural Hazards Risk Data
   b) Critical Infrastructure & Facilities Data
   c) NFIP Information
2) NC Forestry Service
   a) Fire Reports
3) NC Dam Safety
   a) Dam Inventory
4) NC Division of Mitigation Services
   a) Coordination between RHMP Update and the North Carolina Flood Resiliency Blueprint
5) NC Department of Health & Human Services
   a) Extreme Heat – Annual Counts of Heat-Related Illness Emergency Department Visits
6) NC Office of Resilience
   a) Climate Change and Natural Hazards Vulnerability Assessments
7) Neighboring Communities
   a) Invited the neighboring communities identified in the table below to the HMPC's Draft Review Meeting, as well as a link to the Draft Plan and Draft Plan Review Comment-Response Form to submit any comments/feedback.

Table J-5: Neighboring Communities

Name	Position	Organization	County
Joey Coleman	Director	Bladen County Emergency Services	Bladen
Zach Shean	Emergency Management Coordinator	Harnett County Emergency Services	Harnett
Scot Brooks	Emergency Manager/Deputy Director	Moore County Emergency Management	Moore
Bob Smith	Director of Emergency Services	Richmond County Emergency Services	Richmond
Chad Deese	Director of Communications	Robeson County Emergency Services	Robeson
Rick Sauer	Director	Sampson County Emergency Services	Sampson

Name	Position	Organization	County
Robert Sampson	Emergency Management Coordinator	Scotland County Emergency Management	Scotland

Coordination with Other Community Planning Efforts and Hazard Mitigation Activities

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, 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 the following existing plans, studies, reports, and initiatives, as well as other relevant data from neighboring communities and other jurisdictions. The following is a complete list of planning efforts in Cumberland County that the HMPC coordinated with and integrated into this RHMP update.

Table J-6: Coordination with Other Community Planning Efforts in Cumberland County

Plan	Year
Hope Mills Area Land Use Plan	In Progress (2026)
Cumberland County Flood Damage Prevention Ordinance	Amended 2/20/2026
Cumberland County Zoning Ordinance	Revised 12/15/2025
Northeast Cumberland Land Use Plan	Adopted 10/20/2025
North Central Area Land Use Plan	Adopted 10/7/2024
Cumberland County Emergency Action Plan Guide & Template	Updated September 2025
Cumberland County Subdivision Ordinance	Revised 8/21/2023
Climate Change and Natural Hazards Vulnerability Assessment for the Mid-Carolina Region	Published 12/2022
Spring Lake Area Land Use Plan	Adopted 10/17/2022
Bethany Area Land Use Plan	Adopted 10/18/2021
Stedman Area Land Use Plan	Adopted 8/17/2020
Eastover Area Land Use Plan	Adopted 11/19/2018
Cumberland Road Business Street Plan	Adopted 8/20/2018
Vander Area Land Use Plan	Adopted 9/18/2017
Cumberland County Emergency Operations Plan	Adopted 7/14/2017
Southeastern Cumberland Land Use Plan	Adopted 3/16/2017
South Central Land Use Plan	Adopted March 2015
Southwest Cumberland Land Use Plan	Adopted 8/27/2013
2030 Growth Vision Plan	Adopted 3/27/2009
Cumberland County Land Use Policies Plan	Adopted 7/23/2009

These and other documents were reviewed and considered, as appropriate, during data collection to support CRS Planning Steps 4 and 5, which include hazard identification, vulnerability assessment, and capability assessment. Data from these plans and ordinances were incorporated into the community profile, risk assessment, and hazard vulnerability sections of the plan as appropriate. The data were also used to determine the community's capacity to

implement certain mitigation strategies. The Capability Assessment can be accessed in Section 6.

Phase II – Risk Assessment

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

The HMPC completed a comprehensive effort to identify, document, and profile all hazards that have, or could have, an impact on the planning area. Data collection worksheets were developed and used in this effort to aid in determining hazards, vulnerabilities, and the areas where risk varies across the planning area. Geographic information systems (GIS) were used to display, analyze, and quantify hazards and vulnerabilities. A draft of the risk and vulnerability assessment was posted on the Cumberland County website for HMPC and public review and comment. The HMPC also conducted a capability assessment to review and document the planning area's current capabilities to mitigate risk from and vulnerability to hazards. By collecting information on existing government programs, policies, regulations, ordinances, and emergency plans, the HMPC could assess the activities and measures already in place that help mitigate the risks and vulnerabilities identified.

Phase III – Mitigation Strategy

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

During HMPC Meetings #4 and #5, AECOM facilitated brainstorming and discussion sessions with the HMPC that outlined the purpose and process for developing planning goals, a comprehensive range of mitigation alternatives, and a method for selecting and defending recommended mitigation actions using a series of selection criteria. This information is included in Section 7 - Mitigation Strategy.

Planning Step 8: Draft an Action Plan

A complete first draft of the plan was prepared based on the HMPC's feedback on the draft risk assessment and the goals and activities identified in CRS Planning Steps 6 and 7. This complete draft was posted on the Cumberland County website for HMPC and public review and comment. Other agencies were invited to comment on this draft as well. HMPC, public, and agency comments were integrated into the final draft for the NCEM and FEMA Region IV to review and approve, contingent upon final adoption by the governing body of each participating jurisdiction.

Phase IV – Plan Maintenance

Planning Step 9: Adopt the Plan

To secure buy-in and officially implement the plan, the governing body of each participating jurisdiction reviewed and adopted it on the dates specified in the corresponding resolutions in Appendix A.

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

Implementation and maintenance of the plan are critical to the overall success of hazard mitigation planning. To this point in the planning process, all of the HMPC's efforts have been directed toward researching data, coordinating input from participating entities, and developing appropriate mitigation actions. Section 9 - Plan Maintenance provides an overview of the overall strategy for plan implementation and maintenance and outlines the method and schedule for monitoring, updating, and evaluating the plan. Section 9 also discusses incorporating the plan into existing planning mechanisms and addressing continued public involvement.

APPENDIX K

9.12. Cybersecurity

9.12.1. Hazard Description

Cybersecurity incidents, such as ransomware attacks, denial-of-service attacks, and unauthorized access, pose significant risks to critical infrastructure and essential services. These incidents can disrupt lifelines (water, power, communications, healthcare), compromise sensitive data, and impede emergency response and recovery operations. Cyber threats often intersect with natural hazards (e.g., flooding that damages IT systems, hurricanes that increase reliance on remote access), amplifying community vulnerability.

9.12.2. Location and Spatial Extent

The location and spatial extent of cybersecurity hazards is the entire Cumberland-Hoke region, including all participating county and municipal governments.

Affected Assets:

- Emergency Operations Center
- 911/PSAP Systems
- Water/Wastewater Supervisory Control and Data Acquisition (SCADA)
- Public Health Networks
- Municipal IT Systems

9.12.3. Extent

Impacts range from localized service outages to widespread operational disruption. Severity depends on system interconnectivity, backup capacity, and cyber hygiene. Existing vulnerabilities may include:

- Legacy systems with limited patching
- Insufficient network segmentation between IT and operational technology
- Limited offline backups and tested recovery procedures
- Workforce gaps in cyber incident response

9.12.4. Previous Occurrences

The State, Local, Tribal, and Territorial (SLTT) community has had multiple (20+) compromised accounts over the last six months of 2025. Upon discovery of one of these compromised accounts, either by the agency or another agency, the rest of the community is notified using the North Carolina Local Government Information Systems Association (NCLGISA) listserv, and direct notifications are sent to the agency with the compromised account. Agencies investigate their systems to determine if they are affected. Whether or not they are affected, controls are implemented to ensure that they are not compromised or compromised in the future.

Financial Scam: Although these two articles don't mention whether the communication was through email or a Vendor access system, both cases involved the change of banking details, which diverted funds to the perpetrator(s)' account.

https://www.wect.com/2026/02/11/hackers-steal-nearly-488k-town-carolina-beach-dual-cyberattacks/

https://www.wect.com/2025/12/16/650000-stolen-pender-county-through-financial-fraud-scheme/

Ransomware Attack:

https://therecord.media/winston-salem-north-carolina-services-offline-cyberattack

K-1: Previous Cybersecurity Incidents or Near Misses in Cumberland County

Jurisdiction	Organization	Date	Description of Incident	Description of Incident's Impact
Cumberland County & Hoke County	Register of Deeds	Oct 19, 2023	In October 2023, the online deed search system used by the Cumberland County Register of Deeds was disabled following a ransomware attack that targeted a third-party vendor hosting the county's online records database. The attack also affected similar systems used by nearby counties. The incident temporarily locked access to the online platform containing historical property deed records and related documentation used for real estate transactions. County officials stated the county's internal systems were not directly attacked; however, the disruption occurred because the vendor's system supporting the online database was compromised.	The ransomware attack prevented the public, real estate professionals, and attorneys from accessing property records through the county's online search system. While the records themselves were not permanently lost and remained available in person at the courthouse, individuals seeking to research or file property deeds were required to do so manually at the Register of Deeds office. This resulted in slower processing times for property transactions and created inconvenience for buyers, sellers, lenders, and real estate professionals who rely on timely access to digital records. The incident demonstrated the potential operational disruptions that can occur when third-party systems supporting government services are compromised.
Cumberland County	Cape Fear Valley Health	Feb 21, 2024	In February 2024, a cyberattack targeted Change Healthcare, a healthcare technology company owned by UnitedHealth Group. The attack, attributed to the ransomware group ALPHV/BlackCat, disrupted electronic prescription and insurance claims processing systems used by healthcare providers nationwide. Several major healthcare systems in central North Carolina were affected, including Duke Health, UNC Health, and Cape Fear Valley Health. The disruption prevented many patients from having prescriptions	The cyberattack caused widespread disruptions to prescription processing and health insurance claims across the United States. Healthcare providers experienced operational delays and had to implement temporary workarounds to continue patient care. The most significant disruptions occurred from late February through mid-March 2024, although recovery efforts and residual impacts continued for several weeks afterward. According to UnitedHealth Group, the breach ultimately affected approximately 192.7 million individuals, making it one of the largest

Jurisdiction	Organization	Date	Description of Incident	Description of Incident's Impact
			processed through insurance and created operational challenges for pharmacies and healthcare providers.	healthcare cybersecurity incidents in U.S. history.
Cumberland County	Cumberland County Schools	Jan 7th, 2025	In December 2024, a cybersecurity breach occurred involving PowerSchool, a widely used student information system that previously stored historical data for Cumberland County Schools. Unauthorized actors gained access to portions of the system containing legacy student and staff records. The breach was identified by the vendor and subsequently reported to the North Carolina Department of Public Instruction in January 2025. Although Cumberland County Schools had transitioned to a different student information system, historical data remained on the PowerSchool platform and may have been accessed during the breach.	The breach potentially exposed sensitive historical records for students and staff, including personal identifying information such as names, student identification numbers, email addresses, and, in some cases, Social Security numbers. Current student data was not affected, as it is maintained in a separate system. While the incident did not disrupt daily school operations, it highlighted the vulnerability of third-party data systems and the potential for cybersecurity incidents to affect educational institutions and government partners through the exposure of sensitive information and required notification and monitoring processes.

9.12.5. Probability of Future Occurrences

There is a high likelihood of future occurrences given the increasing frequency of attacks and reliance on digital systems. Threat actors target local governments and utilities due to resource constraints and critical service dependencies.

9.12.6. Consequence and Impact Analysis

Public Safety

Delayed emergency response if 911 or CAD systems fail.

Health & Lifelines

Disruption of critical infrastructure IT systems, including water treatment facilities, hospital networks, and emergency response systems

Economic

Recovery costs, ransom payments, reputational damage.

Cascading Impacts

Natural hazard and cyber failure (e.g., a hurricane damages the power grid and triggers remote access vulnerabilities).

SECTION 7: Mitigation Strategy

7.2. Mitigation Goals

The following are additional mitigation goals & objectives related to cybersecurity in Cumberland County as a part of the Cumberland-Hoke Regional Hazard Mitigation Plan 2026 Update.

1. Maintain continuity of critical services during disasters.
2. Reduce cyber vulnerabilities in lifeline sectors.
3. Integrate cyber resilience into physical hazard mitigation projects.

7.6. Integrating the Mitigation Plan with Other Planning Mechanisms

Information related to cybersecurity hazards in this plan references Threat and Hazard Identification and Risk Assessment (THIRA) Cybersecurity capability targets. To integrate the cybersecurity information and planned mitigation actions with other planning mechanisms, participating jurisdictions should coordinate with their Emergency Operations Plan (EOP), Continuity of Operations Plan (COP), and IT security policies. Any cybersecurity efforts undertaken by participants should align with FEMA and the U.S. Cybersecurity and Infrastructure Security Agency (CISA) standards, found in Planning Considerations for Cyber Incidents – Guidance for Emergency Managers (2023).[1]

[1] *Planning Considerations for Cyber Incidents: Guidance for Emergency Managers*. (2023). FEMA. https://www.cisa.gov/sites/default/files/2024-01/2023_fema_planning-considerations-cyber-incidents.pdf

SECTION 8: MITIGATION ACTION PLAN

8.1. Overview

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 7: Mitigation Strategy and will be maintained regularly in accordance with the plan maintenance procedures established in Section 9: 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 lead agency or department responsible for carrying it out and 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 7.1.1. 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 was” 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.

K- 2: Definitions for Mitigation Action Plan Details

Category	Definition	
Hazard(s) Addressed	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 be continued.
	Medium	Strategies that have at least two of the following characteristics (but not all three) and 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 getting worse and are typically administered through government programs or regulatory actions that influence the way land is developed, and buildings are built.
	Property Protection	Property protection measures involve the modification of existing buildings and structures to help them better withstand the forces of a hazard, or removal of the 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 environmental natural progression of the hazard event through construction.
	Public Education	Public education and awareness activities are used to advise 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 action or program; requires annual or periodic maintenance to continue the action.
	Complete:	No further action required for mitigation action to be implemented or used.
	In Progress:	Action is currently being implemented.
	Deferred:	Action will be reevaluated later.

	Deleted:	The Jurisdiction will no longer utilize the action as a viable mitigation action that can be implemented.
	New	The mitigation action has just been added to the HMP.
Estimated Cost	Low	Less than $10,000
	Moderate	$10,000 -$50,000
	High	More than $50,000
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 following table provides details on newly added, cybersecurity-related mitigation actions for Cumberland County.

K- 3: Cumberland County Mitigation Action Plan – Cybersecurity Actions

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Cumberland County	Prevention	Implement additional hardening controls for computers, servers, and network devices. CIS Benchmarks: These are best practices for securing system configurations.	Cybersecurity	Low	ITS	County Budget	Staffing	Short-term	New	-
Cumberland County	Preparedness & Property Protection	Currently working on one mitigation item, which will be completed on May 1st, 2026. New mitigation items start in mid-2026 and will be completed by the end of 2026.	Email Phishing and Malware Protection	Low	Emergency Services/Innovation and Technology Services	Grant and County	Moderate - High	Short term	New	-

Jurisdiction	Action Type	Description	Hazards Addressed	Relative Priority	Lead Agency or Department	Potential Funding Sources	Cost Estimate	Implementation Timeline	Status	Implementation Details
Cumberland County	Emergency Services	Deploy browser detection and response technology to monitor browser activity, detect phishing and identity-based attacks, and prevent unauthorized access to county systems.	Cybersecurity	Low	ITS	County Funds	$30,000	Short-term	New	-

APPENDIX L: City of Fayetteville Prioritized Projects

Arran Lakes West Dam

The project will design and construct overtopping protection for the Arran Lakes West Dam. Overtopping protection of the dam is needed prior to any implementation of upstream stormwater mitigation projects (i.e., Rockford Drive Drainage Improvements, Rhemish Drive Drainage Improvements). The project also reduces downstream flooding, such as overtopping at Fisher Road.

College Lakes Dam

The project will design and construct a retrofit of the existing, breached College Lakes Dam to provide temporary detention and attenuation for large storm events, thereby mitigating downstream flooding depths and durations. The project addresses an improperly breached dam and also reduces the flooding frequency and duration downstream, including the single access road, Shawcroft Road (Kings Grant community), as well as Ramsey Street.

Troy Drive Drainage Improvements

The culvert under Troy Drive is undersized, and the ponding on the upstream side of the roadway is affecting a home off Elba Street. The project would include improving the culvert crossing under Troy Drive by increasing the pipe size and lowering the pipe inverts and channel improvements to increase downstream capacity from Troy Drive to Buzzards Branch. This includes lowering the channel bottom and increasing the channel dimensions. The project brings the pipe system under Troy Drive up to the design level of service standards for future rainfall conditions.

Carloway Drive Drainage Improvements

The primary cause of yard and street flooding along Carloway Drive is an undersized storm drain network comprised of concrete pipe. The project focuses on capacity expansion by upsizing the pipes along the alignment of the existing storm system.

Marshbrook Drive/Burgenfield Drive Drainage Improvements

Limited pipe capacity leads to surcharging along Marshbrook Drive and overland flow across the open channel, disconnecting 18 residences. The open channel has an inverse slope, which means that the water should rise to the road level and return to the stormwater system on Burgenfield Drive. The proposed projects focus on capacity expansion and are suggested to increase the number of inlets and their capacity sizes on Marshbrook Drive. Additionally, the new pipes will be installed in the right-of-way of Burgenfield Drive and will disconnect the storm system, allowing it to discharge into the open channel in the backyard of private properties. Also, pipes located between Burgenfield Drive and the outfall along the alignment of the existing storm system will be upsized. Pipes will be upgraded to meet the required service level. The project along Marshbrook Drive would need to be completed prior to the project along Burgenfield Drive.

Ashbrook Road Culvert

Existing concerns include an undersized culvert in the primary system and disconnected structures due to high road-crossing risk. The 3' circular culvert under Ashbrook Road is also insufficiently sized to prevent roadway overtopping. The proposed project consists of the upsizing of the culvert at the new outfall location on Ashbrook Road from a 36" circular pipe to a recommended two 84" x 54" rectangular pipes. The culvert on Ashbrook Road needs to be completed prior to other projects being implemented in the secondary system.

Poplar Drive Drainage Improvements

The channel suffers from heavy sediment accumulation, especially in upstream sections, with evidence of trash deposition. The downstream banks have eroded, forming point bars, with standing or flowing water visible, which increases with distance traveled downstream. Some riffles form where banks have eroded, exposing trees or tree roots in the flow path. The Poplar Drive culvert does not meet the 25-yr design storm control level. The proposed project includes stream restoration and capacity expansion through the restoration of the drainage channel by excavating sediment, clearing and grubbing, and installing riprap for channel stability. Additional actions involve removing debris from the culvert inlet and filling the pooled area at the culvert outlet. This project includes upsizing the Poplar Drive culvert to two 54" x 36" rectangular pipes.

Cawdor Drive/Lakehurst Drive/Ashton Road Drainage Improvements

Existing concerns are primarily related to roadway flooding in the public right-of-way and structure flooding associated with overflow from public streets. The cause of these concerns is limited capacity in the existing stormwater system. Additionally, there is inadequate storage in the downstream channel between Lakehurst Drive and Ashton Road. Proposed projects include capacity expansion, stormwater detention, and stormwater diversion. Proposed pipe sizes range from 24" to 48". Due to limited coverage and a gradient in the area, much of the proposed network will be double-barreled. The proposed projects include redirecting flow away from the existing channel to a downstream detention basin on the private parcel east of Hope Mills Road. The pipe connection across Ashton Road to the channel will be removed, and the flow tributary to the inlet on the south side of Ashton Road will be reversed to the detention basin. The existing channel running behind the homes on Ashton Road will have overbank connections to the proposed detention basin to mitigate flooding into the backyards and structures. The project along Lakehurst Drive would need to be completed first, followed by Cawdor Drive and then Ashton Road.

St. Louis Street/Portsmouth Drive Drainage Improvements

Existing concerns are primarily related to roadway flooding in the public right-of-way, structure flooding associated with overflow from public streets, and traverse road crossings. As such, multiple structures fail to meet the 10-year and 25-year levels of service, and a high traverse road-crossing risk rating is observed, especially for the Portsmouth Drive culvert. Proposed projects include capacity expansion, stormwater redirection, and stream restoration. The Saint Louis Street project involves upsizing the 36" circular pipe that passes under Saint Louis Street to a 48" circular pipe and installing 48" circular pipes along a new alignment traveling west down

Saint Louis Street to create a new outfall redirecting flow. The Portsmouth Drive involves stream restoration downstream of the culvert on Saint Louis St and upsizing the culvert on Portsmouth Drive to a 36” circular pipe. The project along Saint Louis Street needs to be completed prior to Portsmouth Drive.

Gunston Court Drainage Improvements

Existing concerns are primarily related to roadway flooding in the public right-of-way and structure flooding associated with overflow from public streets. The cause of concern is insufficient culvert sizing under Gunston Court and S Churchill Drive. The proposed project involves capacity expansion by installing double-barrel 48-inch sewers to convey flow under Gunston Court and S Churchill Drive. The downstream portion of the existing channel may be regraded and deepened to accommodate the construction of the double-barrel sewers under S Churchill Drive.

Rockford Drive Drainage Improvements

Yard and street flooding occurs along Rockford Drive, Berriedale Drive, Tyson Drive, and Lawthorne Drive. The flooding crosses Bailey Lake Road, a main thoroughfare in and out of the neighborhood. The primary cause of this flooding is an undersized storm system comprised of both open ditches and a 36” concrete pipe under Bailey Lake Road. The proposed consists of increasing pipe sizes within the existing alignment, rerouting piped runoff to stay within the right of way, and converting the existing open channel to a closed pipe.

Rhemish Drive Drainage Improvements

Yard and street flooding occurs along Rhemish Drive, Furnish Drive, Leffew Avenue, Farwell Drive, and Rutherglen Drive. Six structures are impacted by the flooding. The primary cause of the flooding is an undersized storm system comprised of a concrete pipe. The proposed project would upsize pipes along their existing alignment in the right-of-way.

Farmers Road Extension

The project consists of roadway, drainage, and pedestrian facility improvements to extend Farmers Road to Dunbane Court and the proposed Liberty Hills II development. This extension closes a critical gap in the local street network by providing a secondary access point to the Kings Grant community, which currently functions as a single-entrance neighborhood. This vulnerability was demonstrated during Hurricane Matthew, when the sole access point washed away, leaving the community temporarily cut off and highlighting the need for a redundant, reliable connection. By creating an additional connection, the project improves overall mobility and traffic distribution, enhances emergency response efficiency, and reduces dependence on a single access route. The new connection also supports long-term efficiency by dispersing traffic, reducing congestion at the existing entrance, and improving service access for City departments and utilities. The improved pedestrian facilities also strengthen neighborhood connectivity and support safer, more accessible travel options for residents.

Blantons Road Extension

The project consists of constructing approximately 0.379 miles of new roadway, including grading, paving, drainage improvements, pavement markings, and utility upgrades, to extend Blanton Road and create a direct connection between Bragg Boulevard and Pamalee Drive. This extension closes a critical gap in the transportation network, improving overall system efficiency and reducing congestion on adjacent corridors. The improved connectivity will enhance emergency response times for the newly constructed Fire Station and support more efficient service delivery for Police, Public Works Commission, and other City departments that rely on reliable access and reduced travel delays. Beyond emergency services, the Blanton Road Extension will relieve pressure on adjacent corridors, improve traffic distribution, and create additional routing options for residents, businesses, and visitors. By integrating necessary utility upgrades into the project, the extension also supports future development, reduces redundant construction efforts, and contributes to coordinated infrastructure planning across departments.