Iredell Rowan

Regional Hazard Mitigation Plan

FINAL

AECOM

Plan Design Enable

060288-BD-14

TABLE OF CONTENTS

SECTION 1: INTRODUCTION

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

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

1.1 Background

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

The Iredell Rowan Region is located in the western Piedmont of North Carolina and includes the counties of Iredell and Rowan and the municipalities located within the counties. This area is vulnerable to a wide range of natural hazards such as thunderstorms, winter storms, tornadoes and hailstorms. It is also vulnerable to human-caused hazards, including hazardous material spills. These hazards threaten the life and safety of residents in the Iredell Rowan Region and have the potential to damage or destroy both public and private property, disrupt the local economy, and impact the overall quality of life of individuals who live, work, and vacation in the region.

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

FEMA Definition of Hazard Mitigation:
"Any sustained action taken to reduce or eliminate the long-term risk to human life and property from hazards."

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

A key component in the formulation of a comprehensive approach to hazard mitigation is to develop, adopt, and update a local hazard mitigation plan as needed. A hazard mitigation plan establishes the

broad community vision and guiding principles for reducing hazard risk, and further proposes specific mitigation actions to eliminate or reduce identified vulnerabilities.

Each of the two counties and the municipal jurisdictions participating in the development of the Iredell Rowan Hazard Mitigation Plan have an existing hazard mitigation plan that has evolved over the years, as described in Section 2: *Planning Process*. This regional plan draws from each of the County plans to document the region's sustained efforts to incorporate hazard mitigation principles and practices into routine government activities and functions. At its core, the Plan recommends specific actions to minimize hazard vulnerability and protect residents from losses to those hazards that pose the greatest risk. These mitigation actions go beyond simply recommending structural solutions to reduce existing vulnerability, such as elevation, retrofitting, and acquisition projects. Local policies on community growth and development, incentives for natural resource protection, and public awareness and outreach activities are examples of other actions considered to reduce the Iredell Rowan Region's vulnerability to identified hazards. The Plan remains a living document, with implementation and evaluation procedures established to help achieve meaningful objectives and successful outcomes over time.

1.1.1 The Disaster Mitigation Act and the Flood Insurance Reform Act

To reduce the Nation's mounting natural disaster losses, the U.S. Congress passed the Disaster Mitigation Act of 2000 (DMA 2000) in order to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act. Section 322 of DMA 2000 emphasizes the need for state, local and Tribal government entities to closely coordinate on mitigation planning activities and makes the development of a hazard mitigation plan a specific eligibility requirement for any local or Tribal government applying for federal mitigation grant funds. These funds include the Hazard Mitigation Grant Program (HMGP) and the Pre-Disaster Mitigation (PDM) program, both of which are administered by the Federal Emergency Management Agency (FEMA) under the Department of Homeland Security. Communities with an adopted and federally approved hazard mitigation plan thereby become pre-positioned and more apt to receive available mitigation funds before and after the next disaster strikes.

Additionally, the Biggert Waters Flood Insurance Reform Act of 2012 modified the existing Flood Mitigation Assistance (FMA) program. One of the requirements of this Act is that a FEMA-approved Hazard Mitigation Plan is now required if communities wish to be eligible for these FEMA mitigation programs.

The Iredell Rowan Regional Hazard Mitigation Plan has been prepared in coordination with FEMA Region IV and the North Carolina Division of Emergency Management (NCDEM) to ensure that the Plan meets all applicable FEMA and state requirements for hazard mitigation plans. A *Local Mitigation Plan Review Tool*, found in Appendix B, provides a summary of federal and state minimum standards and notes the location where each requirement is met within the Plan.

1.2 Purpose

The purpose of the Iredell Rowan Regional Hazard Mitigation Plan is to:

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

1.3 Scope

The focus of the Iredell Rowan Regional Hazard Mitigation Plan is on those hazards determined to be "high" or "moderate" risks to the Iredell Rowan Region, as determined through a detailed hazard risk assessment. Other hazards that pose a "low" or "negligible" risk will continue to be evaluated during future updates to the Plan, but they may not be fully addressed until they are determined to be of high or moderate risk. This enables the participating counties and municipalities to prioritize mitigation actions based on those hazards which are understood to present the greatest risk to lives and property.

The geographic scope (i.e., the planning area) for the Plan includes the counties of Iredell and Rowan, as well as their incorporated jurisdictions. **Table 1.1** indicates the participating jurisdictions.

Table 1-1: Participating Jurisdictions in the Iredell Rowan Regional Hazard Mitigation Plan

Iredell County	
Harmony	Statesville
Love Valley	Troutman
Mooresville	
Rowan County	
China Grove	Landis
Cleveland	Rockwell
East Spencer	Salisbury
Faith	Spencer
Granite Quarry	

1.4 Authority

The Iredell Rowan Regional Hazard Mitigation Plan has been developed in accordance with current state and federal rules and regulations governing local hazard mitigation plans and has been adopted by each participating county and local jurisdiction in accordance with standard local procedures. Copies of the adoption resolutions for each participating jurisdiction will be provided in Appendix A as jurisdictions adopt the Plan. The Plan shall be routinely monitored and revised to maintain compliance with the following provisions, rules, and legislation:

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

1.5 Summary of Plan Contents

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

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

The ***Community Profile***, located in Section 3, provides a general overview of the Iredell Rowan Region, including prevalent geographic, demographic, and economic characteristics. In addition, building characteristics and land use patterns are discussed. This baseline information provides a snapshot of the planning area and helps local officials recognize those social, environmental, and economic factors that ultimately play a role in determining the region's vulnerability to hazards.

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

The Risk Assessment begins by identifying hazards that threaten the Iredell Rowan Region. Next, detailed profiles are established for each hazard, building on available historical data from past hazard occurrences, spatial extent, and probability of future occurrence. This section culminates in a hazard risk ranking based on conclusions regarding the frequency of occurrence, spatial extent, and potential impact highlighted in each of the hazard profiles. In essence, the information generated through the risk assessment serves a critical function as the participating jurisdictions in the Iredell Rowan Region seek to determine the most appropriate mitigation actions to pursue and implement—enabling them to prioritize and focus their efforts on those hazards of greatest concern and those structures or planning areas facing the greatest risk(s).

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

The *Community Profile*, *Risk Assessment*, and *Capability Assessment* collectively serve as a basis for determining the goals for the Iredell Rowan Regional Hazard Mitigation Plan, each contributing to the development, adoption, and implementation of a meaningful and manageable *Mitigation Strategy* that is based on accurate background information.

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

In addition to the identification and prioritization of possible mitigation projects, emphasis is placed on the use of program and policy alternatives to help make the Iredell Rowan Region less vulnerable to the

damaging forces of hazards while improving the economic, social, and environmental health of the community. The concept of multi-objective planning was emphasized throughout the planning process, particularly in identifying ways to link, where possible, hazard mitigation policies and programs with complimentary community goals related to disaster recovery, housing, economic development, recreational opportunities, transportation improvements, environmental quality, land development, and public health and safety.

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

SECTION 2: PLANNING PROCESS

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

- 2.1 Overview of Hazard Mitigation Planning
- 2.2 History of Hazard Mitigation Planning in The Iredell Rowan Region
- 2.3 Preparing the 2020 Plan
- 2.4 The Iredell Rowan Regional Hazard Mitigation Planning Team
- 2.5 Community Meetings and Workshops
- 2.6 Involving the Public
- 2.7 Involving the Stakeholders
- 2.8 Documentation of Plan Progress

44 CFR Requirement
44 CFR Part 201.6(c)(1): 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 to best minimize or manage those risks. 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 is assigned for each proposed mitigation action 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 for the routine monitoring of implementation progress, as well as the evaluation and enhancement of the mitigation plan itself. These plan maintenance procedures ensure that the Plan remains a current, dynamic, and effective planning document over time that becomes integrated into the routine local decision-making process.

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

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

Typically, communities that participate in mitigation planning are described as having the potential to produce long-term and recurring benefits by breaking the repetitive cycle of disaster loss. 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, such as preserving open space, maintaining environmental health, and enhancing recreational opportunities. Thus, it is vitally important that any local mitigation planning process be integrated with other concurrent local planning efforts, and any proposed mitigation strategies must consider other existing community goals or initiatives that will help complement or hinder their future implementation.

2.2 History of Hazard Mitigation Planning in The Iredell Rowan Region

Each of the counties and jurisdictions participating in this Plan have previously adopted the hazard mitigation plan. The list of the participating municipalities that seek approval, are listed below:

- Iredell County
    - Town of Harmony
    - Town of Love Valley
    - Town of Mooresville
    - City of Statesville
    - Town of Troutman
- Rowan County
    - Town of China Grove
    - Town of Cleveland
    - Town of East Spencer
    - Town of Faith
    - Town of Granite Quarry
    - City of Kannapolis*
    - Town of Landis
    - Town of Rockwell
    - City of Salisbury
    - Town of Spencer

* The City of Kannapolis, being located in both Cabarrus and Rowan Counties, has chosen to participate in the Cabarrus, Stanly Union Regional Hazards Mitigation Plan.

The regional plan was developed using the multi-jurisdictional planning process recommended by the Federal Emergency Management Agency (FEMA). For this plan, all the aforementioned jurisdictions joined to form a regional plan. All the jurisdictions that participated in previous planning efforts participated in the development of this regional plan.

2.3 Preparing the 2020 Plan

Local hazard mitigation plans are required to be updated every five years to remain eligible for federal mitigation funding. To simplify planning efforts for the jurisdictions in the region, Iredell and Rowan Counties decided to join to create the *Iredell Rowan Regional Hazard Mitigation Plan* in 2015. This allows resources to be shared amongst the participating jurisdictions and eases the administrative duties of all the participants by combining the existing county plans into one multi-jurisdictional plan.

To prepare the 2020 *Iredell Rowan Regional Hazard Mitigation Plan*, AECOM was hired as an outside consultant to provide professional mitigation planning services. To meet requirements of the

Community Rating System, the region ensured that the planning process was facilitated under the direction of a professional planner. 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 and Local Mitigation Plan Review Guide) and recommendations provided by North Carolina Division of Emergency Management (NCEM) mitigation planning staff. The Local Mitigation Plan Review Tool, found in Appendix B, provides a detailed summary of FEMA's current minimum standards of acceptability for compliance with DMA 2000 and notes the location where each requirement is met within this Plan. These standards are based upon FEMA's Final Rule as published in the Federal Register in Part 201 of the Code of Federal Regulations (CFR). The planning team used FEMA's Local Mitigation Plan Review Guide (October 2011) for reference as they completed the Plan.

The process used to prepare this Plan included twelve major steps that were completed over the course of approximately ten months beginning in February 2019. Each of these planning steps (illustrated in **Figure 2.1**) resulted in critical work products and outcomes that collectively make up the Plan. Specific plan sections are further described in Section 1: *Introduction*.

Over the past five years, each participating jurisdiction has been actively working to implement their existing plans. This is documented in the Mitigation Action Plan through the implementation status updates for each of the Mitigation Actions. The Capability Assessment also documents changes and improvements in the capabilities of each participating jurisdiction to implement the Mitigation Strategy.

Figure 2-1: Mitigation Planning Process for the Iredell Rowan Region

2.4 The Iredell Rowan Regional Hazard Mitigation Planning Team

In order to guide the development of this Plan, the participating jurisdictions created the Iredell Rowan Regional Hazard Mitigation Planning Team (Regional Hazard Mitigation Planning Team or Regional Planning Team). The Regional Hazard Mitigation Planning Team represents a community-based planning team made up of representatives from various county departments, municipalities, and other key stakeholders identified to serve as critical partners in the planning process.

Beginning in February 2019, the Regional Hazard Mitigation Planning Team members engaged in regular discussions as well as local meetings and planning workshops to discuss and complete tasks associated with preparing the Plan. This working group coordinated on all aspects of plan preparation and provided valuable input to the process. In addition to regular meetings, committee members routinely communicated and were kept informed through an e-mail distribution list.

Specifically, the tasks assigned to the Regional Hazard Mitigation Planning Team members included:

- participate in Regional Hazard Mitigation Planning Team meetings and workshops
- provide 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 regional goal statements
- help design and propose appropriate mitigation actions for their department/agency for incorporation into the Mitigation Action Plan
- review and provide timely comments on all study findings and draft plan deliverables
- support the adoption of the 2020 *Iredell Rowan Regional Hazard Mitigation Plan*

Table 2.1 lists the members of the Regional Hazard Mitigation Planning Team who were responsible for participating in the development of the Plan. For jurisdictions unable to attend all the meetings in person they were represented by their County Lead Coordinator and maintained communication in order to participate, review and make decisions regarding plan data. The County Lead Coordinators are: Iredell County, Jody Smyre; Chris Soliz, Rowan County. Committee members are listed in alphabetical order by last name.

Table 2-1: Members of the Iredell Rowan Regional Hazard Mitigation Planning Team

Name	Title/Agency	Jurisdiction
Aaron Poplin	Planner	Rowan County
Allen Cross	Rowan County 911	Rowan County
Amanda Treadway	EMS Compliance Officer	Iredell County
Amy Potoczny	RCHD	Rowan County
Blair Richey	Director of Iredell EMS	Iredell County
Bob Pendegrass	Director of Animal Services	Rowan County
Brent Edwards	Planner	AECOM
Brian Gates	Director of Animal Services	Iredell County
Caleb Sinclair	Rowan County Solid Waste	Rowan County
Chris Furgeson	Planner	NCEM
Chris Lambert	EMS Captain	Rowan County

Name	Title/Agency	Jurisdiction
Barbara Mallett	Mayor	Town of East Spencer
Beauford Taylor	Mayor	Town of Rockwell
Charles Seaford	Mayor	Town of China Grove
Chris Nuckolls	Salisbury Schools Facilities/Construction Director	City of Salisbury
Chris Roke	Disaster Program Manager	American Red Cross
Chris Soliz	ES Chief	Rowan County
Chuck Harris	LEPC Chairman	Thorlos Textiles
CJ Moody Jr.	Mayor	Town of Faith
Curt Deaton	Mooresville Fire Rescue	Town of Mooresville
D. Lee Matney	Mayor	Town of Harmony
Daniel Bransinsta	Forest Service Ranger	NC Forest Service
Danny Gabriel	Mayor	Town of Cleveland
Danny Nicholson	Fire Chief	City of Statesville
Danny Sloan	Asst. Manager Iredell Water Corp	Iredell County
David Bullins	Mitchell Community College	City of Statesville
David Martin	Mooresville Grade School Maintenance Director	Town of Mooresville
David Southe	Fire Marshal	Iredell County
David Treme	Interim Town Manager	Town of Spencer
Dennis Floyd	Forest Service Ranger	NC Forest Service
Garrett Barger	NCSHP	NCEM
Heather Lemaster	DPS/Red Cross	American Red Cross
James Bennett	Town Administrator	Town of East Spencer
Jason Wilson	Salisbury/Rowan Utilities	City of Salisbury
Jerry Stokes	Salisbury Police Department	City of Salisbury
Jim Behmer	Director of Utilities	City of Salisbury
Jody Smyre	Emergency Manager	Iredell County
Jonathan Williams	Mayor	Town of Spencer
Joseph Pierce	Assistant County Manager	Iredell County
Kaisha Brown	Communications Specialist	City of Statesville
Karen Alexander	Mayor	Town of Salisbury
Karen Hamby	Area Coordinator	NCEM
Kathy Wolfe	Floodplain Manager/GIS Analyst	Iredell County
Kelly Keefe	Lead Planner	AECOM
Ken Deal	Town Manager	Town of China Grove
Kent Greene	Iredell EM	Iredell County
Lane Bailey	City Manager	City of Salisbury
Larry Smith	Interim Town Manager	Granite Quarry
Leonard Barefoot	Town Manager	Town of Landis
Matthew Todd	Planning Director	Iredell County
Meredith Bare Smith	Mayor	Town of Landis
Mike Kluttz	City of Salisbury Transit	City of Statesville
Nick Childers	Risk Manager	Rowan County

Name	Title/Agency	Jurisdiction
Paul Dupree	Chief of Public Safety	Rowan County
Rae Alepa	DSS Coordinator	Rowan County
Randy Welch	District Manager	Duke Energy
Ron Scheultz	Transit Planner	Iredell County
Sam Migit	Emergency Preparedness Coordinator	Iredell County
Scott Graham	Engineer	Iredell County
Spencer Lee	Fire Chief/ EM Coordinator	City of Statesville
Susan Johnson	Director of Nursing, IC Health Dept.	Iredell County
Susan Mills	Disaster Coordinator DSS	Iredell County
Teross W. Young Jr.	Mayor	Town of Troutman
Thomas Logan	Director of Security	Iredell County
Tim Ward	Mayor	Town of Love Valley
TJ Brown	Support Services/Assistant EM	Rowan County
William Feather	Mayor	Town of Granite Quarry
Yvette Smith	DSS Coordinator	Iredell County

2.4.1 Multi-Jurisdictional Participation

The Iredell Rowan Regional Multi-Jurisdictional Hazard Mitigation Plan includes two counties, and fourteen incorporated municipalities. To satisfy multi-jurisdictional participation requirements, each county and its participating jurisdictions were required to perform the following tasks:

- Participate in mitigation planning workshops;
- Identify completed mitigation projects, if applicable; and
- Develop and adopt (or update) their local Mitigation Action Plan.
- Review the Mitigation Plan and provide feedback

Each jurisdiction participated in the planning process and has developed a local Mitigation Action Plan unique to their jurisdiction by attending meetings in person and participating in reviews via electronic data exchange. Jurisdictions (Harmony, Love Valley, Troutman, China Grove, Cleveland, East Spencer, Faith, Granite, Landis, Rockwell, Spencer) that were unable to attend in-person meetings, designated their lead county as proxy. The County Lead Coordinators are: Iredell County, Jody Smyre; Chris Soliz, Rowan County. Each jurisdiction will adopt their Mitigation Action Plan separately. This provides the means for jurisdictions to monitor and update their Plan on a regular basis.

2.5 Community Meetings and Workshops

The preparation of this Plan required a series of meetings and workshops for facilitating discussion, gaining consensus and initiating data collection efforts with local government staff, community officials, neighboring communities and other identified stakeholders. More importantly, the meetings and workshops prompted continuous input and feedback from relevant participants throughout the drafting stages of the Plan. The following is a summary of the key meetings and community workshops held during the development of the plan update. In many cases, routine discussions and additional meetings were held by local staff to accomplish planning tasks specific to their department or agency, such as the approval of specific mitigation actions for their department or agency to undertake and include in the Mitigation Action Plan.

HMPC Meeting #1 (February 20, 2019)

The Project Kickoff meeting was initiated by Chris Soliz, Rowan County Emergency Management Coordinator, and was led by Brent Edwards (AECOM Mitigation Planner), and Kelly Keefe, CFM (AECOM Lead Planner). This meeting consisted of a detailed overview of the project, a review and discussion of the previous regional mitigation plan, an explanation of the process to be followed for updating the previous plan and integrating content from other resources, an open discussion session, and an explanation of next steps.

The meeting began with a brief welcome and opportunity for each of the attendees to introduce themselves to the group. Particular emphasis was placed on identifying what jurisdiction or organization each participant was there to represent, as there were representatives from the 14 participating jurisdictions, other state and local stakeholders, and AECOM. As part of this recognition process, a spreadsheet was passed around for representatives to designate one "Designated Local Jurisdiction Lead" to serve as a primary point of contact for each participating jurisdiction for the duration of the project.

The project overview consisted of an explanation of the purpose of the planning process. It also covered the geographic scope of the project, the proposed schedule for the project, and a detailed breakdown of the key project tasks. The roles and responsibilities for AECOM, Rowan County as the lead local agency, 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
    - Monthly progress reports
- Rowan County
    - Serving as lead coordinating agency
    - Assistance with the collection of documents, data, and other information
    - Logistics for project meetings
    - Responding to general questions or inquiries from the public or stakeholders
    - Coordinating with participating jurisdictions
- All participating jurisdictions
    - Designate local jurisdiction lead
    - Attend Hazard Mitigation Planning Committee 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

A discussion was also facilitated to discuss ways that existing resources could be leveraged, such as existing plans, studies, and reports; existing data and information; local knowledge sharing; and other resources. Three primary planning resources were also introduced to the HMPC at this time: The Local Mitigation Planning Handbook, Mitigation Ideas: A Resource for Reducing Risk to Natural Hazards, and Integrating Hazard Mitigation into Local Planning, all recent publications from FEMA providing mitigation planning guidance.

Emphasis was also placed on the need for effective communication throughout the duration of the project. This included an overview of the planning team's organization and the idea that municipal jurisdictions would coordinate first through their Designated Local Jurisdiction Lead who would in turn coordinate with the Designated Local Jurisdiction Lead for that county, who would in turn coordinate with the overall local project leads, Chris Soliz with Rowan County. Active participation and responsiveness were also stressed considering the aggressive schedule to complete the plan in the desired timeframe.

A detailed discussion also centered on GIS data collection needs and the process to be followed for collecting and submitting the needed data (which was to follow the chain of communication described in the paragraph above). Emphasis was placed on the need for the GIS data to be submitted in a readily usable format and to be the best data readily available.

The committee was also given an overview of a Public Outreach Strategy that would be developed between HMPC Meeting #1 and HMPC Meeting #2. The goals of the Public Outreach Strategy were stated as:

- Generate public interest;
- Solicit citizen input; and
- Engage additional partners in the planning process.

Specific opportunities for public participation were identified as being two in-person open public meetings, the creation of a public project information website, a web-based public participation survey, and use of social media (Facebook, Twitter, RSS, and other various options).

Next steps were defined as assignment of Designated Local Jurisdiction Leads (to be completed as soon as possible); open the online Public Participation Survey (to be completed by March 1, 2019); finalize Public Outreach Strategy (to be completed by March 1, 2019); prepare preliminary risk assessment decisions, analysis, and map templates (to be completed by March 29, 2019); and prepare for HMPC Meeting #2 (to be held April 5, 2019).

HMPC Meeting #2 (April 5, 2019)

The Public Outreach Strategy meeting was initiated by Chris Soliz, Rowan County Emergency Manager, and was led by Kelly Keefe, CFM (AECOM Lead Planner) with assistance from Brent Edwards (AECOM Planner). This meeting consisted of a detailed overview of the final draft Public Outreach Strategy, a hazard identification exercise, recommendations for the Risk Assessment, an overview of the Local Capability Assessment Survey and Safe Growth Survey, discussion of a regional vision statement and mitigation goals, an update on data collection progress, an open discussion session, and an explanation of next steps.

The meeting began with a brief welcome and opportunity for each of the attendees to introduce themselves to the group.

A printed handout containing the final draft Public Outreach Strategy was distributed to the committee and a review of the document was provided via PowerPoint. The strategy (found in Appendix D) follows the outline presented at the first meeting in terms of goals, outreach opportunities, etc.

Additional details were provided regarding the two proposed in-person open public meetings:

- Public meetings would be scheduled at two key points during the project timeline: following completion of the draft risk and capability assessments and following completion of the draft plan;

- The primary purpose of the meetings would be to inform the public on the process and current status of the regional planning process and to gain input to the process during the drafting stage and prior to plan completion and approval; and
- AECOM would prepare presentations and handout materials to help facilitate two-way communication with public meeting attendees and would also have plotter-sized maps, videos, and other resources available for discussion with meeting attendees.

An update was also given on the public project information website proposed at the first meeting. At the time of the first meeting, the website was live and already contained the final project information fact sheet; contacts, task lists, meeting slides, and handouts for the planning committee; existing plan documents; planning guidance and resources; social media integration; and project contact information.

The project information fact sheet was also presented to the group and additional opportunities were discussed for disseminating the fact sheet to the public. The fact sheet contains an overview of the regional mitigation planning effort; an explanation of the planning process including the six main planning steps of public outreach, risk assessment, capability assessment, mitigation strategy development, plan maintenance, and plan adoption; project leadership; project schedule; and contact information.

Another significant topic covered at the meeting was the online public participation survey. At the time of the second meeting, screen mock-ups were shown to the group along with several sample questions. It was explained that the survey would go live around March 1, 2019 and would remain open until November 1, 2019. The survey was hosted by AECOM using the SurveyMonkey web hosting service. The primary purpose of the survey was to solicit input from any interested parties in the planning area. The survey also offered individuals that were unable to attend the in-person meetings the opportunity to participate in the planning process. Information from the online survey allows the project team to better understand the types of hazards that most concern the public and the mitigation actions that are of interest. The survey was made accessible through hyperlinks posted on the project information website and circulated via email, Facebook, newspaper articles, etc. Additionally, hard copies of the survey would be distributed at the first in-person public meeting on April 4, 2019. The feedback received was ultimately evaluated and incorporated into the HMPC's decision making process and the final plan. Bi-weekly updates on the survey results were submitted to Chris Soliz as the local project manager from March to November and responses were reviewed periodically to check for consistency with the development of various sections of the Plan.

Attendees were asked to participate in an exercise called "Mayor for the Day" in which each committee member was given $40 in pretend currency (divided into one $20, one $10 and one $5). Committee members were then asked to "spend" their limited funds on mitigation actions designed to address the natural hazards of most concern to them. The natural hazards were represented by a row of cups each labeled with the name of a natural hazard likely to be addressed in the regional plan. The results of this exercise are as follows:

- Flood $255
- Winter Weather $150
- Drought/Extreme Heat $90
- Hazardous Material $75
- Tornado $70
- Hurricane $50
- Wildfire $45
- Thunderstorm/Lightning/Hail $30

- Dam/Levee Failure $20
- Erosion $15
- Landslide $0
- Earthquake $0

The Local Capability Assessment Survey was distributed to the HMPC and explained. Essentially, the Local Capability Assessment Survey is designed to capture indicators of local capability in the following categories: planning and regulatory capability, administrative and technical capability, fiscal capability, education and outreach capability, political capability, and self-assessment. The Designated Local Jurisdiction Lead was given approximately three weeks to complete the survey and return it to Chris Soliz and Jody Smyre. Results of this survey are presented in the Capability Assessment section (Section 5) and Appendix F.

The Safe Growth Survey was distributed to the HMPC and explained. Essentially, the Safe Growth Survey is designed to capture indicators of safe growth policy in the following categories: comprehensive planning (land use, transportation, environmental management, and public safety), zoning ordinances, subdivision regulations, capital improvement programming and infrastructure policies, and other indicators. The Designated Local Jurisdiction Lead was given approximately three weeks to complete the survey and return it to the committee. Results of this survey were considered by members of the HMPC as they reviewed, revised, and crafted their 2020 Mitigation Action Plans.

A suggestion was made by AECOM to develop a regional vision statement to help define the new regional plan. General thoughts about a vision statement that were shared as part of the presentation included that a vision statement:

- Captures the overall purpose of the planning process;
- Expresses the outcome that the participating jurisdictions seek to accomplish as the plan is implemented;
- Helps drive the planning process;
- Unites the planning team around a common purpose;
- Provides a foundation for the rest of the planning process; and
- Communicates the reason for the plan to stakeholders, elected officials, and the public.

The first draft of the vision statement shared with the HMPC was:

“Through a cohesive regional planning effort, create and implement an effective hazard mitigation plan that will identify and reduce risk to natural hazards in order to protect the health, safety, quality of life, environment and economy of Iredell and Rowan counties.”

Based on discussion and input from the HMPC, a final draft vision statement was developed as shown in the Introduction section. This final draft vision statement is as follows:

“Through a coordinated regional planning effort, create and implement an effective hazard mitigation plan that will identify and prioritize risk reduction measures for natural hazards in order to protect the health, safety, quality of life, environment, and economy of the Iredell and Rowan counties.”

An update was given on the GIS data collection effort and a reminder of the upcoming deadline was provided. Other topics covered included early drafts of sample map templates to be used for the Risk Assessment and a review of available planning guidance and resources.

The meeting ended with open discussion and a list of next steps, which consisted of the following: development of draft risk assessment results; development of draft capability assessment results; and scheduling of HMPC Meeting #3.

The online survey was closed on November 1, 2019. A complete list of questions and responses can be found in Appendix F.

HMPC Meeting #3 (May 17, 2019)

The Mitigation Strategy Workshop was initiated by Jody Smyre, Iredell County Emergency Management Coordinator, and was led by Brent Edwards (AECOM Planner) with assistance from Kelly Keefe (AECOM Lead Planner). This meeting consisted of a detailed overview of the draft risk assessment and draft capability assessment results, an update on public outreach, discussion of the regional vision statement, an exercise to formulate regional mitigation goals and regional mitigation actions, and an explanation of next steps.

The meeting began with a brief welcome and opportunity for each of the attendees to introduce themselves to the group.

The meeting continued with an overview of the draft risk assessment findings. The hazards addressed included: flood; erosion; dam/levee failure; drought/extreme heat; thunderstorm, lightning, and hail; tornado; winter weather; hurricane and tropical storm; landslide; earthquake; sinkhole; and wildfire. For each hazard the following information was shared: hazard maps, tables of at-risk buildings and infrastructure, and historical hazard occurrences. Complete inventories and maps were shown for demographic data, parcels and buildings, critical facilities, infrastructure elements, high potential loss properties, and historic properties. The technical information shared during this portion of the presentation is too extensive to share in this section.

The next portion of the presentation consisted of an overview of the draft capability assessment findings. Participation from the Local Capability Assessment Survey was 100% (28 out of 28 surveys returned). The results centered on findings in the areas of planning and regulatory capability, administrative and technical capability, fiscal capability, education and outreach capability, political capability, and a community self-assessment. The point system and overall capability assessment score for the Region were presented to the group along with a ranking of local capability by jurisdiction. All of this information is presented in its final form in the Capability Assessment section (Section 5).

An update on the Public Participation Survey was also provided just prior to a working lunch being served. At the time of the meeting, 232 online surveys had been started and preliminary notes and indications from these surveys were presented to the group. In general, the input being provided by the public was consistent and in-line with the discussions and decisions being made by the HMPC.

HMPC Meeting #4 (June 21, 2019)

The Presentation of Draft Mitigation Plan meeting was initiated by Jody Smyre, Iredell County Emergency Management Coordinator, and was led by Brent Edwards (AECOM Planner) and Kelly Keefe (AECOM Lead Planner). This meeting consisted of a high-level walkthrough of the working draft Hazard Mitigation Plan including all its sections, instructions for the committee's review and comment period, results of the public participation survey, an interactive Mitigation Action Plan exercise, discussion of plan maintenance procedures, an open discussion session, and an explanation of next steps.

The portion of the presentation covering a walkthrough of the working draft plan document consisted of an overview of the plan's organization (i.e., table of contents), a brief status update on each section, an explanation of the review and comment process, suggested areas of focus for the committee members, availability of the review files on the project information website, and instructions for submitting review comments.

For the Mitigation Action Plan exercise, participants were asked to pair up with others from their jurisdiction and/or county, to review the Mitigation Strategy section of the Plan including regional mitigation goals (provided as a handout), to review the mitigation actions for their jurisdiction, to review the status of the previous mitigation actions for their jurisdiction, make any additional changes that may be needed, and pose questions to the group about mitigation actions they were unsure of.

Some of the questions asked regarding plan maintenance procedures included the following:

- Who will be the lead agency for future mitigation planning meetings, updates, progress reports, etc.?
- What will be the schedule for any ongoing meetings of the HMPC, prior to the next 5-year plan update? (Such as annual meetings, bi-annual meetings, "as-needed" meetings, etc.)
- To what extent will you seek to integrate the regional plan with other local plans, policies and programs? (Such as comprehensive plans, land use plans, emergency operations plans, etc.)
- What other implementation strategies can you use?
- What criteria will be used for 5-year plan updates?
- What kind(s) of reporting procedures would you like to adopt?
- How will you keep the public involved?
- How will you keep stakeholders involved?

Responses and decisions based on these questions are reflected in the Plan Maintenance Procedures section (Section 8).

The discussion of next steps consisted of another reminder regarding the review/comment period and deadline, an explanation that the next version of the plan document would be considered a final draft based on the committee's review comments, an overview of the upcoming State and FEMA plan review process, and local adoption procedures and expectations.

2.6 Involving the Public

44 CFR Requirement
44 CFR Part 201.6(b)(1): The planning process shall include an opportunity for the public to comment on the plan during the drafting stage and prior to plan approval.

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

Public involvement in the development of the *Iredell Rowan Regional Hazard Mitigation Plan* was sought using these methods: public survey instruments were made available in hard copy, online at https://gis.aecomonline.net/IRISK2/NCHMP.aspx?region=14 and via social media; copies of the draft Plan deliverables were made available for public review on county and municipal websites and at government offices and open meetings. The public was provided more than two opportunities to be involved in the development of the regional plan throughout the planning process: during the drafting

stage of the Plan; and upon completion of a final draft Plan, but prior to official plan approval and adoption.

Each of the participating jurisdictions will hold public meetings before the final plan is officially adopted by the local governing bodies. These meetings will occur at different times once FEMA has granted conditional approval of the Plan. Adoption resolutions will be included in Appendix A.

2.6.1 Public Participation Survey

The Regional Hazard Mitigation Planning Team was successful in getting citizens to provide input to the mitigation planning process using the *Public Participation Survey*. The *Public Participation Survey* was designed to provide an opportunity for the public to be involved in the planning process and capture data/feedback from residents of the region that might not be able to attend public meetings or participate through other means in the mitigation planning process.

Copies of the *Public Participation Survey* were distributed to the Regional Hazard Mitigation Planning Team to be made available for residents to complete at local public offices. A link to an electronic version of the survey was also posted on each county's website. A total of 251 survey responses were received, which provided valuable input for the Regional Hazard Mitigation Planning Team to consider in the development of the plan update. Selected survey results are presented below.

- Approximately 77 percent of survey respondents had been impacted by a disaster, mainly hurricanes (Hugo, Fran, Floyd), winter storms (blizzards, ice storms), and thunderstorms.
- Respondents ranked Hurricane/Winter Weather as the highest threat to their neighborhood (65 percent), followed by Thunderstorm (47 percent) and Tornado (28 percent).
- Approximately 27 percent of respondents have taken actions to make their homes more resistant to hazards and 80 percent are interested in making their homes more resistant to hazards.
- 62 percent of respondents do not know what office to contact regarding reducing their risks to hazards.
- Emergency Services and Public Education were ranked as the most important activities for communities to pursue in reducing risks.

A copy of the survey and a detailed summary of the survey results are provided in Appendix F.

2.7 Involving the Stakeholders

44 CFR Requirement
44 CFR Part 201.6(b)(2): The planning process shall include an opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other non-profit interests to be involved in the planning process.

At the beginning of the planning process for the development of this plan, the project consultants worked with each of the County Emergency Management leads to initiate outreach to stakeholders to be involved in the planning process, via e-mails, phone calls, Quick Response Code (QR Code) flyers and related meeting announcements at correlated government meetings The project consultant sent out a list of recommended stakeholders provided from FEMA Publication 386-1 titled **Getting Started: Building Support for Mitigation Planning**, in order to give these stakeholders and neighboring communities an opportunity to be on the planning team or otherwise be involved in the planning process.

In addition to participation from a wide variety of County-level departments, additional stakeholders that were involved in the process of developing this plan and/or were invited as participants and given the chance to provide input to affect the plan's content: North Carolina Division of Emergency Management (NCEM), American Red Cross, Duke Energy, Rowan Cabarrus Community College, Mitchell Community College, Salisbury Post, citizens, and neighboring communities such as the counties of Wilkes, Alexander, Catawba, Lincoln, Mecklenberg, Cabarrus, Stanley, Davidson, Davie, and Yadkin were invited via email and word of mouth at other government meetings and gatherings

In addition to the efforts described above, the regional Hazard Mitigation Planning Team encouraged more open and widespread participation in the mitigation planning process by designing and distributing via email, QR Code flyers posted in government offices, and social media advertisements, the *Public Participation Survey*. These opportunities were provided for local officials, residents, businesses, academia, neighboring jurisdictions and other private interests in the region to be involved and offer input throughout the local mitigation planning process.

2.8 Documentation of Plan Progress

The plan document is the written record of the planning process and describes how the plan was prepared, who was involved and what activities made up the plan's development. This plan update includes documentation of the current planning process undertaken to update the plan; this documentation is detailed throughout Section 2: Planning Process.

Progress in hazard mitigation planning for the participating jurisdictions in the Iredell Rowan Region is documented in this plan update. Since hazard mitigation planning efforts officially began in the participating counties with the development of the initial Hazard Mitigation Plans in the late 1990s and early 2000s, many mitigation actions have been completed and implemented in the participating jurisdictions. These actions will help reduce the overall risk to natural hazards for the people and property in the region. The actions that have been completed are documented in the Mitigation Action Plan found in Section 8.

In addition, community capability continues to improve with the implementation of new plans, policies and programs that help to promote hazard mitigation at the local level. The current state of local capabilities for the participating jurisdictions is captured in Section 6: *Capability Assessment*. The participating jurisdictions continue to demonstrate their commitment to hazard mitigation and hazard mitigation planning and have proven this by developing the Regional Hazard Mitigation Planning Team to update the Plan and by continuing to involve the public in the hazard mitigation planning process.

SECTION 3: COMMUNITY PROFILE

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

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

3.1 Geography and the Environment

The Iredell Rowan Region is located in the central piedmont of North Carolina. For the purposes of this plan, the Iredell Rowan Region includes the two counties of Iredell and Rowan and their participating municipalities. An orientation map is provided as **Figure 3.1**.

The Brushy Mountains are located in the northwest corner of Iredell County and include Fox Mountain, which is the highest point of elevation in the county at 1,760 feet. Iredell County is laden with ridges, and creeks run through the valleys allowing for good irrigation. The largest manmade lake in the state, Lake Norman, extends into the southwest portion of Iredell County as well. The South Yadkin River, the lowest point in the county, runs along the Davie-Rowan County border. Rowan County is adjacent to the east side of Iredell County. The eastern border of the county is the Yadkin River, which encompasses High Rock Lake. The South Yadkin River is a tributary. Only 35 square miles of the region's total area is covered by water.

The total area of the two participating counties is presented in **Table 3.1**.

Table 3-1: Total Land Areas of Participating Counties

County	Total Area
Iredell County	597 square miles
Rowan County	524 square miles

Source: US Census Bureau

The Iredell Rowan Region enjoys a moderate climate that is characterized by moderate winters and hot, humid summers. Temperatures in the winter months of November, December, and January through March typically range from the 30s to the low 50s. In general, the spring months see temperatures that start to warm up. From March through May, temperatures have an average high of 66˚F and an average low of 50˚F. Typically, the weather is milder by mid-April and warm in June.

In the summer, afternoon showers and thunderstorms are common and average temperatures increase with afternoon highs reaching the mid to upper 80s in July and August. September and October hosts typically cooler weather that alternates between warm days and cool nights. Daytime highs are usually in the 70s and 80s during September but fall to the 50s and 60s in November. Precipitation is consistent every month with 3 to 5 inches.

Winter in this region is generally moderate but extremes do occur with snowfall. About half of the days from mid-November through February have high temperatures of 50˚F or more and can even reach the 70s. Winter lows are usually at or below freezing. Snow is most common during December, January, and February with approximately 9 inches annually.

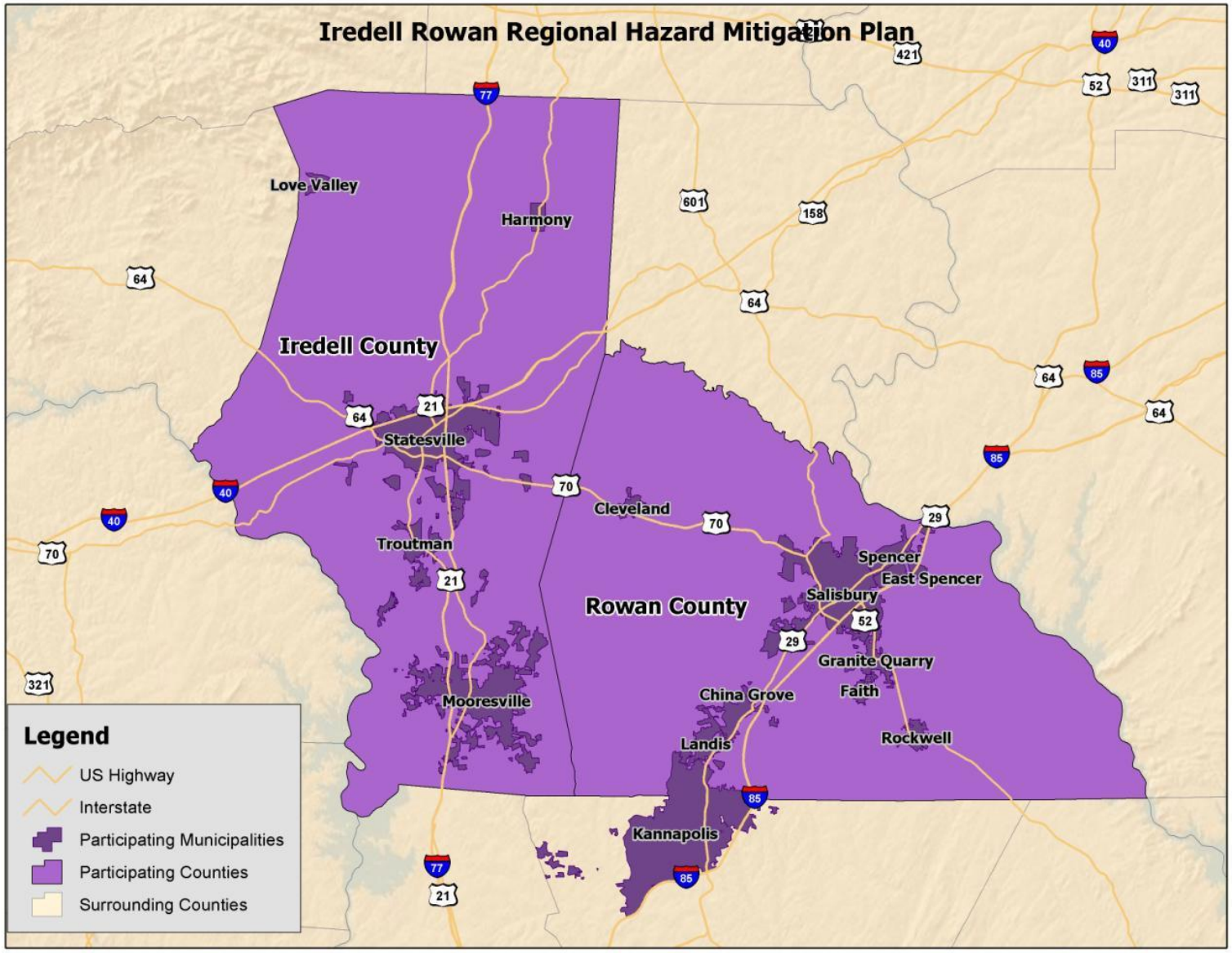


Figure 3-1: Iredell Rowan Region Orientation Map

3.2 Population and Demographics

Iredell County is the largest participating county by area and it also has the largest population. Between 2000 and 2010, Iredell County experienced growth by 30% whereas Rowan County experienced a 6.2% increase. Population counts from the US Census Bureau for 1990, 2000, and 2010 for both participating counties are presented in **Table 3.2.**

Table 3-2: Population Counts for Participating Counties

Jurisdiction	1990 Census Population	2000 Census Population	2010 Census Population	% Change 2000-2010
Iredell County	92,931	122,660	159,437	30.0%
Rowan County	110,605	130,340	138,428	6.2%

Source: US Census Bureau

Based on the 2010 Census, the median age of residents of the participating counties is approximately 39 years. The racial characteristics of the participating counties are presented in **Table 3.3**. Generally, whites make up most of the population in the region accounting for over 76 percent of the population in both counties. The percentage of other races represented in both counties is about equal.

Table 3-3: Demographics of Participating Counties

Jurisdiction	White, Percent (2010)	Black or African American, Percent (2010)	American Indian or Alaska Native, Percent (2010)	Asian, Percent (2010)	Native Hawaiian or Other Pacific Islander, Percent (2010)	Other Race, Percent (2010)	Two or More Races, percent (2010)	Persons of Hispanic Origin, Percent (2010)*
Iredell County	80.7%	11.9%	0.3%	1.8%	0.0%	3.4%	1.8%	6.8%
Rowan County	76.5%	16.2%	0.3%	1.0%	0.0%	4.3%	1.6%	7.7%

* Hispanics may be of any race, so also are included in applicable race categories
Source: US Census Bureau

3.3 Housing, Infrastructure, and Land Use

3.3.1 Housing

According to the 2010 US Census, there were 129,224 housing units in the Iredell Rowan Region, the majority of which are single family homes or mobile homes. Housing information for the participating counties is presented in **Table 3.4**.

Table 3-4: Housing Characteristics of Participating Counties

Jurisdiction	Housing Units (2000)	Housing Units (2010)	Seasonal Units, Percent (2010)	Median Home Value (2006-2010)
Iredell County	51,918	69,013	2.3%	$168,300
Rowan County	53,980	60,211	1.5%	$127,200

Source: US Census Bureau

3.3.2 Infrastructure

Transportation

Two major interstates run through Iredell County. Interstate 77 runs north to south and intersects Interstate 40 which runs east to west at the county seat of Statesville. There are three US highways that run through the county: 21, 64, and 70. Seven state highways also provide transportation through the county.

Interstate 85 runs southwest to northeast through Rowan County. US Route 70 enters Rowan County from Iredell County and joins with US Route 29 in the City of Salisbury. The southeastern portion of the county is served by US Route 52 which connects the Towns of Gold Hill, Rockwell, and Granite Quarry. It joins Interstate 85 before reaching Salisbury.

The Charlotte Douglas International Airport is the largest airport closest to Iredell Rowan Region. It offers non-stop commercial flights on nine airlines to over 50 destinations across the eastern US and Midwest as well as to several international destinations. It is approximately 42 miles from the center of the region. Lake Norman Airpark Airport and Statesville Regional Airport provide public service to Iredell County as well as several other private airports. Rowan County Airport provides public air services to the county and region as well as numerous private airports within the county. The Piedmont Triad International airport is another large airport that is also in close proximity to the region.

Utilities

Electrical power in the Iredell Rowan Region is provided by one public utility and two electricity cooperatives. Duke Energy Progress provides service to both counties. The electricity cooperatives servicing the region include United Energy Cooperative in both counties and Union Power Cooperative in Rowan County. Additionally, the Town of Landis operates a municipal ElectriCities Cooperative providing electrical services for its municipality, the northernmost section of the City of Kannapolis, and a small area of Southern Rowan County adjacent to Landis.

The Iredell Water Corporation provides water and sewer service to the northern part of Iredell County south of the county seat, Statesville. It is a membership-owned, non-profit organization. The West Iredell Water Company services the other part of the county. Foothills Water and Sewer Inc. and Energy United Water Company also provide service in the county. Three of the municipalities, Statesville, Mooresville, and Troutman provide water service for their citizens as well. The Salisbury-Rowan Utilities Department provides water and wastewater services to the municipalities of China Grove, East Spencer, Faith, Granite Quarry, Rockwell, Salisbury, and Spencer in Rowan County. The Town of Cleveland provides their own water and wastewater services. The residents of Town of Landis are served by two entities, the City of Kannapolis and the Salisbury-Rowan Utilities Department.

Community Facilities

There are several public buildings and community facilities located throughout the Iredell Rowan Region. According to the data collected for the vulnerability assessment (Section 6.4.1), there are 96 fire/EMS stations, 18 police stations, 5 medical care facilities, 2 Emergency Operations Centers (EOC), 79 schools, and 226 other critical facilities located within the study area.

Five hospitals are in the Iredell Rowan Region. The largest is Novant Health Rowan Medical Center, a 203-bed short term acute center with 17 operating rooms located in the City of Salisbury. The Iredell Memorial Hospital in Statesville, Lake Norman Regional Medical Center in Mooresville, and Davis Regional Medical Center also in Statesville are three additional short-term acute centers with 199 beds, 123 beds, and 102 beds, respectively. There is also a veterans' hospital in Rowan County, W.G. Hefner Salisbury VA Medical Center.

The Iredell Rowan Region contains eight parks and recreation areas. Iredell County has three parks and Rowan has five parks for public use. Rowan County is home of the N.C. Transportation Museum and Dan Nicholas Park. Three academic institutions are also located there, Catawba College, Livingstone College, and Rowan-Cabarrus Community College. Mitchell Community College is in Iredell County.

3.3.3 Land Use

Many areas of the Iredell Rowan Region are still rural in nature; however, as the population grows the development is expanding and there is less and less farming. Currently, farmland still represents a substantial portion of the total region land base. As shown in **Figure 3.1** above, there are six incorporated municipalities located in Iredell County and nine smaller municipalities in Rowan County, and these areas are where the region's population is generally concentrated. The incorporated areas are also where many businesses, commercial uses, and institutional uses are located. Land uses in the balance of the study area generally consist of rural residential development, agricultural uses, recreational areas, and forestland.

Local land use (and associated regulations, or lack thereof) is further discussed in *Section 6: Capability Assessment.*

3.4 Employment and Industry

The Lowe's corporate headquarters is in Mooresville in Iredell County. Iredell County is also a hub of NASCAR racing. There are many racing teams and drivers that call Mooresville and Iredell County home. The major businesses in Rowan County are Freightliner, Continental Structural Plastics, and the corporate office of Delhaize/Food Lion Supermarkets. Agriculture is also a major source of income in the Iredell Rowan Region, and a large portion of land remains rural in character even though there has been rapid population growth in the southern portion of Iredell County and western portion of Rowan County. The early modern economy in the Iredell Rowan Region was built around agriculture but it has declined due to increasing development pressure on farmlands.

SECTION 4: HAZARD IDENTIFICATION

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

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

44 CFR Requirement
44 CFR Part 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.

4.1 Overview

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

Upon a review of the full range of natural hazards suggested under FEMA planning guidance, the participating counties in the Iredell Rowan Region (Iredell County and Rowan County) have identified a number of hazards that are to be addressed in its Regional Hazard Mitigation Plan. These hazards were identified through an extensive process that utilized input from the Iredell Rowan Regional Hazard Mitigation Planning Team members, research of past disaster declarations in the participating counties[11], and review of the North Carolina State Hazard Mitigation Plan (2015). Readily available information from reputable sources (such as federal and state agencies) was also evaluated to supplement information from these key sources.

Table 4.1 lists the full range of natural hazards initially identified for inclusion in the Plan and provides a brief description for each. This table includes 23 individual hazards. Some of these hazards are considered to be interrelated or cascading, but for preliminary hazard identification purposes these individual hazards are broken out separately.

Next, **Table 4.2** lists the disaster declarations in the Iredell Rowan Region.

Next, **Table 4.3** documents the evaluation process used for determining which of the initially identified hazards are considered significant enough to warrant further evaluation in the risk assessment. For each hazard considered, the table indicates whether or not the hazard was identified as a significant hazard to be further assessed, how this determination was made, and why this determination was made. The table works to summarize not only those hazards that *were* identified (and why) but also those that *were not* identified (and why not). Hazard events not identified for inclusion at this time may be

[1] A complete list of disaster declarations for the Iredell Rowan Region can be found below in Section 4.3.

addressed during future evaluations and updates of the risk assessment if deemed necessary by the Regional Hazard Mitigation Planning Team during the plan update process.

Lastly, **Table 4.4** provides a summary of the hazard identification and evaluation process noting that 14 of the 23 initially identified hazards are considered significant enough for further evaluation through this Plan's risk assessment (marked with a "X").

4.2 Description of Full Range of Hazards

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

Hazard	Description
ATMOSPHERIC HAZARDS	
Avalanche	A rapid fall or slide of a large mass of snow down a mountainside.
Drought	A prolonged period of less than normal precipitation such that the lack of water causes a serious hydrologic imbalance. Common effects of drought include crop failure, water supply shortages, and fish and wildlife mortality. High temperatures, high winds, and low humidity can worsen drought conditions and also make areas more susceptible to wildfire. Human demands and actions have the ability to hasten or mitigate drought-related impacts on local communities.
Hailstorm	Any storm that produces hailstones that fall to the ground; usually used when the amount or size of the hail is considered significant. Hail is formed when updrafts in thunderstorms carry raindrops into parts of the atmosphere where the temperatures are below freezing.
Heat Wave	A heat wave may occur when temperatures hover 10 degrees or more above the average high temperature for the region and last for several weeks. Humid or muggy conditions, which add to the discomfort of high temperatures, occur when a "dome" of high atmospheric pressure traps hazy, damp air near the ground. Excessively dry and hot conditions can provoke dust storms and low visibility. A heat wave combined with a drought can be very dangerous and have severe economic consequences on a community.
Hurricane and Tropical Storm	Hurricanes and tropical storms are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and with a diameter averaging 10 to 30 miles across. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is closely monitored by the National Hurricane Center. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation and tornadoes. Coastal areas are also vulnerable to the additional forces of storm surge, wind-driven waves and tidal flooding which can be more destructive than cyclone wind. The majority of hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea and Gulf of Mexico during the official Atlantic hurricane season, which extends from June through November.

Hazard	Description
Lightning	Lightning is a discharge of electrical energy resulting from the buildup of positive and negative charges within a thunderstorm, creating a "bolt" when the buildup of charges becomes strong enough. This flash of light usually occurs within the clouds or between the clouds and the ground. A bolt of lightning can reach temperatures approaching 50,000 degrees Fahrenheit. Lightning rapidly heats the sky as it flashes, but the surrounding air cools following the bolt. This rapid heating and cooling of the surrounding air causes thunder. On average, 73 people are killed each year by lightning strikes in the United States.
Nor'easter	Similar to hurricanes, nor'easters are ocean storms capable of causing substantial damage to coastal areas in the Eastern United States due to their associated strong winds and heavy surf. Nor'easters are named for the winds that blow in from the northeast and drive the storm up the East Coast along the Gulf Stream, a band of warm water that lies off the Atlantic coast. They are caused by the interaction of the jet stream with horizontal temperature gradients and generally occur during the fall and winter months when moisture and cold air are plentiful. Nor'easters are known for dumping heavy amounts of rain and snow, producing hurricane-force winds, and creating high surf that causes severe beach erosion and coastal flooding.
Tornado	A tornado is a violently rotating column of air that has contact with the ground and is often visible as a funnel cloud. Its vortex rotates cyclonically with wind speeds ranging from as low as 40 mph to as high as 300 mph. Tornadoes are most often generated by thunderstorm activity when cool, dry air intersects and overrides a layer of warm, moist air forcing the warm air to rise rapidly. The destruction caused by tornadoes ranges from light to catastrophic depending on the intensity, size and duration of the storm.
Severe Thunderstorm	Thunderstorms are caused by air masses of varying temperatures meeting in the atmosphere. Rapidly rising warm moist air fuels, the formation of thunderstorms. Thunderstorms may occur singularly, in lines, or in clusters. They can move through an area very quickly or linger for several hours. Thunderstorms may result in hail, tornadoes, or straight-line winds. Windstorms pose a threat to lives, property, and vital utilities primarily due to the effects of flying debris and can down trees and power lines.
Winter Storm and Freeze	Winter storms may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Blizzards, the most dangerous of all winter storms, combine low temperatures, heavy snowfall, and winds of at least 35 miles per hour, reducing visibility to only a few yards. Ice storms occur when moisture falls and freezes immediately upon impact on trees, power lines, communication towers, structures, roads and other hard surfaces. Winter storms and ice storms can down trees, cause widespread power outages, damage property, and cause fatalities and injuries to human life.
GEOLOGIC HAZARDS	
Earthquake	A sudden, rapid shaking of the Earth caused by the breaking and shifting of rock beneath the surface. This movement forces the gradual building and accumulation of energy. Eventually, strain becomes so great that the energy is abruptly released, causing the shaking at the earth's surface which we know as an earthquake. Roughly 90 percent of all earthquakes occur at the boundaries where plates meet, although it is possible for earthquakes to occur entirely within plates. Earthquakes can affect hundreds of thousands of square miles; cause damage to property measured in the

Hazard	Description
	tens of billions of dollars; result in loss of life and injury to hundreds of thousands of persons; and disrupt the social and economic functioning of the affected area.
Expansive Soils	Soils that will exhibit some degree of volume change with variations in moisture conditions. The most important properties affecting degree of volume change in a soil are clay mineralogy and the aqueous environment. Expansive soils will exhibit expansion caused by the intake of water and, conversely, will exhibit contraction when moisture is removed by drying. Generally speaking, they often appear sticky when wet, and are characterized by surface cracks when dry. Expansive soils become a problem when structures are built upon them without taking proper design precautions into account with regard to soil type. Cracking in walls and floors can be minor or can be severe enough for the home to be structurally unsafe.
Landslide	The movements of a mass of rock, debris, or earth down a slope when the force of gravity pulling down the slope exceeds the strength of the earth materials that comprise to hold it in place. Slopes greater than 10 degrees are more likely to slide, as are slopes where the height from the top of the slope to its toe is greater than 40 feet. Slopes are also more likely to fail if vegetative cover is low and/or soil water content is high.
Land Subsidence	The gradual settling or sudden sinking of the Earth's surface due to the subsurface movement of earth materials. Causes of land subsidence include groundwater plumage, aquifer system compaction, drainage of organic soils, underground mining, hydro compaction, natural compaction, sinkholes, and thawing permafrost.
Tsunami	A series of waves generated by an undersea disturbance such as an earthquake. The speed of a tsunami traveling away from its source can range from up to 500 miles per hour in deep water to approximately 20 to 30 miles per hour in shallower areas near coastlines. Tsunamis differ from regular ocean waves in that their currents travel from the water surface all the way down to the sea floor. Wave amplitudes in deep water are typically less than one meter; they are often barely detectable to the human eye. However, as they approach shore, they slow in shallower water, basically causing the waves from behind to effectively "pile up", and wave heights to increase dramatically. As opposed to typical waves which crash at the shoreline, tsunamis bring with them a continuously flowing 'wall of water' with the potential to cause devastating damage in coastal areas located immediately along the shore.
Volcano	A mountain that opens downward to a reservoir of molten rock below the surface of the earth. While most mountains are created by forces pushing up the earth from below, volcanoes are different in that they are built up over time by an accumulation of their own eruptive products: lava, ash flows, and airborne ash and dust. Volcanoes erupt when pressure from gases and the molten rock beneath becomes strong enough to cause an explosion.
HYDROLOGIC HAZARDS	
Dam and Levee Failure	Dam failure is the collapse, breach, or other failure of a dam structure resulting in downstream flooding. In the event of a dam failure, the energy of the water stored behind even a small dam is capable of causing loss of life and severe property damage if development exists downstream of the dam. Dam failure can result from natural events, human-induced events, or a combination of the two. The most common cause of dam failure is prolonged rainfall that produces flooding. Failures due to other natural events such as hurricanes, earthquakes or landslides are significant because there is generally little or no advance warning.

Hazard	Description
Erosion	Erosion is the gradual breakdown and movement of land due to both physical and chemical processes of water, wind, and general meteorological conditions. Natural, or geologic, erosion has occurred since the Earth's formation and continues at a very slow and uniform rate each year.
Flood	The accumulation of water within a water body which results in the overflow of excess water onto adjacent lands, usually floodplains. The floodplain is the land adjoining the channel of a river, stream ocean, lake or other watercourse or water body that is susceptible to flooding. Most floods fall into the following three categories: riverine flooding, coastal flooding, or shallow flooding (where shallow flooding refers to sheet flow, ponding and urban drainage).
Storm Surge	A storm surge is a large dome of water often 50 to 100 miles wide and rising anywhere from four to five feet in a Category 1 hurricane up to more than 30 feet in a Category 5 storm. Storm surge heights and associated waves are also dependent upon the shape of the offshore continental shelf (narrow or wide) and the depth of the ocean bottom (bathymetry). A narrow shelf, or one that drops steeply from the shoreline and subsequently produces deep water close to the shoreline, tends to produce a lower surge but higher and more powerful storm waves. Storm surge arrives ahead of a storm's actual landfall and the more intense the hurricane is, the sooner the surge arrives. Storm surge can be devastating to coastal regions, causing severe beach erosion and property damage along the immediate coast. Further, water rise caused by storm surge can be very rapid, posing a serious threat to those who have not yet evacuated flood-prone areas.
OTHER HAZARDS	
Hazardous Materials Incident	Hazardous material (HAZMAT) incidents can apply to fixed facilities as well as mobile, transportation-related accidents in the air, by rail, on the nation's highways and on the water. HAZMAT incidents consist of solid, liquid and/or gaseous contaminants that are released from fixed or mobile containers, whether by accident or by design as with an intentional terrorist attack. A HAZMAT incident can last hours to days, while some chemicals can be corrosive or otherwise damaging over longer periods of time. In addition to the primary release, explosions and/or fires can result from a release, and contaminants can be extended beyond the initial area by persons, vehicles, water, wind and possibly wildlife as well.
Terror Threat	Terrorism is defined by FEMA as, "the use of force or violence against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion, or ransom." Terrorist acts may include assassinations, kidnappings, hijackings, bomb scares and bombings, cyberattacks (computer-based), and the use of chemical, biological, nuclear and radiological weapons.
Wildfire	An uncontrolled fire burning in an area of vegetative fuels such as grasslands, brush, or woodlands. Heavier fuels with high continuity, steep slopes, high temperatures, low humidity, low rainfall, and high winds all work to increase risk for people and property located within wildfire hazard areas or along the urban/wildland interface. Wildfires are part of the natural management of forest ecosystems, but most are caused by human factors. Over 80 percent of forest fires are started by negligent human behavior such as smoking in wooded areas or improperly extinguishing campfires. The second most common cause for wildfire is lightning.

4.3 Disaster Declarations

Disaster declarations provide initial insight into the hazards that may impact the Iredell Rowan Regional planning area. Since 1973, ten presidential disaster declarations have been reported in the Iredell Rowan Region. This includes one declaration related to severe storms and flooding, one declaration related to tornadoes, three declarations related to hurricane, and three declarations related to winter storm events.

Table 4-2: Iredell Rowan Region Disaster Declarations

Year	Disaster Number	Description	Iredell County	Rowan County
1973	394	Severe Storms and Flooding	X	
1989	827	Tornadoes	X	
1989	844	Hurricane Hugo	X	X
1996	1087	Blizzard of '96	X	X
1996	1103	Winter Storm	X	
1999	1292	Hurricane Floyd		X
2002	1448	Severe Ice Storm	X	X
2004	1546	Tropical Storm Frances	X	
2018	4393	Hurricane Florence		X
2018	4412	Tropical Storm Michael	X	

4.4 Hazard Evaluation

Table 4-3: Documentation of the Hazard Evaluation Process

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
ATMOSPHERIC HAZARDS			
Avalanche	NO	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of the NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of US Forest Service National Avalanche Center website	• The United States avalanche hazard is limited to mountainous western states including Alaska as well as some areas of low risk in New England. • Avalanche hazard was removed from the North Carolina State Hazard Mitigation Plan after determining the mountain elevation in Western North Carolina did have enough snow not produce this hazard. • Avalanche is not included in any of the previous Iredell Rowan hazard mitigation plans. • There is no risk of avalanche events in North Carolina.
Drought	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of the NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plans • Review of the North Carolina Drought Monitor website	• Drought is a normal part of virtually all climatic regimes, including areas with high and low average rainfall. • Droughts are discussed in the NC State Hazard Mitigation Plan as a lesser hazard. • The NC State Hazard Mitigation Plan lists drought as a top hazard for the Piedmont 4 Region, which includes the Iredell Rowan counties. • Drought is included in the previous Iredell Rowan hazard mitigation plan.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
			• There are reports of drought conditions in each of the last ten years in the Iredell Rowan Region, according to the North Carolina Drought Monitor.
Hailstorm	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of NOAA NCDC Storm Events Database	• Although hailstorms occur primarily in the Midwestern states, they do occur in every state on the mainland U.S. Most inland regions experience hailstorms at least two or more days each year. • Hailstorm events are discussed in the state plan under the severe thunderstorm hazard. • Hail is addressed under the severe thunderstorm hazard in the two previous Iredell Rowan hazard mitigation plans. Given the frequency of the event, individual analysis is warranted. • NCDC reports 239 hailstorm events (3/4-inch size hail to 4.5 inches) for the Iredell Rowan Region since 1959.
Heat Wave	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of the North Carolina State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of NOAA NCDC Storm Events Database	• Many areas of the United States are susceptible to heat waves, including North Carolina. • The NC State Hazard Mitigation Plan does not include Heat Wave as a top hazard for the Piedmont 4 Region, which includes the Iredell Rowan counties. • The NC State Hazard Mitigation Plan reports the Piedmont Region as having moderate vulnerability compared to the rest of the state. • NCDC does not report any extreme heat events for the Iredell Rowan counties.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Hurricane and Tropical Storm	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Analysis of NOAA historical tropical cyclone tracks and National Hurricane Center Website • Review of NOAA NCDC Storm Events Database • Review of historical presidential disaster declarations	• The Atlantic and Gulf regions are most prone to landfall by hurricanes and tropical storms. • Hurricane and tropical storm events are discussed in the state plan and are listed as the top hazard in the Piedmont 4 Region, which includes the Iredell Rowan counties. • Hurricane and tropical storm were addressed in the previous Iredell Rowan hazard mitigation plans. • NOAA historical records indicate 30 tropical storms and 32 tropical depressions have come within 75 miles of the Iredell Rowan Region since 1854. • NCDC does not report any hurricane or tropical storm events for the Iredell Rowan Region. • Five out of ten disaster declarations in the Iredell Rowan Region are directly related to hurricane and tropical storm events. • The 50-year return period peak gust for hurricane and tropical storm events in the Iredell Rowan Region is between 57-64 mph.
Lightning	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of NOAA NCDC Storm Events Database	• The central region of the Florida has the highest density of lightning strikes in the mainland U.S.; however, lightning events are experienced in nearly every region. • Lightning events are discussed in the state plan as part of the severe thunderstorm hazard. • NCDC reports 36 lightning events for the Iredell Rowan Region since 1995.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Nor'easter	NO	• Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of NOAA NCDC Storm Events Database	• Nor'easters are discussed in the state plan. The Piedmont Region, which includes the Iredell Rowan Region, has relatively low vulnerability compared to the state. • Nor'easter was considered for inclusion in one of the two previous Iredell Rowan hazard mitigation plans; however, it was found to pose low enough risk not to warrant an in-depth hazard assessment. • NCDC does not report any nor'easter activity for the Iredell Rowan Region. However, nor'easters may have affected the region as severe winter storms. In this case, the activity would be reported under winter storm events.
Tornado	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of NOAA NCDC Storm Events Database • Review of historical presidential disaster declarations.	• Tornado events are discussed in the NC State Hazard Mitigation Plan. The Piedmont Region, which includes the Iredell Rowan Region, is one of the regions with the highest vulnerability in the state. • Tornado events were addressed in the previous Iredell Rowan hazard mitigation plan. • NCDC reports 26 tornado events in Iredell Rowan Region counties since 1959. One of the region's ten disaster declarations was directly related to tornado events.
Severe Thunderstorm	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of NOAA NCDC Storm Events Database	• Over 100,000 thunderstorms are estimated to occur each year on the • U.S. mainland, and they are experienced in nearly every region. • Severe thunderstorm events are discussed in the NC State Hazard Mitigation Plan and are identified as a

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
		• Review of historical presidential disaster declarations.	top hazard in the Piedmont 4 Region, which includes the Iredell Rowan counties. • Severe thunderstorm events were addressed in the previous Iredell Rowan hazard mitigation plans. • NCDC reports 523 thunderstorm/high wind events in the Iredell Rowan Region counties since 1957. • One of the region's ten disaster declarations was directly related to severe storm events.
Winter Storm and Freeze	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of NOAA NCDC Storm Events Database • Review of historical presidential disaster declarations.	• Winter storms affect every state in the continental U.S. and Alaska. • Severe winter storms, including snow storms and ice storms, are discussed in the state plan. They are listed as a top hazard in the Piedmont 4 Region, which includes the Iredell Rowan counties. • Winter storm events were addressed in the previous Iredell Rowan hazard mitigation plans. • NCDC reports that the Iredell Rowan counties have been affected by 134 winter storm events since 1993. Three of the region's ten disaster declarations were directly related to winter storm events.
GEOLOGIC HAZARDS			
Earthquake	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of the National Geophysical Data Center • USGS Earthquake Hazards Program website	• Although the zone of greatest seismic activity in the United States is along the Pacific Coast, eastern regions have experienced significant earthquakes. • Earthquake events are discussed in the state plan and both of the participating counties in the Iredell Rowan Region are considered to have low vulnerability to an earthquake event.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
			• Earthquakes have occurred in and around the State of North Carolina in the past. The state is affected by the Charleston and the New Madrid (near Missouri) Fault lines which have generated a magnitude 8.0 earthquake in the last 200 years. • The previous hazard mitigation plan in the Iredell Rowan Region addresses earthquake. • 19 events are known to have occurred in the region according to the National Geophysical Data Center. The greatest MMI reported was a 5. • According to USGS seismic hazard maps, the peak ground acceleration (PGA) with a 10% probability of exceedance in 50 years for the Iredell Rowan Region is approximately 3 to 4%g. FEMA recommends that earthquakes be further evaluated for mitigation purposes in areas with a PGA of 3%g or more.
Expansive Soils	NO	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of USDA Soil Conservation Service's Soil Survey	• The effects of expansive soils are most prevalent in parts of the Southern, Central, and Western U.S. • Expansive soils are identified in the state plan and are listed as a top hazard in the Piedmont 4 Region, which includes the Iredell Rowan counties; however, • Neither of the previous Iredell Rowan hazard mitigation plans identifies expansive soils as a potential hazard. • According to FEMA and USDA sources, the Iredell Rowan Region is located in an area that has "little or no" clay swelling potential.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Landslide	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of USGS Landslide Incidence and Susceptibility Hazard Map • Review of the North Carolina Geological Survey database of historic landslides	• Landslides occur in every state in the U.S, and they are most common in the coastal ranges of California, the Colorado Plateau, the Rocky Mountains, and the Appalachian Mountains. • Landslide/debris flow events are discussed in the state plan but are not included as a top hazard for the Piedmont 4 Region, which includes the Iredell Rowan counties. However, the Piedmont Region has moderate vulnerability compared to the rest of the state. • One of the previous Iredell Rowan hazard mitigation plans addresses landslides. (Landslide was considered for inclusion in the other previous plan; however, it was found to pose low enough risk not to warrant an in-depth hazard assessment). • USGS landslide hazard maps indicate "low incidence" and "moderate susceptibility" are found throughout out most of the Iredell Rowan Region. However, there is an area of "high incidence" (more than 15% of the area is involved in land sliding) in central Iredell County and "moderate incidence" in the northwest corner of Iredell County (both of these areas also have high susceptibility). • Data provided by NCGS indicate no recorded landslide events in the Iredell Rowan Region.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Land Subsidence	NO	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan	• Land subsidence affects at least 45 states, including North Carolina. However, because of the broad range of causes and impacts, there has been limited national focus on this hazard. • The state plan delineates certain areas that are susceptible to land subsidence hazards in North Carolina; however, the Iredell Rowan counties have relatively low vulnerability. • Neither of the previous Iredell Rowan hazard mitigation plans identifies land subsidence as a potential hazard.
Tsunami	NO	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of FEMA • "How-to" mitigation • planning guidance (Publication 386-2, "Understanding Your Risks – Identifying Hazards and Estimating Losses).	• No record exists of a catastrophic Atlantic basin tsunami impacting the mid-Atlantic coast of the United States. • Tsunami inundation zone maps are not available for communities located along the U.S. East Coast. • Tsunamis are discussed in the state plan and described as a "greater" hazard for the state. However, the Piedmont Region scored a zero for tsunami hazard risk. • Tsunami was mentioned in both previous Iredell Rowan hazard mitigation plans; however, it was found to pose low enough risk not to warrant an in-depth hazard assessment. • FEMA mitigation planning guidance suggests that locations along the U.S. East Coast have a relatively low tsunami risk and need not conduct a tsunami risk assessment at this time.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Volcano	NO	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of USGS Volcano Hazards Program website	• More than 65 potentially active volcanoes exist in the United States and most are located in Alaska. The Western states and Hawaii are also potentially affected by volcanic hazards. • There are no active volcanoes in North Carolina. • There has not been a volcanic eruption in North Carolina in over 1 million years. • No volcanoes are located near the Iredell Rowan Region.
HYDROLOGIC HAZARDS			
Dam and Levee Failure	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of North Carolina Division of Land Management website	• The National Inventory of Dams shows dams are located in every state. • Dam failure is discussed in the state plan and is found to pose moderate risk to the Iredell Rowan Region. • One of the previous Iredell Rowan hazard mitigation plans addresses dam failure. (Dam failure was considered for inclusion in the other previous plan; however, it was found to pose low enough risk not to warrant an in-depth hazard assessment). • Of the 208 dams reported on the North Carolina Inventory of Dams, 43 are high hazard (21%). (High hazard is defined as "where failure or mis-operation will probably cause loss of human life.")

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Erosion	YES	• Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan	• Coastal erosion is discussed in the state plan but only for coastal areas (there is no discussion of riverine erosion). Iredell Rowan is not located in a coastal area. • Erosion is not discussed in either of the previous Iredell Rowan hazard mitigation plans. • Although erosion was not previously addressed, it remains a natural, dynamic, and continuous process in the Iredell Rowan Region that warrants inclusion as a potential hazard.
Flood	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of NOAA NCDC Storm Events Database • Review of historical disaster declarations • Review of FEMA DFIRM data • Review of FEMA's NFIP Community Status Book and Community Rating System (CRS)	• Floods occur in all 50 states and in the • U.S. territories. • The flood hazard is thoroughly discussed in the state plan. The Iredell Rowan Region was found to have relatively low vulnerability compared to the state. • The previous hazard mitigation plan in the Iredell Rowan Region address flood hazard. • NCDC reports that the Iredell Rowan Region counties have been affected by 58 flood events since 1993. • One of the ten Presidential Disaster Declarations was flood-related and an additional three were hurricane or tropical storm-related which caused flooding issues. • Nearly 9% of the Iredell Rowan Region is located in an identified floodplain (100 or 500 year). • All municipalities in the Rowan County participate in the NFIP.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Storm Surge	NO	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation plan • Review of NOAA NCDC Storm Events Database	• Given the inland location of the Iredell Rowan Region, storm surge would not affect the area. • Storm surge is discussed in the state plan under the hurricane hazard. The Piedmont Region, which includes the Iredell Rowan Region, has zero vulnerability to storm surge. • Neither of the previous hazard mitigation plans in the Iredell Rowan Region address storm surge. • No historical events were reported by NCDC
OTHER HAZARDS			
Hazardous Materials Incident	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of previous Iredell Rowan county hazard mitigation plans	• Cities, counties, and towns where hazardous materials fabrication, processing, and storage sites are located, and those where hazardous waste treatment, storage or disposal facilities operate are at risk for hazardous materials events. • One of previous Iredell Rowan Region hazard mitigation plans includes hazardous materials incident.
Terror Threat	NO	• Review of previous Iredell Rowan county hazard mitigation plans • Review of local official knowledge	• Terrorist activity was considered for inclusion in one of the two previous Iredell Rowan hazard mitigation plans; however, it was found to pose low enough risk not to warrant an in-depth hazard assessment. • There are few high profiles targets in the area.

Natural Hazards Considered	Was this hazard identified as a significant hazard to be addressed in the plan at this time? (Yes or No)	How was this determination made?	Why was this determination made?
Wildfire	YES	• Review of FEMA's Multi-Hazard Identification and Risk Assessment • Review of NC State Hazard Mitigation Plan • Review of previous Iredell Rowan county hazard mitigation • Review of Southern Wildfire Risk Assessment (SWRA) Data • Review of the NC Division of Forest Resources website	• Wildfires occur in virtually all parts of the United States. Wildfire hazard risks will increase as low-density development along the urban/wildland interface increases. • Wildfires are discussed in the state plan as a "greater" hazard of concern, although the Piedmont Region, which includes the Iredell Rowan Region, shares the lowest vulnerability in the state. • The previous hazard mitigation plans in the Iredell Rowan Region addresses wildfire. • A review of SWRA data indicates that there are some areas of elevated concern in the Iredell Rowan Region. • According to the North Carolina Division of Forest Resources, the Iredell Rowan Region experiences an average of 121 fires each year which burn a combined average of 108 acres.

4.5 Hazard Identification Results

Table 4-4: Summary Results of the Hazard Identification and Evaluation Process

Atmospheric Hazards	Geologic Hazards
☐ Avalanche	☒ Earthquake
☒ Drought	☐ Expansive Soils
☒ Hailstorm	☒ Landslide
☒ Heat Wave	☐ Land Subsidence
☒ Hurricane and Tropical Storm	☐ Tsunami
☐ Lightning	☐ Volcano
☐ Nor'easter	**Hydrologic Hazards**
☒ Tornado	☒ Dam and Levee Failure
☒ Severe Thunderstorm	☒ Erosion
☒ Winter Storm and Freeze	☒ Flood
	☐ Storm Surge
	Other Hazards
	☒ Hazardous Materials Incident
	☐ Terror Threat
	☒ Wildfire

SECTION 5: HAZARD PROFILES

Table of Contents

Tables

Figures

SECTION 5: HAZARD PROFILES

This section includes detailed hazard profiles for each of the hazards identified in the previous section (*Hazard Identification*) as significant enough for further evaluation in the Iredell Rowan Regional Hazard Mitigation Plan. It contains the following subsections:

44 CFR Requirement
44 CFR Part 201.6I(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

This section includes detailed hazard profiles for each of the hazards identified in the previous section (*Hazard Identification*) as significant enough for further evaluation in the Iredell Rowan Region hazard risk assessment by creating a hazard profile. Each hazard profile includes a general description of the hazard, its location and extent, notable historical occurrences, and the probability of future occurrences. Each profile also includes specific items noted by members of the Iredell Rowan Regional Hazard Mitigation Planning Team as it relates to unique historical or anecdotal hazard information for the counties in the Iredell Rowan Region, or a participating municipality within them.

The following hazards were identified:

- Atmospheric
  - Drought
  - Extreme Heat
  - Hailstorm
  - Hurricane and Tropical Storm
  - Lightning
  - Severe Thunderstorm (including straight-line winds)
  - Tornado
  - Winter Storm and Freeze
- Geologic
  - Earthquake
  - Landslide

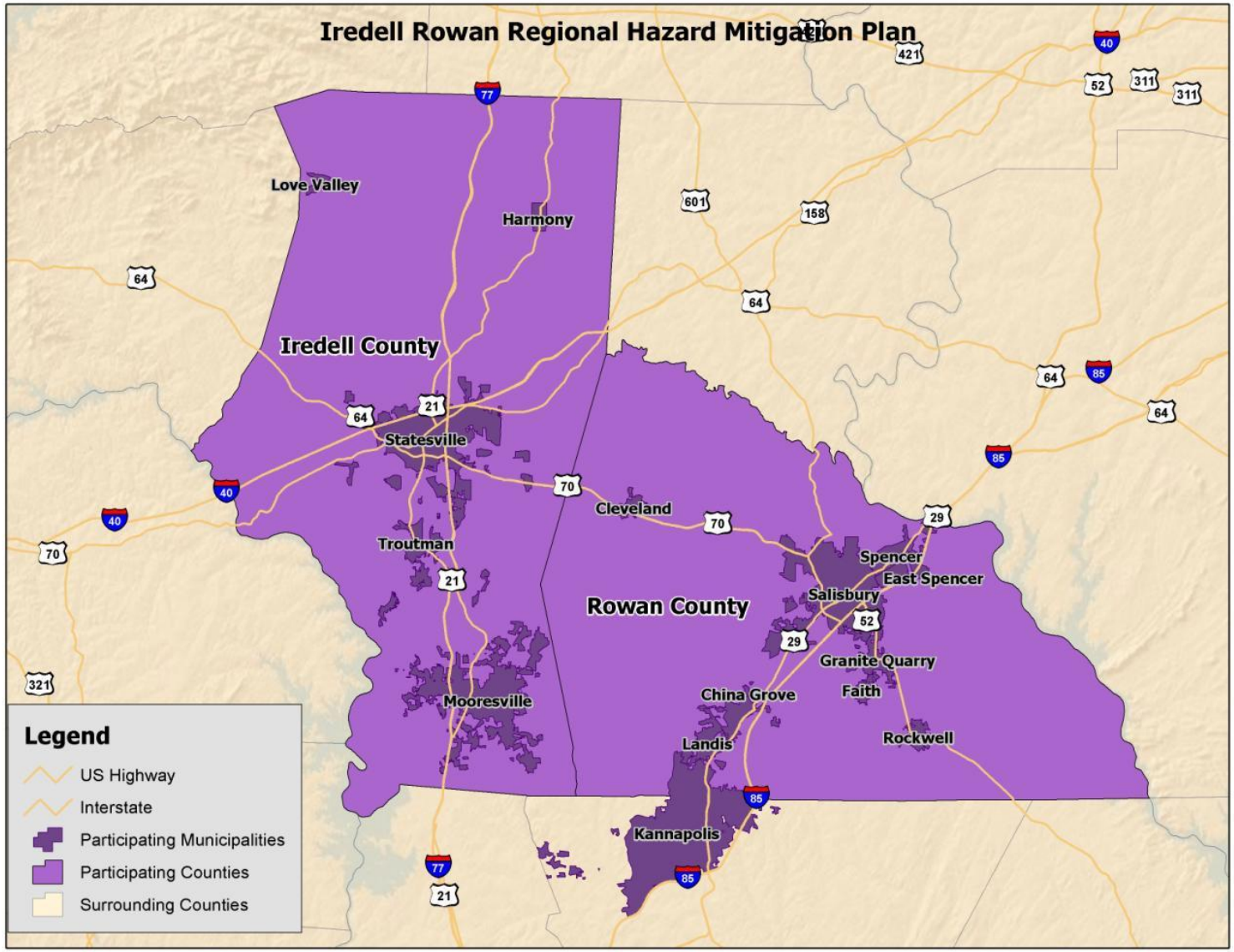
- Hydrologic
  - Dam and Levee Failure
  - Erosion
  - Flood
- Other
  - Hazardous Materials Incident
  - Wildfire

5.2 STUDY AREA

The Iredell Rowan Region includes two counties: Iredell and Rowan. **Table 5-1** provides a summary table of the participating jurisdictions within each county. In addition, **Figure 5-1** provides a base map, for reference, of the Iredell Rowan Region.

Table 5-1: Participating Jurisdictions in the Iredell Rowan Regional Hazard Mitigation Plan

Iredell County	
Harmony	Statesville
Love Valley	Troutman
Mooresville	
Rowan County	
China Grove	Landis
Cleveland	Rockwell
East Spencer	Salisbury
Faith	Spencer
Granite Quarry	



*The City of Kannapolis is participating in the Cabarrus Stanly Union Regional Hazard Mitigation Plan.

Figure 5-1: Iredell Rowan Region Base Map

Table 5-2 lists each significant hazard for the Iredell Rowan Region and identifies whether or not it has been determined to be a specific hazard of concern for the fourteen municipal jurisdictions and each of the two county's unincorporated areas. This is the based on the best available data and information from the Iredell Rowan Regional Hazard Mitigation Planning Team. (● = hazard of concern)

Table 5-2: Summary of Identified Hazard Events in the Iredell Rowan Region

Jurisdiction	Atmospheric								Geologic		Hydrologic			Other	
	Drought	Extreme Heat	Hailstorm	Hurricane and Tropical Storm	Lightning	Thunderstorm	Tornado	Winter Storm	Earthquake	Landslide	Dam and Levee Failure	Erosion	Flood	HAZMAT	Wildfire
Iredell County															
Harmony	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Love Valley	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Mooresville	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Statesville	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Troutman	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Unincorporated Area	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Rowan County															
China Grove	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Cleveland	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
East Spencer	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Faith	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Granite Quarry	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Landis	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Rockwell	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Salisbury	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Spencer	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Unincorporated Area	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

5.3 ASSET INVENTORY

An inventory of geo-referenced assets within the Iredell Rowan counties and jurisdictions was compiled in order to identify and characterize those properties potentially at risk to the identified hazards[1]. By understanding the type and number of assets that exist and where they are in relation to known hazard areas, the relative risk and vulnerability for such assets can be assessed. Under this assessment, two categories of physical assets were created and then further assessed through GIS analysis.

[1] While potentially not all-inclusive for the jurisdictions in the Iredell Rowan Region, "georeferenced" assets include those assets for which specific location data is readily available for connecting the asset to a specific geographic location for purposes of GIS analysis.

5.3.1 Physical and Improved Assets

The two categories of physical assets consist of:

- Improved Property: Includes all improved properties in the Iredell Rowan Region according to local parcel data provided by counties. The information has been expressed in terms of the number of parcels and total assessed value of improvements (buildings) that may be exposed to the identified hazards.
- Critical Facilities: Critical facilities vary by jurisdiction. When provided, the critical facilities provided by the jurisdiction are used in this section. If no critical facilities are identified, facilities were used from iRISK which includes fire stations, police station, medical care facilities, schools, and emergency operation centers, etc. It should be noted that this listing is not all-inclusive for assets located in the region, but it is anticipated that it will be expanded during future updates as more geo-referenced data becomes available for use in GIS analysis.

The following tables provide a detailed listing of the geo-referenced assets that have been identified for inclusion in the vulnerability assessment for the Iredell Rowan Region.

Table 5-3 lists the number of parcels, total value of parcels, total number of parcels with improvements, and the total assessed value of improvements for participating areas of the Iredell Rowan Region (study area of vulnerability assessment).[2]

Table 5-3: Improved Property in Iredell Rowan Region

Location	Number of Parcels	Total Assessed Value of Parcels	Estimated Number of Buildings*	Total Assessed Value of Improvements
Iredell County	**93,395**	**$18,174,838,443**	**61,876**	**$10,907,267,663**
Harmony	414	$26,553,270	217	$19,418,800
Love Valley	214	$6,127,140	78	$3,091,180
Mooresville	14,459	$3,183,735,397	12,006	$2,266,927,867
Statesville	12,731	$1,822,673,263	9,345	$1,313,951,333
Troutman	1,451	$184,313,150	966	$131,767,340
Unincorporated Area	64,126	$12,951,436,223	39,264	$7,172,111,143
Rowan County	**77,614**	**$10,751,914,394**	**56,128**	**$6,494,325,509**
China Grove	1,976	$204,850,349	1,629	$147,032,359
Cleveland	482	$76,416,964	351	$24,323,868
East Spencer	1,197	$54,846,828	683	$38,727,985
Faith	463	$57,965,547	356	$44,244,037
Granite Quarry	1,436	$158,981,180	1,036	$116,832,472
Kannapolis	4,337	$395,811,721	3,631	$265,712,313
Landis	1,723	$194,814,714	1,382	$136,039,967
Rockwell	901	$113,242,488	778	$83,648,538
Salisbury	13,483	$2,536,517,061	10,936	$1,806,443,802
Spencer	1,715	$165,526,955	1,358	$126,022,712
Unincorporated Area	49,901	$6,792,940,587	33,988	$3,705,297,456
IREDELL ROWAN REGION TOTAL	**171,009**	**$28,926,752,837**	**118,004**	**$17,401,593,172**

*Number of buildings for each county is based on the number of parcels with an improved building value greater than zero.

[2] Total assessed values for improvements is based on tax assessor records as joined to digital parcel data. This data does not include dollar figures for tax-exempt improvements such as publicly-owned buildings and facilities. It should also be noted that, due to record keeping, some duplication is possible thus potentially resulting in an inflated value exposure for an area.

Table 5-4 lists the number of parcels, total value of parcels, total number of parcels with improvements, and the total assessed value of improvements for participating areas of the Iredell Rowan Region (study area of vulnerability assessment).[3]

Table 5-4: Improved Property in Iredell Rowan Region

Location	Number of Parcels	Total Assessed Value of Parcels	Estimated Number of Buildings*	Total Assessed Value of Improvements
Iredell County	**93,395**	**$18,174,838,443**	**61,876**	**$10,907,267,663**
Harmony	414	$26,553,270	217	$19,418,800
Love Valley	214	$6,127,140	78	$3,091,180
Mooresville	14,459	$3,183,735,397	12,006	$2,266,927,867
Statesville	12,731	$1,822,673,263	9,345	$1,313,951,333
Troutman	1,451	$184,313,150	966	$131,767,340
Unincorporated Area	64,126	$12,951,436,223	39,264	$7,172,111,143
Rowan County	**77,614**	**$10,751,914,394**	**56,128**	**$6,494,325,509**
China Grove	1,976	$204,850,349	1,629	$147,032,359
Cleveland	482	$76,416,964	351	$24,323,868
East Spencer	1,197	$54,846,828	683	$38,727,985
Faith	463	$57,965,547	356	$44,244,037
Granite Quarry	1,436	$158,981,180	1,036	$116,832,472
Kannapolis	4,337	$395,811,721	3,631	$265,712,313
Landis	1,723	$194,814,714	1,382	$136,039,967
Rockwell	901	$113,242,488	778	$83,648,538
Salisbury	13,483	$2,536,517,061	10,936	$1,806,443,802
Spencer	1,715	$165,526,955	1,358	$126,022,712
Unincorporated Area	49,901	$6,792,940,587	33,988	$3,705,297,456
IREDELL ROWAN REGION TOTAL	**171,009**	**$28,926,752,837**	**118,004**	**$17,401,593,172**

* Number of buildings for each county is based on the number of parcels with an improved building value greater than zero.

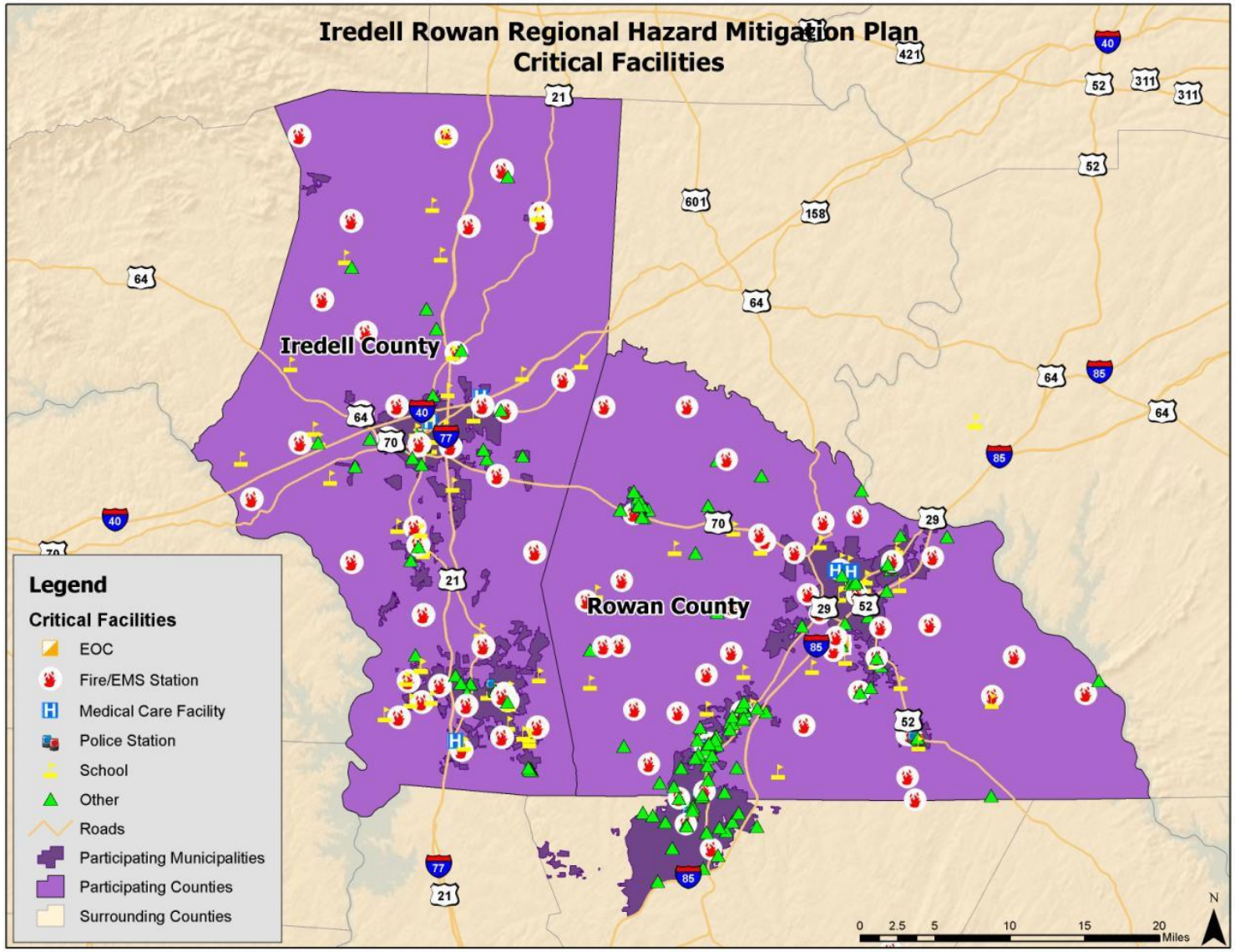
Table 5-5 lists the fire/emergency medical services (EMS) stations, police stations, medical care facilities, emergency operations centers (EOCs), schools, and "other" facilities located in the Iredell Rowan Region. The participating county governments provided the data for this analysis. In addition, **Figure 5-2** shows the locations of essential facilities in the Iredell Rowan Region.

Table 5-5: Critical Facility Inventory in the Iredell Rowan Region

Location	Fire/EMS Stations	Police Stations	Medical Care Facilities	EOC	Schools	Other
Iredell County	**44**	**6**	**3**	**1**	**44**	**71**

[3] Total assessed values for improvements is based on tax assessor records as joined to digital parcel data. This data does not include dollar figures for tax-exempt improvements such as publicly-owned buildings and facilities. It should also be noted that, due to record keeping, some duplication is possible thus potentially resulting in an inflated value exposure for an area.

Location	Fire/EMS Stations	Police Stations	Medical Care Facilities	EOC	Schools	Other
Harmony	2	0	0	0	1	0
Love Valley	0	0	0	0	0	0
Mooresville	6	1	1	0	9	21
Statesville	4	4	2	1	7	37
Troutman	3	1	0	0	4	3
Unincorporated Area	29	0	0	0	23	10
Rowan County	**52**	**12**	**2**	**1**	**35**	**155**
China Grove	6	1	0	0	5	15
Cleveland	2	1	0	0	1	14
East Spencer	1	1	0	0	0	2
Faith	1	0	0	0	1	7
Granite Quarry	1	1	0	0	1	4
Kannapolis	5	2	0	0	0	31
Landis	3	1	0	0	2	18
Rockwell	4	1	0	0	2	2
Salisbury	21	3	2	1	16	49
Spencer	1	1	0	0	3	7
Unincorporated Area	7	0	0	0	4	6
IREDELL ROWAN REGION TOTAL	**96**	**18**	**5**	**2**	**79**	**226**



Source: Iredell County; Rowan County

Figure 5-2: Critical Facility Locations in the Iredell Rowan Region

Atmospheric Hazards

5.4 DROUGHT

5.4.1 Background

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

Droughts are typically classified into one of four types: 1) meteorological, 2) hydrologic, 3) agricultural, or 4) socioeconomic. **Table 5-6** presents definitions for these types of drought.

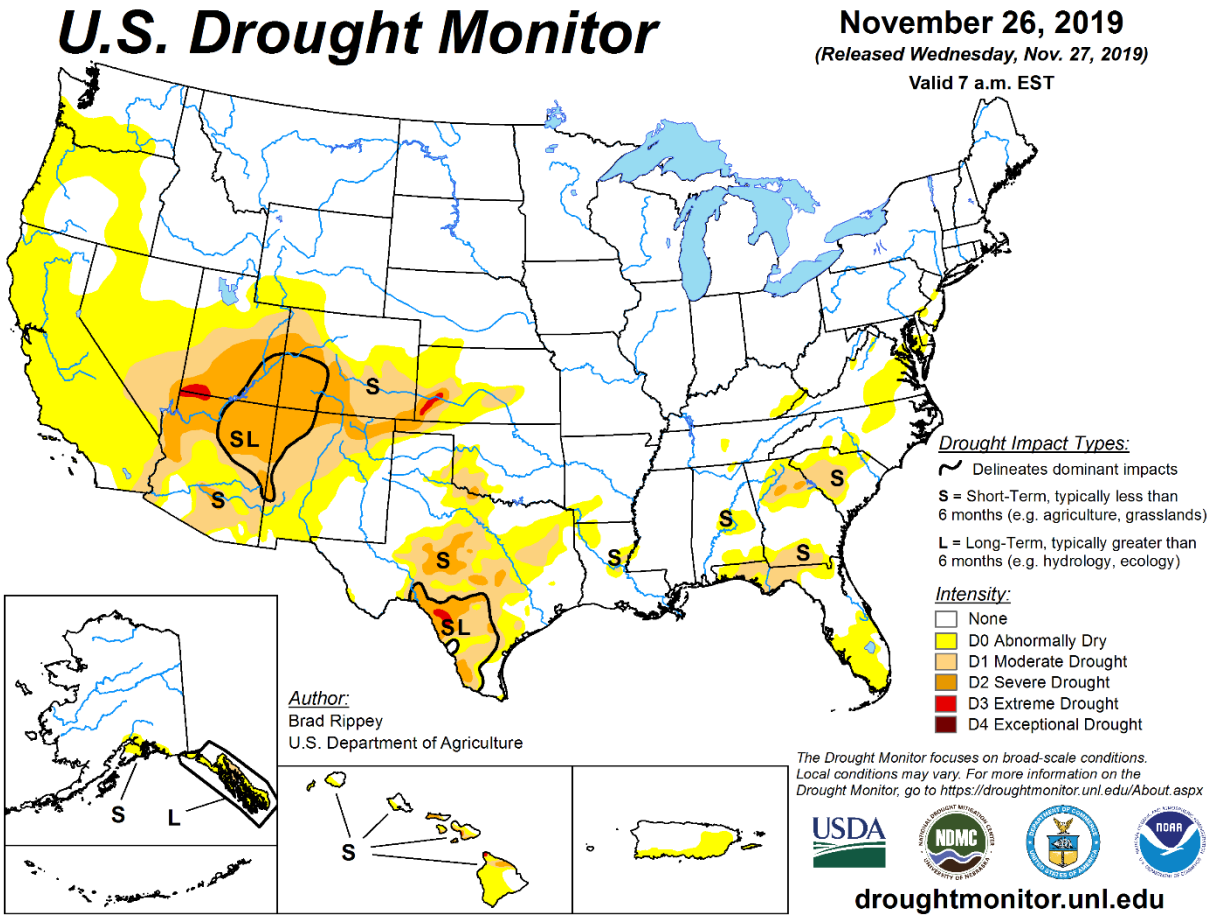
Table 5-6: Drought Classification Definitions

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

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

Droughts are slow-onset hazards, but, over time, can have very damaging affects to crops, municipal water supplies, recreational uses, and wildlife. If drought conditions extend over several years, the direct and indirect economic impact can be significant.

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



Source: National Drought Mitigation Center

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

5.4.2 Location and Spatial Extent

Drought typically covers a large area and cannot be confined to any geographic or political boundaries. According to the Palmer Drought Severity Index (**Figure 5-4**), west-central North Carolina has a relatively low risk for drought hazard. However, local areas may experience much more severe and/or frequent drought events than what is represented on the Palmer Drought Severity Index map. Furthermore, it is assumed that the Iredell Rowan Region would be uniformly exposed to drought, making the spatial extent potentially widespread. It is also notable that drought conditions typically do not cause significant damage to the built environment.

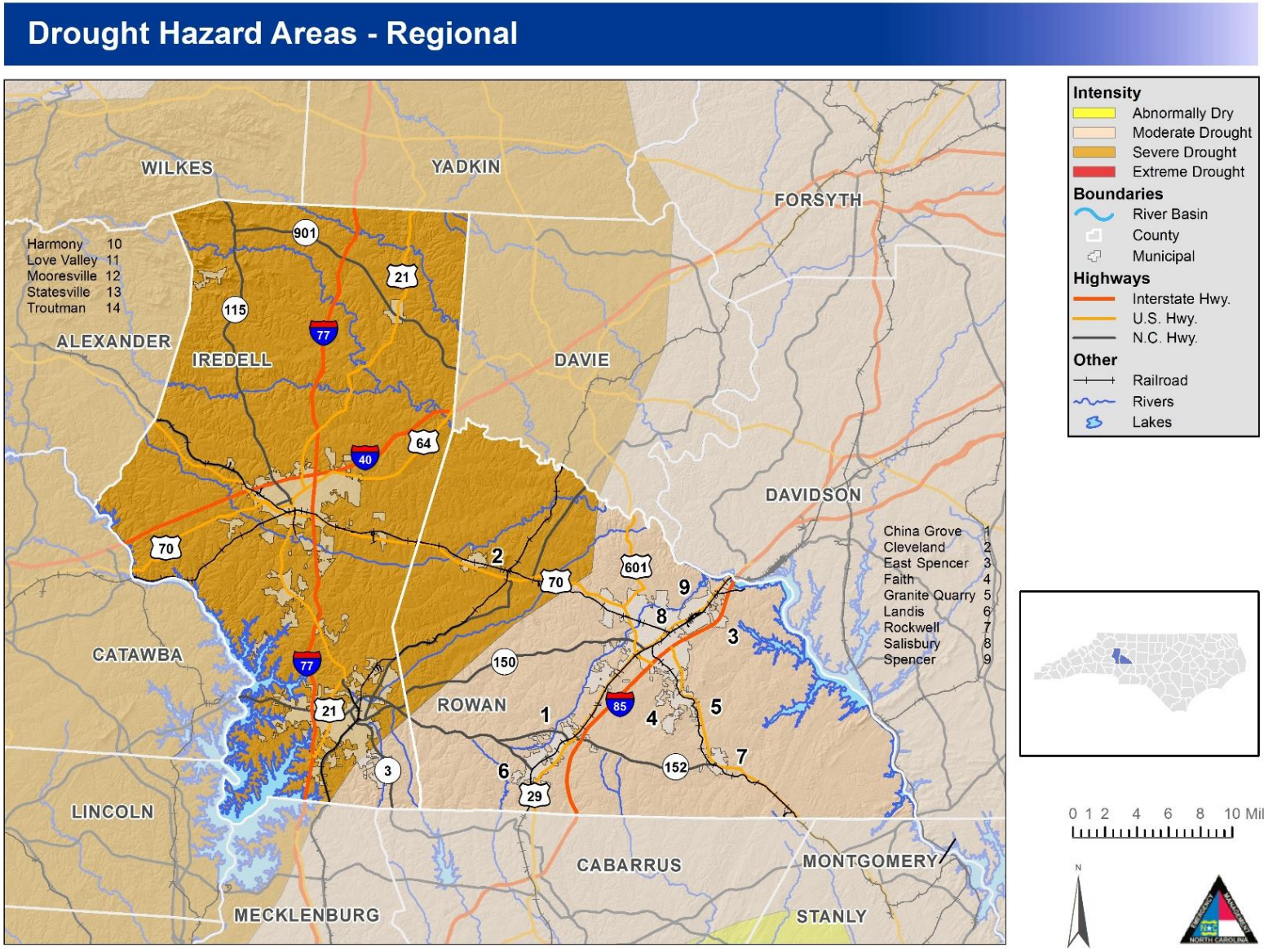


Figure 5-4: Drought Hazard Areas – Regional

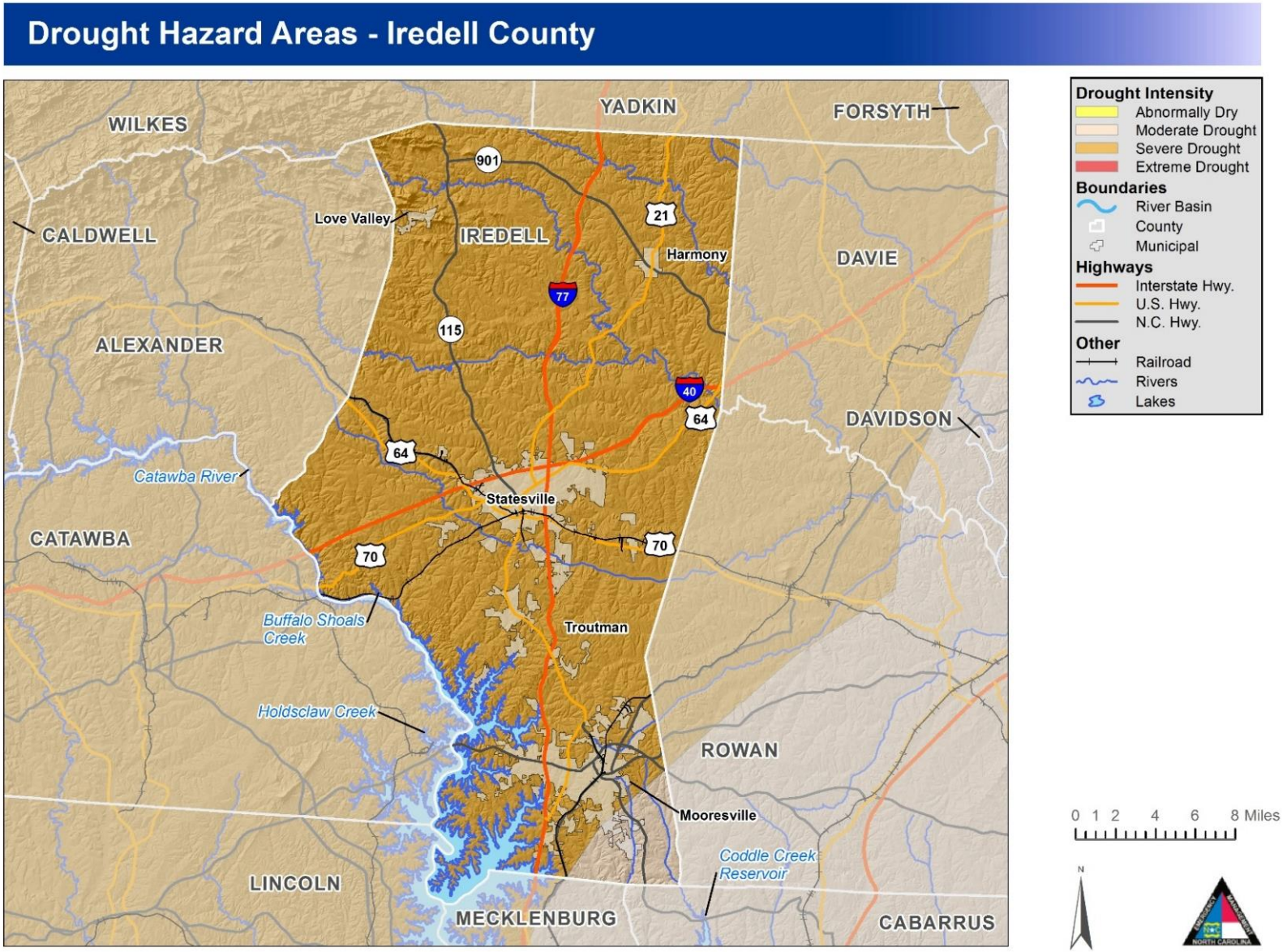


Figure 5-5: Drought Hazard Areas – Iredell County

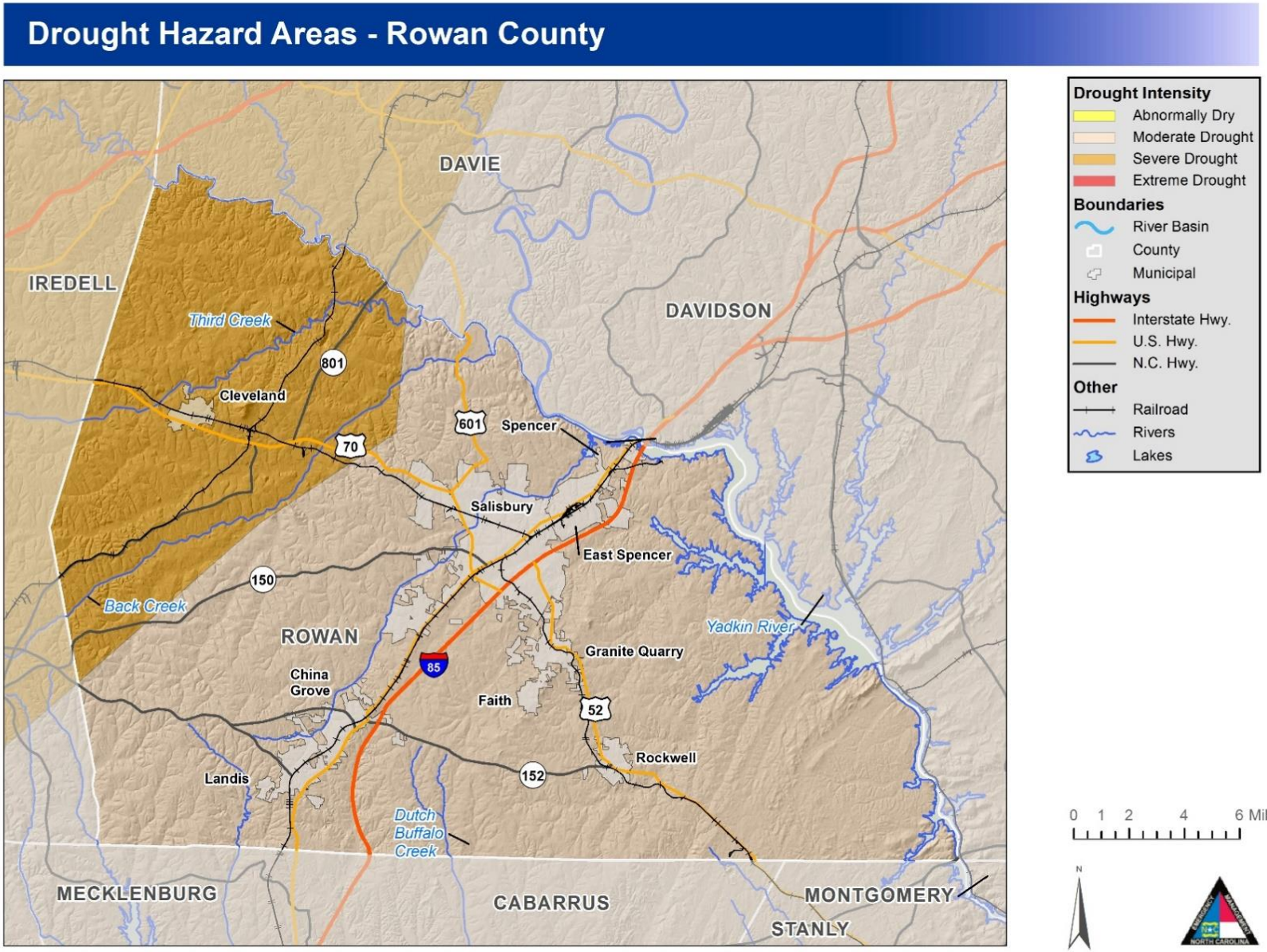


Figure 5-6: Drought Hazard Areas – Rowan County

5.4.3 Extent

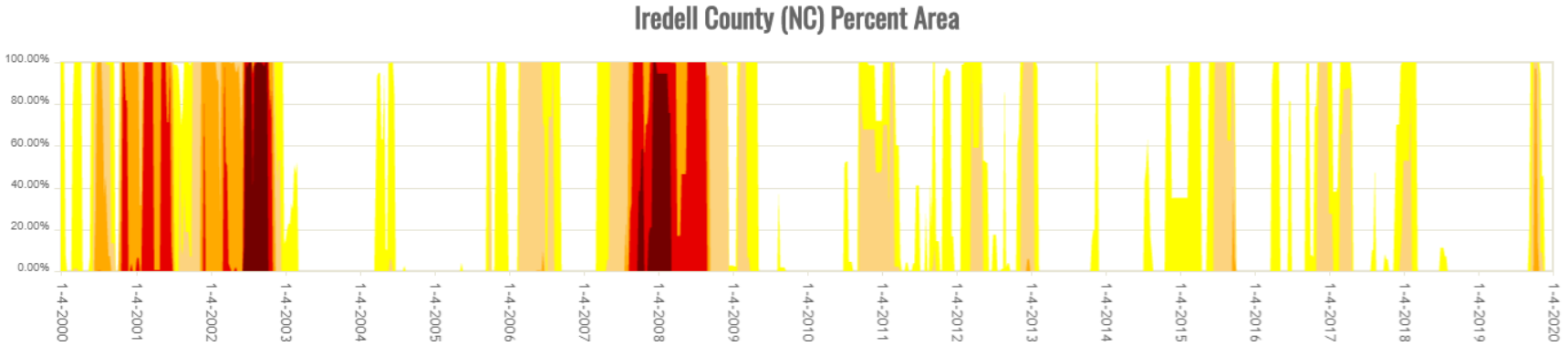
According to the North Carolina Drought Monitor, both of the counties and all jurisdictions in the planning area in the Iredell Rowan Region had drought occurrences (including abnormally dry) in all of the last 19 years (2000-2019) (**Table 5-7**) It should be noted that the North Carolina Drought Monitor also estimates what percentage of the county is in each classification of drought severity. For example, the most severe classification reported may be exceptional, but most of the county may be in a less severe condition.

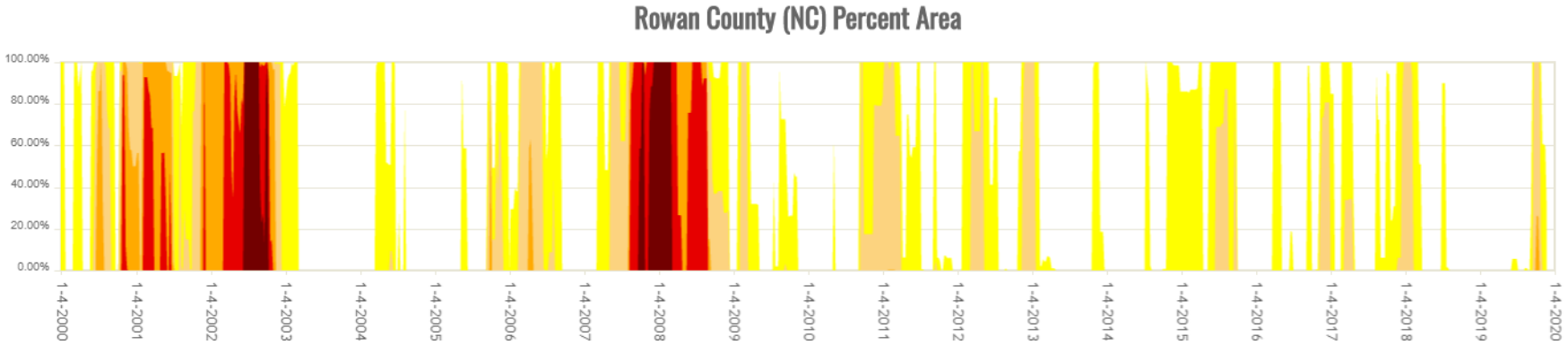
5.4.4 Historical Occurrences

Data from the North Carolina Drought Management Advisory Council and National Climatic Data Center (NCDC) were used to ascertain historical drought events in the Iredell Rowan Region. The North Carolina Drought Management Advisory Council reports data on North Carolina drought conditions from 2000 to 2019 through the North Carolina Drought Monitor. It classifies drought conditions by county on a scale of D0 to D4:

- D0: Abnormally Dry
- D1: Moderate Drought
- D2: Severe Drought
- D3: Extreme Drought
- D4: Exceptional Drought

Table 5-7: Summary of Drought Occurrences in the Iredell Rowan Region





Source: North Carolina Drought Monitor

5.4.5 Probability of Future Occurrences

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

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Low: Less than 1% annual probability
- Medium: Between 1% and 10% annual probability
- High: Greater than 10% annual probability

Jurisdiction	Probability of Future Occurrence
City of Salisbury	Medium
City of Statesville	Medium
Iredell County (Unincorporated Area)	Medium
Rowan County (Unincorporated Area)	Medium
Town of China Grove	Medium
Town of Cleveland	Medium
Town of East Spencer	Medium
Town of Faith	Medium
Town of Granite Quarry	Medium
Town of Harmony	Medium
Town of Landis	Medium
Town of Love Valley	Medium
Town of Mooresville	Medium
Town of Rockwell	Medium
Town of Spencer	Medium
Town of Troutman	Medium

Drought Hazard Vulnerability and Impact

Agricultural crops are most directly affected and vulnerable to drought, and their loss can result in a significant economic burden on the local economy. The local economy is semi-dependent upon agriculture. Within the community,it is common knowledge that the past two decades of drought conditions have contributed to a reduction in the number of local farmers.

It is estimated that annualized losses to the drought hazard will decrease over time due to the continued trend of decreasing agricultural production within the Region (for all jurisdictions in the planning area), much of which has to do with decreases in the number of farms and land available for farming. While future agricultural losses may decrease other sectors of the Region that are dependent on water supply will likely continue to experience future economic impacts during periods of severe to extreme drought conditions.

5.5 EXTREME HEAT

5.5.1 Background

Extreme heat, like drought, poses little risk to property. However, extreme heat can have devastating effects on health. Extreme heat is often referred to as a "heat wave." According to the National Weather Service, there is no universal definition for a heat wave, but the standard U.S. definition is any event lasting at least three days where temperatures reach ninety degrees Fahrenheit or higher.

However, it may also be defined as an event at least three days long where temperatures are ten degrees greater than the normal temperature for the affected area. Heat waves are typically accompanied by humidity but may also be very dry. These conditions can pose serious health threats causing an average of 1,500 deaths each summer in the United States[4].

According to the National Oceanic and Atmospheric Administration, heat is the number one weather-related killer among natural hazards, followed by frigid winter temperatures. The National Weather Service devised the Heat Index as a mechanism to better inform the public of heat dangers. The Heat Index Chart, shown in **Figure 5-7**, uses air temperature and humidity to determine the heat index or apparent temperature. **Table 5-8** shows the dangers associated with different heat index temperatures. Some populations, such as the elderly and young, are more susceptible to heat danger than other segments of the population.

Table 5-8: Heat Disorders Associated with Heat Index Temperature

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

Source: National Weather Service, NOAA

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

[4] http://www.noaawatch.gov/themes/heat.php

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.

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 Iredell Rowan Region and all its jurisdictions is susceptible to extreme heat conditions. Maps below depict relative humidity in terms of High (<107), Medium (90-107), Low (>81).

Air Temp (in F)	Relative Humidity (in percent)																				
	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
140	125																				
135	120	128																			
130	117	122	131																		
125	111	116	123	131	141																
120	107	111	116	123	130	139	148														
115	103	107	111	115	120	127	135	143	151												
110	99	102	105	108	112	117	123	130	137	143	150										
105	95	97	100	102	105	109	113	118	123	129	135	142	149								
100	91	93	95	97	99	101	104	107	110	115	120	126	132	138	144						
95	87	88	90	91	93	94	96	98	101	104	107	110	114	119	124	130	136				
90	83	84	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113	117	122		
85	78	79	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97	99	102	105	108
80	73	74	75	76	77	77	78	79	79	80	81	81	82	83	85	86	86	87	88	89	91
75	69	69	70	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80
70	64	64	65	65	66	66	67	67	68	68	69	69	70	70	70	70	71	71	71	71	72

Source: NOAA

Figure 5-7: Heat Index Chart

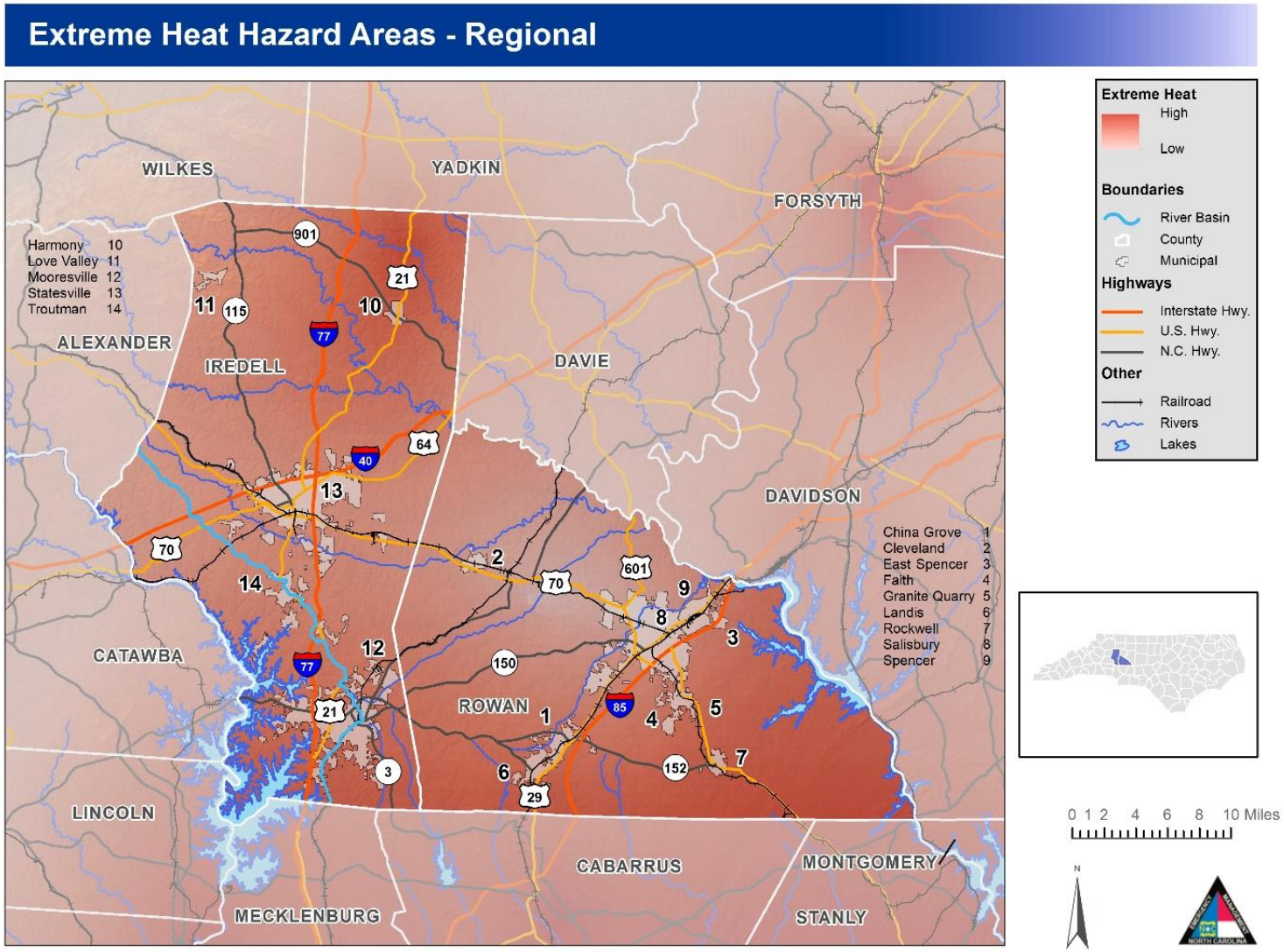


Figure 5-8: Extreme Heat Hazard Areas – Regional

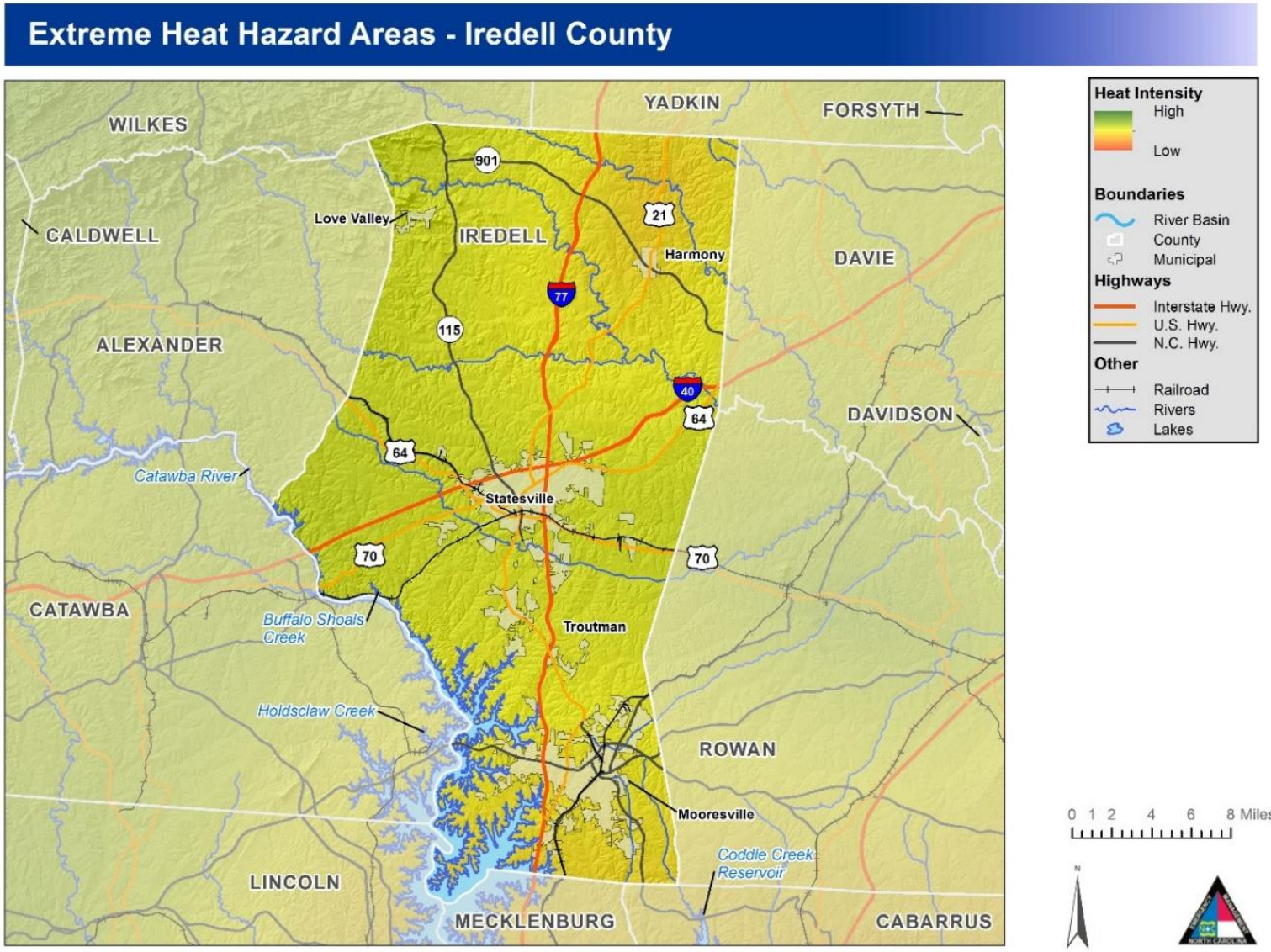


Figure 5-9: Extreme Heat Hazard Areas – Iredell County

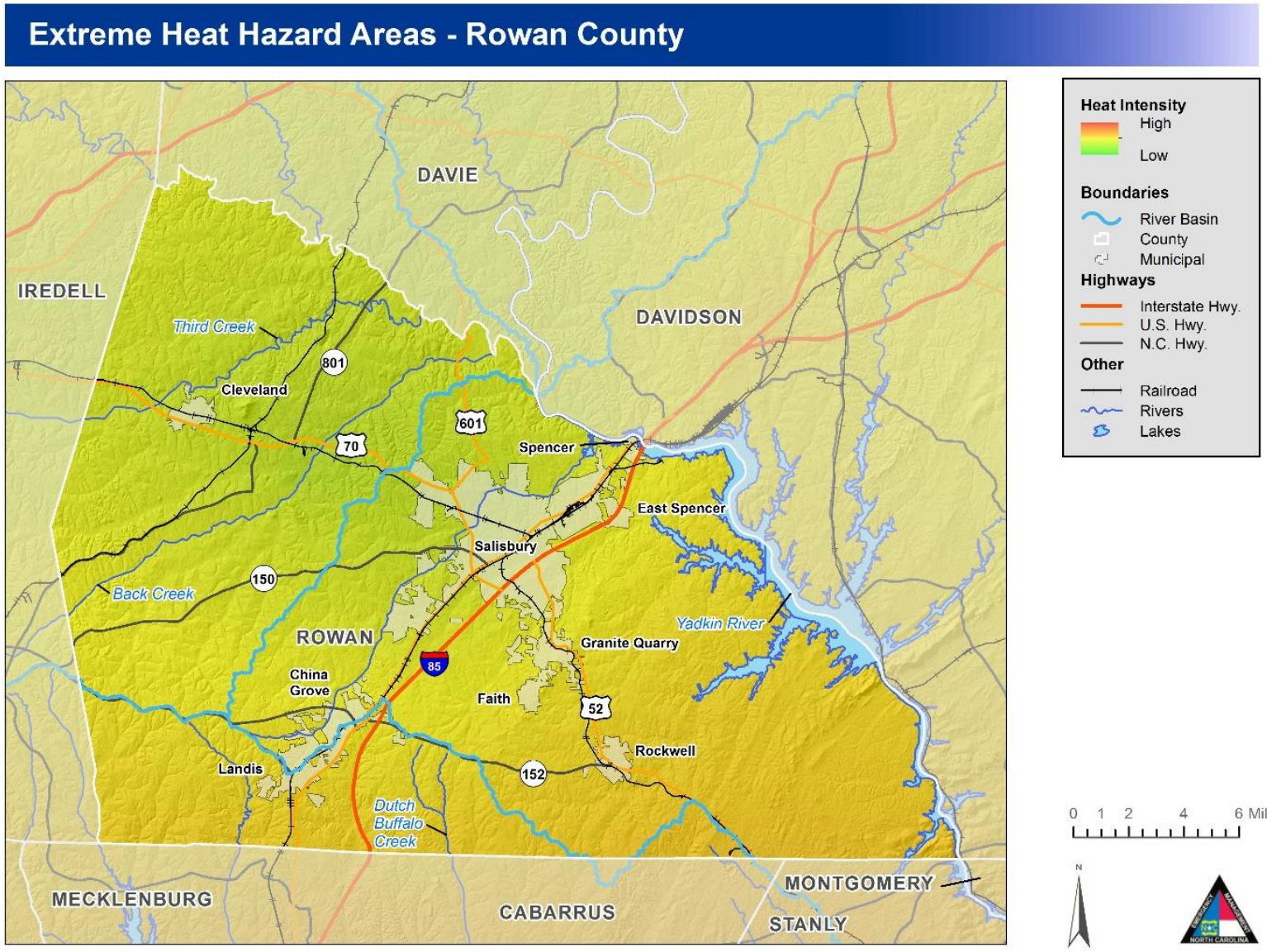


Figure 5-10: Extreme Heat Hazard Areas – Rowan County

5.5.3 Extent

The extent of extreme heat can be defined by the maximum temperature reached. The highest temperature recorded in the Iredell Rowan Region is 106 degrees Fahrenheit (reported on August 18, 1988) in Iredell County.

- Iredell County: 106°F (August 18, 1988)
- Rowan County: 105° (June 19, 1944)

5.5.4 Historical Occurrences

Data from the National Climatic Data Center was used to determine historical extreme heat and heat wave events in the Iredell Rowan Region. There were no major signifigant events reported. One of the most widespread heat waves in recorded history affected most of the United States during June and July 2012. This heat wave was responsible for at least 82 reported deaths while breaking thousands of high temperature records from Colorado all the way to the East Coast. The worst portion of this heat wave developed across the Carolinas June 29th through July 9th, with another surge of extreme heat July 22nd through the 29th. At the time, 2012 was the warmest year on record for the continental United States, running 3.2 degrees above the long-term average and breaking the prior warmest year's record set in 1998 by a full degree. (This record has since been broken again in 2016) March, June, and July of 2012 were exceptionally warm and offset otherwise normal temperatures recorded during the fall and early winter. According to a NCDC database search from 1950-2019 for Iredell and Rowan counties, "A very hot and humid airmass that spent several days building west of the Appalachians finally made it east of the mountains, bringing very hot conditions to foothills and Piedmont of North Carolina. The high temperature at Charlotte-Douglas International Airport hit 104 degrees on both the 29th and 30th, tying the all-time high. The heat index hit 105 degrees. Excessive heat affected areas east of Charlotte. The ASOS at Monroe, NC reported a heat index value of 110 degrees on 30th. Lower dewpoints over the foothills resulted in sub-advisory and warning level heat index values. The heat lasted through July 1st, before thunderstorms brought somewhat cooler conditions."

In addition, information from the State Climate Office of North Carolina was reviewed to obtain historical temperature records in the region. Temperature information has been reported since 1893. The recorded maximum for each county can be found below in **Table 5-9**.

Table 5-9: Highest Recorded Temperature in the Iredell Rowan Region

Location	Date	Temperature (°F)
Iredell County	8/18/1988	106
Rowan County	6/19/1944	105
IREDELL ROWAN REGION MAXIMUM	**--**	**106**

Source: State Climate Office of North Carolina

The State Climate Office also reports average maximum temperatures in various locations in the region. The most centralized location is in Salisbury (Rowan County). **Table 5-10** shows the average maximum temperatures from 1971 to 2019 at the Salisbury observation station which can be used as a general comparison for the region.

Table 5-10: Average Maximum Temperature in Salisbury 9 WNW, Rowan County

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Avg. Max	50	55	63	72	79	86	89	88	81	72	62	53

Source: State Climate Office of North Carolina

5.5.5 Probability of Future Occurrences

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

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Low: Less than 1% annual probability
- Medium: Between 1% and 10% annual probability
- High: Greater than 10% annual probability

Jurisdiction	Probability of Future Occurrence
City of Salisbury	Medium
City of Statesville	Medium
Iredell County (Unincorporated Area)	Medium
Rowan County (Unincorporated Area)	Medium
Town of China Grove	Medium
Town of Cleveland	Medium
Town of East Spencer	Medium
Town of Faith	Medium
Town of Granite Quarry	Medium
Town of Harmony	Medium
Town of Landis	Medium
Town of Love Valley	Medium
Town of Mooresville	Medium
Town of Rockwell	Medium
Town of Spencer	Medium
Town of Troutman	Medium

Extreme Heat Hazard Vulnerability and Impact

It is estimated that annualized losses to the extreme heat hazard will decrease over time due to the continued trend of decreasing agricultural production within the Region and all its jurisdictions, much of which has to do with decreases in the number of farms and land available for farming. In addition to the physical danger, periods of extreme heat put pressure on the Region's infrastructure. Heat waves cause people to increase their usage of air conditioning, which can strain the power grid and trigger power outages; power outages in turn, can lead to adverse health impacts.

5.6 HAILSTORM

5.6.1 Background

Hailstorms are a potentially damaging outgrowth of severe thunderstorms (thunderstorms are discussed separately in Section 5.9). Early in the developmental stages of a hailstorm, ice crystals form within a low-pressure front due to the rapid rising of warm air into the upper atmosphere and the subsequent cooling of the air mass. Frozen droplets gradually accumulate on the ice crystals until they develop to a enough weight and fall as precipitation. Hail typically takes the form of spheres or irregularly-shaped masses greater than 0.75 inches in diameter. The size of hailstones is a direct function of the size and severity of the storm. High velocity updraft winds are required to keep hail in suspension in thunderclouds. The strength of the updraft is a function of the intensity of heating at the Earth's surface. Higher temperature gradients relative to elevation above the surface result in increased suspension time and hailstone size.

5.6.2 Location and Spatial Extent

It is important to note that hailstorms frequently accompany thunderstorms. Thunderstorms are widespread atmospheric disturbances that are not isolated to a specific geographic location. Therefore, it is assumed that the entire Region and all the jurisdictions in the planning area is exposed to these hazards. However, it is possible to map historic hail, as seen in figures below, reporting by diameter as an indication of where in the plan area these hazards have previously been observed and to what degree.

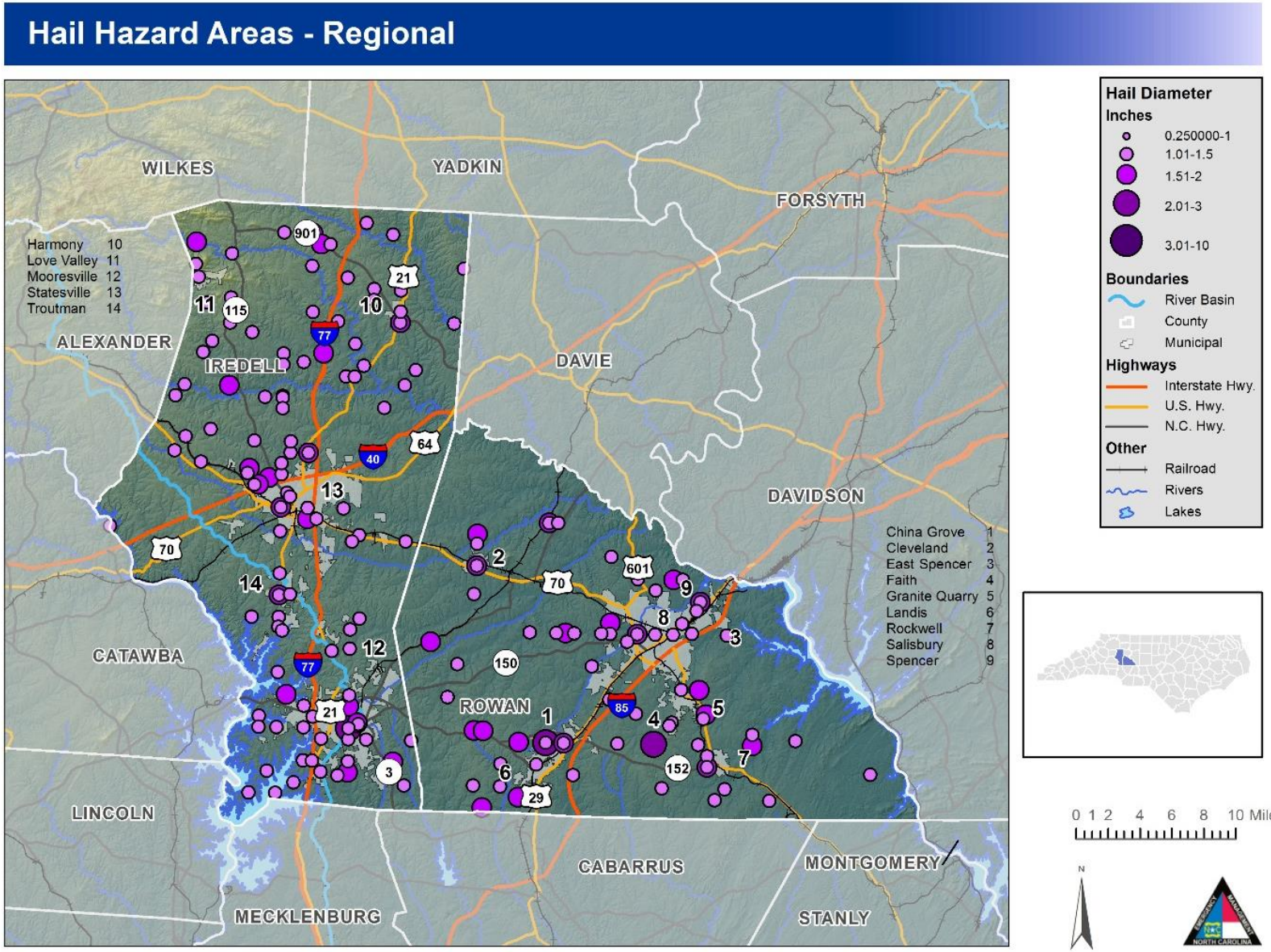


Figure 5-11: Hail Hazard Areas – Regional

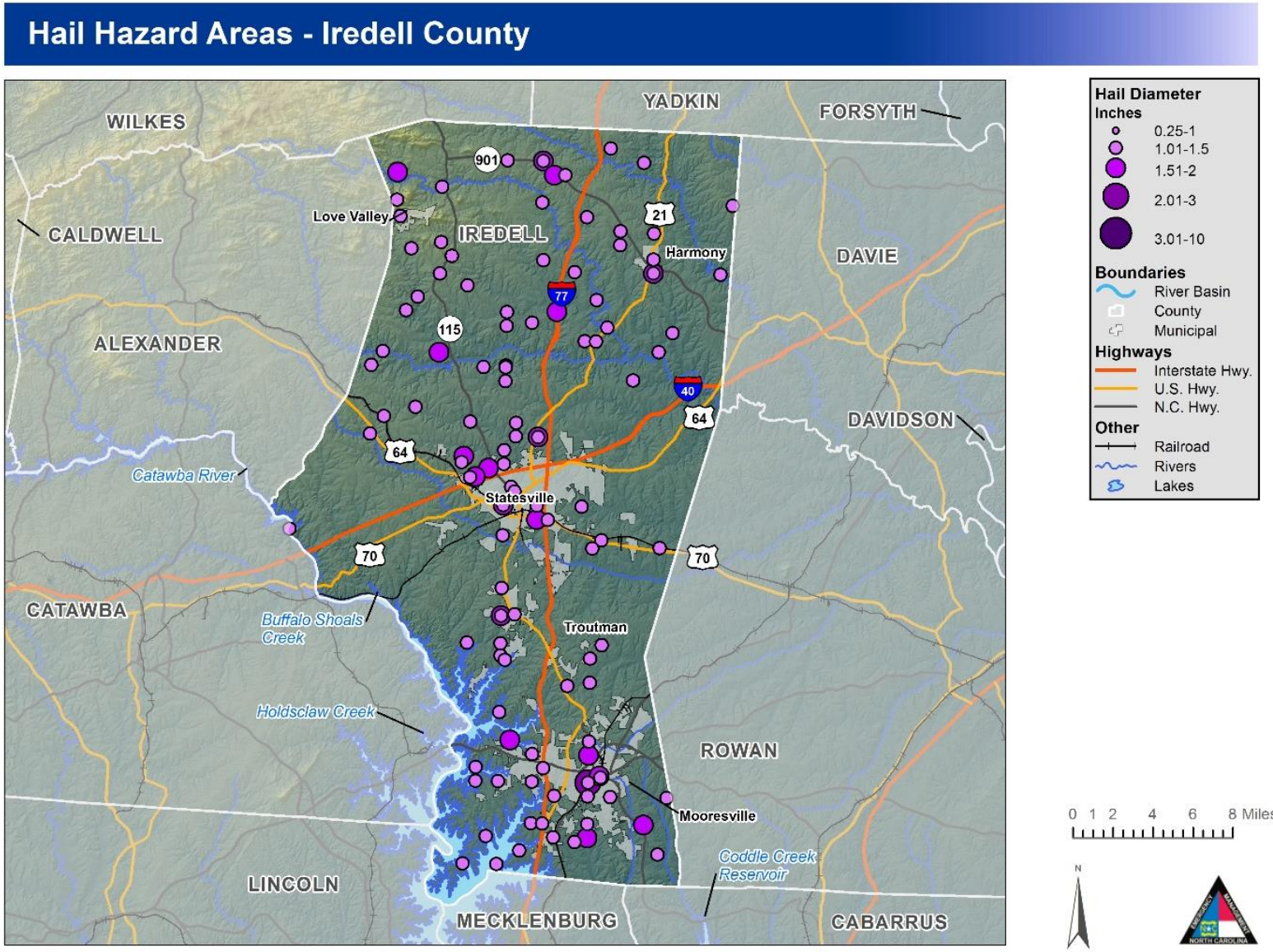


Figure 5-12: Hail Hazard Areas – Iredell County

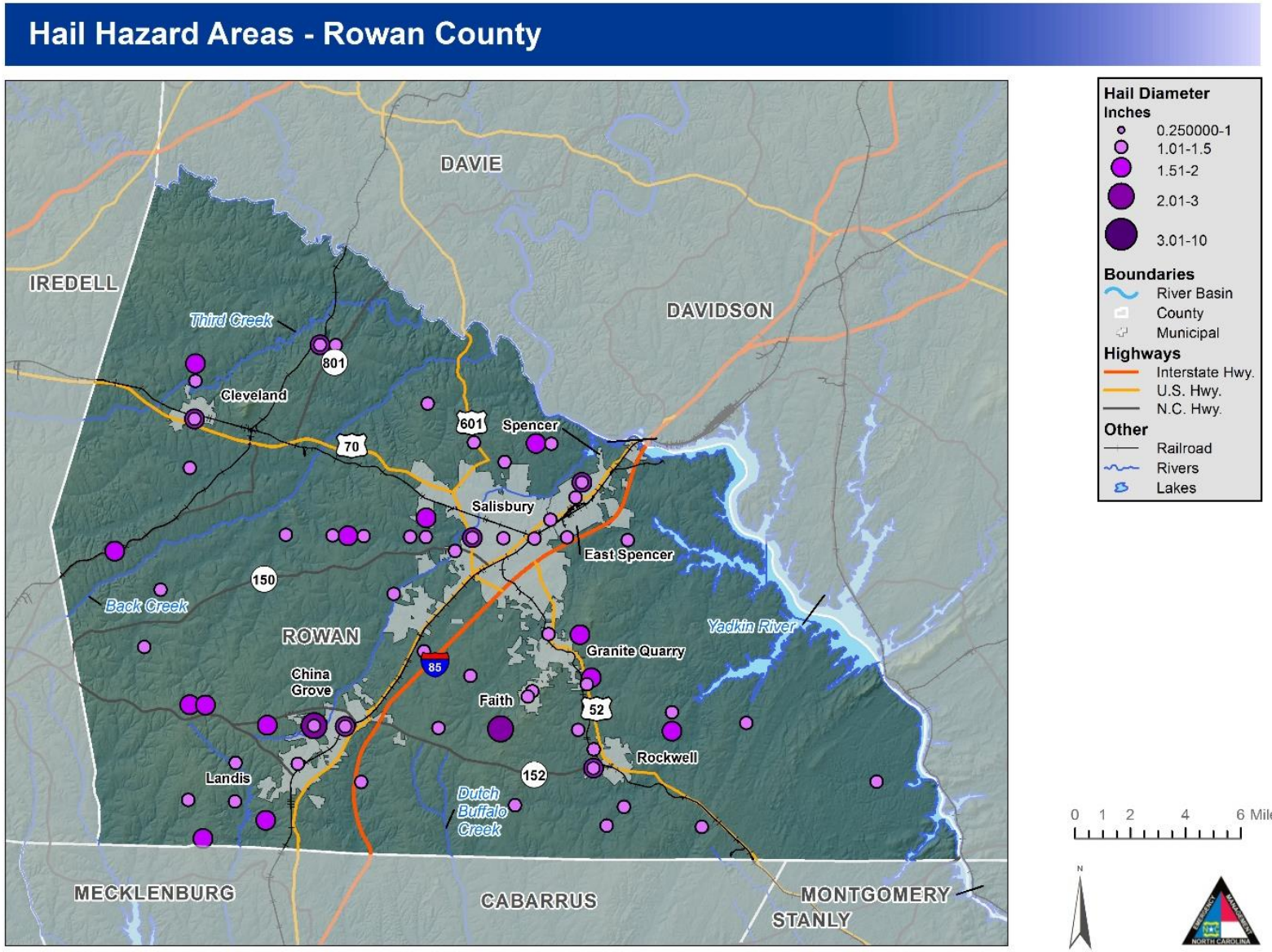


Figure 5-13: Hail Hazard Areas – Rowan County

5.6.3 Extent

Definition:

The TORRO Hailstorm Intensity Scale (H0 to H10) in relation to typical damage and hail size codes. Size codes are presented in **Table 5.11**.

Table 5.11: TORRO Hailstorm Intensity Scale

	Intensity Category	Typical Hail Diameter (mm)*	Probable Kinetic Energy, J-m2	Typical Damage Impacts
H0	Hard Hail	5	0-20	No damage
H1	Potentially Damaging	5-15	>20	Slight general damage to plants, crops
H2	Significant	10-20	>100	Significant damage to fruit, crops, vegetation
H3	Severe	20-30	>300	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	25-40	>500	Widespread glass damage, vehicle bodywork damage
H5	Destructive	30-50	>800	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	40-60		Bodywork of grounded aircraft dented, brick walls pitted
H7	Destructive	50-75		Severe roof damage, risk of serious injuries
H8	Destructive	60-90		(Severest recorded in the British Isles) Severe damage to aircraft bodywork
H9	Super Hailstorms	75-**100**		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	>100		Extensive structural damage. Risk of severe or even fatal injuries to persons caught in the open

* Approximate range (typical maximum size in bold), since other factors (e.g. number and density of hailstones, hail fall speed and surface wind speeds) affect severity.

Table 5.12: Hail Size and Diameter

Size code	Maximum Diameter mm	Description
0	5-9	Pea
1	10-15	Mothball
2	16-20	Marble, grape
3	21-30	Walnut
4	31-40	Pigeon's egg > squash ball
5	41-50	Golf ball > Pullet's egg
6	51-60	Hen's egg
7	61-75	Tennis ball > cricket ball
8	76-90	Large orange > Soft ball

Size code	Maximum Diameter mm	Description
9	91-100	Grapefruit
10	>100	Melon

The Size code is the maximum reported size code accepted as consistent with other reports and evidence.

One of the worst events in the Region was on April 29, 2000 in the Town of Troutman. A trained storm spotter reported to NCDC that, "A severe thunderstorm dumped large hail, mostly the size of quarters, but some as large as golf balls, for 15 minutes. Hail covered the ground to a depth of greater than one inch." No quantifiable damage assessments were available.

Table below describes the extent and characteristics of the hazard:

Community	Hail Size Range	Number of Days with Hail Occurrences July 1950-July 2019
Iredell	0.75 in-1.75 in	Total: 112
Harmony	0.75 in-1.75 in	10
Love Valley	0.75-1.50 in	5
Mooresville	0.75 in-1.75 in	33
Statesville	0.75 in-1.75 in	38
Troutman	0.75-1.50 in	7
Rowan	0.75 in-2.50 in	Total: 77
China Grove	0.75 in-1.75 in	7
Cleveland	0.75 in-1.75 in	4
East Spencer	0.75 in	1
Faith	0.75 in-0.88 in	2
Granite Quarry	0.75 in-1.75 in	4
Landis	0.75-1.25 in	2
Rockwell	0.75-1.75 in	7
Salisbury	0.75-1.75 in	17
Spencer	0.75-1.75 in	5

5.6.4 Historical Occurrences

The following historical occurrences have been identified based on the NCDC Storm Events database **Table 5-13** from 1970 to present. 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 5-13: Historical Occurrences of Hail

Location	Date	Type	Mag	Deaths	Injuries	Property Damage	Crop Damage
Rowan Co.	04/29/1975	Hail	0.75 in.	0	0	0.00K	0.00K
Iredell Co.	03/27/1983	Hail	1.75 in.	0	0	0.00K	0.00K

Iredell Co.	05/15/1985	Hail	0.75 in.	0	0	0.00K	0.00K
Rowan Co.	05/15/1985	Hail	0.75 in.	0	0	0.00K	0.00K
Rowan Co.	06/04/1985	Hail	1.75 in.	0	0	0.00K	0.00K
Rowan Co.	06/04/1985	Hail	2.75 in.	0	0	0.00K	0.00K
Iredell Co.	06/05/1985	Hail	0.75 in.	0	0	0.00K	0.00K
Iredell Co.	06/05/1985	Hail	0.75 in.	0	0	0.00K	0.00K
Iredell Co.	06/05/1985	Hail	0.75 in.	0	0	0.00K	0.00K
Rowan Co.	06/10/1985	Hail	0.75 in.	0	0	0.00K	0.00K
Iredell Co.	07/10/1985	Hail	0.75 in.	0	0	0.00K	0.00K
Rowan Co.	04/15/1987	Hail	2.50 in.	0	0	0.00K	0.00K
Rowan Co.	04/15/1987	Hail	1.75 in.	0	0	0.00K	0.00K
Rowan Co.	04/24/1987	Hail	0.75 in.	0	0	0.00K	0.00K
Rowan Co.	09/09/1987	Hail	0.88 in.	0	0	0.00K	0.00K
Iredell Co.	05/03/1988	Hail	2.75 in.	0	0	0.00K	0.00K
Rowan Co.	05/03/1988	Hail	1.75 in.	0	0	0.00K	0.00K
Iredell Co.	05/17/1988	Hail	1.75 in.	0	0	0.00K	0.00K
Iredell Co.	05/18/1988	Hail	0.75 in.	0	0	0.00K	0.00K
Iredell Co.	05/18/1988	Hail	0.75 in.	0	0	0.00K	0.00K
Iredell Co.	06/20/1988	Hail	1.00 in.	0	0	0.00K	0.00K
Iredell Co.	09/24/1988	Hail	1.75 in.	0	0	0.00K	0.00K
Iredell Co.	03/15/1989	Hail	0.75 in.	0	0	0.00K	0.00K
Rowan Co.	04/27/1989	Hail	1.00 in.	0	0	0.00K	0.00K
Iredell Co.	05/23/1989	Hail	1.75 in.	0	0	0.00K	0.00K
Rowan Co.	05/02/1990	Hail	1.75 in.	0	0	0.00K	0.00K
Iredell Co.	05/02/1990	Hail	0.75 in.	0	0	0.00K	0.00K
Iredell Co.	05/28/1990	Hail	1.75 in.	0	0	0.00K	0.00K
Rowan Co.	04/08/1991	Hail	0.75 in.	0	0	0.00K	0.00K
Iredell Co.	08/04/1991	Hail	0.88 in.	0	0	0.00K	0.00K
Rowan Co.	03/07/1992	Hail	0.75 in.	0	0	0.00K	0.00K
Rowan Co.	03/07/1992	Hail	1.75 in.	0	0	0.00K	0.00K
Rowan Co.	03/07/1992	Hail	1.75 in.	0	0	0.00K	0.00K
Rowan Co.	03/07/1992	Hail	0.75 in.	0	0	0.00K	0.00K
Rowan Co.	03/19/1992	Hail	1.00 in.	0	0	0.00K	0.00K
Rowan Co.	07/03/1992	Hail	0.75 in.	0	0	0.00K	0.00K
Iredell Co.	07/27/1992	Hail	0.75 in.	0	0	0.00K	0.00K
Granite Quarry	04/01/1993	Hail	1.00 in.	0	0	0.00K	0.00K
Mount	04/16/1993	Hail	1.00 in.	0	0	0.00K	0.00K
Southwestern	04/21/1993	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	04/21/1993	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	05/18/1993	Hail	1.00 in.	0	0	0.00K	0.00K
S Of Salisbury	09/25/1994	Hail	0.75 in.	0	0	0.00K	0.00K
Mooresville	09/25/1994	Hail	0.75 in.	0	0	0.00K	0.00K
Rowan Co.	05/13/1995	Hail	0.75 in.	0	0	0.00K	0.00K

China Grove	07/06/1995	Hail	1.75 in.	0	0	0.00K	0.00K
Statesville	03/16/1996	Hail	1.50 in.	0	0	0.00K	0.00K
Spencer	05/11/1996	Hail	0.75 in.	0	0	75.00K	0.00K
Mooresville	05/29/1996	Hail	1.50 in.	0	0	0.00K	0.00K
China Grove	05/29/1996	Hail	1.75 in.	0	0	0.00K	0.00K
Salisbury	05/29/1996	Hail	1.75 in.	0	0	0.00K	0.00K
Mooresville	07/02/1996	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	05/01/1997	Hail	1.00 in.	0	0	1.00K	0.00K
Statesville	05/01/1997	Hail	1.00 in.	0	0	10.00K	0.00K
Troutman	05/01/1997	Hail	1.00 in.	0	0	1.00K	0.00K
New Hope	01/08/1998	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	04/17/1998	Hail	0.75 in.	0	0	0.00K	0.00K
Salisbury	05/01/1998	Hail	1.75 in.	0	0	0.00K	0.00K
Woodleaf	05/07/1998	Hail	0.75 in.	0	0	0.00K	0.00K
Mooresville	05/07/1998	Hail	0.75 in.	0	0	0.00K	0.00K
Kannapolis	05/07/1998	Hail	2.75 in.	0	0	0.00K	0.00K
Kannapolis	05/07/1998	Hail	4.50 in.	0	0	0.00K	0.00K
Kannapolis	05/07/1998	Hail	1.75 in.	0	0	0.00K	0.00K
Troutman	05/26/1998	Hail	1.50 in.	0	0	0.00K	0.00K
China Grove	05/26/1998	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville	05/27/1998	Hail	1.00 in.	0	0	0.00K	0.00K
Statesville	06/03/1998	Hail	0.75 in.	0	0	0.00K	0.00K
Spencer	06/03/1998	Hail	1.75 in.	0	0	0.00K	0.00K
Mooresville	06/10/1998	Hail	1.00 in.	0	0	0.00K	0.00K
Scotts	04/27/1999	Hail	0.75 in.	0	0	0.00K	0.00K
Salisbury	05/22/1999	Hail	1.75 in.	0	0	0.00K	0.00K
China Grove	07/06/1999	Hail	0.75 in.	0	0	0.00K	0.00K
Rockwell	07/06/1999	Hail	1.00 in.	0	0	0.00K	0.00K
Union Grove	07/24/1999	Hail	1.00 in.	0	0	0.00K	0.00K
Salisbury	04/17/2000	Hail	0.75 in.	0	0	0.00K	0.00K
Troutman	04/29/2000	Hail	1.75 in.	0	0	0.00K	0.00K
Mooresville	05/02/2000	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville	05/02/2000	Hail	1.00 in.	0	0	0.00K	0.00K
Salisbury	05/02/2000	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville	05/25/2000	Hail	0.75 in.	0	0	0.00K	0.00K
Union Grove	05/27/2000	Hail	1.00 in.	0	0	0.00K	0.00K
Harmony	05/27/2000	Hail	0.88 in.	0	0	0.00K	0.00K
Salisbury	05/28/2000	Hail	1.75 in.	0	0	0.00K	0.00K
Harmony	06/15/2000	Hail	1.75 in.	0	0	0.00K	0.00K
Salisbury	08/18/2000	Hail	1.75 in.	0	0	0.00K	0.00K
Salisbury	04/01/2001	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville	06/25/2001	Hail	1.75 in.	0	0	0.00K	0.00K
Rockwell	06/26/2001	Hail	1.75 in.	0	0	0.00K	0.00K

Gold Hill	03/31/2002	Hail	0.88 in.	0	0	0.00K	0.00K
Statesville	07/04/2002	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	09/04/2002	Hail	0.75 in.	0	0	0.00K	0.00K
Turnersburg	04/29/2003	Hail	0.75 in.	0	0	0.00K	0.00K
Mooresville	05/03/2003	Hail	0.75 in.	0	0	0.00K	0.00K
Mooresville	05/03/2003	Hail	1.00 in.	0	0	0.00K	0.00K
Salisbury	05/15/2003	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville	05/15/2003	Hail	0.75 in.	0	0	0.00K	0.00K
Cool Spg	06/08/2003	Hail	0.75 in.	0	0	0.00K	0.00K
Mooresville	06/16/2003	Hail	0.75 in.	0	0	0.00K	0.00K
Woodleaf	07/16/2003	Hail	0.75 in.	0	0	0.00K	0.00K
Cleveland	07/22/2003	Hail	0.75 in.	0	0	0.00K	0.00K
Woodleaf	07/29/2003	Hail	0.75 in.	0	0	0.00K	0.00K
Union Grove	08/05/2003	Hail	1.75 in.	0	0	0.00K	0.00K
Harmony	08/05/2003	Hail	1.75 in.	0	0	0.00K	0.00K
Statesville	08/16/2003	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	05/09/2004	Hail	1.00 in.	0	0	0.00K	0.00K
Statesville	05/10/2005	Hail	0.88 in.	0	0	0.00K	0.00K
Statesville	07/27/2005	Hail	0.88 in.	0	0	0.00K	0.00K
Troutman	04/03/2006	Hail	1.75 in.	0	0	0.00K	0.00K
Statesville	04/03/2006	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	04/22/2006	Hail	0.75 in.	0	0	0.00K	0.00K
Landis	04/22/2006	Hail	0.75 in.	0	0	0.00K	0.00K
Mooresville	05/14/2006	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville	05/14/2006	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville	05/14/2006	Hail	1.75 in.	0	0	0.00K	0.00K
Enochville	05/14/2006	Hail	1.00 in.	0	0	0.00K	0.00K
Rockwell	05/14/2006	Hail	0.88 in.	0	0	0.00K	0.00K
Gold Hill	05/14/2006	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville	05/14/2006	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville	05/18/2006	Hail	0.75 in.	0	0	0.00K	0.00K
Salisbury	05/18/2006	Hail	0.75 in.	0	0	0.00K	0.00K
Salisbury	05/18/2006	Hail	0.88 in.	0	0	0.00K	0.00K
Mooresville	05/18/2006	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville	05/20/2006	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	06/02/2006	Hail	0.75 in.	0	0	0.00K	0.00K
Cleveland	06/11/2006	Hail	0.75 in.	0	0	0.00K	0.00K
Granite Quarry	07/04/2006	Hail	0.88 in.	0	0	0.00K	0.00K
Granite Quarry	07/04/2006	Hail	0.75 in.	0	0	0.00K	0.00K
Rockwell	08/07/2006	Hail	0.88 in.	0	0	0.00K	0.00K
Union Grove	08/07/2006	Hail	0.88 in.	0	0	0.00K	0.00K
Statesville	04/15/2007	Hail	1.75 in.	0	0	0.00K	0.00K
Salisbury	04/15/2007	Hail	1.00 in.	0	0	0.00K	0.00K

Gold Hill	05/12/2007	Hail	0.75 in.	0	0	0.00K	0.00K
Harmony	06/08/2007	Hail	0.75 in.	0	0	0.00K	0.00K
Mooresville	06/12/2007	Hail	0.75 in.	0	0	0.00K	0.00K
Spencer	06/13/2007	Hail	0.75 in.	0	0	0.00K	0.00K
Harmony	06/16/2007	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	06/24/2007	Hail	0.88 in.	0	0	0.00K	0.00K
Mooresville	06/24/2007	Hail	0.88 in.	0	0	0.00K	0.00K
Statesville	06/24/2007	Hail	0.75 in.	0	0	0.00K	0.00K
Troutman	06/24/2007	Hail	0.88 in.	0	0	0.00K	0.00K
Mooresville	06/24/2007	Hail	0.75 in.	0	0	0.00K	0.00K
China Grove	06/24/2007	Hail	0.88 in.	0	0	0.00K	0.00K
Statesville	06/27/2007	Hail	0.75 in.	0	0	0.00K	0.00K
Salisbury	06/27/2007	Hail	0.75 in.	0	0	0.00K	0.00K
Elmwood	04/19/2008	Hail	0.88 in.	0	0	0.00K	0.00K
Woodleaf	04/19/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Rockwell	05/11/2008	Hail	0.88 in.	0	0	0.00K	0.00K
China Grove Arpt	05/20/2008	Hail	0.88 in.	0	0	0.00K	0.00K
Turnersburg	06/03/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Turnersburg	06/03/2008	Hail	0.88 in.	0	0	0.00K	0.00K
Charles	06/03/2008	Hail	1.75 in.	0	0	0.00K	0.00K
Statesville	06/03/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	06/03/2008	Hail	1.00 in.	0	0	0.00K	0.00K
Cleveland	06/03/2008	Hail	1.75 in.	0	0	0.00K	0.00K
Mooresville	06/11/2008	Hail	0.88 in.	0	0	0.00K	0.00K
Statesville	06/11/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Love Valley	06/21/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	06/23/2008	Hail	1.75 in.	0	0	0.00K	0.00K
Statesville	06/23/2008	Hail	1.75 in.	0	0	0.00K	0.00K
Statesville	06/23/2008	Hail	1.00 in.	0	0	0.00K	0.00K
Statesville	06/23/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Salisbury	07/06/2008	Hail	1.00 in.	0	0	0.00K	0.00K
Faith	07/22/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Enochville	07/22/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Troutman	08/02/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Cool Spg	09/08/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Scotts	09/30/2008	Hail	0.88 in.	0	0	0.00K	0.00K
Statesville	09/30/2008	Hail	1.75 in.	0	0	0.00K	0.00K
Elmwood	09/30/2008	Hail	1.00 in.	0	0	0.00K	0.00K
Union Grove	09/30/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Salisbury	09/30/2008	Hail	0.75 in.	0	0	0.00K	0.00K
Crescent	09/30/2008	Hail	0.75 in.	0	0	0.00K	0.00K
East Spencer	04/10/2009	Hail	0.75 in.	0	0	0.00K	0.00K
Olin	04/21/2009	Hail	0.75 in.	0	0	0.00K	0.00K

Charles	04/21/2009	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	05/06/2009	Hail	0.75 in.	0	0	0.00K	0.00K
Cleveland	05/06/2009	Hail	0.75 in.	0	0	0.00K	0.00K
Spencer	06/11/2009	Hail	0.75 in.	0	0	0.00K	0.00K
Pooletown	07/20/2009	Hail	1.00 in.	0	0	0.00K	0.00K
Harmony	07/27/2009	Hail	1.00 in.	0	0	0.00K	0.00K
Troutman	07/28/2009	Hail	0.75 in.	0	0	0.00K	0.00K
Mooresville	08/05/2009	Hail	0.75 in.	0	0	0.00K	0.00K
Mooresville	03/28/2010	Hail	1.75 in.	0	0	0.00K	0.00K
Love Valley	05/14/2010	Hail	0.75 in.	0	0	0.00K	0.00K
Love Valley	06/15/2010	Hail	1.00 in.	0	0	0.00K	0.00K
Woodleaf	07/25/2010	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville Rhyne Ar	08/05/2010	Hail	1.00 in.	0	0	0.00K	0.00K
Statesville	02/28/2011	Hail	1.00 in.	0	0	0.00K	0.00K
Turnersburg	02/28/2011	Hail	1.00 in.	0	0	0.00K	0.00K
Majolica	02/28/2011	Hail	1.00 in.	0	0	0.00K	0.00K
Loray	05/10/2011	Hail	0.75 in.	0	0	0.00K	0.00K
Mt Mourne	05/10/2011	Hail	1.75 in.	0	0	0.00K	0.00K
Charles	05/13/2011	Hail	0.88 in.	0	0	0.00K	0.00K
Union Grove	05/23/2011	Hail	1.75 in.	0	0	0.00K	0.00K
Enochville	05/27/2011	Hail	1.75 in.	0	0	0.00K	0.00K
Landis	05/27/2011	Hail	1.25 in.	0	0	0.00K	0.00K
Rowan Co Arpt	05/27/2011	Hail	1.00 in.	0	0	0.00K	0.00K
Mt Ulla	06/09/2011	Hail	0.75 in.	0	0	0.00K	0.00K
Mill Bridge	06/09/2011	Hail	1.00 in.	0	0	0.00K	0.00K
Faith	06/11/2011	Hail	0.88 in.	0	0	0.00K	0.00K
Love Valley	08/14/2011	Hail	0.75 in.	0	0	0.00K	0.00K
Spencer	11/16/2011	Hail	1.75 in.	0	0	0.00K	0.00K
Salisbury	11/16/2011	Hail	1.00 in.	0	0	0.00K	0.00K
Statesville	03/02/2012	Hail	0.75 in.	0	0	0.00K	0.00K
Mt Mourne	03/24/2012	Hail	1.00 in.	0	0	0.00K	0.00K
Franklin	03/24/2012	Hail	0.75 in.	0	0	0.00K	0.00K
Shupings Mill	03/24/2012	Hail	0.88 in.	0	0	0.00K	0.00K
Rockwell	03/24/2012	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville Arpt	03/25/2012	Hail	1.75 in.	0	0	0.00K	0.00K
Mooresville	03/25/2012	Hail	1.00 in.	0	0	0.00K	0.00K
Mt Ulla	03/25/2012	Hail	1.75 in.	0	0	0.00K	0.00K
Woodleaf	03/25/2012	Hail	0.75 in.	0	0	0.00K	0.00K
Mooresville	04/26/2012	Hail	0.75 in.	0	0	0.00K	0.00K
Granite Quarry	05/22/2012	Hail	1.75 in.	0	0	0.00K	0.00K
Gold Hill	05/22/2012	Hail	1.00 in.	0	0	0.00K	0.00K
Harmony	06/12/2012	Hail	0.75 in.	0	0	0.00K	0.00K
Mooresville Arpt	06/22/2012	Hail	0.88 in.	0	0	0.00K	0.00K

Mt Mourne	07/16/2012	Hail	0.75 in.	0	0	0.00K	0.00K
Mt Mourne	07/25/2012	Hail	0.88 in.	0	0	0.00K	0.00K
New Hope	07/25/2012	Hail	1.75 in.	0	0	0.00K	0.00K
Statesville	07/25/2012	Hail	1.00 in.	0	0	0.00K	0.00K
Statesville	09/28/2012	Hail	1.00 in.	0	0	0.00K	0.00K
Love Valley	05/06/2013	Hail	1.50 in.	0	0	0.00K	0.00K
Union Grove	05/06/2013	Hail	0.88 in.	0	0	0.00K	0.00K
Williamsburg	05/06/2013	Hail	1.00 in.	0	0	0.00K	0.00K
Union Grove	05/06/2013	Hail	0.88 in.	0	0	0.00K	0.00K
Harmony	06/13/2013	Hail	1.00 in.	0	0	0.00K	0.00K
Statesville	06/26/2013	Hail	1.00 in.	0	0	0.00K	0.00K
Shinnville	07/09/2013	Hail	1.25 in.	0	0	0.00K	0.00K
Harmony	07/17/2013	Hail	1.00 in.	0	0	0.00K	0.00K
Statesville	03/12/2014	Hail	0.75 in.	0	0	0.00K	0.00K
Houstonville	06/16/2014	Hail	0.88 in.	0	0	0.00K	0.00K
Harmony	06/19/2014	Hail	1.25 in.	0	0	0.00K	0.00K
Woodleaf	08/18/2014	Hail	0.88 in.	0	0	0.00K	0.00K
Gold Hill	10/11/2014	Hail	1.00 in.	0	0	0.00K	0.00K
Mayhew	06/19/2015	Hail	1.00 in.	0	0	0.00K	0.00K
Olin	04/28/2016	Hail	1.50 in.	0	0	0.00K	0.00K
Statesville	05/02/2016	Hail	1.00 in.	0	0	0.00K	0.00K
Mooresville Jct	05/03/2016	Hail	1.00 in.	0	0	0.00K	0.00K
Liberty	05/03/2016	Hail	1.00 in.	0	0	0.00K	0.00K
New Hope	06/29/2016	Hail	1.00 in.	0	0	0.00K	0.00K
Scotts	09/29/2016	Hail	0.75 in.	0	0	0.00K	0.00K
Loray	03/01/2017	Hail	1.75 in.	0	0	0.00K	0.00K
Rockwell	03/21/2017	Hail	1.00 in.	0	0	0.00K	0.00K
Rowan Co Arpt	03/21/2017	Hail	1.00 in.	0	0	0.00K	0.00K
China Grove	06/13/2017	Hail	0.88 in.	0	0	0.00K	0.00K
Charles	05/11/2018	Hail	0.75 in.	0	0	0.00K	0.00K
Rowan Co Arpt	06/02/2018	Hail	1.00 in.	0	0	0.00K	0.00K
Oswalt	06/14/2018	Hail	0.75 in.	0	0	0.00K	0.00K
Statesville	07/22/2018	Hail	1.25 in.	0	0	0.00K	0.00K
Mt Mourne	08/08/2018	Hail	1.50 in.	0	0	0.00K	0.00K
Mooresville	08/08/2018	Hail	0.75 in.	0	0	0.00K	0.00K
Kannapolis	05/31/2019	Hail	1.75 in.	0	0	0.00K	0.00K
Totals:				**0**	**0**	**87.00K**	**0.00K**

Source: National Climatic Data Center (NCDC) Storm Events Database and or potential user entered data.

According to NCDC, 239 recorded instances of thunderstorm, lightning, and hail conditions have affected the planning area causing an estimated $87,000 in property damages, $0 in crop damages, 0 death(s), and 0 reported injuries.

Table 5-14 provides a summary of this historical information by participating jurisdiction. It is important to note that many of the events attributed to the county are countywide or cover large portions of the county. The individual counts by jurisdiction are for those events that are only attributed to that one jurisdiction.

Table 5-14: Summary of Historical Hail Occurrences by Participating Jurisdiction

Jurisdiction	Number of Occurrences	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
Iredell							
City of Statesville	28	0	0	$1,000	$283	$0	$0
Iredell County (Unincorporated Area)	76	0	0	$0	$0	$0	$0
Town of Harmony	6	0	0	$0	$0	$0	$0
Town of Love Valley	5	0	0	$0	$0	$0	$0
Town of Mooresville	27	0	0	$0	$0	$0	$0
Town of Troutman	6	0	0	$11,000	$5,055	0	$0
Subtotal Iredell	**148**	**0**	**0**	**$12,000**	**$5,338**	**$0**	**$0**
Rowan							
City of Salisbury	16	0	0	$0	$0	$0	$0
Rowan County (Unincorporated Area)	46	0	0	$0	$0	$0	$0
Town of China Grove	5	0	0	$0	$0	$0	$0
Town of Cleveland	7	0	0	$0	$0	$0	$0
Town of East Spencer	1	0	0	0	$0	0	$0
Town of Faith	2	0	0	$0	$0	$0	$0
Town of Granite Quarry	5	0	0	$0	$0	$0	$0
Town of Landis	1	0	0	0	$0	0	$0
Town of Rockwell	7	0	0	$0	$0	0	$0
Town of Spencer	6	0	0	$75,000	$26,157	$0	$0
Subtotal Rowan	**96**	**0**	**0**	**$75,000**	**$26,157**	**$0**	**$0**
TOTAL PLAN	**244**	**0**	**0**	**$87,000**	**$31,495**	**$0**	**$0**

Source: National Climatic Data Center (NCDC) Storm Events Database and or potential user entered data.

5.6.5 Probability of Future Occurrences

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

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Low: Less than 1% annual probability
- Medium: Between 1% and 10% annual probability
- High: Greater than 10% annual probability

Jurisdiction	Probability of Future Occurrence
City of Salisbury	Medium
City of Statesville	Medium
Iredell County (Unincorporated Area)	Medium
Rowan County (Unincorporated Area)	Medium
Town of China Grove	Medium
Town of Cleveland	Medium
Town of East Spencer	Medium
Town of Faith	Medium
Town of Granite Quarry	Medium
Town of Harmony	Medium
Town of Landis	Medium
Town of Love Valley	Medium
Town of Mooresville	Medium
Town of Rockwell	Medium
Town of Spencer	Medium
Town of Troutman	Medium

Hail Hazard Vulnerability and Impact

All the inventoried assets in the Region and all the jurisdictions in the planning are exposed to hail. Agriculture is typically the most affected by hail storms because it causes severe crop damage and even a minor storm with relatively small size Hailstones can have a devastating effect. As well, damage to vehicles, roofs (residential/commercial), and landscaping are the other things most commonly damaged

by hail. A Vulnerability Assessment for property can be quite difficult for Hail Storms. Any specific vulnerability of individual assets depends greatly on individual design, building characteristics, and any existing mitigation measures currently in place. Such site-specific vulnerability determinations are outside the scope of this risk assessment but may be considered during future updates and mitigation strategies

5.7 HURRICANE AND TROPICAL STORM

5.7.1 Background

Hurricanes and tropical storms are classified as cyclones and defined as any closed circulation developing around a low-pressure center in which the winds rotate counter-clockwise in the Northern Hemisphere (or clockwise in the Southern Hemisphere) and whose diameter averages 10 to 30 miles across. A tropical cyclone refers to any such circulation that develops over tropical waters. Tropical cyclones act as a "safety-valve," limiting the continued build-up of heat and energy in tropical regions by maintaining the atmospheric heat and moisture balance between the tropics and the pole-ward latitudes. The primary damaging forces associated with these storms are high-level sustained winds, heavy precipitation, and tornadoes.

The key energy source for a tropical cyclone is the release of latent heat from the condensation of warm water. Their formation requires a low-pressure disturbance, warm sea surface temperature, rotational force from the spinning of the earth, and the absence of wind shear in the lowest 50,000 feet of the atmosphere. Most hurricanes and tropical storms form in the Atlantic Ocean, Caribbean Sea, and Gulf of Mexico during the official Atlantic hurricane season, which encompasses the months of June through November. The peak of the Atlantic hurricane season is in early to mid-September and the average number of storms that reach hurricane intensity per year in the Atlantic basin is about six.

As an incipient hurricane develops, barometric pressure (measured in millibars or inches) at its center falls and winds increase. If the atmospheric and oceanic conditions are favorable, it can intensify into a tropical depression. When maximum sustained winds reach or exceed 39 miles per hour, the system is designated a tropical storm, given a name, and is closely monitored by the National Hurricane Center in Miami, Florida. When sustained winds reach or exceed 74 miles per hour the storm is deemed a hurricane. Hurricane intensity is further classified by the Saffir-Simpson Scale (**Table 5-15**), which rates hurricane intensity on a scale of 1 to 5, with 5 being the most intense.

Table 5-15: Saffir-Simpson Scale

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

Source: National Hurricane Center (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 5-16** 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 5-16: Hurricane Damage Classifications

Storm Category	Damage Level	Description of Damages	Photo Exampl
1	MINIMAL	No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Also, some coastal flooding and minor pier damage.	
2	MODERATE	Some roofing material, door, and window damage. Considerable damage to vegetation, mobile homes, etc. Flooding damages piers and small craft in unprotected moorings may break their moorings.	
3	EXTENSIVE	Some structural damage to small residences and utility buildings, with a minor amount of curtainwall failures. Mobile homes are destroyed. Flooding near the coast destroys smaller structures, with larger structures damaged by floating debris. Terrain may be flooded well inland.	
4	EXTREME	More extensive curtainwall failures with some complete roof structure failure on small residences. Major erosion of beach areas. Terrain may be flooded well inland.	
5	CATASTROPHIC	Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown over or away. Flooding causes major damage to lower floors of all structures near the shoreline. Massive evacuation of residential areas may be required.	

Source: National Hurricane Center; Federal Emergency Management Agency

5.7.2 Location and Spatial Extent

Hurricanes and tropical storms threaten the entire Atlantic and Gulf seaboard of the United States. While coastal areas are most directly exposed to the brunt of landfalling storms, their impact is often felt hundreds of miles inland and they can affect the Iredell Rowan Region. All areas in the Iredell Rowan Region are equally susceptible to hurricane and tropical storms.

5.7.3 Extent

Hurricane extent is defined by the Saffir-Simpson Scale which classifies hurricanes into Category 1 through Category 5 (**Table 5-16**). The greatest classification of hurricane to traverse directly through the Iredell Rowan Region was a tropical storm (Not Named storms in 1896 and 1940) in Rowan County which carried tropical force winds of 62 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:

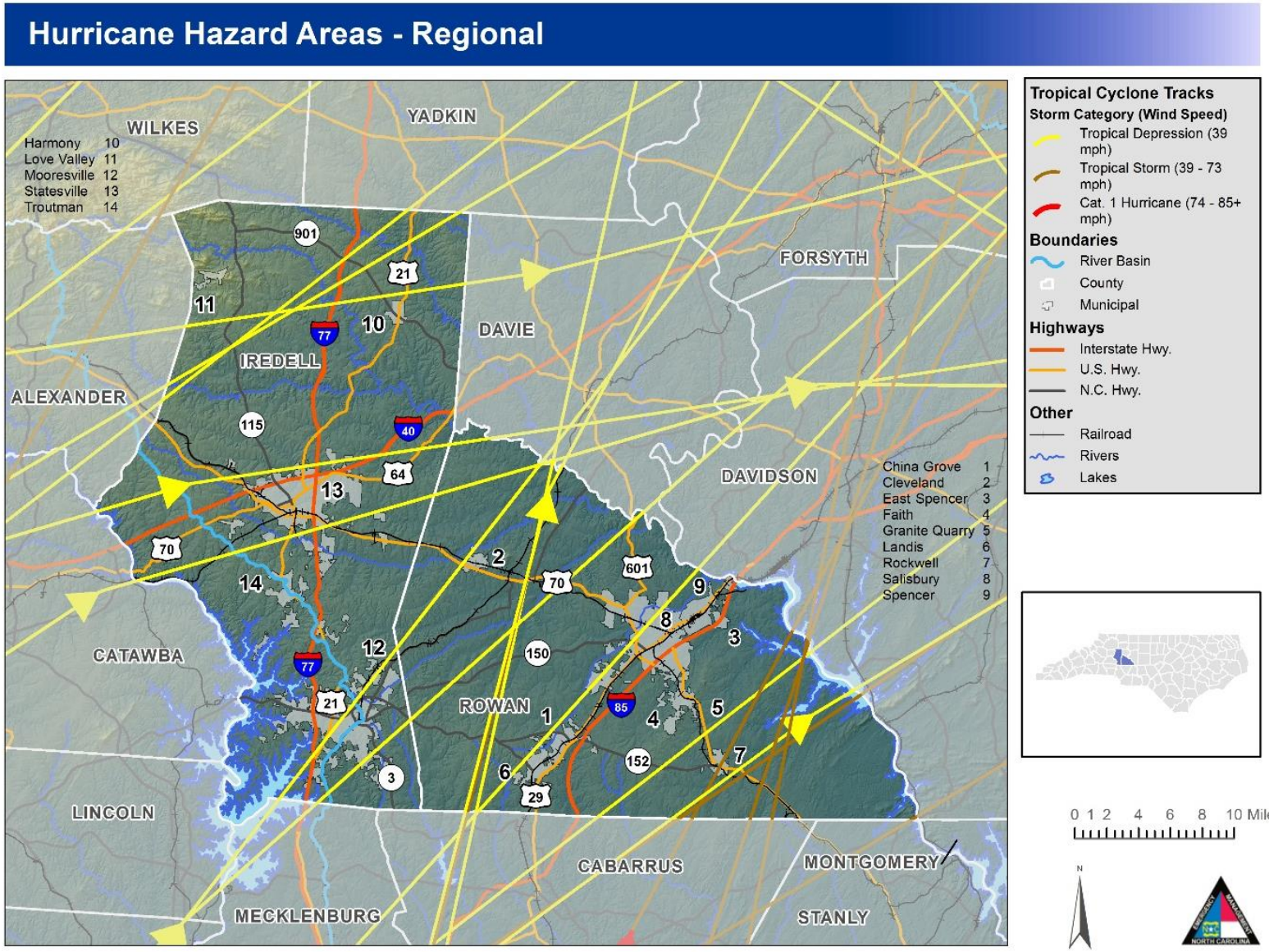
- Iredell County: Hurricane Gracie, Tropical Storm (53 knots)
- Rowan County: Not Named 1896 and 1940 Storms, Tropical Storm (62 knots)

5.7.4 Historical Occurrences

According to the National Hurricane Center's historical storm track records, 62 tropical storm and tropical depression tracks have passed within 75 miles of the Iredell Rowan Region since 1854.[5] This includes 32 tropical depressions and 30 tropical storms.

Of the recorded storm events, 15 traversed directly through the Iredell Rowan Region as shown in **Figure 5-14**. **Table 5-17** provides the date of occurrence, name (if applicable), maximum wind speed (as recorded within 75 miles of the Iredell Rowan Region) and Category of the storm based on the Saffir-Simpson Scale for each event.

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



Source: National Oceanic and Atmospheric Administration; National Hurricane Center

Figure 5-14: Historical Hurricane Storm Tracks Within 75 Miles of the Iredell Rowan Region

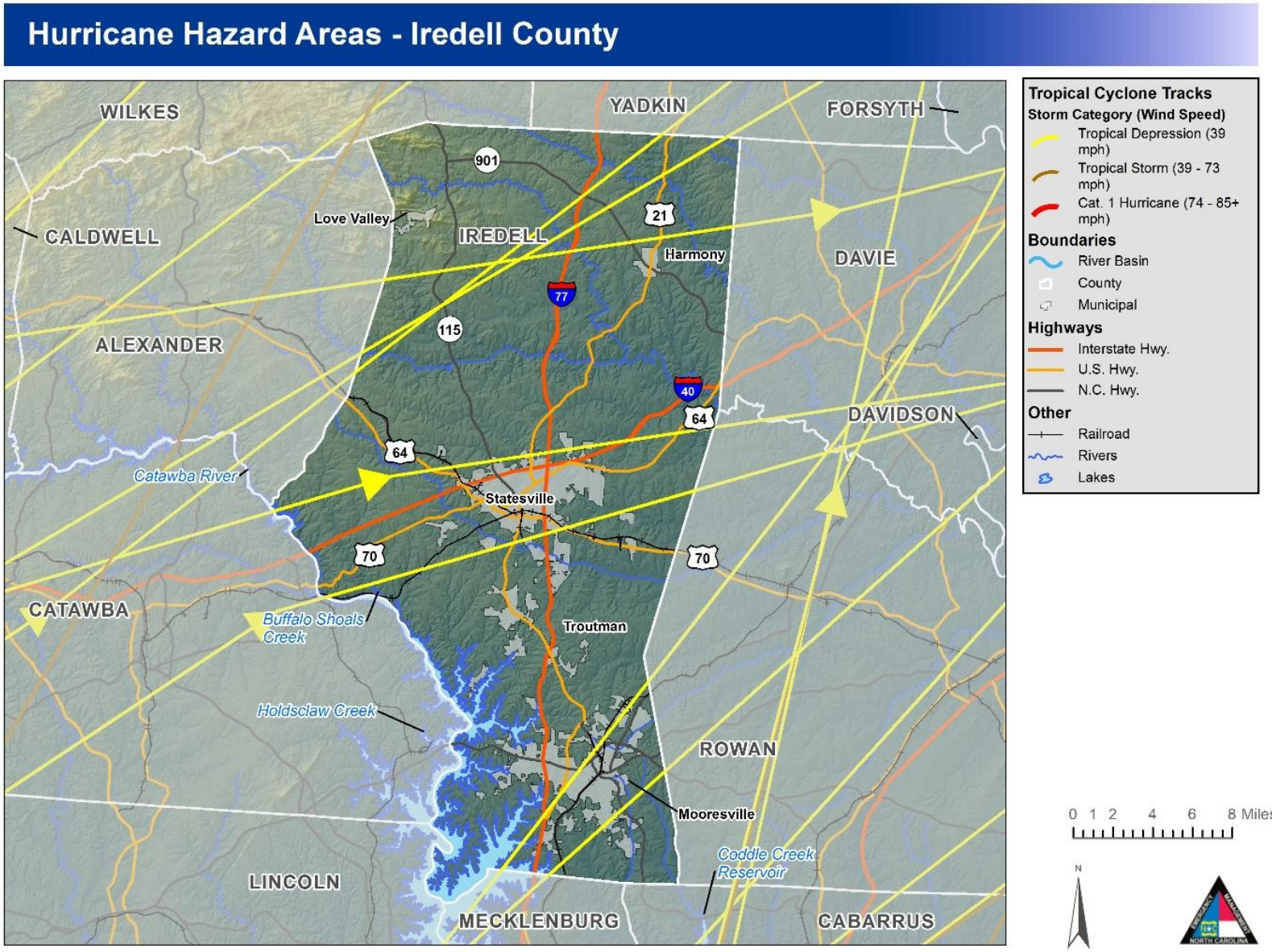


Figure 5-15: Hurricane Hazard Areas – Iredell County

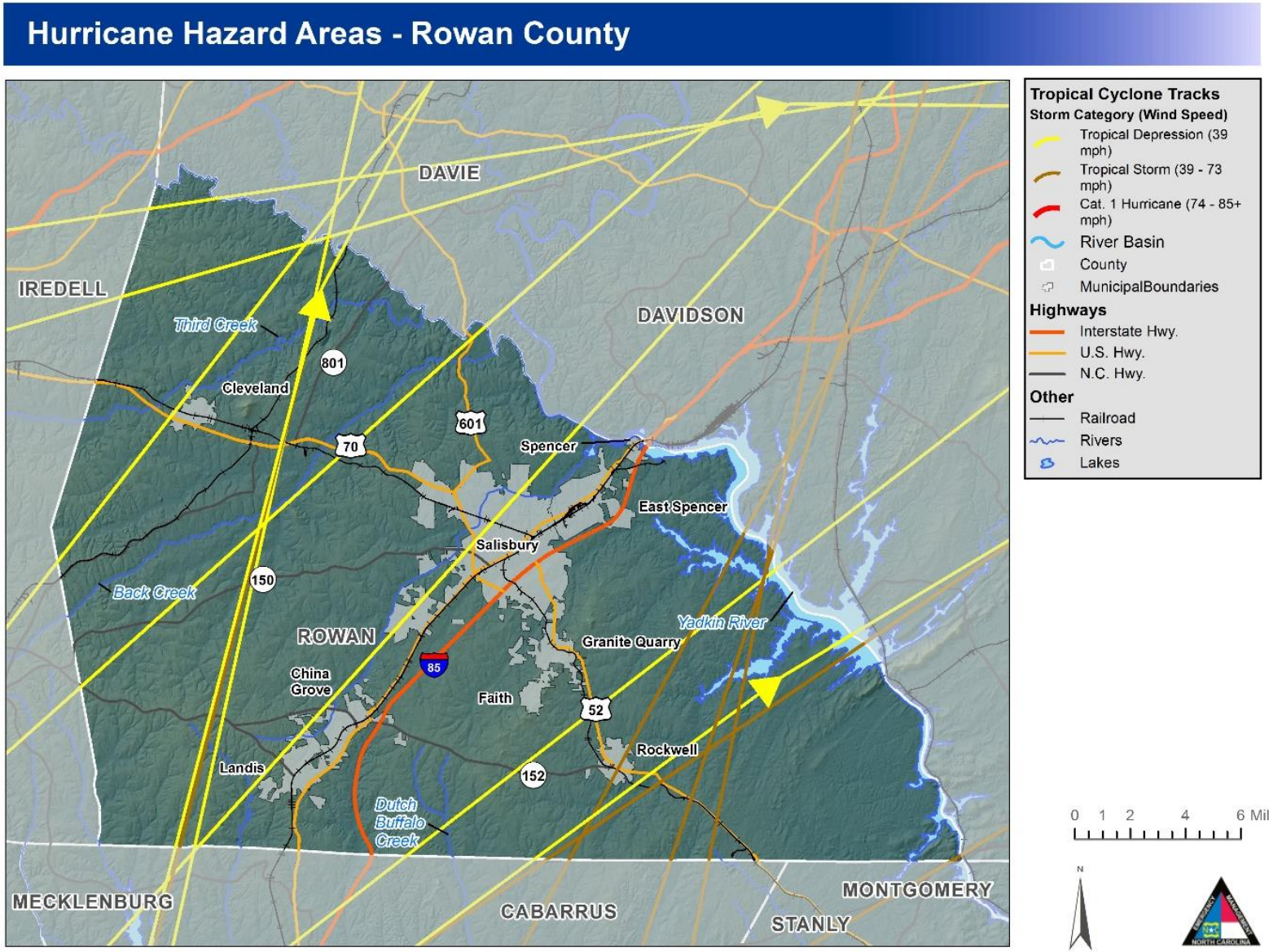


Figure 5-16: Hurricane Hazard Areas – Rowan County

Table 5-17: Historical Storm Tracks within 75 Miles of the Iredell Rowan Region (1850–2019)

Date of Occurrence	Storm Name	Maximum Wind Speed (knots)	Storm Category
10/30/1854	NOT NAMED	35	Tropical Storm
9/15/1859	NOT NAMED	35	Tropical Storm
9/2/1867	NOT NAMED	0	Tropical Depression
9/26/1877	NOT NAMED	48	Tropical Storm
9/1/1878	NOT NAMED	44	Tropical Storm
11/18/1885	NOT NAMED	35	Tropical Storm
9/15/1886	NOT NAMED	35	Tropical Storm
9/16/1886	NOT NAMED	31	Tropical Depression
10/9/1887	NOT NAMED	0	Tropical Depression
9/8/1888	NOT NAMED	31	Tropical Depression
9/12/1889	NOT NAMED	35	Tropical Storm
7/25/1891	NOT NAMED	35	Tropical Storm
9/27/1893	NOT NAMED	35	Tropical Storm
9/22/1896	NOT NAMED	62	Tropical Storm
7/4/1901	NOT NAMED	26	Tropical Depression
9/28/1901	NOT NAMED	0	Tropical Depression
6/12/1902	NOT NAMED	31	Tropical Depression
10/7/1902	NOT NAMED	31	Tropical Depression
9/13/1904	NOT NAMED	53	Tropical Storm
10/5/1905	NOT NAMED	0	Tropical Depression
9/21/1907	NOT NAMED	31	Tropical Depression
8/26/1911	NOT NAMED	22	Tropical Depression
6/7/1912	NOT NAMED	31	Tropical Depression
8/30/1913	NOT NAMED	26	Tropical Depression
7/31/1915	NOT NAMED	31	Tropical Depression
9/19/1920	NOT NAMED	31	Tropical Depression
10/1/1927	NOT NAMED	44	Tropical Storm
8/3/1928	NOT NAMED	26	Tropical Depression
10/3/1929	NOT NAMED	35	Tropical Storm
9/3/1935	NOT NAMED	48	Tropical Storm
8/11/1940	NOT NAMED	62	Tropical Storm
9/12/1945	NOT NAMED	35	Tropical Storm
10/14/1946	NOT NAMED	26	Tropical Depression
9/20/1947	NOT NAMED	53	Tropical Storm
8/23/1949	NOT NAMED	35	Tropical Storm
8/19/1952	NOT NAMED	35	Tropical Storm
7/5/1959	CINDY	26	Tropical Depression
9/20/1959	GRACIE	53	Tropical Storm
8/20/1964	CLEO	22	Tropical Depression
6/11/1965	UNNAMED	35	Tropical Storm
7/18/1968	CELESTE	31	Tropical Depression
5/24/1970	ALMA	22	Tropical Depression
9/16/1976	SUBTROP 3	53	Tropical Storm
9/3/1977	BABE	40	Tropical Storm
8/25/1979	DAVID	40	Tropical Storm

Date of Occurrence	Storm Name	Maximum Wind Speed (knots)	Storm Category
7/25/1985	BOB	40	Tropical Storm
8/20/1985	ONE-C	22	Tropical Depression
9/22/1989	HUGO	48	Tropical Storm
5/19/1990	NOT NAMED	35	Tropical Storm
7/20/1994	NOT NAMED	31	Tropical Depression
8/14/1994	BERYL	0	Tropical Depression
7/16/1997	DANNY	31	Tropical Depression
9/2/1999	DENNIS	22	Tropical Depression
9/14/2000	GORDON	0	Tropical Depression
9/15/2000	HELENE	0	Tropical Depression
7/6/2003	DOLORES	18	Tropical Depression
8/27/2004	GASTON	35	Tropical Storm
9/6/2004	IVAN	18	Tropical Depression
9/28/2004	JEANNE	31	Tropical Depression
7/3/2005	CINDY	18	Tropical Depression
6/14/2006	ALBERTO	35	Tropical Storm
10/8/2018	MICHAEL	50	Tropical Storm

Source: National Hurricane Center

The National Climatic Data Center did not report any events associated with a hurricane or tropical storm in the Iredell Rowan Region between 1950 and 2019. However, federal records indicate that three disaster declarations were made in 1989 (Hurricane Hugo), 1999 (Hurricane Floyd), 2004 (Tropical Storm Frances), 2018 (Hurricane Michael) for the region.[6]

Flooding is generally the greatest hazard of concern with hurricane and tropical storm events in the Iredell Rowan Region. Most events do not carry winds that are above that of the winter storms and straight line winds received by the Iredell Rowan counties. Some anecdotal information is available for the major storms that have impacted that area as found below:

Hurricane Hugo – September 22-24, 1989

Hurricane Hugo was one of the largest storms on record in the Atlantic Basin that produced high winds and dumped heavy rains over much of North Carolina and South Carolina. Hugo reached a peak level of Category 5 on the Saffir-Simpson scale and made landfall near Isle of Palms in South Carolina as a Category 4, eventually passing over Charlotte and much of the surrounding area as a Category 1 storm. Although the storm caused its greatest damage in South Carolina, over 1,000 structures were destroyed or severely damaged in North Carolina, causing over $1 billion dollars in damages. Wind gusts reached over 40 mph and numerous trees were downed throughout much of south and western North Carolina.

Hurricane Hugo devastated the Iredell Rowan Region, causing structural, non-structural (i.e., power distribution system), and agricultural damages in excess of $31 million in Rowan County and $48 million in Iredell County.

Hurricane Floyd – September 16, 1999

Hurricane Floyd, combined with the weather conditions before and immediately after this hurricane, resulted in the most severe flooding and devastation in North Carolina history. In North Carolina, the

[6] Not all of the participating counties were declared disaster areas for these storms. A complete listing of historical disaster declarations, including the affected counties, can be found in Section 4: *Hazard Identification*.

storm resulted in 35 fatalities, over $3 billion in damages, 7,000 destroyed homes, 56,000 damaged homes, 1,500 people rescued from flooded areas, and more than 500,000 customers without electricity. Additionally, the flooding caused an estimated $813 million in agricultural losses affecting 32,000 farmers. There was also significant loss of livestock including 2,860,827 poultry, 28,000 swine, and 619 cattle.

Hurricane Floyd produced heavy rainfall and high winds for the region. With the most significant rain and wind recorded along the coast of NC the Region still received minimal flooding and wind damage.

Tropical Storm Frances – September 7-8, 2004

Tropical Storm Frances was a slow-moving, relatively large storm that dumped heavy rains over the eastern United States. The remnants of Frances produced a swath of 5 to 15 inches of rain across the North Carolina Mountains and Foothills with reports of 12 to 15 inches of rain along the higher terrain and isolated rep orts in excess of 18 inches. Wind gusts reached between 40 and 60 mph along the Appalachian Mountains and numerous trees were downed. Frances caused significant crop damages totaling $55 million statewide. North Carolina residents received almost $20.6 million in federal disaster assistance following the storm.

Due to the path of Tropical Storm Frances hitting NC in the western portion of the state, the region did not see the typical high winds from a tropical storm but did see heavy rainfall which recorded over 9 inches of rain and multiple reports of flash flooding.

Hurricane Michael – October 8, 2018

Michael originated as a Category 5 hurricane that came up the Gulf of Mexico and first hit land around the Florida/Georgia border. Tropical storm Michael gradually weakened as it tracked from the South Carolina Midlands through portions of the South Carolina and North Carolina Piedmont throughout the 11th. Gusty winds increased during the daylight hours on the east side of the storm track, with numerous trees blown, especially across the Piedmont. Flooding continued east for days after the storm hit. Iredell County was included in the Presidential Disaster Declaration.

Hurricane Michael caused multiple flash flooding events and multiple power outages in the region due to high winds. The storm also caused 3 deaths in Iredell County due to a fallen tree.

5.7.5 Probability of Future Occurrences

Based on the analyses performed in IRISK, the probability of future Hurricane Winds is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Less Than 0.2% Annual Probability Of 50-Year Event
- Between 0.2% And 2% Annual Probability Of 50-Year Event
- More Than 2% Annual Probability Of 50-Year Event

Jurisdiction	IRISK Probability of Future Occurrence
City of Salisbury	**Medium**
City of Statesville	**Medium**

Jurisdiction	IRISK Probability of Future Occurrence
Iredell County (Unincorporated Area)	Medium
Rowan County (Unincorporated Area)	Medium
Town of China Grove	Medium
Town of Cleveland	Medium
Town of East Spencer	Medium
Town of Faith	Medium
Town of Granite Quarry	Medium
Town of Harmony	Medium
Town of Landis	Medium
Town of Love Valley	Medium
Town of Mooresville	Medium
Town of Rockwell	Medium
Town of Spencer	Medium
Town of Troutman	Medium

Hurricane Winds Hazard Vulnerability and Impact

Continued enforcement of building codes, flood damage prevention ordinances and other local regulatory tools and policies designed to mitigate the effects of high hazard winds is expected to minimize future losses as construction and planning continue to seek higher standards. Based on historical events the most significant local impacts for the Region regarding future events will likely be damage to trees (and the requisite management of vegetative debris) and widespread power outages to the area.

The following tables provide counts and values by jurisdiction relevant to Hurricane Winds hazard vulnerability in the Iredell-Rowan Regional HMP Area.

Table 5-18: Population Impacted by the 25 Year Hurricane Winds

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	28,651	98.2%	3,740	3,674	98.2%	1,825	1,793	98.2%
Iredell County (Unincorporated Area)	87,091	86,073	98.8%	11,168	11,037	98.8%	5,449	5,385	98.8%
Town of Harmony	525	517	98.5%	67	66	98.5%	33	32	97%
Town of Love Valley	100	94	94%	13	12	92.3%	6	6	100%
Town of Mooresville	38,203	37,991	99.4%	4,899	4,872	99.4%	2,390	2,377	99.5%
Town of Troutman	4,068	4,021	98.8%	522	516	98.9%	254	251	98.8%
Subtotal Iredell	**167,713**	**167,713**	**100%**	**21102**	**21102**	**100%**	**10612**	**10612**	**100%**
Rowan									
City of Salisbury	35,981	35,809	99.5%	5,193	5,168	99.5%	2,349	2,338	99.5%
Rowan County (Unincorporated Area)	63,003	62,991	100%	9,092	9,090	100%	4,113	4,112	100%
Town of China Grove	5,344	5,337	99.9%	771	770	99.9%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,719	99.6%	249	248	99.6%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,120	99.9%	451	450	99.8%	204	204	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,798	98.9%	554	548	98.9%	251	248	98.8%
Subtotal Rowan	**138,538**	**171,371**	**123.7%**	**19993**	**23689**	**118.5%**	**9046**	**11450**	**126.6%**
TOTAL PLAN	**297,972**	**339,084**	**113.8%**	**40438**	**44791**	**110.8%**	**19021**	**22062**	**116%**

Source: GIS Analysis

Table 5-19: Population Impacted by the 50 Year Hurricane Winds

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	28,696	98.4%	3,740	3,680	98.4%	1,825	1,796	98.4%
Iredell County (Unincorporated Area)	87,091	86,218	99%	11,168	11,056	99%	5,449	5,394	99%
Town of Harmony	525	517	98.5%	67	66	98.5%	33	32	97%
Town of Love Valley	100	94	94%	13	12	92.3%	6	6	100%
Town of Mooresville	38,203	37,997	99.5%	4,899	4,873	99.5%	2,390	2,377	99.5%
Town of Troutman	4,068	4,026	99%	522	517	99%	254	251	98.8%
Subtotal Iredell	**159,434**	**167,914**	**105.3%**	**20445**	**21129**	**103.3%**	**9975**	**10624**	**106.5%**

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Rowan									
City of Salisbury	35,981	35,809	99.5%	5,193	5,168	99.5%	2,349	2,338	99.5%
Rowan County (Unincorporated Area)	63,003	62,991	100%	9,092	9,090	100%	4,113	4,112	100%
Town of China Grove	5,344	5,337	99.9%	771	770	99.9%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,719	99.6%	249	248	99.6%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,120	99.9%	451	450	99.8%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,798	98.9%	554	548	98.9%	251	248	98.8%
Subtotal Rowan	**138,538**	**171,371**	**123.7%**	**19993**	**23689**	**118.5%**	**9046**	**11450**	**126.6%**
TOTAL PLAN	**297,972**	**339,285**	**113.9%**	**40438**	**44818**	**110.8%**	**19021**	**22074**	**116.1%**

Source: GIS Analysis

Table 5-20: Population Impacted by the 100 Year Hurricane Winds

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	28,701	98.4%	3,740	3,681	98.4%	1,825	1,796	98.4%
Iredell County (Unincorporated Area)	87,091	86,242	99%	11,168	11,059	99%	5,449	5,396	99%
Town of Harmony	525	517	98.5%	67	66	98.5%	33	32	97%
Town of Love Valley	100	94	94%	13	12	92.3%	6	6	100%
Town of Mooresville	38,203	37,997	99.5%	4,899	4,873	99.5%	2,390	2,377	99.5%
Town of Troutman	4,068	4,026	99%	522	517	99%	254	251	98.8%
Subtotal Iredell	**159,434**	**168,058**	**105.4%**	**20445**	**21143**	**103.4%**	**9975**	**10635**	**106.6%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**138,538**	**171,749**	**100%**	**19993**	**23741**	**100%**	**9046**	**11475**	**100%**
TOTAL PLAN	**297,972**	**339,807**	**114%**	**40438**	**44884**	**111%**	**19021**	**22110**	**116.2%**

Source: GIS Analysis

Table 5-21: Population Impacted by the 300 Year Hurricane Winds

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**159,434**	**169,631**	**100%**	**20445**	**21344**	**100%**	**9975**	**10734**	**100%**

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**138,538**	**171,749**	**100%**	**19993**	**23741**	**100%**	**9046**	**11475**	**100%**
TOTAL PLAN	**297,972**	**341,380**	**100%**	**40438**	**45085**	**100%100%**	**19021**	**22209**	**100%100%100%100%**

Source: GIS Analysis

Table 5-22: Population Impacted by the 700 Year Hurricane Winds

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-23: Buildings Impacted by the 25 Year Hurricane Winds

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,668	74.8%	11,777	82.6%	$939,478	1,837	12.9%	$405,964	422	3%	$47,745	14,036	98.5%	$1,393,187
Iredell County (Unincorporated Area)	55,474	25,593	46.1%	52,985	95.5%	$4,724,352	1,174	2.1%	$131,655	683	1.2%	$286,477	54,842	98.9%	$5,142,484
Town of Harmony	444	432	97.3%	370	83.3%	$23,914	41	9.2%	$1,760	27	6.1%	$1,399	438	98.6%	$27,072
Town of Love Valley	258	243	94.2%	221	85.7%	$9,790	21	8.1%	$553	1	0.4%	$23	243	94.2%	$10,366
Town of Mooresville	14,440	5,481	38%	12,659	87.7%	$980,332	1,466	10.2%	$437,644	241	1.7%	$162,493	14,366	99.5%	$1,580,468
Town of Troutman	2,439	2,379	97.5%	2,126	87.2%	$133,398	229	9.4%	$19,495	58	2.4%	$5,161	2,413	98.9%	$158,054
Subtotal Iredell	**87,309**	**44,796**	**51.3%**	**80,138**	**91.8%**	**$6,811,264**	**4,768**	**5.5%**	**$997,071**	**1,432**	**1.6%**	**$503,298**	**86,338**	**98.9%**	**$8,311,631**

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Rowan															
City of Salisbury	13,960	9,573	68.6%	12,016	86.1%	$1,444,234	1,446	10.4%	$515,558	438	3.1%	$134,393	13,900	99.6%	$2,094,185
Rowan County (Unincorporated Area)	38,881	12,049	31%	36,159	93%	$3,516,927	2,169	5.6%	$953,392	541	1.4%	$277,923	38,869	100%	$4,748,243
Town of China Grove	2,546	2,521	99%	2,284	89.7%	$269,671	203	8%	$34,506	56	2.2%	$12,109	2,543	99.9%	$316,286
Town of Cleveland	812	812	100%	729	89.8%	$76,592	58	7.1%	$14,413	25	3.1%	$21,458	812	100%	$112,463
Town of East Spencer	1,015	1,005	99%	941	92.7%	$86,601	33	3.3%	$167,791	37	3.6%	$25,254	1,011	99.6%	$279,646
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$170,931	76	4.8%	$24,103	13	0.8%	$1,706	1,590	100%	$196,741
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$205,979	142	6%	$44,489	33	1.4%	$72,435	2,350	100%	$322,903
Town of Landis	1,544	1,385	89.7%	1,391	90.1%	$126,843	112	7.3%	$26,536	39	2.5%	$14,560	1,542	99.9%	$167,939
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$197,962	156	6.5%	$108,133	38	1.6%	$4,469	2,402	100%	$310,563
Town of Spencer	2,010	1,962	97.6%	1,812	90.1%	$234,310	132	6.6%	$61,488	46	2.3%	$14,559	1,990	99%	$310,357
Subtotal Rowan	**67,110**	**33,628**	**50.1%**	**61,216**	**91.2%**	**$6,330,050**	**4,527**	**6.7%**	**$1,950,409**	**1,266**	**1.9%**	**$578,866**	**67,009**	**99.8%**	**$8,859,326**
TOTAL PLAN	**154,419**	**78,424**	**50.8%**	**141,354**	**91.5%**	**$13,141,314**	**9,295**	**6%**	**$2,947,480**	**2,698**	**1.7%**	**$1,082,164**	**153,347**	**99.3%**	**$17,170,957**

Source: GIS Analysis

Table 5-24: Buildings Impacted by the 50 Year Hurricane Winds

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,682	74.9%	11,796	82.8%	$969,994	1,837	12.9%	$490,486	422	3%	$66,312	14,055	98.6%	$1,526,792
Iredell County (Unincorporated Area)	55,474	25,606	46.2%	53,074	95.7%	$4,815,339	1,174	2.1%	$170,733	683	1.2%	$308,334	54,931	99%	$5,294,406
Town of Harmony	444	432	97.3%	370	83.3%	$24,396	41	9.2%	$2,347	27	6.1%	$2,098	438	98.6%	$28,840
Town of Love Valley	258	243	94.2%	221	85.7%	$10,099	21	8.1%	$649	1	0.4%	$35	243	94.2%	$10,783
Town of Mooresville	14,440	5,482	38%	12,661	87.7%	$1,008,234	1,466	10.2%	$523,704	241	1.7%	$175,593	14,368	99.5%	$1,707,532
Town of Troutman	2,439	2,382	97.7%	2,129	87.3%	$136,319	229	9.4%	$28,197	58	2.4%	$7,161	2,416	99.1%	$171,678
Subtotal Iredell	**87,309**	**44,827**	**51.3%**	**80,251**	**91.9%**	**$6,964,381**	**4,768**	**5.5%**	**$1,216,116**	**1,432**	**1.6%**	**$559,533**	**86,451**	**99%**	**$8,740,031**
Rowan															
City of Salisbury	13,960	9,573	68.6%	12,016	86.1%	$1,444,234	1,446	10.4%	$515,558	438	3.1%	$134,393	13,900	99.6%	$2,094,185
Rowan County (Unincorporated Area)	38,881	12,049	31%	36,159	93%	$3,516,927	2,169	5.6%	$953,392	541	1.4%	$277,923	38,869	100%	$4,748,243
Town of China Grove	2,546	2,521	99%	2,284	89.7%	$269,671	203	8%	$34,506	56	2.2%	$12,109	2,543	99.9%	$316,286
Town of Cleveland	812	812	100%	729	89.8%	$76,592	58	7.1%	$14,413	25	3.1%	$21,458	812	100%	$112,463
Town of East Spencer	1,015	1,005	99%	941	92.7%	$86,601	33	3.3%	$167,791	37	3.6%	$25,254	1,011	99.6%	$279,646
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$170,931	76	4.8%	$24,103	13	0.8%	$1,706	1,590	100%	$196,741
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$205,979	142	6%	$44,489	33	1.4%	$72,435	2,350	100%	$322,903

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Landis	1,544	1,385	89.7%	1,391	90.1%	$126,843	112	7.3%	$26,536	39	2.5%	$14,560	1,542	99.9%	$167,939
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$197,962	156	6.5%	$108,133	38	1.6%	$4,469	2,402	100%	$310,563
Town of Spencer	2,010	1,962	97.6%	1,812	90.1%	$234,310	132	6.6%	$61,488	46	2.3%	$14,559	1,990	99%	$310,357
Subtotal Rowan	**67,110**	**33,628**	**50.1%**	**61,216**	**91.2%**	**$6,330,050**	**4,527**	**6.7%**	**$1,950,409**	**1,266**	**1.9%**	**$578,866**	**67,009**	**99.8%**	**$8,859,326**
TOTAL PLAN	**154,419**	**78,455**	**50.8%**	**141,467**	**91.6%**	**$13,294,431**	**9,295**	**6%**	**$3,166,525**	**2,698**	**1.7%**	**$1,138,399**	**153,460**	**99.4%**	**$17,599,357**

Source: GIS Analysis

Table 5-25: Buildings Impacted by the 100 Year Hurricane Winds

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,684	75%	11,798	82.8%	$3,384,255	1,837	12.9%	$1,182,770	422	3%	$141,521	14,057	98.6%	$4,708,546
Iredell County (Unincorporated Area)	55,474	25,608	46.2%	53,089	95.7%	$17,305,082	1,174	2.1%	$514,352	683	1.2%	$1,316,098	54,946	99%	$19,135,532
Town of Harmony	444	432	97.3%	370	83.3%	$82,485	41	9.2%	$3,737	27	6.1%	$3,119	438	98.6%	$89,341
Town of Love Valley	258	243	94.2%	221	85.7%	$34,380	21	8.1%	$1,760	1	0.4%	$39	243	94.2%	$36,179
Town of Mooresville	14,440	5,482	38%	12,661	87.7%	$3,935,982	1,466	10.2%	$1,506,849	241	1.7%	$644,309	14,368	99.5%	$6,087,140
Town of Troutman	2,439	2,382	97.7%	2,129	87.3%	$509,457	229	9.4%	$46,926	58	2.4%	$14,458	2,416	99.1%	$570,841

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Subtotal Iredell	**87,309**	**44,831**	**51.3%**	**80,268**	**91.9%**	**$25,251,641**	**4,768**	**5.5%**	**$3,256,394**	**1,432**	**1.6%**	**$2,119,544**	**86,468**	**99%**	**$30,627,579**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$4,726,139	1,446	10.4%	$2,285,022	438	3.1%	$585,742	13,958	100%	$7,596,903
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$11,742,528	2,169	5.6%	$4,731,695	541	1.4%	$1,422,227	38,876	100%	$17,896,450
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$880,662	203	8%	$148,571	56	2.2%	$45,934	2,546	100%	$1,075,167
Town of Cleveland	812	812	100%	729	89.8%	$303,619	58	7.1%	$71,508	25	3.1%	$109,003	812	100%	$484,130
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$293,178	33	3.3%	$867,958	37	3.6%	$122,433	1,015	100%	$1,283,569
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$560,282	76	4.8%	$121,944	13	0.8%	$7,720	1,590	100%	$689,946
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$707,615	142	6%	$204,626	33	1.4%	$370,983	2,350	100%	$1,283,224
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$495,617	112	7.3%	$132,717	39	2.5%	$62,441	1,544	100%	$690,774
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$749,378	156	6.5%	$531,330	38	1.6%	$14,475	2,402	100%	$1,295,184
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$700,638	132	6.6%	$294,669	46	2.3%	$62,096	2,010	100%	$1,057,403
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$21,159,656**	**4,527**	**6.7%**	**$9,390,040**	**1,266**	**1.9%**	**$2,803,054**	**67,103**	**100%**	**$33,352,750**
TOTAL PLAN	**154,419**	**78,550**	**50.9%**	**141,578**	**91.7%**	**$46,411,297**	**9,295**	**6%**	**$12,646,434**	**2,698**	**1.7%**	**$4,922,598**	**153,571**	**99.5%**	**$63,980,329**

Source: GIS Analysis

Table 5-26: Buildings Impacted by the 300 Year Hurricane Winds

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$19,380,338	1,837	12.9%	$12,204,861	422	3%	$2,111,845	14,249	100%	$33,697,043
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$105,630,857	1,174	2.1%	$6,671,534	683	1.2%	$8,199,058	55,469	100%	$120,501,449
Town of Harmony	444	438	98.6%	376	84.7%	$427,748	41	9.2%	$34,127	27	6.1%	$82,217	444	100%	$544,093
Town of Love Valley	258	258	100%	236	91.5%	$206,746	21	8.1%	$16,643	1	0.4%	$284	258	100%	$223,674
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$25,877,456	1,466	10.2%	$14,815,022	241	1.7%	$4,428,504	14,437	100%	$45,120,982
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$2,778,077	229	9.4%	$706,179	58	2.4%	$211,126	2,438	100%	$3,695,382
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$154,301,222**	**4,768**	**5.5%**	**$34,448,366**	**1,432**	**1.6%**	**$15,033,034**	**87,295**	**100%**	**$203,782,623**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$33,343,058	1,446	10.4%	$24,927,530	438	3.1%	$6,348,950	13,958	100%	$64,619,539
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$73,553,696	2,169	5.6%	$42,706,015	541	1.4%	$12,803,182	38,876	100%	$129,062,892
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$6,495,900	203	8%	$1,387,636	56	2.2%	$679,376	2,546	100%	$8,562,912
Town of Cleveland	812	812	100%	729	89.8%	$2,779,131	58	7.1%	$1,050,316	25	3.1%	$1,065,587	812	100%	$4,895,034
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$2,267,284	33	3.3%	$7,434,274	37	3.6%	$1,192,126	1,015	100%	$10,893,685
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$3,544,041	76	4.8%	$969,229	13	0.8%	$106,332	1,590	100%	$4,619,603
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$4,680,536	142	6%	$1,734,146	33	1.4%	$2,076,879	2,350	100%	$8,491,560

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$3,422,633	112	7.3%	$1,742,962	39	2.5%	$785,300	1,544	100%	$5,950,895
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$5,474,338	156	6.5%	$3,862,296	38	1.6%	$258,140	2,402	100%	$9,594,774
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$4,975,383	132	6.6%	$2,907,508	46	2.3%	$803,426	2,010	100%	$8,686,316
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$140,536,000**	**4,527**	**6.7%**	**$88,721,912**	**1,266**	**1.9%**	**$26,119,298**	**67,103**	**100%**	**$255,377,210**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$294,837,222**	**9,295**	**6%**	**$123,170,278**	**2,698**	**1.7%**	**$41,152,332**	**154,398**	**100%**	**$459,159,833**

Source: GIS Analysis

Table 5-27: Buildings Impacted by the 700 Year Hurricane Winds

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$53,357,007	1,837	12.9%	$38,445,676	422	3%	$7,597,515	14,249	100%	$99,400,198
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$304,745,579	1,174	2.1%	$20,968,850	683	1.2%	$16,346,589	55,469	100%	$342,061,017
Town of Harmony	444	438	98.6%	376	84.7%	$1,200,044	41	9.2%	$113,182	27	6.1%	$355,223	444	100%	$1,668,449
Town of Love Valley	258	258	100%	236	91.5%	$609,699	21	8.1%	$39,917	1	0.4%	$918	258	100%	$650,534
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$76,643,095	1,466	10.2%	$41,653,264	241	1.7%	$9,253,243	14,437	100%	$127,549,602
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$7,216,898	229	9.4%	$2,572,033	58	2.4%	$709,306	2,438	100%	$10,498,237

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$443,772,322**	**4,768**	**5.5%**	**$103,792,922**	**1,432**	**1.6%**	**$34,262,794**	**87,295**	**100%**	**$581,828,037**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$104,468,792	1,446	10.4%	$62,715,565	438	3.1%	$16,338,701	13,958	100%	$183,523,058
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$224,349,315	2,169	5.6%	$91,566,326	541	1.4%	$29,502,153	38,876	100%	$345,417,794
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$21,671,653	203	8%	$3,627,754	56	2.2%	$2,473,354	2,546	100%	$27,772,760
Town of Cleveland	812	812	100%	729	89.8%	$7,876,869	58	7.1%	$3,246,674	25	3.1%	$2,174,656	812	100%	$13,298,199
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$6,896,792	33	3.3%	$12,486,876	37	3.6%	$2,385,608	1,015	100%	$21,769,276
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$11,110,275	76	4.8%	$1,817,294	13	0.8%	$302,296	1,590	100%	$13,229,865
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$13,271,076	142	6%	$3,418,116	33	1.4%	$3,425,207	2,350	100%	$20,114,399
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$10,965,278	112	7.3%	$5,101,961	39	2.5%	$2,387,064	1,544	100%	$18,454,303
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$17,223,802	156	6.5%	$7,457,298	38	1.6%	$977,286	2,402	100%	$25,658,386
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$15,782,482	132	6.6%	$6,101,721	46	2.3%	$2,110,309	2,010	100%	$23,994,511
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$433,616,334**	**4,527**	**6.7%**	**$197,539,585**	**1,266**	**1.9%**	**$62,076,634**	**67,103**	**100%**	**$693,232,551**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$877,388,656**	**9,295**	**6%**	**$301,332,507**	**2,698**	**1.7%**	**$96,339,428**	**154,398**	**100%**	**$1,275,060,588**

Source: GIS Analysis

The following tables provide counts and estimated damages for CIKR buildings by jurisdiction in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event. Totals across all sectors are shown at the bottom of each table.

Table 5-28: Critical Facilities Exposed to the Hurricane Winds - City of Statesville

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	24	$17,340
Banking and Finance	50 Year	24	$18,305
Banking and Finance	100 Year	24	$50,327
Banking and Finance	300 Year	24	$251,099
Banking and Finance	700 Year	24	$524,928
Commercial Facilities	25 Year	1,205	$231,313
Commercial Facilities	50 Year	1,205	$267,602
Commercial Facilities	100 Year	1,205	$739,599
Commercial Facilities	300 Year	1,205	$6,926,508
Commercial Facilities	700 Year	1,205	$19,636,101
Communications	25 Year	1	$51
Communications	50 Year	1	$76
Communications	100 Year	1	$83
Communications	300 Year	1	$588
Communications	700 Year	1	$1,727
Critical Manufacturing	25 Year	460	$98,658
Critical Manufacturing	50 Year	460	$136,535
Critical Manufacturing	100 Year	460	$241,885
Critical Manufacturing	300 Year	460	$3,812,537
Critical Manufacturing	700 Year	460	$14,596,679
Emergency Services	25 Year	1	$171
Emergency Services	50 Year	1	$256

Sector	Event	Number of Buildings At Risk	Estimated Damages
Emergency Services	100 Year	1	$281
Emergency Services	300 Year	1	$5,665
Emergency Services	700 Year	1	$26,494
Energy	25 Year	7	$86,131
Energy	50 Year	7	$129,197
Energy	100 Year	7	$142,116
Energy	300 Year	7	$3,291,829
Energy	700 Year	7	$15,075,899
Food and Agriculture	25 Year	1	$167
Food and Agriculture	50 Year	1	$167
Food and Agriculture	100 Year	1	$521
Food and Agriculture	300 Year	1	$2,027
Food and Agriculture	700 Year	1	$5,731
Government Facilities	25 Year	174	$21,476
Government Facilities	50 Year	174	$31,464
Government Facilities	100 Year	174	$58,238
Government Facilities	300 Year	174	$947,634
Government Facilities	700 Year	174	$3,641,353
Healthcare and Public Health	25 Year	172	$28,480
Healthcare and Public Health	50 Year	172	$38,176
Healthcare and Public Health	100 Year	172	$65,835
Healthcare and Public Health	300 Year	172	$967,756
Healthcare and Public Health	700 Year	172	$3,613,951
Transportation Systems	25 Year	185	$46,669
Transportation Systems	50 Year	185	$54,195

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	100 Year	185	$131,015
Transportation Systems	300 Year	185	$1,073,639
Transportation Systems	700 Year	185	$3,237,518
All Categories	**25 Year**	**2,230**	**$530,456**
All Categories	**50 Year**	**2,230**	**$675,973**
All Categories	**100 Year**	**2,230**	**$1,429,900**
All Categories	**300 Year**	**2,230**	**$17,279,282**
All Categories	**700 Year**	**2,230**	**$60,360,381**

Source: GIS Analysis

Table 5-29: Critical Facilities Exposed to the Hurricane Winds - Iredell County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	2	$117
Banking and Finance	50 Year	2	$175
Banking and Finance	100 Year	2	$544
Banking and Finance	300 Year	2	$8,607
Banking and Finance	700 Year	2	$32,706
Commercial Facilities	25 Year	1,146	$317,964
Commercial Facilities	50 Year	1,146	$341,188
Commercial Facilities	100 Year	1,146	$1,484,024
Commercial Facilities	300 Year	1,146	$10,181,677
Commercial Facilities	700 Year	1,146	$21,845,191
Critical Manufacturing	25 Year	279	$48,772
Critical Manufacturing	50 Year	279	$68,544
Critical Manufacturing	100 Year	279	$169,099
Critical Manufacturing	300 Year	279	$2,369,371

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	700 Year	279	$8,077,628
Energy	25 Year	3	$64,243
Energy	50 Year	3	$96,365
Energy	100 Year	3	$203,074
Energy	300 Year	3	$6,654,486
Energy	700 Year	3	$26,672,966
Food and Agriculture	25 Year	18	$3,113
Food and Agriculture	50 Year	18	$3,293
Food and Agriculture	100 Year	18	$15,069
Food and Agriculture	300 Year	18	$136,957
Food and Agriculture	700 Year	18	$318,655
Government Facilities	25 Year	238	$29,651
Government Facilities	50 Year	238	$41,855
Government Facilities	100 Year	238	$78,099
Government Facilities	300 Year	238	$1,037,048
Government Facilities	700 Year	238	$3,495,885
Healthcare and Public Health	25 Year	20	$2,594
Healthcare and Public Health	50 Year	20	$3,079
Healthcare and Public Health	100 Year	20	$10,751
Healthcare and Public Health	300 Year	20	$126,252
Healthcare and Public Health	700 Year	20	$328,813
Transportation Systems	25 Year	137	$15,383
Transportation Systems	50 Year	137	$20,173
Transportation Systems	100 Year	137	$71,482
Transportation Systems	300 Year	137	$993,173

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	700 Year	137	$3,156,099
Water	25 Year	3	$205
Water	50 Year	3	$205
Water	100 Year	3	$764
Water	300 Year	3	$3,143
Water	700 Year	3	$6,973
All Categories	**25 Year**	**1,846**	**$482,042**
All Categories	**50 Year**	**1,846**	**$574,877**
All Categories	**100 Year**	**1,846**	**$2,032,906**
All Categories	**300 Year**	**1,846**	**$21,510,714**
All Categories	**700 Year**	**1,846**	**$63,934,916**

Source: GIS Analysis

Table 5-30: Critical Facilities Exposed to the Hurricane Winds - Town of Harmony

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	2	$62
Banking and Finance	50 Year	2	$93
Banking and Finance	100 Year	2	$102
Banking and Finance	300 Year	2	$877
Banking and Finance	700 Year	2	$2,624
Commercial Facilities	25 Year	31	$1,072
Commercial Facilities	50 Year	31	$1,573
Commercial Facilities	100 Year	31	$1,983
Commercial Facilities	300 Year	31	$21,985
Commercial Facilities	700 Year	31	$77,506
Critical Manufacturing	25 Year	12	$979

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	50 Year	12	$1,210
Critical Manufacturing	100 Year	12	$2,251
Critical Manufacturing	300 Year	12	$16,626
Critical Manufacturing	700 Year	12	$47,059
Government Facilities	25 Year	18	$892
Government Facilities	50 Year	18	$1,338
Government Facilities	100 Year	18	$2,197
Government Facilities	300 Year	18	$73,286
Government Facilities	700 Year	18	$328,903
Healthcare and Public Health	25 Year	1	$32
Healthcare and Public Health	50 Year	1	$47
Healthcare and Public Health	100 Year	1	$52
Healthcare and Public Health	300 Year	1	$366
Healthcare and Public Health	700 Year	1	$1,075
Transportation Systems	25 Year	4	$122
Transportation Systems	50 Year	4	$182
Transportation Systems	100 Year	4	$270
Transportation Systems	300 Year	4	$3,204
Transportation Systems	700 Year	4	$11,238
All Categories	**25 Year**	**68**	**$3,159**
All Categories	**50 Year**	**68**	**$4,443**
All Categories	**100 Year**	**68**	**$6,855**
All Categories	**300 Year**	**68**	**$116,344**
All Categories	**700 Year**	**68**	**$468,405**

Source: GIS Analysis

Table 5-31: Critical Facilities Exposed to the Hurricane Winds - Town of Love Valley

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	25 Year	21	$573
Commercial Facilities	50 Year	21	$679
Commercial Facilities	100 Year	21	$1,765
Commercial Facilities	300 Year	21	$16,116
Commercial Facilities	700 Year	21	$38,527
Food and Agriculture	25 Year	1	$3
Food and Agriculture	50 Year	1	$5
Food and Agriculture	100 Year	1	$34
Food and Agriculture	300 Year	1	$811
Food and Agriculture	700 Year	1	$2,308
All Categories	**25 Year**	**22**	**$576**
All Categories	**50 Year**	**22**	**$684**
All Categories	**100 Year**	**22**	**$1,799**
All Categories	**300 Year**	**22**	**$16,927**
All Categories	**700 Year**	**22**	**$40,835**

Source: GIS Analysis

Table 5-32: Critical Facilities Exposed to the Hurricane Winds - Town of Mooresville

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	37	$15,074
Banking and Finance	50 Year	37	$16,228
Banking and Finance	100 Year	37	$57,117
Banking and Finance	300 Year	37	$486,233
Banking and Finance	700 Year	37	$1,114,930
Commercial Facilities	25 Year	902	$264,334

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	50 Year	902	$301,826
Commercial Facilities	100 Year	902	$1,000,411
Commercial Facilities	300 Year	902	$8,755,750
Commercial Facilities	700 Year	902	$21,551,698
Critical Manufacturing	25 Year	301	$61,431
Critical Manufacturing	50 Year	301	$80,487
Critical Manufacturing	100 Year	301	$163,164
Critical Manufacturing	300 Year	301	$1,985,889
Critical Manufacturing	700 Year	301	$7,031,836
Energy	25 Year	2	$123,196
Energy	50 Year	2	$184,794
Energy	100 Year	2	$203,274
Energy	300 Year	2	$3,347,306
Energy	700 Year	2	$15,302,617
Food and Agriculture	25 Year	2	$27
Food and Agriculture	50 Year	2	$41
Food and Agriculture	100 Year	2	$95
Food and Agriculture	300 Year	2	$2,091
Food and Agriculture	700 Year	2	$7,085
Government Facilities	25 Year	120	$147,280
Government Facilities	50 Year	120	$155,354
Government Facilities	100 Year	120	$599,162
Government Facilities	300 Year	120	$3,907,244
Government Facilities	700 Year	120	$7,634,451
Healthcare and Public Health	25 Year	121	$45,858

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	50 Year	121	$54,875
Healthcare and Public Health	100 Year	121	$167,365
Healthcare and Public Health	300 Year	121	$1,625,839
Healthcare and Public Health	700 Year	121	$4,483,033
Nuclear Reactors, Materials and Waste	25 Year	1	$220
Nuclear Reactors, Materials and Waste	50 Year	1	$331
Nuclear Reactors, Materials and Waste	100 Year	1	$364
Nuclear Reactors, Materials and Waste	300 Year	1	$3,765
Nuclear Reactors, Materials and Waste	700 Year	1	$12,755
Transportation Systems	25 Year	214	$64,957
Transportation Systems	50 Year	214	$88,727
Transportation Systems	100 Year	214	$161,338
Transportation Systems	300 Year	214	$2,444,818
Transportation Systems	700 Year	214	$8,955,696
Water	25 Year	1	$124
Water	50 Year	1	$186
Water	100 Year	1	$205
Water	300 Year	1	$5,155
Water	700 Year	1	$23,043
All Categories	**25 Year**	**1,701**	**$722,501**
All Categories	**50 Year**	**1,701**	**$882,849**
All Categories	**100 Year**	**1,701**	**$2,352,495**
All Categories	**300 Year**	**1,701**	**$22,564,090**
All Categories	**700 Year**	**1,701**	**$66,117,144**

Source: GIS Analysis

Table 5-33: Critical Facilities Exposed to the Hurricane Winds - Town of Troutman

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	3	$209
Banking and Finance	50 Year	3	$246
Banking and Finance	100 Year	3	$571
Banking and Finance	300 Year	3	$7,006
Banking and Finance	700 Year	3	$21,960
Commercial Facilities	25 Year	170	$12,762
Commercial Facilities	50 Year	170	$18,418
Commercial Facilities	100 Year	170	$30,474
Commercial Facilities	300 Year	170	$505,984
Commercial Facilities	700 Year	170	$1,900,641
Critical Manufacturing	25 Year	73	$8,842
Critical Manufacturing	50 Year	73	$12,770
Critical Manufacturing	100 Year	73	$21,749
Critical Manufacturing	300 Year	73	$283,214
Critical Manufacturing	700 Year	73	$973,444
Energy	25 Year	1	$71,598
Energy	50 Year	1	$107,397
Energy	100 Year	1	$118,136
Energy	300 Year	1	$1,359,536
Energy	700 Year	1	$5,876,493
Government Facilities	25 Year	27	$1,784
Government Facilities	50 Year	27	$2,677
Government Facilities	100 Year	27	$3,985
Government Facilities	300 Year	27	$73,623

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	700 Year	27	$270,307
Healthcare and Public Health	25 Year	5	$128
Healthcare and Public Health	50 Year	5	$191
Healthcare and Public Health	100 Year	5	$210
Healthcare and Public Health	300 Year	5	$2,999
Healthcare and Public Health	700 Year	5	$11,610
Transportation Systems	25 Year	9	$931
Transportation Systems	50 Year	9	$1,057
Transportation Systems	100 Year	9	$4,395
Transportation Systems	300 Year	9	$44,478
Transportation Systems	700 Year	9	$103,376
All Categories	**25 Year**	**288**	**$96,254**
All Categories	**50 Year**	**288**	**$142,756**
All Categories	**100 Year**	**288**	**$179,520**
All Categories	**300 Year**	**288**	**$2,276,840**
All Categories	**700 Year**	**288**	**$9,157,831**

Source: GIS Analysis

Table 5-34: Critical Facilities Exposed to the Hurricane Winds - City of Salisbury

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	26	$2,360
Banking and Finance	50 Year	26	$2,360
Banking and Finance	100 Year	26	$6,362
Banking and Finance	300 Year	26	$93,611
Banking and Finance	700 Year	26	$358,149
Commercial Facilities	25 Year	892	$327,866

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	50 Year	892	$327,866
Commercial Facilities	100 Year	892	$1,501,574
Commercial Facilities	300 Year	892	$15,678,679
Commercial Facilities	700 Year	892	$37,895,978
Communications	25 Year	1	$147
Communications	50 Year	1	$147
Communications	100 Year	1	$616
Communications	300 Year	1	$11,778
Communications	700 Year	1	$29,346
Critical Manufacturing	25 Year	311	$69,321
Critical Manufacturing	50 Year	311	$69,321
Critical Manufacturing	100 Year	311	$249,616
Critical Manufacturing	300 Year	311	$2,829,943
Critical Manufacturing	700 Year	311	$8,609,572
Energy	25 Year	1	$4,833
Energy	50 Year	1	$4,833
Energy	100 Year	1	$10,929
Energy	300 Year	1	$172,579
Energy	700 Year	1	$861,537
Food and Agriculture	25 Year	2	$10
Food and Agriculture	50 Year	2	$10
Food and Agriculture	100 Year	2	$99
Food and Agriculture	300 Year	2	$2,555
Food and Agriculture	700 Year	2	$7,536
Government Facilities	25 Year	198	$57,643

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	50 Year	198	$57,643
Government Facilities	100 Year	198	$252,856
Government Facilities	300 Year	198	$2,921,449
Government Facilities	700 Year	198	$7,674,982
Healthcare and Public Health	25 Year	130	$52,173
Healthcare and Public Health	50 Year	130	$52,173
Healthcare and Public Health	100 Year	130	$233,483
Healthcare and Public Health	300 Year	130	$3,277,719
Healthcare and Public Health	700 Year	130	$8,490,240
Transportation Systems	25 Year	277	$120,263
Transportation Systems	50 Year	277	$120,263
Transportation Systems	100 Year	277	$564,042
Transportation Systems	300 Year	277	$5,972,672
Transportation Systems	700 Year	277	$14,726,391
All Categories	**25 Year**	**1,838**	**$634,616**
All Categories	**50 Year**	**1,838**	**$634,616**
All Categories	**100 Year**	**1,838**	**$2,819,577**
All Categories	**300 Year**	**1,838**	**$30,960,985**
All Categories	**700 Year**	**1,838**	**$78,653,731**

Source: GIS Analysis

Table 5-35: Critical Facilities Exposed to the Hurricane Winds - Rowan County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	7	$1,633
Banking and Finance	50 Year	7	$1,633
Banking and Finance	100 Year	7	$6,062

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	300 Year	7	$52,495
Banking and Finance	700 Year	7	$157,745
Commercial Facilities	25 Year	1,290	$514,515
Commercial Facilities	50 Year	1,290	$514,515
Commercial Facilities	100 Year	1,290	$2,538,580
Commercial Facilities	300 Year	1,290	$24,004,033
Commercial Facilities	700 Year	1,290	$53,770,878
Critical Manufacturing	25 Year	686	$395,046
Critical Manufacturing	50 Year	686	$395,046
Critical Manufacturing	100 Year	686	$1,989,920
Critical Manufacturing	300 Year	686	$16,527,602
Critical Manufacturing	700 Year	686	$31,860,706
Energy	25 Year	4	$4,265
Energy	50 Year	4	$4,265
Energy	100 Year	4	$20,412
Energy	300 Year	4	$353,081
Energy	700 Year	4	$1,175,887
Food and Agriculture	25 Year	184	$2,479
Food and Agriculture	50 Year	184	$2,479
Food and Agriculture	100 Year	184	$10,684
Food and Agriculture	300 Year	184	$210,237
Food and Agriculture	700 Year	184	$660,324
Government Facilities	25 Year	137	$132,925
Government Facilities	50 Year	137	$132,925
Government Facilities	100 Year	137	$668,441

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	300 Year	137	$5,642,566
Government Facilities	700 Year	137	$13,195,751
Healthcare and Public Health	25 Year	22	$14,811
Healthcare and Public Health	50 Year	22	$14,811
Healthcare and Public Health	100 Year	22	$74,960
Healthcare and Public Health	300 Year	22	$618,294
Healthcare and Public Health	700 Year	22	$1,161,848
Nuclear Reactors, Materials and Waste	25 Year	1	$91
Nuclear Reactors, Materials and Waste	50 Year	1	$91
Nuclear Reactors, Materials and Waste	100 Year	1	$272
Nuclear Reactors, Materials and Waste	300 Year	1	$3,304
Nuclear Reactors, Materials and Waste	700 Year	1	$10,862
Transportation Systems	25 Year	362	$162,469
Transportation Systems	50 Year	362	$162,469
Transportation Systems	100 Year	362	$833,917
Transportation Systems	300 Year	362	$8,044,649
Transportation Systems	700 Year	362	$19,060,688
Water	25 Year	3	$5
Water	50 Year	3	$5
Water	100 Year	3	$11
Water	300 Year	3	$155
Water	700 Year	3	$767
All Categories	**25 Year**	**2,696**	**$1,228,239**
All Categories	**50 Year**	**2,696**	**$1,228,239**

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**100 Year**	**2,696**	**$6,143,259**
All Categories	**300 Year**	**2,696**	**$55,456,416**
All Categories	**700 Year**	**2,696**	**$121,055,456**

Source: GIS Analysis

Table 5-36: Critical Facilities Exposed to the Hurricane Winds - Town of China Grove

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	4	$150
Banking and Finance	50 Year	4	$150
Banking and Finance	100 Year	4	$809
Banking and Finance	300 Year	4	$10,675
Banking and Finance	700 Year	4	$28,868
Commercial Facilities	25 Year	142	$15,650
Commercial Facilities	50 Year	142	$15,650
Commercial Facilities	100 Year	142	$66,767
Commercial Facilities	300 Year	142	$793,683
Commercial Facilities	700 Year	142	$2,288,497
Critical Manufacturing	25 Year	47	$9,386
Critical Manufacturing	50 Year	47	$9,386
Critical Manufacturing	100 Year	47	$39,591
Critical Manufacturing	300 Year	47	$322,732
Critical Manufacturing	700 Year	47	$811,085
Food and Agriculture	25 Year	1	$6
Food and Agriculture	50 Year	1	$6
Food and Agriculture	100 Year	1	$60
Food and Agriculture	300 Year	1	$1,499

Sector	Event	Number of Buildings At Risk	Estimated Damages
Food and Agriculture	700 Year	1	$4,345
Government Facilities	25 Year	15	$6,474
Government Facilities	50 Year	15	$6,474
Government Facilities	100 Year	15	$19,052
Government Facilities	300 Year	15	$385,100
Government Facilities	700 Year	15	$1,644,503
Healthcare and Public Health	25 Year	5	$3,397
Healthcare and Public Health	50 Year	5	$3,397
Healthcare and Public Health	100 Year	5	$15,505
Healthcare and Public Health	300 Year	5	$94,079
Healthcare and Public Health	700 Year	5	$186,659
Transportation Systems	25 Year	43	$11,412
Transportation Systems	50 Year	43	$11,412
Transportation Systems	100 Year	43	$52,418
Transportation Systems	300 Year	43	$454,891
Transportation Systems	700 Year	43	$1,118,910
All Categories	**25 Year**	**257**	**$46,475**
All Categories	**50 Year**	**257**	**$46,475**
All Categories	**100 Year**	**257**	**$194,202**
All Categories	**300 Year**	**257**	**$2,062,659**
All Categories	**700 Year**	**257**	**$6,082,867**

Source: GIS Analysis

Table 5-37: Critical Facilities Exposed to the Hurricane Winds - Town of Cleveland

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	25 Year	41	$25,401

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	50 Year	41	$25,401
Commercial Facilities	100 Year	41	$127,488
Commercial Facilities	300 Year	41	$1,297,586
Commercial Facilities	700 Year	41	$2,802,547
Critical Manufacturing	25 Year	17	$5,823
Critical Manufacturing	50 Year	17	$5,823
Critical Manufacturing	100 Year	17	$30,281
Critical Manufacturing	300 Year	17	$527,444
Critical Manufacturing	700 Year	17	$1,769,466
Government Facilities	25 Year	7	$1,014
Government Facilities	50 Year	7	$1,014
Government Facilities	100 Year	7	$3,135
Government Facilities	300 Year	7	$54,096
Government Facilities	700 Year	7	$208,792
Healthcare and Public Health	25 Year	1	$53
Healthcare and Public Health	50 Year	1	$53
Healthcare and Public Health	100 Year	1	$113
Healthcare and Public Health	300 Year	1	$1,486
Healthcare and Public Health	700 Year	1	$6,822
Transportation Systems	25 Year	15	$3,520
Transportation Systems	50 Year	15	$3,520
Transportation Systems	100 Year	15	$19,365
Transportation Systems	300 Year	15	$234,001
Transportation Systems	700 Year	15	$628,666
All Categories	**25 Year**	**81**	**$35,811**

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**50 Year**	**81**	**$35,811**
All Categories	**100 Year**	**81**	**$180,382**
All Categories	**300 Year**	**81**	**$2,114,613**
All Categories	**700 Year**	**81**	**$5,416,293**

Source: GIS Analysis

Table 5-38: Critical Facilities Exposed to the Hurricane Winds - Town of East Spencer

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	25 Year	47	$159,109
Commercial Facilities	50 Year	47	$159,109
Commercial Facilities	100 Year	47	$821,312
Commercial Facilities	300 Year	47	$7,057,223
Commercial Facilities	700 Year	47	$11,868,350
Critical Manufacturing	25 Year	8	$13,991
Critical Manufacturing	50 Year	8	$13,991
Critical Manufacturing	100 Year	8	$64,470
Critical Manufacturing	300 Year	8	$638,104
Critical Manufacturing	700 Year	8	$1,406,678
Government Facilities	25 Year	8	$19,573
Government Facilities	50 Year	8	$19,573
Government Facilities	100 Year	8	$103,369
Government Facilities	300 Year	8	$915,726
Government Facilities	700 Year	8	$1,550,215
Healthcare and Public Health	25 Year	1	$25
Healthcare and Public Health	50 Year	1	$25
Healthcare and Public Health	100 Year	1	$56

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	300 Year	1	$560
Healthcare and Public Health	700 Year	1	$1,905
Transportation Systems	25 Year	5	$296
Transportation Systems	50 Year	5	$296
Transportation Systems	100 Year	5	$1,079
Transportation Systems	300 Year	5	$14,169
Transportation Systems	700 Year	5	$43,789
All Categories	**25 Year**	**69**	**$192,994**
All Categories	**50 Year**	**69**	**$192,994**
All Categories	**100 Year**	**69**	**$990,286**
All Categories	**300 Year**	**69**	**$8,625,782**
All Categories	**700 Year**	**69**	**$14,870,937**

Source: GIS Analysis

Table 5-39: Critical Facilities Exposed to the Hurricane Winds - Town of Faith

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	25 Year	48	$16,766
Commercial Facilities	50 Year	48	$16,766
Commercial Facilities	100 Year	48	$87,533
Commercial Facilities	300 Year	48	$731,724
Commercial Facilities	700 Year	48	$1,394,565
Critical Manufacturing	25 Year	29	$3,137
Critical Manufacturing	50 Year	29	$3,137
Critical Manufacturing	100 Year	29	$14,796
Critical Manufacturing	300 Year	29	$124,921
Critical Manufacturing	700 Year	29	$263,786

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	25 Year	5	$903
Government Facilities	50 Year	5	$903
Government Facilities	100 Year	5	$1,938
Government Facilities	300 Year	5	$18,624
Government Facilities	700 Year	5	$61,938
Healthcare and Public Health	25 Year	1	$2,851
Healthcare and Public Health	50 Year	1	$2,851
Healthcare and Public Health	100 Year	1	$14,513
Healthcare and Public Health	300 Year	1	$83,053
Healthcare and Public Health	700 Year	1	$147,370
Transportation Systems	25 Year	6	$2,153
Transportation Systems	50 Year	6	$2,153
Transportation Systems	100 Year	6	$10,884
Transportation Systems	300 Year	6	$117,240
Transportation Systems	700 Year	6	$251,932
All Categories	**25 Year**	**89**	**$25,810**
All Categories	**50 Year**	**89**	**$25,810**
All Categories	**100 Year**	**89**	**$129,664**
All Categories	**300 Year**	**89**	**$1,075,562**
All Categories	**700 Year**	**89**	**$2,119,591**

Source: GIS Analysis

Table 5-40: Critical Facilities Exposed to the Hurricane Winds - Town of Granite Quarry

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	4	$455
Banking and Finance	50 Year	4	$455

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	100 Year	4	$2,348
Banking and Finance	300 Year	4	$28,291
Banking and Finance	700 Year	4	$87,202
Commercial Facilities	25 Year	72	$6,378
Commercial Facilities	50 Year	72	$6,378
Commercial Facilities	100 Year	72	$26,078
Commercial Facilities	300 Year	72	$275,535
Commercial Facilities	700 Year	72	$711,392
Critical Manufacturing	25 Year	39	$7,189
Critical Manufacturing	50 Year	39	$7,189
Critical Manufacturing	100 Year	39	$19,789
Critical Manufacturing	300 Year	39	$177,517
Critical Manufacturing	700 Year	39	$460,268
Government Facilities	25 Year	15	$71,441
Government Facilities	50 Year	15	$71,441
Government Facilities	100 Year	15	$366,934
Government Facilities	300 Year	15	$2,017,614
Government Facilities	700 Year	15	$3,231,104
Healthcare and Public Health	25 Year	3	$82
Healthcare and Public Health	50 Year	3	$82
Healthcare and Public Health	100 Year	3	$200
Healthcare and Public Health	300 Year	3	$3,072
Healthcare and Public Health	700 Year	3	$12,900
Transportation Systems	25 Year	41	$31,285
Transportation Systems	50 Year	41	$31,285

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	100 Year	41	$159,992
Transportation Systems	300 Year	41	$1,306,083
Transportation Systems	700 Year	41	$2,330,960
All Categories	**25 Year**	**174**	**$116,830**
All Categories	**50 Year**	**174**	**$116,830**
All Categories	**100 Year**	**174**	**$575,341**
All Categories	**300 Year**	**174**	**$3,808,112**
All Categories	**700 Year**	**174**	**$6,833,826**

Source: GIS Analysis

Table 5-41: Critical Facilities Exposed to the Hurricane Winds - Town of Landis

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	2	$160
Banking and Finance	50 Year	2	$160
Banking and Finance	100 Year	2	$438
Banking and Finance	300 Year	2	$5,618
Banking and Finance	700 Year	2	$21,396
Commercial Facilities	25 Year	80	$13,505
Commercial Facilities	50 Year	80	$13,505
Commercial Facilities	100 Year	80	$68,388
Commercial Facilities	300 Year	80	$896,991
Commercial Facilities	700 Year	80	$2,460,154
Critical Manufacturing	25 Year	32	$11,631
Critical Manufacturing	50 Year	32	$11,631
Critical Manufacturing	100 Year	32	$48,571
Critical Manufacturing	300 Year	32	$541,601

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	700 Year	32	$1,661,664
Government Facilities	25 Year	13	$10,806
Government Facilities	50 Year	13	$10,806
Government Facilities	100 Year	13	$44,573
Government Facilities	300 Year	13	$573,369
Government Facilities	700 Year	13	$1,804,561
Healthcare and Public Health	25 Year	3	$284
Healthcare and Public Health	50 Year	3	$284
Healthcare and Public Health	100 Year	3	$1,006
Healthcare and Public Health	300 Year	3	$15,162
Healthcare and Public Health	700 Year	3	$46,416
Transportation Systems	25 Year	21	$4,710
Transportation Systems	50 Year	21	$4,710
Transportation Systems	100 Year	21	$32,182
Transportation Systems	300 Year	21	$495,521
Transportation Systems	700 Year	21	$1,494,835
All Categories	**25 Year**	**151**	**$41,096**
All Categories	**50 Year**	**151**	**$41,096**
All Categories	**100 Year**	**151**	**$195,158**
All Categories	**300 Year**	**151**	**$2,528,262**
All Categories	**700 Year**	**151**	**$7,489,026**

Source: GIS Analysis

Table 5-42: Critical Facilities Exposed to the Hurricane Winds - Town of Rockwell

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	2	$120

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	50 Year	2	$120
Banking and Finance	100 Year	2	$342
Banking and Finance	300 Year	2	$5,722
Banking and Finance	700 Year	2	$23,418
Commercial Facilities	25 Year	100	$27,940
Commercial Facilities	50 Year	100	$27,940
Commercial Facilities	100 Year	100	$127,848
Commercial Facilities	300 Year	100	$1,074,307
Commercial Facilities	700 Year	100	$2,598,752
Critical Manufacturing	25 Year	46	$74,966
Critical Manufacturing	50 Year	46	$74,966
Critical Manufacturing	100 Year	46	$376,190
Critical Manufacturing	300 Year	46	$2,521,325
Critical Manufacturing	700 Year	46	$4,274,826
Government Facilities	25 Year	12	$1,317
Government Facilities	50 Year	12	$1,317
Government Facilities	100 Year	12	$3,547
Government Facilities	300 Year	12	$98,213
Government Facilities	700 Year	12	$483,881
Healthcare and Public Health	25 Year	6	$687
Healthcare and Public Health	50 Year	6	$687
Healthcare and Public Health	100 Year	6	$3,000
Healthcare and Public Health	300 Year	6	$50,586
Healthcare and Public Health	700 Year	6	$152,499
Transportation Systems	25 Year	21	$6,388

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	50 Year	21	$6,388
Transportation Systems	100 Year	21	$30,676
Transportation Systems	300 Year	21	$303,533
Transportation Systems	700 Year	21	$704,400
All Categories	**25 Year**	**187**	**$111,418**
All Categories	**50 Year**	**187**	**$111,418**
All Categories	**100 Year**	**187**	**$541,603**
All Categories	**300 Year**	**187**	**$4,053,686**
All Categories	**700 Year**	**187**	**$8,237,776**

Source: GIS Analysis

Table 5-43: Critical Facilities Exposed to the Hurricane Winds - Town of Spencer

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	25 Year	95	$48,654
Commercial Facilities	50 Year	95	$48,654
Commercial Facilities	100 Year	95	$226,064
Commercial Facilities	300 Year	95	$2,214,125
Commercial Facilities	700 Year	95	$4,548,783
Critical Manufacturing	25 Year	23	$4,578
Critical Manufacturing	50 Year	23	$4,578
Critical Manufacturing	100 Year	23	$24,009
Critical Manufacturing	300 Year	23	$257,002
Critical Manufacturing	700 Year	23	$668,505
Government Facilities	25 Year	12	$7,938
Government Facilities	50 Year	12	$7,938
Government Facilities	100 Year	12	$36,141

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	300 Year	12	$544,866
Government Facilities	700 Year	12	$1,476,222
Healthcare and Public Health	25 Year	7	$740
Healthcare and Public Health	50 Year	7	$740
Healthcare and Public Health	100 Year	7	$2,846
Healthcare and Public Health	300 Year	7	$51,850
Healthcare and Public Health	700 Year	7	$142,852
Transportation Systems	25 Year	33	$12,412
Transportation Systems	50 Year	33	$12,412
Transportation Systems	100 Year	33	$62,572
Transportation Systems	300 Year	33	$615,850
Transportation Systems	700 Year	33	$1,321,004
All Categories	**25 Year**	**170**	**$74,322**
All Categories	**50 Year**	**170**	**$74,322**
All Categories	**100 Year**	**170**	**$351,632**
All Categories	**300 Year**	**170**	**$3,683,693**
All Categories	**700 Year**	**170**	**$8,157,366**

Source: GIS Analysis

The following table provides counts and estimated damages for CIKR buildings across all jurisdictions, by sector, in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event.

Table 5-44: Critical Facilities Exposed to the Hurricane Winds (by Sector)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	5,531	$8,827,715
Banking and Finance	50 Year	5,531	$24,335,684
Banking and Finance	100 Year	5,531	$61,813,573

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	300 Year	5,531	$258,477,164
Banking and Finance	700 Year	5,531	$516,716,125
Chemical	25 Year	64	$675,334
Chemical	50 Year	64	$2,670,702
Chemical	100 Year	64	$7,754,300
Chemical	300 Year	64	$50,667,379
Chemical	700 Year	64	$115,822,730
Commercial Facilities	25 Year	196,885	$230,333,735
Commercial Facilities	50 Year	196,885	$606,996,610
Commercial Facilities	100 Year	196,888	$1,563,246,914
Commercial Facilities	300 Year	196,889	$5,966,360,732
Commercial Facilities	700 Year	196,889	$11,695,284,735
Communications	25 Year	227	$1,153,656
Communications	50 Year	227	$3,255,900
Communications	100 Year	227	$8,370,712
Communications	300 Year	227	$32,646,679
Communications	700 Year	227	$61,293,241
Critical Manufacturing	25 Year	61,886	$78,991,684
Critical Manufacturing	50 Year	61,887	$183,655,759
Critical Manufacturing	100 Year	61,887	$466,312,774
Critical Manufacturing	300 Year	61,887	$1,946,037,206
Critical Manufacturing	700 Year	61,887	$4,015,878,357
Defense Industrial Base	25 Year	77	$491,589
Defense Industrial Base	50 Year	77	$3,046,866
Defense Industrial Base	100 Year	77	$5,765,765

Sector	Event	Number of Buildings At Risk	Estimated Damages
Defense Industrial Base	300 Year	77	$26,491,978
Defense Industrial Base	700 Year	77	$51,595,615
Emergency Services	25 Year	2,557	$4,346,564
Emergency Services	50 Year	2,557	$14,386,395
Emergency Services	100 Year	2,557	$41,235,015
Emergency Services	300 Year	2,557	$191,994,450
Emergency Services	700 Year	2,557	$389,504,505
Energy	25 Year	1,776	$10,852,499
Energy	50 Year	1,777	$39,473,094
Energy	100 Year	1,777	$141,775,453
Energy	300 Year	1,777	$1,014,374,767
Energy	700 Year	1,777	$2,433,341,677
Food and Agriculture	25 Year	152,107	$9,394,802
Food and Agriculture	50 Year	152,109	$36,937,928
Food and Agriculture	100 Year	152,109	$111,835,804
Food and Agriculture	300 Year	152,109	$396,875,703
Food and Agriculture	700 Year	152,109	$764,996,867
Government Facilities	25 Year	38,706	$138,871,940
Government Facilities	50 Year	38,707	$336,107,318
Government Facilities	100 Year	38,707	$793,570,704
Government Facilities	300 Year	38,707	$2,743,515,249
Government Facilities	700 Year	38,707	$5,005,329,552
Healthcare and Public Health	25 Year	13,594	$24,073,080
Healthcare and Public Health	50 Year	13,594	$64,514,978
Healthcare and Public Health	100 Year	13,594	$177,336,996

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	300 Year	13,594	$795,207,431
Healthcare and Public Health	700 Year	13,594	$1,572,034,626
Information Technology	25 Year	3	$1,669
Information Technology	50 Year	3	$1,669
Information Technology	100 Year	3	$8,813
Information Technology	300 Year	3	$85,284
Information Technology	700 Year	3	$161,929
National Monuments and Icons	25 Year	2	$1,246
National Monuments and Icons	50 Year	2	$4,188
National Monuments and Icons	100 Year	2	$15,242
National Monuments and Icons	300 Year	2	$77,461
National Monuments and Icons	700 Year	2	$209,930
Nuclear Reactors, Materials and Waste	25 Year	65	$962,650
Nuclear Reactors, Materials and Waste	50 Year	65	$2,046,857
Nuclear Reactors, Materials and Waste	100 Year	65	$3,577,009
Nuclear Reactors, Materials and Waste	300 Year	65	$10,436,881
Nuclear Reactors, Materials and Waste	700 Year	65	$16,433,902
Other	25 Year	12	$10,325
Other	50 Year	12	$14,873
Other	100 Year	12	$44,968
Other	300 Year	12	$305,367
Other	700 Year	12	$749,393
Postal and Shipping	25 Year	246	$218,103
Postal and Shipping	50 Year	246	$736,035

Sector	Event	Number of Buildings At Risk	Estimated Damages
Postal and Shipping	100 Year	246	$2,355,350
Postal and Shipping	300 Year	246	$9,148,407
Postal and Shipping	700 Year	246	$15,606,429
Transportation Systems	25 Year	36,772	$41,486,463
Transportation Systems	50 Year	36,772	$96,328,564
Transportation Systems	100 Year	36,772	$263,453,253
Transportation Systems	300 Year	36,772	$1,160,715,890
Transportation Systems	700 Year	36,772	$2,353,474,913
Water	25 Year	1,359	$10,550,329
Water	50 Year	1,359	$39,863,179
Water	100 Year	1,359	$133,433,498
Water	300 Year	1,359	$586,263,668
Water	700 Year	1,359	$1,283,577,386
All Categories	**25 Year**	**511,869**	**$561,243,383**
All Categories	**50 Year**	**511,874**	**$1,454,376,599**
All Categories	**100 Year**	**511,877**	**$3,781,906,143**
All Categories	**300 Year**	**511,878**	**$15,189,681,696**
All Categories	**700 Year**	**511,878**	**$30,292,011,912**

Source: GIS Analysis

The following tables provide counts and estimated damages for High Potential Loss Properties by jurisdiction in the plan. Because there is a large number of categories and events, the table is sorted by category and then by event. Totals across all categories are shown at the bottom of each table.

Table 5-45: High Potential Loss Properties Exposed to the Hurricane Winds - City of Statesville

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	95	$131,069
Commercial	50 Year	95	$149,106

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	100 Year	95	$413,024
Commercial	300 Year	95	$3,554,779
Commercial	700 Year	95	$9,567,856
Government	25 Year	29	$12,752
Government	50 Year	29	$19,128
Government	100 Year	29	$37,075
Government	300 Year	29	$573,011
Government	700 Year	29	$2,102,672
Industrial	25 Year	53	$51,140
Industrial	50 Year	53	$67,700
Industrial	100 Year	53	$142,228
Industrial	300 Year	53	$1,936,947
Industrial	700 Year	53	$6,762,981
Religious	25 Year	19	$6,612
Religious	50 Year	19	$9,919
Religious	100 Year	19	$20,220
Religious	300 Year	19	$360,846
Religious	700 Year	19	$1,390,793
Residential	25 Year	11	$11,523
Residential	50 Year	11	$12,300
Residential	100 Year	11	$52,859
Residential	300 Year	11	$384,179
Residential	700 Year	11	$1,124,592
Utilities	25 Year	5	$86,005
Utilities	50 Year	5	$129,007

Category	Event	Number of Buildings At Risk	Estimated Damages
Utilities	100 Year	5	$141,908
Utilities	300 Year	5	$3,288,101
Utilities	700 Year	5	$15,060,898
All Categories	**25 Year**	**212**	**$299,101**
All Categories	**50 Year**	**212**	**$387,160**
All Categories	**100 Year**	**212**	**$807,314**
All Categories	**300 Year**	**212**	**$10,097,863**
All Categories	**700 Year**	**212**	**$36,009,792**

Source: GIS Analysis

Table 5-46: High Potential Loss Properties Exposed to the Hurricane Winds - Iredell County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	34	$28,991
Commercial	50 Year	34	$33,461
Commercial	100 Year	34	$156,239
Commercial	300 Year	34	$1,705,496
Commercial	700 Year	34	$4,337,168
Government	25 Year	27	$18,385
Government	50 Year	27	$27,115
Government	100 Year	27	$45,027
Government	300 Year	27	$577,814
Government	700 Year	27	$1,942,129
Industrial	25 Year	24	$30,670
Industrial	50 Year	24	$43,406
Industrial	100 Year	24	$111,208
Industrial	300 Year	24	$1,507,975

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	700 Year	24	$5,065,099
Religious	25 Year	24	$224,388
Religious	50 Year	24	$226,676
Religious	100 Year	24	$1,136,302
Religious	300 Year	24	$6,104,017
Religious	700 Year	24	$9,686,849
Residential	25 Year	235	$318,747
Residential	50 Year	235	$321,241
Residential	100 Year	235	$1,058,001
Residential	300 Year	235	$9,591,927
Residential	700 Year	235	$32,104,036
Utilities	25 Year	2	$64,117
Utilities	50 Year	2	$96,175
Utilities	100 Year	2	$202,865
Utilities	300 Year	2	$6,651,692
Utilities	700 Year	2	$26,663,221
All Categories	**25 Year**	**346**	**$685,298**
All Categories	**50 Year**	**346**	**$748,074**
All Categories	**100 Year**	**346**	**$2,709,642**
All Categories	**300 Year**	**346**	**$26,138,921**
All Categories	**700 Year**	**346**	**$79,798,502**

Source: GIS Analysis

Table 5-47: High Potential Loss Properties Exposed to the Hurricane Winds - Town of Mooresville

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	174	$280,790

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	50 Year	174	$323,546
Commercial	100 Year	174	$1,041,792
Commercial	300 Year	174	$9,438,196
Commercial	700 Year	174	$24,279,982
Government	25 Year	17	$126,439
Government	50 Year	17	$132,314
Government	100 Year	17	$524,254
Government	300 Year	17	$3,257,993
Government	700 Year	17	$6,083,477
Industrial	25 Year	32	$24,890
Industrial	50 Year	32	$35,982
Industrial	100 Year	32	$45,609
Industrial	300 Year	32	$869,094
Industrial	700 Year	32	$3,555,426
Religious	25 Year	20	$7,182
Religious	50 Year	20	$9,881
Religious	100 Year	20	$22,633
Religious	300 Year	20	$256,105
Religious	700 Year	20	$744,416
Residential	25 Year	13	$6,869
Residential	50 Year	13	$8,282
Residential	100 Year	13	$36,750
Residential	300 Year	13	$403,385
Residential	700 Year	13	$1,263,520
Utilities	25 Year	3	$123,320

Category	Event	Number of Buildings At Risk	Estimated Damages
Utilities	50 Year	3	$184,980
Utilities	100 Year	3	$203,478
Utilities	300 Year	3	$3,352,461
Utilities	700 Year	3	$15,325,660
All Categories	**25 Year**	**259**	**$569,490**
All Categories	**50 Year**	**259**	**$694,985**
All Categories	**100 Year**	**259**	**$1,874,516**
All Categories	**300 Year**	**259**	**$17,577,234**
All Categories	**700 Year**	**259**	**$51,252,481**

Source: GIS Analysis

Table 5-48: High Potential Loss Properties Exposed to the Hurricane Winds - Town of Troutman

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	9	$6,041
Commercial	50 Year	9	$9,061
Commercial	100 Year	9	$10,667
Commercial	300 Year	9	$229,861
Commercial	700 Year	9	$982,502
Government	25 Year	3	$929
Government	50 Year	3	$1,394
Government	100 Year	3	$2,476
Government	300 Year	3	$47,159
Government	700 Year	3	$165,254
Industrial	25 Year	5	$4,102
Industrial	50 Year	5	$6,153
Industrial	100 Year	5	$7,565

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	300 Year	5	$100,313
Industrial	700 Year	5	$330,882
Religious	25 Year	3	$1,012
Religious	50 Year	3	$1,518
Religious	100 Year	3	$1,670
Religious	300 Year	3	$34,760
Religious	700 Year	3	$147,276
Residential	25 Year	3	$12,346
Residential	50 Year	3	$12,346
Residential	100 Year	3	$40,356
Residential	300 Year	3	$256,549
Residential	700 Year	3	$764,481
Utilities	25 Year	1	$71,598
Utilities	50 Year	1	$107,397
Utilities	100 Year	1	$118,136
Utilities	300 Year	1	$1,359,536
Utilities	700 Year	1	$5,876,493
All Categories	**25 Year**	**24**	**$96,028**
All Categories	**50 Year**	**24**	**$137,869**
All Categories	**100 Year**	**24**	**$180,870**
All Categories	**300 Year**	**24**	**$2,028,178**
All Categories	**700 Year**	**24**	**$8,266,888**

Source: GIS Analysis

Table 5-49: High Potential Loss Properties Exposed to the Hurricane Winds - City of Salisbury

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	111	$246,558
Commercial	50 Year	111	$246,558
Commercial	100 Year	111	$1,136,212
Commercial	300 Year	111	$12,731,462
Commercial	700 Year	111	$30,355,384
Government	25 Year	35	$34,854
Government	50 Year	35	$34,854
Government	100 Year	35	$159,495
Government	300 Year	35	$1,665,373
Government	700 Year	35	$3,933,578
Industrial	25 Year	32	$27,634
Industrial	50 Year	32	$27,634
Industrial	100 Year	32	$97,031
Industrial	300 Year	32	$1,101,171
Industrial	700 Year	32	$3,386,289
Religious	25 Year	14	$11,047
Religious	50 Year	14	$11,047
Religious	100 Year	14	$52,855
Religious	300 Year	14	$656,193
Religious	700 Year	14	$1,873,839
Residential	25 Year	77	$42,121
Residential	50 Year	77	$42,121
Residential	100 Year	77	$176,382
Residential	300 Year	77	$1,545,496

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	700 Year	77	$4,331,474
Utilities	25 Year	1	$4,833
Utilities	50 Year	1	$4,833
Utilities	100 Year	1	$10,929
Utilities	300 Year	1	$172,579
Utilities	700 Year	1	$861,537
All Categories	**25 Year**	**270**	**$367,047**
All Categories	**50 Year**	**270**	**$367,047**
All Categories	**100 Year**	**270**	**$1,632,904**
All Categories	**300 Year**	**270**	**$17,872,274**
All Categories	**700 Year**	**270**	**$44,742,101**

Source: GIS Analysis

Table 5-50: High Potential Loss Properties Exposed to the Hurricane Winds - Rowan County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Agricultural	25 Year	1	$11
Agricultural	50 Year	1	$11
Agricultural	100 Year	1	$111
Agricultural	300 Year	1	$3,140
Agricultural	700 Year	1	$9,548
Commercial	25 Year	33	$54,835
Commercial	50 Year	33	$54,835
Commercial	100 Year	33	$236,649
Commercial	300 Year	33	$3,039,088
Commercial	700 Year	33	$8,081,655
Government	25 Year	20	$70,179

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	50 Year	20	$70,179
Government	100 Year	20	$364,003
Government	300 Year	20	$3,294,805
Government	700 Year	20	$8,531,527
Industrial	25 Year	18	$200,631
Industrial	50 Year	18	$200,631
Industrial	100 Year	18	$1,043,292
Industrial	300 Year	18	$8,454,457
Industrial	700 Year	18	$14,928,080
Religious	25 Year	11	$9,842
Religious	50 Year	11	$9,842
Religious	100 Year	11	$49,789
Religious	300 Year	11	$512,692
Religious	700 Year	11	$1,223,092
Residential	25 Year	16	$16,951
Residential	50 Year	16	$16,951
Residential	100 Year	16	$64,392
Residential	300 Year	16	$771,491
Residential	700 Year	16	$2,323,497
Utilities	25 Year	2	$2,030
Utilities	50 Year	2	$2,030
Utilities	100 Year	2	$4,465
Utilities	300 Year	2	$60,863
Utilities	700 Year	2	$281,535
All Categories	**25 Year**	**101**	**$354,479**

Category	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**50 Year**	**101**	**$354,479**
All Categories	**100 Year**	**101**	**$1,762,701**
All Categories	**300 Year**	**101**	**$16,136,536**
All Categories	**700 Year**	**101**	**$35,378,934**

Source: GIS Analysis

Table 5-51: High Potential Loss Properties Exposed to the Hurricane Winds - Town of China Grove

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	5	$3,773
Commercial	50 Year	5	$3,773
Commercial	100 Year	5	$12,696
Commercial	300 Year	5	$195,646
Commercial	700 Year	5	$671,159
Government	25 Year	2	$4,580
Government	50 Year	2	$4,580
Government	100 Year	2	$13,209
Government	300 Year	2	$272,971
Government	700 Year	2	$1,186,681
Industrial	25 Year	3	$1,238
Industrial	50 Year	3	$1,238
Industrial	100 Year	3	$4,000
Industrial	300 Year	3	$73,811
Industrial	700 Year	3	$259,495
Religious	25 Year	1	$180
Religious	50 Year	1	$180
Religious	100 Year	1	$405

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	300 Year	1	$5,769
Religious	700 Year	1	$26,892
Residential	25 Year	2	$1,775
Residential	50 Year	2	$1,775
Residential	100 Year	3	$6,354
Residential	300 Year	3	$47,056
Residential	700 Year	3	$146,882
All Categories	**25 Year**	**13**	**$11,546**
All Categories	**50 Year**	**13**	**$11,546**
All Categories	**100 Year**	**14**	**$36,664**
All Categories	**300 Year**	**14**	**$595,253**
All Categories	**700 Year**	**14**	**$2,291,109**

Source: GIS Analysis

Table 5-52: High Potential Loss Properties Exposed to the Hurricane Winds - Town of Cleveland

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	2	$1,511
Commercial	50 Year	2	$1,511
Commercial	100 Year	2	$7,706
Commercial	300 Year	2	$120,650
Commercial	700 Year	2	$384,829
Government	25 Year	1	$395
Government	50 Year	1	$395
Government	100 Year	1	$933
Government	300 Year	1	$14,767
Government	700 Year	1	$68,366

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	25 Year	6	$5,467
Industrial	50 Year	6	$5,467
Industrial	100 Year	6	$28,897
Industrial	300 Year	6	$508,233
Industrial	700 Year	6	$1,710,051
Religious	25 Year	1	$17,762
Religious	50 Year	1	$17,762
Religious	100 Year	1	$93,462
Religious	300 Year	1	$831,719
Religious	700 Year	1	$1,474,498
Residential	25 Year	2	$10,828
Residential	50 Year	2	$10,828
Residential	100 Year	2	$82,661
Residential	300 Year	2	$1,189,084
Residential	700 Year	2	$3,066,778
All Categories	**25 Year**	**12**	**$35,963**
All Categories	**50 Year**	**12**	**$35,963**
All Categories	**100 Year**	**12**	**$213,659**
All Categories	**300 Year**	**12**	**$2,664,453**
All Categories	**700 Year**	**12**	**$6,704,522**

Source: GIS Analysis

Table 5-53: High Potential Loss Properties Exposed to the Hurricane Winds - Town of East Spencer

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	1	$152,931
Commercial	50 Year	1	$152,931

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	100 Year	1	$801,015
Commercial	300 Year	1	$6,758,783
Commercial	700 Year	1	$10,937,832
Government	25 Year	2	$19,191
Government	50 Year	2	$19,191
Government	100 Year	2	$101,638
Government	300 Year	2	$890,719
Government	700 Year	2	$1,477,517
Industrial	25 Year	1	$1,897
Industrial	50 Year	1	$1,897
Industrial	100 Year	1	$5,754
Industrial	300 Year	1	$89,030
Industrial	700 Year	1	$277,318
Residential	25 Year	1	$28
Residential	50 Year	1	$28
Residential	100 Year	1	$275
Residential	300 Year	1	$8,023
Residential	700 Year	1	$25,558
All Categories	**25 Year**	**5**	**$174,047**
All Categories	**50 Year**	**5**	**$174,047**
All Categories	**100 Year**	**5**	**$908,682**
All Categories	**300 Year**	**5**	**$7,746,555**
All Categories	**700 Year**	**5**	**$12,718,225**

Source: GIS Analysis

Table 5-54: High Potential Loss Properties Exposed to the Hurricane Winds - Town of Faith

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	25 Year	2	$349
Religious	50 Year	2	$349
Religious	100 Year	2	$2,795
Religious	300 Year	2	$47,474
Religious	700 Year	2	$127,830
Residential	25 Year	1	$1,774
Residential	50 Year	1	$1,774
Residential	100 Year	1	$7,249
Residential	300 Year	1	$98,393
Residential	700 Year	1	$249,737
All Categories	**25 Year**	**3**	**$2,123**
All Categories	**50 Year**	**3**	**$2,123**
All Categories	**100 Year**	**3**	**$10,044**
All Categories	**300 Year**	**3**	**$145,867**
All Categories	**700 Year**	**3**	**$377,567**

Source: GIS Analysis

Table 5-55: High Potential Loss Properties Exposed to the Hurricane Winds - Town of Granite Quarry

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	1	$318
Commercial	50 Year	1	$318
Commercial	100 Year	1	$960
Commercial	300 Year	1	$14,790
Commercial	700 Year	1	$46,014
Government	25 Year	2	$1,918

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	50 Year	2	$1,918
Government	100 Year	2	$11,794
Government	300 Year	2	$169,265
Government	700 Year	2	$478,267
Industrial	25 Year	1	$4,487
Industrial	50 Year	1	$4,487
Industrial	100 Year	1	$8,158
Industrial	300 Year	1	$49,367
Industrial	700 Year	1	$145,787
All Categories	**25 Year**	**4**	**$6,723**
All Categories	**50 Year**	**4**	**$6,723**
All Categories	**100 Year**	**4**	**$20,912**
All Categories	**300 Year**	**4**	**$233,422**
All Categories	**700 Year**	**4**	**$670,068**

Source: GIS Analysis

Table 5-56: High Potential Loss Properties Exposed to the Hurricane Winds - Town of Landis

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	1	$3,396
Commercial	50 Year	1	$3,396
Commercial	100 Year	1	$23,865
Commercial	300 Year	1	$376,385
Commercial	700 Year	1	$1,177,602
Government	25 Year	3	$9,513
Government	50 Year	3	$9,513
Government	100 Year	3	$38,406

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	300 Year	3	$491,685
Government	700 Year	3	$1,550,808
Industrial	25 Year	1	$882
Industrial	50 Year	1	$882
Industrial	100 Year	1	$6,721
Industrial	300 Year	1	$88,826
Industrial	700 Year	1	$213,800
Religious	25 Year	1	$157
Religious	50 Year	1	$157
Religious	100 Year	1	$506
Religious	300 Year	1	$8,254
Religious	700 Year	1	$27,448
Residential	25 Year	3	$1,038
Residential	50 Year	3	$1,038
Residential	100 Year	3	$7,004
Residential	300 Year	3	$63,374
Residential	700 Year	3	$158,684
All Categories	**25 Year**	**9**	**$14,986**
All Categories	**50 Year**	**9**	**$14,986**
All Categories	**100 Year**	**9**	**$76,502**
All Categories	**300 Year**	**9**	**$1,028,524**
All Categories	**700 Year**	**9**	**$3,128,342**

Source: GIS Analysis

Table 5-57: High Potential Loss Properties Exposed to the Hurricane Winds - Town of Rockwell

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	4	$1,009
Commercial	50 Year	4	$1,009
Commercial	100 Year	4	$2,515
Commercial	300 Year	4	$45,092
Commercial	700 Year	4	$199,504
Government	25 Year	1	$623
Government	50 Year	1	$623
Government	100 Year	1	$1,649
Government	300 Year	1	$60,792
Government	700 Year	1	$316,292
Industrial	25 Year	2	$1,102
Industrial	50 Year	2	$1,102
Industrial	100 Year	2	$2,250
Industrial	300 Year	2	$17,534
Industrial	700 Year	2	$56,469
Religious	25 Year	1	$348
Religious	50 Year	1	$348
Religious	100 Year	1	$2,682
Religious	300 Year	1	$45,041
Religious	700 Year	1	$129,956
Residential	25 Year	3	$417
Residential	50 Year	3	$417
Residential	100 Year	3	$3,544
Residential	300 Year	3	$63,967

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	700 Year	3	$180,808
All Categories	**25 Year**	**11**	**$3,499**
All Categories	**50 Year**	**11**	**$3,499**
All Categories	**100 Year**	**11**	**$12,640**
All Categories	**300 Year**	**11**	**$232,426**
All Categories	**700 Year**	**11**	**$883,029**

Source: GIS Analysis

Table 5-58: High Potential Loss Properties Exposed to the Hurricane Winds - Town of Spencer

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	11	$33,699
Commercial	50 Year	11	$33,699
Commercial	100 Year	11	$174,637
Commercial	300 Year	11	$1,719,555
Commercial	700 Year	11	$3,304,128
Government	25 Year	4	$6,168
Government	50 Year	4	$6,168
Government	100 Year	4	$27,982
Government	300 Year	4	$465,498
Government	700 Year	4	$1,298,031
Industrial	25 Year	2	$1,165
Industrial	50 Year	2	$1,165
Industrial	100 Year	2	$8,183
Industrial	300 Year	2	$150,044
Industrial	700 Year	2	$462,964
Religious	25 Year	3	$444

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	50 Year	3	$444
Religious	100 Year	3	$1,028
Religious	300 Year	3	$11,229
Religious	700 Year	3	$37,366
Residential	25 Year	2	$732
Residential	50 Year	2	$732
Residential	100 Year	2	$6,612
Residential	300 Year	2	$96,907
Residential	700 Year	2	$241,082
All Categories	**25 Year**	**22**	**$42,208**
All Categories	**50 Year**	**22**	**$42,208**
All Categories	**100 Year**	**22**	**$218,442**
All Categories	**300 Year**	**22**	**$2,443,233**
All Categories	**700 Year**	**22**	**$5,343,571**

Source: GIS Analysis

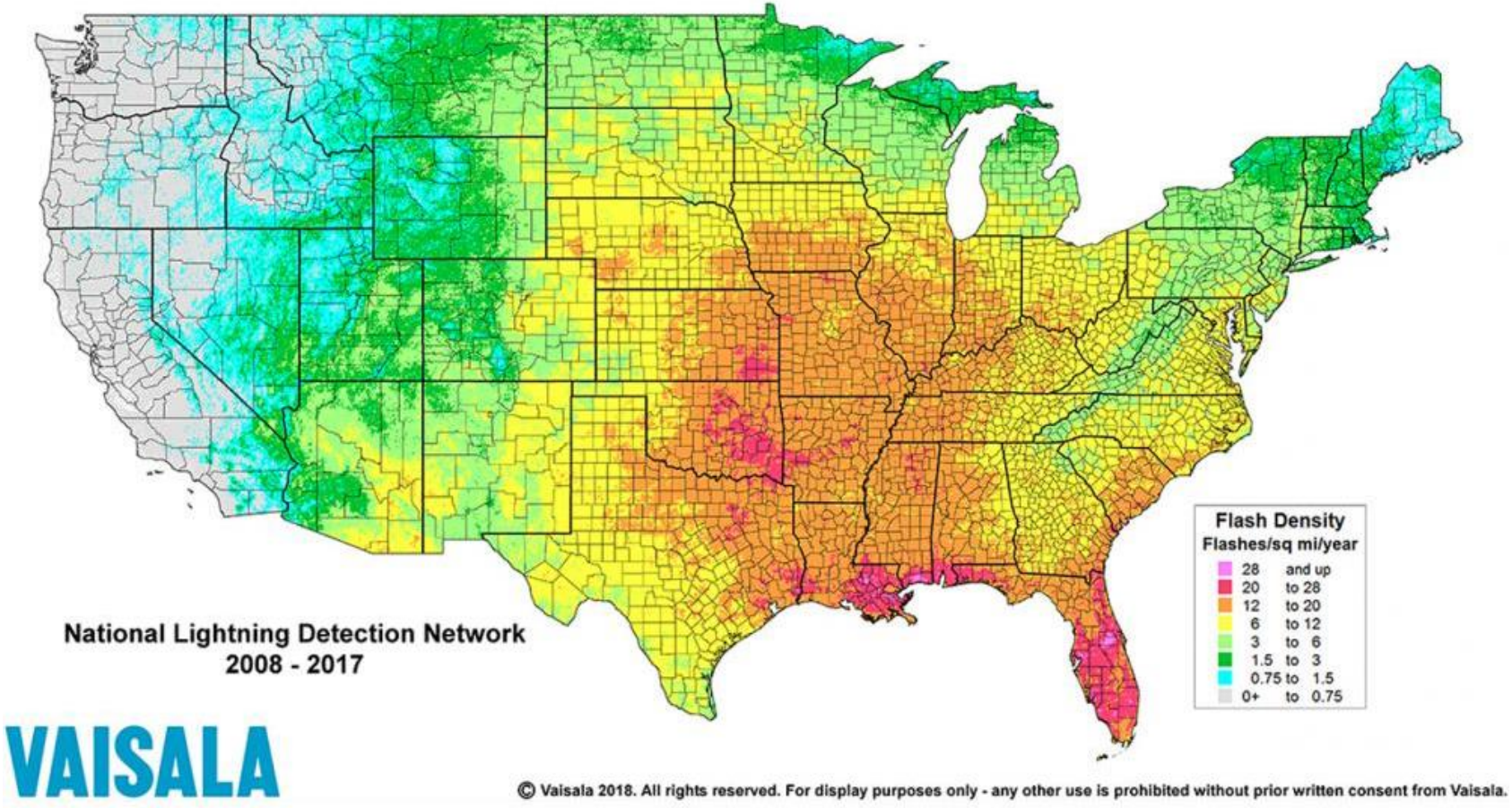
5.8 LIGHTNING

5.8.1 Background

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

Lightning strikes occur in very small, localized areas. For example, they may strike a building, electrical transformer, or even a person. According to FEMA, lightning injures an average of 300 people and kills 80 people each year in the United States. Direct lightning strikes also have the ability to cause significant damage to buildings, critical facilities, and infrastructure largely by igniting a fire. Lightning is also responsible for igniting wildfires that can result in widespread damages to property.

Figure 5-17 shows a lightning flash density map for the years 2008-2017 based upon data provided by Vaisala's U.S. National Lightning Detection Network (NLDN®).



Source: Vaisala U.S. National Lightning Detection Network

Figure 5-17: Lightning Flash Density in the United States

5.8.2 Location and Spatial Extent

Lightning occurs randomly, therefore it is impossible to predict where and with what frequency it will strike. It is assumed that all of the Iredell Rowan Region is uniformly exposed to lightning. The figures below show the average annual cloud-to-ground lightning strikes in the Region with "High" being <100 strikes per year, "Medium" 99-50 strikes per year and "Low" being >50 strikes per year.

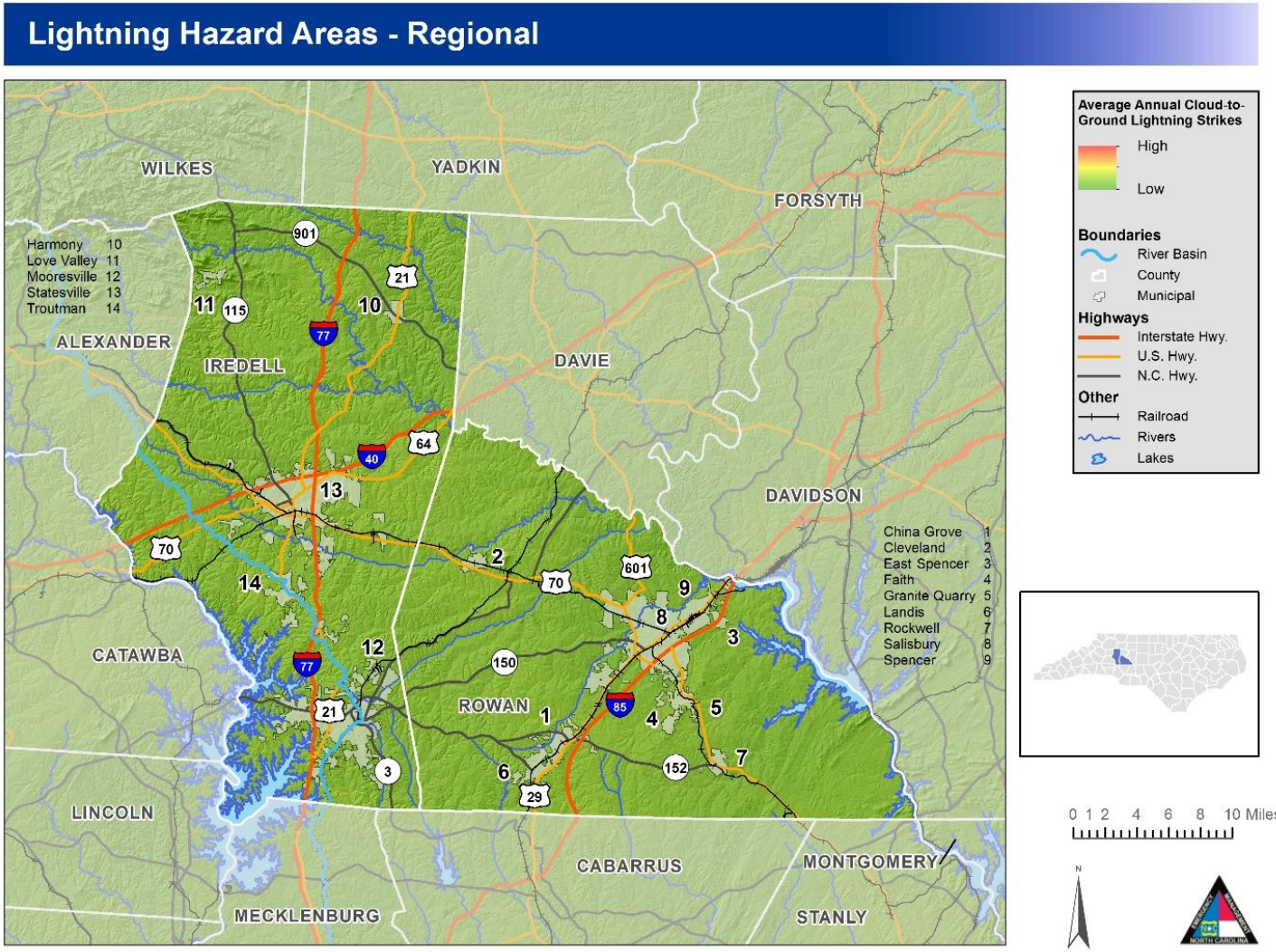


Figure 5-18: Lightning Hazard Areas – Regional

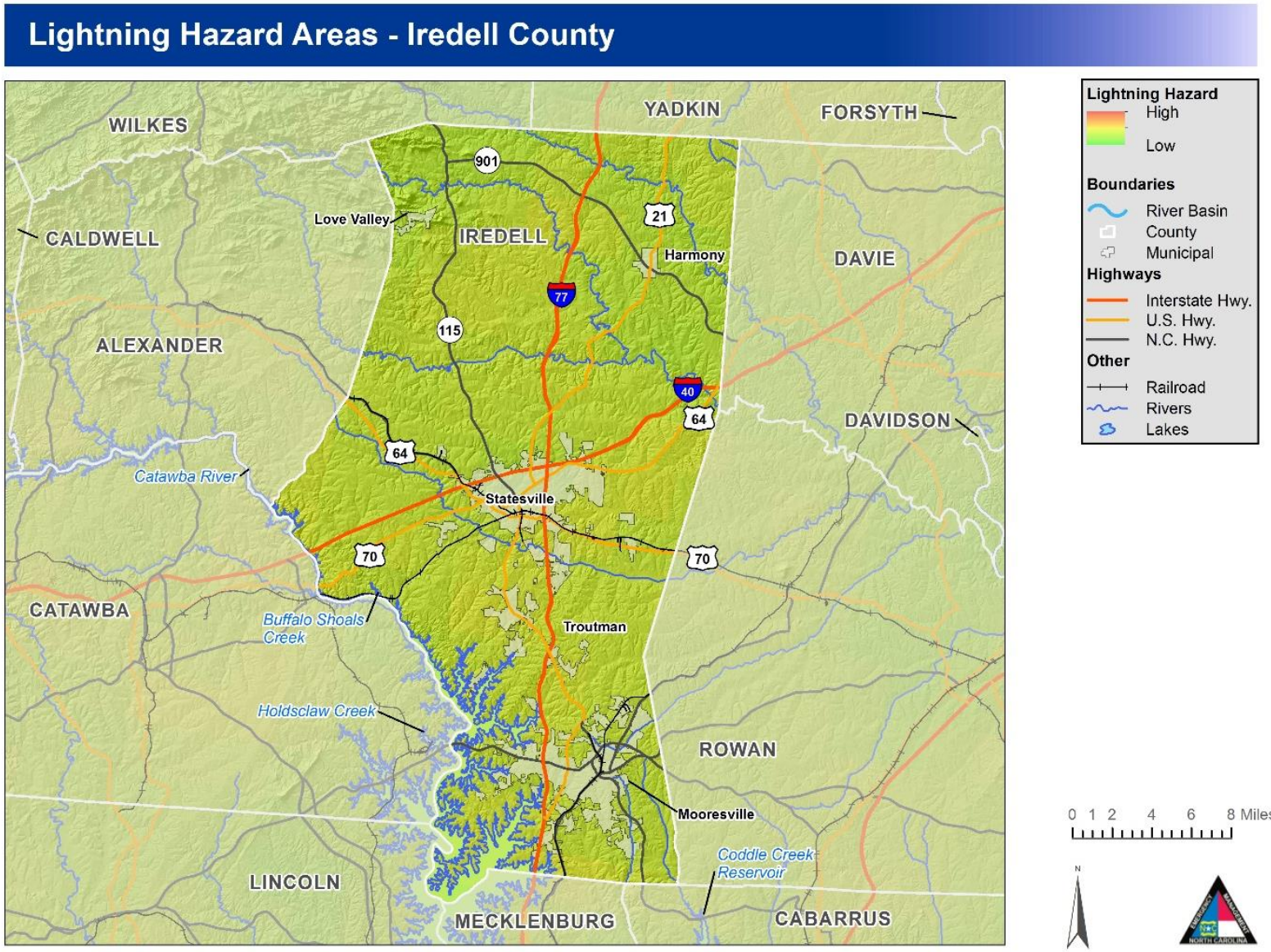


Figure 5-19: Lightning Hazard Areas – Iredell County

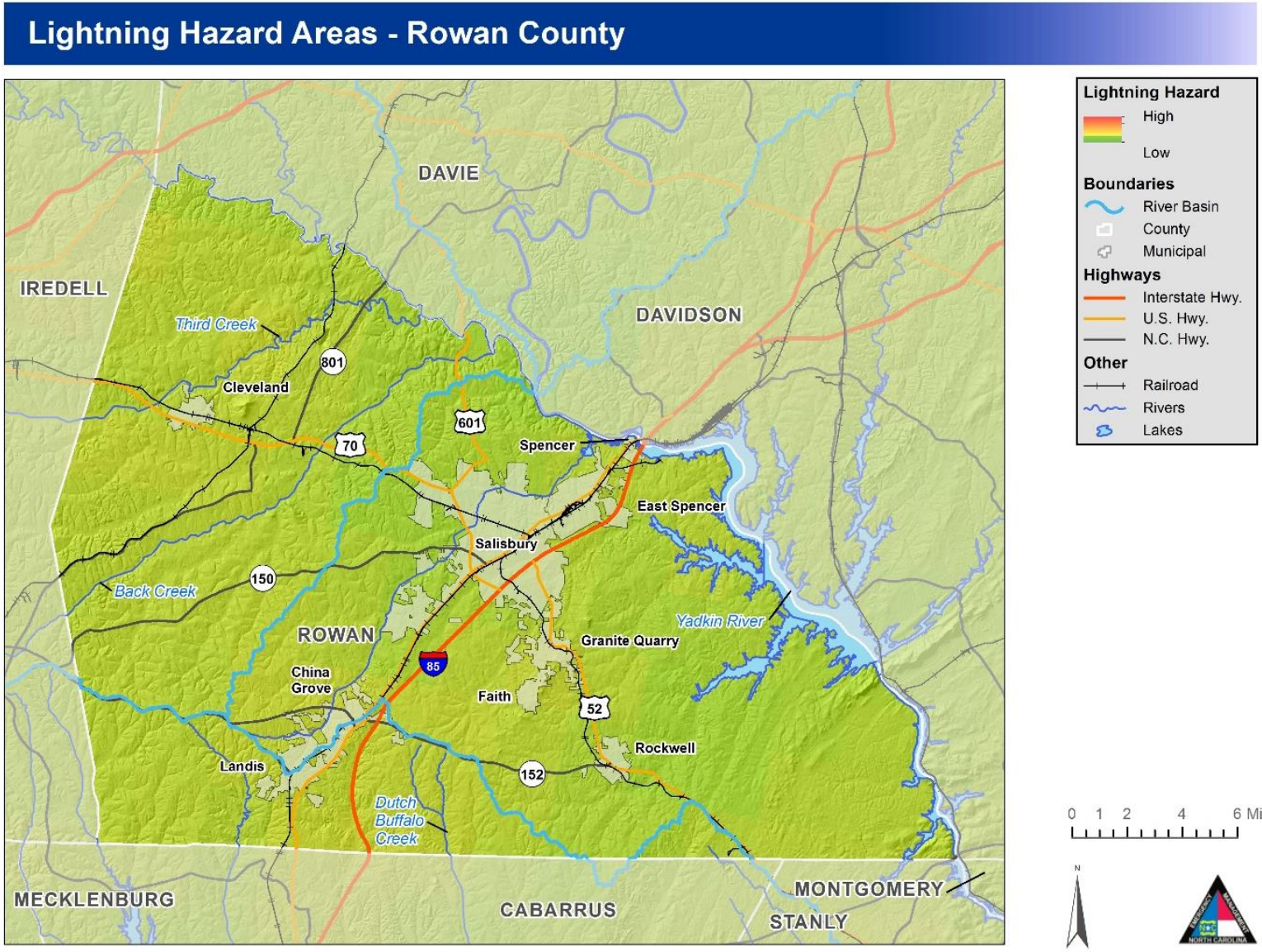


Figure 5-20: Lightning Hazard Areas – Rowan County

5.8.3 Extent

According to the Vaisala flash density map (**Figure 5-17**), the Iredell Rowan Region is located in an area that experiences 3 to 6 lightning flashes per square kilometer per year. According to NCDC the worst lightning event to occur in the Region was on May 20, 2006 in the Town of Mooresville where a lightning strike ignited a fire and destroyed a newly constructed house cause approximately $300,000 in damages. It should be noted that future lightning occurrences may exceed these figures.

Community	Number Of Occurrences	Avg. Annual Cloud-To-Ground Lightning Strikes
Iredell County	**Total: 22**	**50 or less**
Iredell County Uninc.	5	50 or less
Harmony	N/A	50 or less
Love Valley	N/A	50 or less
Mooresville	9	50 or less
Statesville	7	50 or less
Troutman	1	50 or less
Rowan County	**Total: 14**	**50 or less**
Rowan County Uninc.	3	50 or less
China Grove	3	50 or less
Cleveland	N/A	50 or less
East Spencer	N/A	50 or less
Faith	N/A	50 or less
Granite Quarry	N/A	50 or less
Landis	2	50 or less
Rockwell	1	50 or less
Salisbury	5	50 or less
Spencer	N/A	50 or less
Total	36	50 or less

5.8.4 Historical Occurrences

According to the National Climatic Data Center, there have been a total of 36 recorded lightning events in the Iredell Rowan Region since 1995.[7] These events resulted in nearly $2 million in damages, as listed in summary **Table 5-59**. Furthermore, lightning caused 9 injuries throughout the Iredell Rowan Region.

It is certain that more than 36 events have impacted the region. Many of the reported events are those that caused damage, and it should be expected that damages are likely much higher for this hazard than what is reported.

[7] These lightning events are only inclusive of those reported by the National Climatic Data Center (NCDC). It is certain that additional lightning events have occurred in the Iredell Rowan Region As additional local data becomes available, this hazard profile will be amended.

Table 5-59: Summary of Lightning Occurrences in the Iredell Rowan Region

Location	Date	Type	Mag	Deaths	Injuries	Property Damage	Crop Damage
Statesville	06/13/1996	Lightning		0	0	5.00K	0.00K
Mooresville	07/20/1998	Lightning		0	0	20.00K	0.00K
Salisbury	01/23/1999	Lightning		0	0	85.00K	0.00K
Statesville	07/07/1999	Lightning		0	0	20.00K	0.00K
Salisbury	07/28/2000	Lightning		0	0	15.00K	0.00K
Union Grove	01/19/2001	Lightning		0	1	0.00K	0.00K
Statesville	06/15/2001	Lightning		0	0	0.00K	0.00K
Rockwell	08/10/2001	Lightning		0	0	37.00K	0.00K
China Grove	07/22/2002	Lightning		0	0	0.00K	0.00K
Mooresville	08/07/2003	Lightning		0	1	0.00K	0.00K
Mazeppa	08/07/2003	Lightning		0	1	0.00K	0.00K
Statesville	05/09/2004	Lightning		0	0	10.00K	0.00K
Statesville	03/13/2005	Lightning		0	0	0.00K	0.00K
Mooresville	05/20/2006	Lightning		0	0	300.00K	0.00K
Mooresville	07/20/2006	Lightning		0	0	100.00K	0.00K
Salisbury	11/16/2006	Lightning		0	0	10.00K	0.00K
Mooresville	06/27/2007	Lightning		0	1	0.00K	0.00K
Salisbury	07/11/2007	Lightning		0	0	20.00K	0.00K
Woodleaf	04/24/2009	Lightning		0	0	100.00K	0.00K
Woodleaf	05/09/2009	Lightning		0	0	2.00K	0.00K
Mooresville Arpt	09/18/2009	Lightning		0	0	20.00K	0.00K
Woodleaf	05/16/2010	Lightning		0	1	0.00K	0.00K
Mazeppa	07/12/2010	Lightning		0	1	15.00K	0.00K
Mooresville	07/17/2010	Lightning		0	2	0.00K	0.00K
Cool Spg	07/25/2010	Lightning		0	0	200.00K	0.00K
Troutman	07/26/2010	Lightning		0	0	220.00K	0.00K
Elmwood	09/26/2010	Lightning		0	0	100.00K	0.00K
Landis	04/05/2011	Lightning		0	0	50.00K	0.00K
China Grove Arpt	07/06/2011	Lightning		0	0	10.00K	0.00K
Statesville Arpt	07/23/2011	Lightning		0	1	0.00K	0.00K
China Grove Arpt	03/02/2012	Lightning		0	0	10.00K	0.00K
Landis	07/10/2012	Lightning		0	0	100.00K	0.00K
Mooresville Arpt	07/11/2012	Lightning		0	0	10.00K	0.00K
Mooresville Arpt	07/13/2012	Lightning		0	0	100.00K	0.00K
Charles	07/25/2012	Lightning		0	0	150.00K	0.00K
Statesville	04/19/2013	Lightning		0	0	5.00K	0.00K
Totals:				0	9	1.714M	0.00K

Source: National Climatic Data Center

5.8.5 Probability of Future Occurrences

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

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Low: Less than 1% annual probability
- Medium: Between 1% and 10% annual probability
- High: Greater than 10% annual probability

Jurisdiction	Probability of Future Occurrence
City of Salisbury	Medium
City of Statesville	Medium
Iredell County (Unincorporated Area)	Medium
Rowan County (Unincorporated Area)	Medium
Town of China Grove	Medium
Town of Cleveland	Medium
Town of East Spencer	Medium
Town of Faith	Medium
Town of Granite Quarry	Medium
Town of Harmony	Medium
Town of Landis	Medium
Town of Love Valley	Medium
Town of Mooresville	Medium
Town of Rockwell	Medium
Town of Spencer	Medium
Town of Troutman	Medium

5.8.6 Lightning Hazard Vulnerability and Impact

Lightning can occur with all thunderstorms, making all of the Region and all jurisdictions susceptible. Although there were not a high number of historical lightning events reported throughout the Iredell Rowan Region via NCDC data, it is a regular occurrence accompanied by thunderstorms. In fact, lightning events will assuredly happen on an annual basis, though not all events will cause damage. According to

Vaisala's U.S. National Lightning Detection Network (NLDN®), the Iredell Rowan Region is in an area of the country that experienced an average of 3 to 6 lightning flashes per square kilometer per year between 1997 and 2019. It can be expected that future lightning events will continue to threaten life and cause minor property damages throughout the region. The potential for lightning strikes will continue to exist for all jurisdictions in the Region. Different geographic areas could possibly experience varying event frequencies, but in all cases lightning strikes and associated fatalities occur primarily during the summer months. The direct and indirect impacted losses associated with these events include injury and loss of life, damage to structures and infrastructure, agricultural losses, utility failure (power outages), and stress on community resources.

5.9 THUNDERSTORM WIND / HIGH WIND

5.9.1 Background

Thunderstorms can produce a variety of accompanying hazards including wind (discussed here), hail, and lightning.[8] Although thunderstorms generally affect a small area, they are very dangerous and may cause substantial property damage.

Three conditions need to occur for a thunderstorm to form. First, it needs moisture to form clouds and rain. Second, it needs unstable air, such as warm air that can rise rapidly (this often referred to as the "engine" of the storm). Third, thunderstorms need lift, which comes in the form of cold or warm fronts, sea breezes, mountains, or the sun's heat. When these conditions occur simultaneously, air masses of varying temperatures meet, and a thunderstorm is formed. These storm events can occur singularly, in lines, or in clusters. Furthermore, they can move through an area very quickly or linger for several hours.

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

Thunderstorm events have the capability of producing straight-line winds that can cause severe destruction to communities and threaten the safety of a population. Such wind events, sometimes separate from a thunderstorm event, are common throughout the Iredell Rowan Region. Therefore, high winds are also reported in this section.

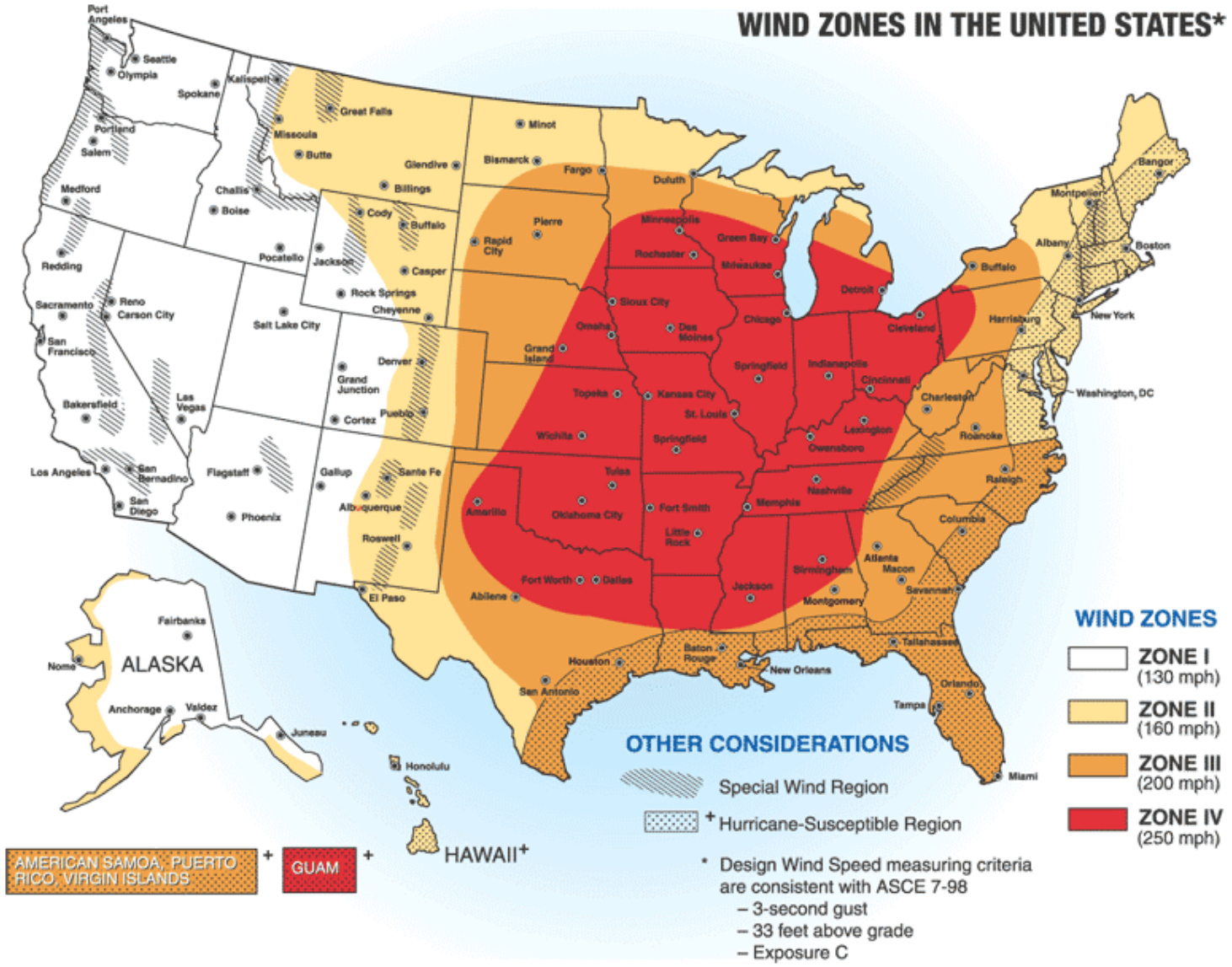
High winds can form due to pressure of the Northeast coast that combines with strong pressure moving through the Ohio Valley. This creates a tight pressure gradient across the region, resulting in high winds which increase with elevation. It is common for gusts of 30 to 60 miles per hour during the winter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

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

[8] Lightning and hail hazards are discussed as separate hazards in this section.

5.9.2 Location and Spatial Extent

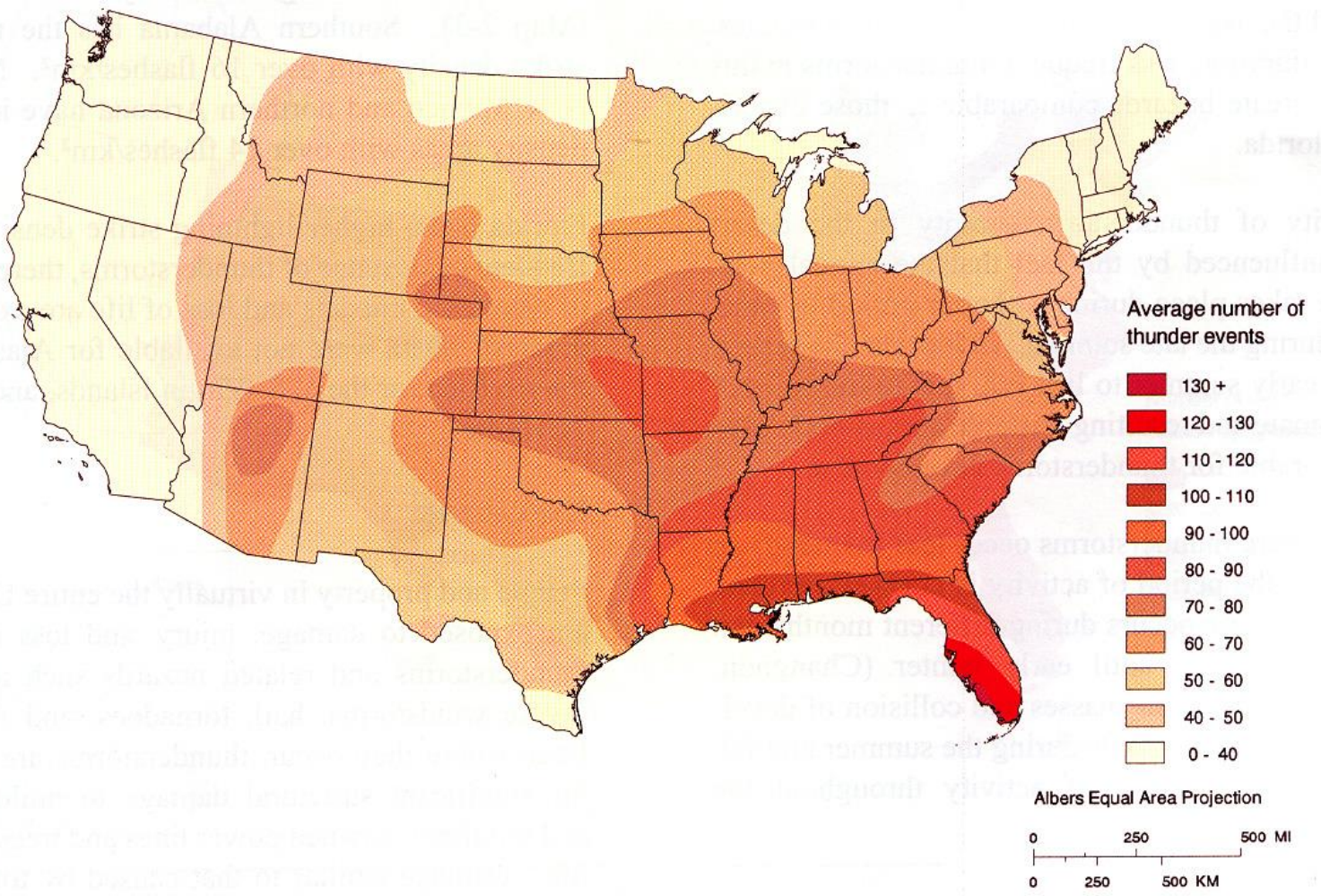
Straight-line winds, which in extreme cases have the potential to cause wind gusts that exceed 100 miles per hour, are responsible for most thunderstorm wind damage. One type of straight-line wind, the downburst, can cause damage equivalent to a strong tornado and can be extremely dangerous to aviation. **Figure 5-21** shows how the frequency and strength of extreme windstorms vary across the United States. The map was produced by the Federal Emergency Management Agency (FEMA) and is based on 40 years of tornado history and over 100 years of hurricane history. Zone IV, the darkest area on the map, has experienced both the greatest number of tornadoes and the strongest tornadoes. As shown by the map key, wind speeds in Zone IV can be as high as 250 MPH. Iredell Rowan Regional planning area is located in Zone III on Figure 5.21.



Source: Federal Emergency Management Agency

Figure 5-21: Wind Zones in the United States

The National Weather Service collected data for thunder days, number and duration of thunder events, and lightning strike density for the 30-year period from 1948 to 1977. A series of maps was generated showing the annual average thunder event duration, the annual average number of thunder events, and the mean annual density of lightning strikes. **Figure 5-22** illustrates thunderstorm hazard severity based on the annual average number of thunder events from 1948 to 1977. **Figures 5-23 – 5-25** show the locations for recorded thunderstorm and lightning events with the data ranging from 1987 – present. Per the National Weather Service Instruction 10-1605, a lightning event is defined as a sudden electrical discharge from a thunderstorm, resulting in a fatality, injury, and/or damage, so each point represented on map for event type "lightning" records exact location of lightning strike/strikes that result in a fatality, injury, and/or damage. The same manual defines thunderstorm winds as winds arising from convection (occurring within 30 minutes of lightning being observed or detected), with speeds of at least 50 knots (58 mph), or winds of any speed (non-severe thunderstorm winds below 50 knots) producing a fatality, injury, or damage.



Source: Federal Emergency Management Agency

Figure 5-22: Annual Average Number of Thunder Events

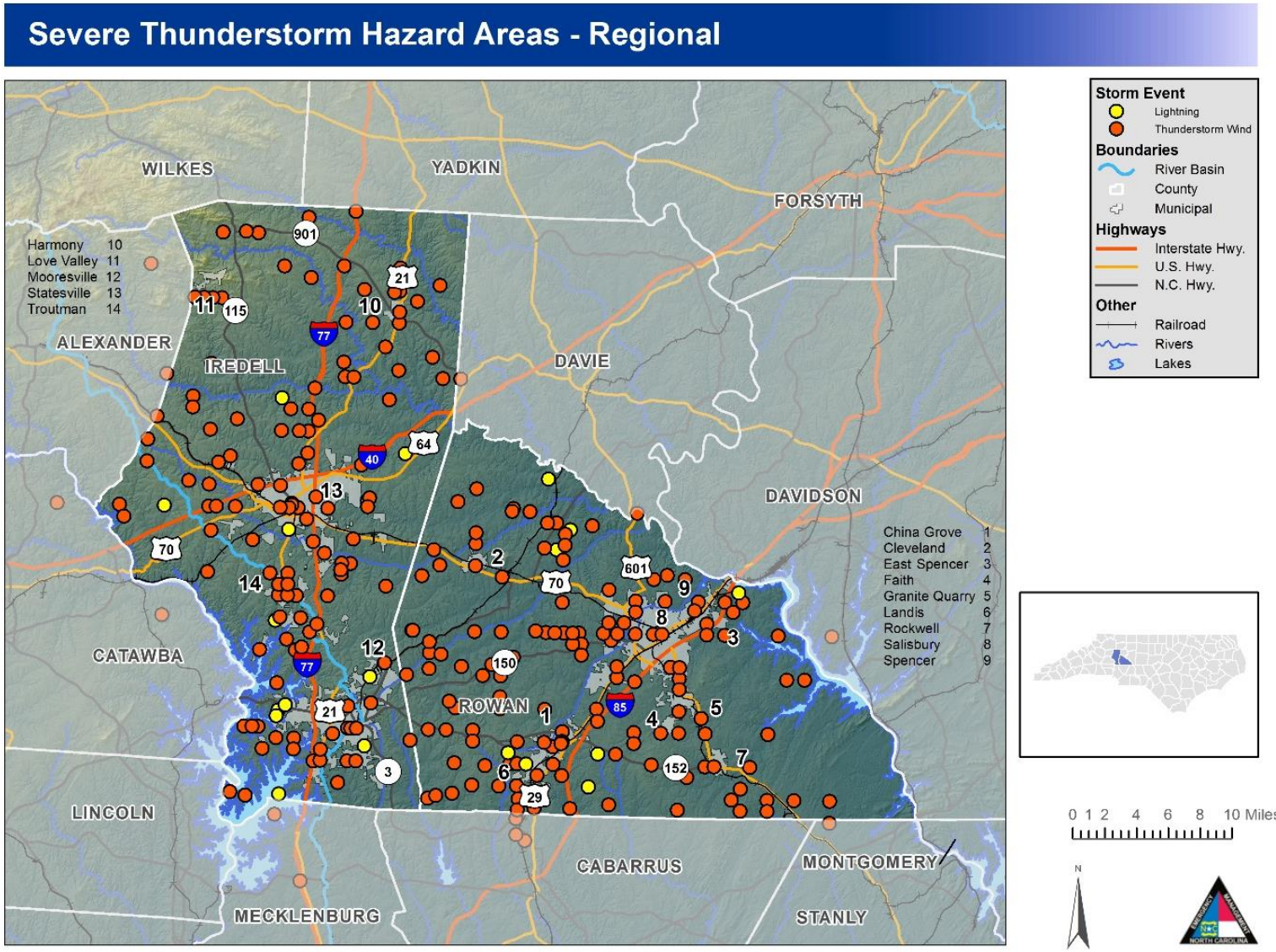


Figure 5-23: Severe Thunderstorm Hazard Areas – Regional

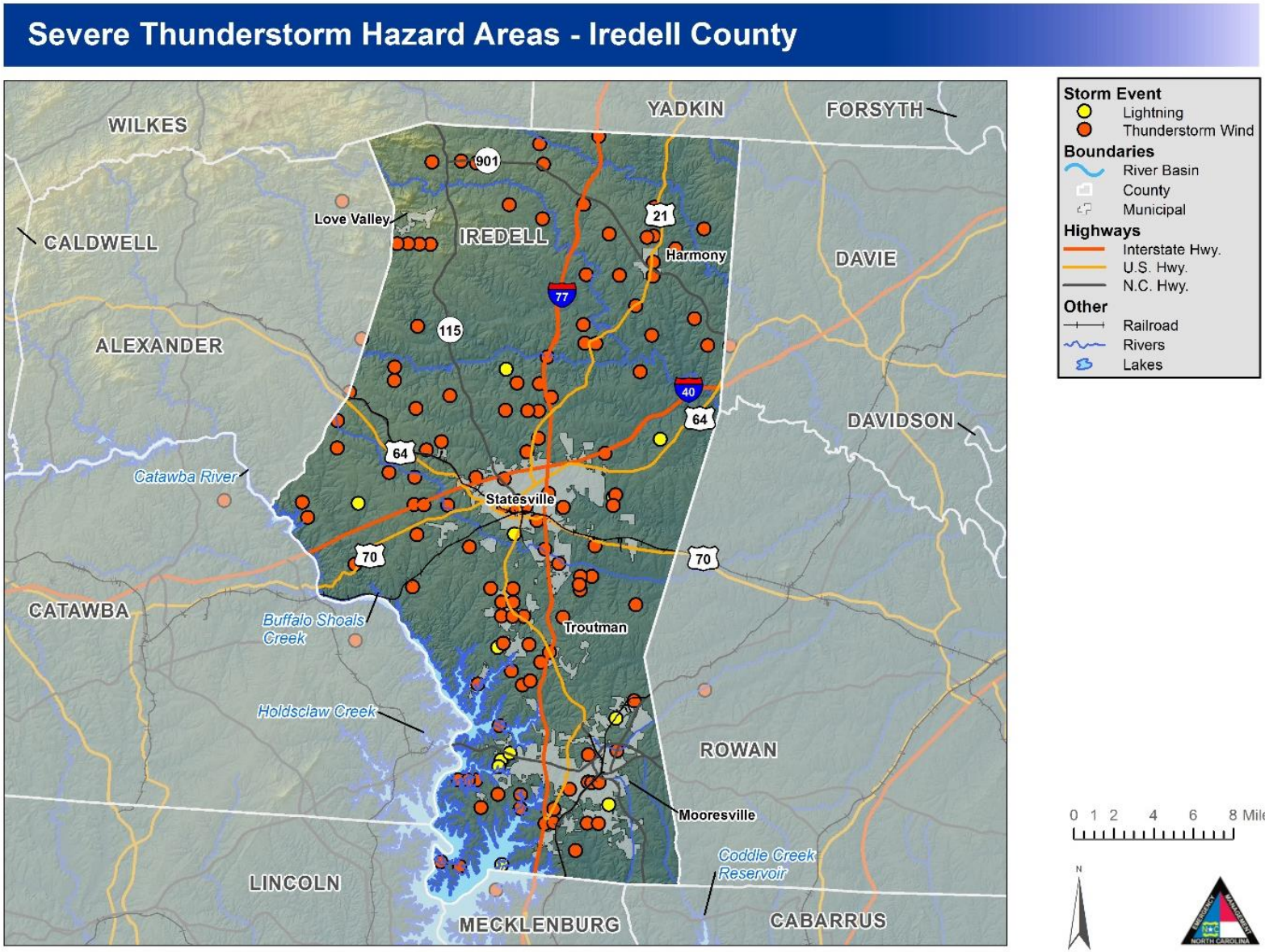


Figure 5-24: Severe Thunderstorm Hazard Areas – Iredell County

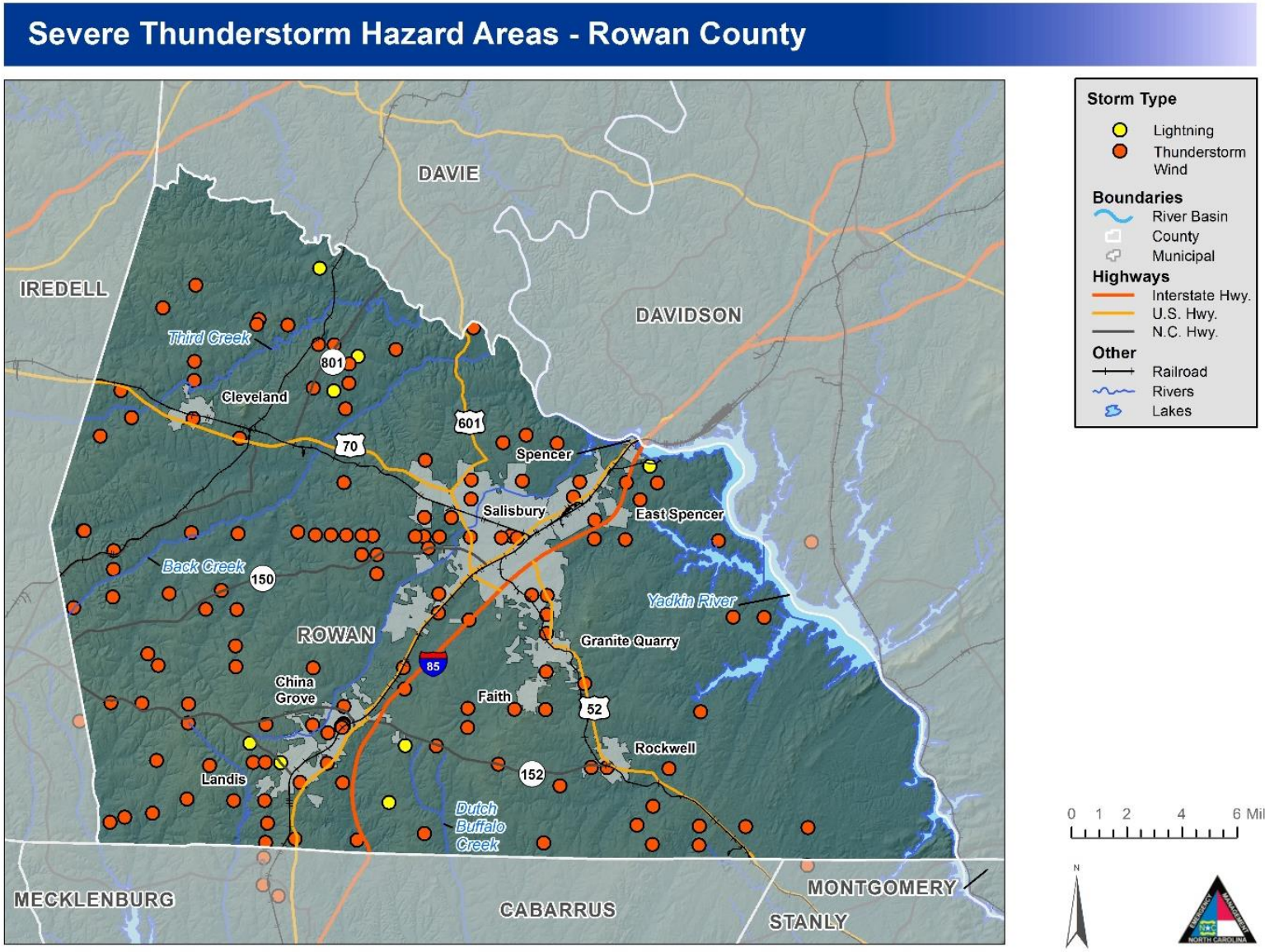


Figure 5-25: Severe Thunderstorm Hazard Areas – Rowan County

5.9.3 Extent

Thunderstorm extent is defined by the number of thunder events and wind speeds reported. According to a 69-year history from the National Climatic Data Center, the strongest recorded wind event in the Iredell Rowan Region was reported on June 22, 1976 at 84 knots (approximately 97 mph). It should be noted that future events may exceed these historical occurrences.

Figures 5-23 – 5-25 (shown above) show the locations for recorded thunderstorm and lightning events with the data ranging from 1987 – present. Per the National Weather Service Instruction 10-1605, a lightning event is defined as a sudden electrical discharge from a thunderstorm, resulting in a fatality, injury, and/or damage, so each point represented on map for event type "lightning" records exact location of lightning strike/strikes that result in a fatality, injury, and/or damage.The same manual defines thunderstorm winds as winds arising from convection (occurring within 30 minutes of lightning being observed or detected), with speeds of at least 50 knots (58 mph), or winds of any speed (non-severe thunderstorm winds below 50 knots) producing a fatality, injury, or damage.

Jurisdiction	Event Date	Magnitude*
Iredell		
Iredell County	7/3/1992	62
Harmony	6/15/2000, 3/7/2004	65
Love Valley	7/24/2011	55
Mooresville	7/7/2000	60
Statesville	3/4/2008, 4/25/2014	65
Troutman	6/4/2003	60
Rowan		
Rowan County	6/22/1976	84
China Grove	5/26/1998	80
China Grove	7/21/2008	80
Salisbury	11/19/2003	78
Faith	7/31/1999	60
Cleveland	5/2/2002	55
Landis	5/13/2002	55
Spencer	5/6/2003	52
Granite Quarry	5/11/1996	50
East Spencer	9/8/1998	50

Jurisdiction	Event Date	Magnitude*
Rockwell	9/25/2000	50

*Magnitude is depicted in knots

5.9.4 Historical Occurrences

The following historical occurrences have been identified based on the NCDC Storm Events database **Table 5-60**. 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 from 1950-2019.

Table 5-60: Historical Occurrences of Thunderstorm Winds

Location	Date	Type	Mag	Deaths	Injuries	Property Damage	Crop Damage
Rowan Co.	08/04/1957	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	06/15/1958	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	06/15/1958	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/29/1964	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	02/13/1966	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	04/12/1966	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	05/02/1967	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	06/02/1968	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	08/10/1968	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	08/19/1968	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	07/19/1969	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/04/1970	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	07/04/1970	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	08/02/1970	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	09/01/1970	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K

Iredell Co.	05/28/1973	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	05/28/1973	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	02/22/1974	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	07/26/1974	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	01/25/1975	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	02/18/1976	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	02/18/1976	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	06/22/1976	Thunderstorm Wind	84 kts.	0	0	0.00K	0.00K
Rowan Co.	06/25/1977	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	06/25/1977	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	07/25/1978	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	06/17/1982	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	03/27/1983	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	04/02/1983	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	04/02/1983	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
Rowan Co.	07/22/1983	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	07/22/1983	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	07/22/1983	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	10/13/1983	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	04/14/1984	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	06/27/1984	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/25/1984	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	02/12/1985	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K

Iredell Co.	05/15/1985	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	05/15/1985	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	05/15/1985	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	06/10/1985	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	06/16/1985	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/10/1985	Thunderstorm Wind	56 kts.	0	0	0.00K	0.00K
Iredell Co.	07/10/1985	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
Iredell Co.	07/10/1985	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
Rowan Co.	07/12/1985	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/13/1986	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	07/25/1986	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	07/25/1986	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	08/07/1986	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	08/11/1986	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	06/01/1987	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/10/1987	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	07/23/1987	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	08/05/1987	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	05/03/1988	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	06/09/1988	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	06/26/1988	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/08/1988	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/09/1988	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K

Rowan Co.	07/31/1988	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/31/1988	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	08/16/1988	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	09/24/1988	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	03/06/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	03/06/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	05/05/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	05/05/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	05/05/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	05/06/1989	Thunderstorm Wind	0 kts.	2	0	0.00K	0.00K
Rowan Co.	05/06/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	05/06/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	06/02/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	06/15/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/08/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/21/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/26/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	08/17/1989	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	02/10/1990	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	02/22/1990	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	02/22/1990	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	05/01/1990	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	05/01/1990	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K

Rowan Co.	05/02/1990	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	06/22/1990	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	09/10/1990	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	02/12/1991	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	04/09/1991	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	04/29/1991	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	04/29/1991	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	03/10/1992	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	03/10/1992	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	03/19/1992	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	04/16/1992	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Iredell Co.	07/03/1992	Thunderstorm Wind	62 kts.	0	0	0.00K	0.00K
Rowan Co.	07/03/1992	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	11/22/1992	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Mooresville	03/31/1993	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Salisbury	04/16/1993	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
W And S Of	05/15/1994	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	05/15/1994	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Statesville	08/16/1994	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
SW Of Mooresville	09/01/1994	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
E Of Salisbury	09/25/1994	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Rowan Co.	05/13/1995	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Statesville	06/27/1995	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K

Northern	07/06/1995	Thunderstorm Wind	0 kts.	0	0	0.00K	0.00K
Granite Quarry	05/11/1996	Thunderstorm Wind	50 kts.	0	0	15.00K	0.00K
Spencer	05/11/1996	Thunderstorm Wind	50 kts.	0	0	75.00K	0.00K
Salisbury	05/11/1996	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Statesville	05/27/1996	Thunderstorm Wind	50 kts.	0	0	2.00K	0.00K
Granite Quarry	06/08/1996	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Spencer	06/08/1996	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Mooresville	06/09/1996	Thunderstorm Wind	50 kts.	0	0	10.00K	0.00K
Statesville	06/19/1996	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Statesville	07/02/1996	Thunderstorm Wind	50 kts.	0	0	2.50K	0.00K
Troutman	07/15/1996	Thunderstorm Wind	50 kts.	0	0	25.00K	0.00K
New Hope	08/24/1996	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
West Central	02/21/1997	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Salisbury	07/04/1997	Thunderstorm Wind	50 kts.	0	3	0.00K	0.00K
Statesville	07/04/1997	Thunderstorm Wind	50 kts.	0	0	85.00K	0.00K
Cleveland	07/04/1997	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Harmony	07/04/1997	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Liberty	07/15/1997	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Salisbury	01/08/1998	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
Statesville	02/17/1998	Thunderstorm Wind	50 kts.	0	0	2.00K	0.00K
Salisbury	02/17/1998	Thunderstorm Wind	50 kts.	0	0	10.00K	0.00K
Statesville	02/17/1998	Thunderstorm Wind	50 kts.	0	0	2.50K	0.00K
Troutman	05/26/1998	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K

Troutman	05/26/1998	Thunderstorm Wind	60 kts.	0	0	0.00K	0.00K
China Grove	05/26/1998	Thunderstorm Wind	70 kts.	0	0	0.00K	0.00K
China Grove	05/26/1998	Thunderstorm Wind	80 kts.	0	0	100.00K	0.00K
Salisbury	05/26/1998	Thunderstorm Wind	70 kts.	0	0	0.00K	0.00K
Statesville	05/27/1998	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
Union Grove	06/03/1998	Thunderstorm Wind	52 kts.	0	0	0.00K	0.00K
Statesville	06/10/1998	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Statesville	06/10/1998	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Salisbury	06/24/1998	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Mooresville	06/29/1998	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Mooresville	06/30/1998	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Salisbury	07/19/1998	Thunderstorm Wind	50 kts.	0	0	15.00K	0.00K
Salisbury	08/08/1998	Thunderstorm Wind	52 kts.	0	0	1.00K	0.00K
East Spencer	09/08/1998	Thunderstorm Wind	50 kts.	0	0	10.00K	0.00K
Cleveland	07/24/1999	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Salisbury	07/24/1999	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Faith	07/31/1999	Thunderstorm Wind	60 kts.	0	0	10.00K	0.00K
Mooresville	08/01/1999	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Mt Ulla	08/01/1999	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Granite Quarry	08/14/1999	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Cleveland	08/14/1999	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Salisbury	09/09/1999	Thunderstorm Wind	50 kts.	0	0	0.00K	0.00K
Troutman	03/11/2000	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K

China Grove	03/11/2000	Thunderstorm Wind	55 kts. E	0	0	0.00K	0.00K
Salisbury	03/11/2000	Thunderstorm Wind	60 kts. E	0	0	0.00K	0.00K
Turnersburg	05/20/2000	Thunderstorm Wind	52 kts. E	0	0	0.00K	0.00K
Statesville	05/21/2000	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Statesville	05/25/2000	Thunderstorm Wind	55 kts. E	0	0	0.00K	0.00K
Statesville	06/15/2000	Thunderstorm Wind	60 kts. E	0	0	0.00K	0.00K
Harmony	06/15/2000	Thunderstorm Wind	65 kts. E	0	0	0.00K	0.00K
Statesville	07/07/2000	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Troutman	07/07/2000	Thunderstorm Wind	60 kts. E	0	0	50.00K	0.00K
Mooresville	07/07/2000	Thunderstorm Wind	60 kts. E	0	0	0.00K	0.00K
Harmony	08/10/2000	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Salisbury	08/10/2000	Thunderstorm Wind	60 kts. E	0	0	0.00K	0.00K
Kannapolis	08/10/2000	Thunderstorm Wind	55 kts. E	0	0	0.00K	0.00K
Salisbury	08/18/2000	Thunderstorm Wind	70 kts. E	0	1	0.00K	0.00K
Salisbury	08/18/2000	Thunderstorm Wind	65 kts. E	0	0	250.00K	0.00K
Rockwell	09/25/2000	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Enochville	04/01/2001	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Rockwell	04/01/2001	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Salisbury	05/22/2001	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Salisbury	05/23/2001	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Salisbury	06/13/2001	Thunderstorm Wind	65 kts. E	0	0	50.00K	0.00K
Salisbury	06/15/2001	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Landis	06/22/2001	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K

Kannapolis	07/05/2001	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
China Grove	08/10/2001	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Countywide	08/11/2001	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Statesville	05/02/2002	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Cleveland	05/02/2002	Thunderstorm Wind	55 kts. E	0	0	2.00K	0.00K
Statesville	05/07/2002	Thunderstorm Wind	50 kts. E	0	0	1.00K	0.00K
Spencer	05/07/2002	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Salisbury	05/07/2002	Thunderstorm Wind	55 kts. E	0	0	10.00K	0.00K
Mooresville	05/13/2002	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Statesville	05/13/2002	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Landis	05/13/2002	Thunderstorm Wind	55 kts. E	0	0	1.00K	0.00K
Kannapolis	05/13/2002	Thunderstorm Wind	50 kts. E	0	0	1.00K	0.00K
Salisbury Rwn Co Arp	05/13/2002	Thunderstorm Wind	52 kts. M	0	0	75.00K	0.00K
Salisbury	05/13/2002	Thunderstorm Wind	50 kts. E	0	0	10.00K	0.00K
Kannapolis	06/01/2002	Thunderstorm Wind	50 kts. E	0	0	1.00K	0.00K
Statesville	06/13/2002	Thunderstorm Wind	50 kts. E	0	0	1.00K	0.00K
Statesville	07/04/2002	Thunderstorm Wind	50 kts. E	0	0	0.00K	0.00K
Salisbury	07/04/2002	Thunderstorm Wind	60 kts. E	0	0	25.00K	0.00K
Troutman	08/24/2002	Thunderstorm Wind	50 kts. E	0	0	10.00K	0.00K
China Grove	08/24/2002	Thunderstorm Wind	50 kts. E	0	0	15.00K	0.00K
Kannapolis	05/02/2003	Thunderstorm Wind	60 kts. EG	0	0	1.00K	0.00K
Troutman	05/02/2003	Thunderstorm Wind	55 kts. EG	0	0	1.00K	0.00K
Salisbury	05/02/2003	Thunderstorm Wind	65 kts. EG	0	3	10.00K	0.00K

Spencer	05/06/2003	Thunderstorm Wind	52 kts. EG	0	0	1.00K	0.00K
Troutman	06/04/2003	Thunderstorm Wind	60 kts. EG	0	0	25.00K	0.00K
Salisbury	06/16/2003	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Kannapolis	07/11/2003	Thunderstorm Wind	55 kts. EG	0	0	5.00K	0.00K
Salisbury	07/19/2003	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
Salisbury	07/19/2003	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	07/19/2003	Thunderstorm Wind	60 kts. EG	0	0	10.00K	0.00K
Mooresville	07/21/2003	Thunderstorm Wind	50 kts. MG	0	0	0.00K	0.00K
Salisbury	07/21/2003	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
Gold Hill	07/21/2003	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
New Hope	07/22/2003	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Cleveland	07/22/2003	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	07/29/2003	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Troutman	08/05/2003	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Kannapolis	08/07/2003	Thunderstorm Wind	55 kts. EG	0	0	3.00K	0.00K
Statesville	08/22/2003	Thunderstorm Wind	50 kts. EG	0	0	3.00K	0.00K
Troutman	08/22/2003	Thunderstorm Wind	55 kts. EG	0	0	5.00K	0.00K
Salisbury	08/22/2003	Thunderstorm Wind	60 kts. EG	0	0	2.00K	0.00K
China Grove	08/31/2003	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Landis	11/19/2003	Thunderstorm Wind	52 kts. EG	0	0	0.00K	0.00K
Salisbury	11/19/2003	Thunderstorm Wind	78 kts. EG	0	0	50.00K	0.00K
Harmony	03/07/2004	Thunderstorm Wind	65 kts. EG	0	0	150.00K	0.00K
Salisbury	03/07/2004	Thunderstorm Wind	65 kts. EG	0	0	100.00K	0.00K

Statesville	05/23/2004	Thunderstorm Wind	50 kts. EG	0	0	25.00K	0.00K
Troutman	05/26/2004	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	05/26/2004	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	06/19/2004	Thunderstorm Wind	50 kts. EG	0	2	5.00K	0.00K
Mooresville	06/23/2004	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	07/04/2004	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	07/05/2004	Thunderstorm Wind	55 kts. EG	0	0	1.00K	0.00K
Harmony	07/12/2004	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Harmony	11/24/2004	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	03/08/2005	Thunderstorm Wind	55 kts. EG	0	0	10.00K	0.00K
Salisbury	04/22/2005	Thunderstorm Wind	45 kts. EG	0	0	2.00K	0.00K
Salisbury	05/10/2005	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Granite Quarry	06/07/2005	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Turnersburg	06/30/2005	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Union Grove	07/02/2005	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	07/07/2005	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	07/27/2005	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville	07/28/2005	Thunderstorm Wind	58 kts. MG	0	0	0.00K	0.00K
Troutman	07/28/2005	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	07/28/2005	Thunderstorm Wind	55 kts. EG	0	0	15.00K	0.00K
Harmony	07/28/2005	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Troutman	04/03/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	04/03/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

Statesville	04/17/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Cleveland	04/17/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Gold Hill	04/17/2006	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
Statesville	04/22/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	04/22/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rockwell	04/22/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	04/22/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	04/25/2006	Thunderstorm Wind	60 kts. EG	0	0	200.00K	0.00K
Cleveland	04/25/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	05/20/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Troutman	06/11/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Woodleaf	06/23/2006	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Statesville	06/23/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	07/04/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	07/04/2006	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Statesville	07/15/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Turnersburg	07/20/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	07/22/2006	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Landis	08/04/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Spencer	08/07/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	09/28/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mt Mourne	11/15/2006	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Harmony	11/16/2006	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K

Statesville	04/15/2007	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Mooresville	06/12/2007	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Mooresville	06/24/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	06/24/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	06/24/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	06/25/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	06/27/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Landis	06/27/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	06/28/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mt Ulla	07/09/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Troutman	07/09/2007	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Statesville	07/10/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Love Valley	07/24/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	08/21/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Cleveland	08/21/2007	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Salisbury	08/21/2007	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Statesville	08/22/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Landis	08/25/2007	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Salisbury	08/25/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Landis	08/30/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Granite Quarry	08/30/2007	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	03/04/2008	Thunderstorm Wind	65 kts. EG	0	0	20.00K	0.00K
Salisbury	03/04/2008	Thunderstorm Wind	55 kts. EG	0	0	20.00K	0.00K

Rockwell	03/04/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Union Grove	05/08/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	06/03/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Amity Hill	06/11/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mt Mourne	06/11/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	06/22/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	06/27/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Love Valley	06/28/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville	06/28/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	06/28/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	06/29/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	06/29/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville	07/08/2008	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Harmony	07/08/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mill Bridge	07/21/2008	Thunderstorm Wind	70 kts. EG	0	0	0.00K	0.00K
China Grove	07/21/2008	Thunderstorm Wind	80 kts. EG	0	0	500.00K	0.00K
Enochville	07/22/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Harmony	07/22/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Kannapolis	07/23/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville	07/31/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Oswalt	08/02/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville Jct	08/02/2008	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Enochville	08/02/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

Harmony	08/02/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Troutman	08/16/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Crescent	09/30/2008	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Spencer	02/11/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	05/09/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Charles	05/09/2009	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
Trading Ford	05/09/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	06/10/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	06/11/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Woodleaf	06/11/2009	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
China Grove	06/13/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Cleveland	06/16/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	07/22/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Kannapolis	07/22/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Harmony	07/27/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Scotts	08/05/2009	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Spencer	08/05/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Houstonville	09/28/2009	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	03/28/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	04/08/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Cleveland	05/28/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	05/28/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Milford Hills	05/28/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

Harmony	05/28/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Landis	06/13/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rowan Co Arpt	06/14/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury Rwn Co Arp	06/14/2010	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
Salisbury	06/15/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Elmwood	06/25/2010	Thunderstorm Wind	55 kts. EG	0	0	20.00K	0.00K
Oswalt	06/29/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mayhew	07/13/2010	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
Union Grove	07/13/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rowan Co Arpt	07/17/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Olin	07/18/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	07/20/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	07/25/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Woodleaf	07/25/2010	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Woodleaf	07/25/2010	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Troutman	07/26/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Amity Hill	08/05/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Enochville	08/05/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Kannapolis	08/05/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Landis	08/06/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Shupings Mill	10/25/2010	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
Statesville	10/26/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Harmony	10/26/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

Amity Hill	10/27/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	11/16/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	11/16/2010	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Buffalo	02/28/2011	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
Oswalt	02/28/2011	Thunderstorm Wind	60 kts. EG	0	0	0.00K	0.00K
Cleveland	02/28/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mayhew	04/05/2011	Thunderstorm Wind	65 kts. EG	0	0	0.00K	0.00K
Cleveland	04/05/2011	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Crescent	04/05/2011	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Rowan Co Arpt	04/16/2011	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Rockwell	04/28/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Turnersburg	05/13/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Barium Spgs	05/13/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville Rhyne Ar	05/22/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Scotts	05/22/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Charles	05/22/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mayhew	05/26/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Troutman	05/26/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Scotts	06/05/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	06/09/2011	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Woodleaf	06/12/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	06/12/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mill Bridge	06/12/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

Mayhew	06/18/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mazeppa	06/18/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Woodleaf	06/18/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Loray	06/22/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	06/28/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
New Hope	06/28/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	06/28/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Barium Spgs	06/28/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Woodleaf	06/28/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Oswalt	07/13/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Gold Hill	07/13/2011	Thunderstorm Wind	50 kts. EG	0	0	30.00K	0.00K
Love Valley	07/24/2011	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Loray	07/24/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
South Salisbury	07/31/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Trading Ford	07/31/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Loray	08/14/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mill Bridge	08/14/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rockwell	08/14/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Harmony	09/02/2011	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Mt Ulla	09/02/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rowan Co Arpt	09/02/2011	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Franklin	09/05/2011	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Gold Hill	06/01/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

Harmony	06/12/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mt Ulla	06/12/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Gold Hill	06/12/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville	06/22/2012	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Mt Mourne	07/16/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	07/18/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	07/19/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mt Mourne	07/25/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Turnersburg	07/27/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville	07/27/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mill Bridge	07/27/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Yadkin	07/28/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville	08/08/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Harmony	09/03/2012	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville Arpt	04/11/2013	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	04/19/2013	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mt Mourne	04/19/2013	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rockwell	06/10/2013	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	06/13/2013	Thunderstorm Wind	65 kts. EG	0	0	0.00K	0.00K
Salisbury	06/13/2013	Thunderstorm Wind	50 kts. EG	0	2	50.00K	0.00K
Enochville	06/28/2013	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Craven	06/28/2013	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville	07/04/2013	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

Harmony	07/17/2013	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Union Grove	08/09/2013	Thunderstorm Wind	55 kts. EG	0	0	5.00K	0.00K
Mooresville Arpt	08/10/2013	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	08/10/2013	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	04/25/2014	Thunderstorm Wind	65 kts. EG	0	0	50.00K	0.00K
Rockwell	05/12/2014	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville	05/12/2014	Thunderstorm Wind	40 kts. EG	0	0	20.00K	0.00K
Mt Ulla	05/12/2014	Thunderstorm Wind	50 kts. EG	0	0	0.50K	0.00K
Salisbury	05/12/2014	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	06/09/2014	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	06/10/2014	Thunderstorm Wind	40 kts. EG	0	0	50.00K	0.00K
Mayhew	06/16/2014	Thunderstorm Wind	60 kts. EG	0	0	5.00K	0.00K
Loray	06/18/2014	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Craven	06/18/2014	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Barium Spgs	07/03/2014	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Woodleaf	07/15/2014	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	08/18/2014	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Scotts	08/21/2014	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	10/11/2014	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rockwell	10/11/2014	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
Mt Mourne	06/19/2015	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rowan Co Arpt	06/19/2015	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K
Mt Mourne	06/20/2015	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

Kannapolis	06/20/2015	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove Arpt	06/20/2015	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	06/26/2015	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
Love Valley	06/30/2015	Thunderstorm Wind	55 kts. EG	0	0	5.00K	0.00K
Cool Spg	07/20/2015	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Troutman	07/21/2015	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	07/21/2015	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Loray	08/19/2015	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
Rowan Co Arpt	09/10/2015	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
Gold Hill	02/03/2016	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville Arpt	02/24/2016	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mill Bridge	05/03/2016	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Franklin	05/03/2016	Thunderstorm Wind	55 kts. EG	0	0	5.00K	0.00K
Barium Spgs	05/12/2016	Thunderstorm Wind	40 kts. EG	0	0	5.00K	0.00K
Enochville	06/04/2016	Thunderstorm Wind	60 kts. EG	0	0	5.00K	0.00K
Rowan Mill	06/22/2016	Thunderstorm Wind	55 kts. EG	0	0	10.00K	0.00K
Milford Hills	06/23/2016	Thunderstorm Wind	40 kts. EG	0	0	10.00K	0.00K
Milford Hills	07/05/2016	Thunderstorm Wind	55 kts. EG	0	0	20.00K	0.00K
New Hope	07/08/2016	Thunderstorm Wind	55 kts. EG	0	0	30.00K	0.00K
Elmwood	07/08/2016	Thunderstorm Wind	40 kts. EG	0	0	10.00K	0.00K
Mooresville	07/08/2016	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	07/08/2016	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Gold Hill	07/11/2016	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

Mill Bridge	07/19/2016	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Morlan Park	07/22/2016	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Kannapolis	08/17/2016	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mill Bridge	08/27/2016	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Troutman	08/27/2016	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Houstonville	11/30/2016	Thunderstorm Wind	50 kts. EG	0	0	5.00K	0.00K
Statesville Arpt	03/26/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Woodleaf	04/03/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville Arpt	05/01/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Enochville	05/01/2017	Thunderstorm Wind	40 kts. EG	0	0	5.00K	0.00K
Amity Hill	05/24/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Buffalo	05/28/2017	Thunderstorm Wind	50 kts. EG	0	0	50.00K	0.00K
Eufola	06/04/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mt Mourne	06/04/2017	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
Union Grove	06/13/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Houstonville	06/13/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mill Bridge	06/13/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	06/13/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	06/18/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville Rhyne Ar	07/13/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove Arpt	07/15/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Liberty	07/15/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	07/15/2017	Thunderstorm Wind	55 kts. EG	0	0	0.00K	0.00K

Mt Mourne	07/15/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	07/15/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Majolica	07/19/2017	Thunderstorm Wind	60 kts. EG	0	0	5.00K	0.00K
Turnersburg	07/28/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Landis	09/01/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Loray	09/01/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Houstonville	10/23/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove Arpt	10/23/2017	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mt Mourne	04/15/2018	Thunderstorm Wind	70 kts. EG	0	0	100.00K	0.00K
Woodleaf	04/15/2018	Thunderstorm Wind	50 kts. EG	0	0	25.00K	0.00K
Mill Bridge	05/10/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Salisbury	05/10/2018	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
Morlan Park	05/20/2018	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
Majolica	06/02/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rockwell	06/03/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
China Grove	06/11/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville Arpt	06/14/2018	Thunderstorm Wind	55 kts. EG	0	0	75.00K	0.00K
Mooresville	06/25/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Craven	06/25/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	07/01/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rockwell	07/22/2018	Thunderstorm Wind	40 kts. EG	0	0	5.00K	0.00K
Trading Ford	07/22/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Loray	08/01/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

Enochville	08/08/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rockwell	08/12/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville	08/19/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Cleveland	08/21/2018	Thunderstorm Wind	40 kts. EG	0	0	10.00K	0.00K
China Grove	08/30/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Loray	09/01/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	09/27/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Rockwell	09/27/2018	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Morlan Park	04/12/2019	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
Mooresville Jct	04/14/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Elmwood	05/29/2019	Thunderstorm Wind	50 kts. EG	0	0	1.00K	0.00K
Statesville Arpt	05/31/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Kannapolis	05/31/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Oswalt	06/20/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Faith	06/20/2019	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
Gold Hill	06/20/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Troutman	06/24/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mooresville Jct	06/24/2019	Thunderstorm Wind	40 kts. EG	0	0	10.00K	0.00K
Statesville	06/24/2019	Thunderstorm Wind	40 kts. EG	0	1	1.00K	0.00K
Cleveland	06/24/2019	Thunderstorm Wind	50 kts. EG	0	0	2.00K	0.00K
Rockwell	07/04/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Houstonville	07/20/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Loray	07/22/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K

Cool Spg	07/22/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Statesville	08/01/2019	Thunderstorm Wind	50 kts. EG	0	0	10.00K	0.00K
Mooresville Arpt	08/13/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Buffalo	08/21/2019	Thunderstorm Wind	55 kts. EG	0	0	50.00K	0.00K
Mooresville Arpt	08/21/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Mayhew	10/31/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Shinnville	10/31/2019	Thunderstorm Wind	50 kts. EG	0	0	0.00K	0.00K
Totals:				**2**	**12**	**2.790M**	**0.00K**

Source: National Climatic Data Center (NCDC) Storm Events Database and or potential user entered data.

According to NCDC 520 recorded instances of Thunderstorm Winds conditions have affected the planning area causing an estimated $2,806,000 in losses to property, $0 in losses to agricultural crops, 2 death(s), and 12 injury(ies).

Table 5-61 provides a summary of this historical information by participating jurisdiction. It is important to note that many of the events attributed to the county are countywide or cover large portions of the county. The individual counts by jurisdiction are for those events that are only attributed to that one jurisdiction.

Table 5-61: Summary of Historical Thunderstorm Winds Occurrences by Participating Jurisdiction

Jurisdiction	Number of Occurrences	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
Iredell							
City of Statesville	57	2	1	$269,000	$40,027	$0	$0
Iredell County (Unincorporated Area)	129	0	0	$552,500	$90,401	$0	$0
Town of Harmony	10	0	0	$150,000	$52,675	$0	$0

Jurisdiction	Number of Occurrences	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
Town of Love Valley	3	0	0	$5,000	$5,000	$0	$0
Town of Mooresville	34	0	0	$40,000	$12,178	$0	$0
Town of Troutman	24	0	0	$115,000	$20,984	$0	$0
Subtotal Iredell	**258**	**2**	**1**	**$1,126,500**	**$216,265**	**$0**	**$0**
Rowan							
City of Salisbury	68	0	10	$586,000	$99,511	$0	$0
Rowan County (Unincorporated Area)	124	0	1	$384,500	$44,985	$0	$0
Town of China Grove	21	0	0	$510,000	$90,038	$0	$0
Town of Cleveland	11	0	0	$10,000	$2,320	$0	$0
Town of East Spencer	3	0	0	$20,000	$9,445	0	$0
Town of Faith	4	0	0	$20,000	$8,911	$0	$0
Town of Granite Quarry	7	0	0	$25,000	$8,968	$0	$0
Town of Landis	9	0	0	$11,000	$4,080	$0	$0
Town of Rockwell	10	0	0	$20,000	$4,197	$0	$0
Town of Spencer	7	0	0	$77,000	$28,767	$0	$0
Subtotal Rowan	**265**	**0**	**11**	**$1,663,500**	**$301,222**	**$0**	**$0**
TOTAL PLAN	**523**	**2**	**12**	**$2,790,000**	**$517,487**	**$0**	**$0**

Source: National Climatic Data Center (NCDC) Storm Events Database and or potential user entered data.

5.9.5 Probability of Future Occurrences

Based on the analyses performed in IRISK, the probability of future Thunderstorm Winds is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Less Than 0.2% Annual Probability Of 50-Year Event
- Between 0.2% And 2% Annual Probability Of 50-Year Event
- More Than 2% Annual Probability Of 50-Year Event

Jurisdiction	IRISK Probability of Future Occurrence
City of Salisbury	Medium
City of Statesville	Medium
Iredell County (Unincorporated Area)	Medium
Rowan County (Unincorporated Area)	Medium
Town of China Grove	Medium
Town of Cleveland	Medium
Town of East Spencer	Medium
Town of Faith	Medium
Town of Granite Quarry	Medium
Town of Harmony	Medium
Town of Landis	Medium
Town of Love Valley	Medium

Jurisdiction	IRISK Probability of Future Occurrence
Town of Mooresville	Medium
Town of Rockwell	Medium
Town of Spencer	Medium
Town of Troutman	Medium

Thunderstorm Winds Hazard Vulnerability and Impact

Vulnerability is difficult to evaluate since thunderstorms can occur at different strength levels, in random locations, and can create relatively narrow paths of destruction. Due to the randomness of this event, all existing and future structures and facilities in the planning region could potentially be impacted and remain vulnerable to possible injury and/or property loss. Continued enforcement of building codes, flood damage prevention ordinances and other local regulatory tools and policies designed to mitigate the effects of high hazard winds is expected to minimize future losses as construction and planning continue to seek higher standards. Based on historical events the most significant local impacts for the Region regarding future events will likely be damage to trees (and the requisite management of vegetative debris) and widespread power outages to the area.

The following tables provide counts and values by jurisdiction relevant to Thunderstorm Winds hazard vulnerability in the Iredell-Rowan Regional HMP Area.

Table 5-62: Population Impacted by the 25 Year Thunderstorm Winds

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Davidson	284	10,466	100%	934	934	100%	776	776	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**159,434**	**169,616**	**100%**	**21343**	**21343**	**100%**	**10733**	**10733**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**138,538**	**171,744**	**100%**	**19993**	**23740**	**100%**	**9046**	**11475**	**100%**

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
TOTAL PLAN	**297,972**	**341,360**	**100%**	**40438**	**45083**	**100%**	**19021**	**22208**	**100%**

Source: GIS Analysis

Table 5-63: Population Impacted by the 50 Year Thunderstorm Winds

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**159,434**	**169,631**	**100%**	**20445**	**21344**	**100%**	**9975**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**138,538**	**171,749**	**100%**	**19993**	**23741**	**100%**	**9046**	**11475**	**100%**
TOTAL PLAN	**297,972**	**341,380**	**100%**	**40438**	**45085**	**100%**	**19021**	**22209**	**100%**

Source: GIS Analysis

Table 5-64: Population Impacted by the 100 Year Thunderstorm Winds

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**450585**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-65: Population Impacted by the 300 Year Thunderstorm Winds

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**138,538**	**171,749**	**100%**	**19993**	**23741**	**100%**	**9046**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-66: Population Impacted by the 700 Year Thunderstorm Winds

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Davidson	10,481	10,481	100%	935	935	100%	777	777	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**297,972**	**341,380**	**100%**	**40438**	**45085**	**100%**	**19021**	**22209**	**100%**

Source: GIS Analysis

Table 5-67: Buildings Impacted by the 25 Year Thunderstorm Winds

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$1,887,559	1,837	12.9%	$706,560	422	3%	$84,252	14,249	100%	$2,678,372
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$9,630,127	1,174	2.1%	$263,987	683	1.2%	$639,788	55,469	100%	$10,533,902
Town of Harmony	444	438	98.6%	376	84.7%	$47,559	41	9.2%	$2,677	27	6.1%	$2,088	444	100%	$52,324
Town of Love Valley	258	258	100%	236	91.5%	$19,413	21	8.1%	$965	1	0.4%	$31	258	100%	$20,409
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$2,108,475	1,466	10.2%	$829,277	241	1.7%	$332,150	14,437	100%	$3,269,901
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$277,687	229	9.4%	$32,594	58	2.4%	$8,551	2,438	100%	$318,832
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$13,970,820**	**4,768**	**5.5%**	**$1,836,060**	**1,432**	**1.6%**	**$1,066,860**	**87,295**	**100%**	**$16,873,740**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$3,108,797	1,446	10.4%	$1,162,891	438	3.1%	$327,756	13,958	100%	$4,599,444
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$8,002,816	2,169	5.6%	$2,681,695	541	1.4%	$752,034	38,876	100%	$11,436,545
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$515,894	203	8%	$72,047	56	2.2%	$23,700	2,546	100%	$611,641
Town of Cleveland	812	812	100%	729	89.8%	$157,487	58	7.1%	$31,921	25	3.1%	$48,651	812	100%	$238,059
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$293,178	33	3.3%	$867,958	37	3.6%	$122,433	1,015	100%	$1,283,569
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$342,358	76	4.8%	$61,000	13	0.8%	$3,583	1,590	100%	$406,941
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$653,070	142	6%	$195,025	33	1.4%	$370,970	2,350	100%	$1,219,065

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$270,462	112	7.3%	$59,640	39	2.5%	$30,121	1,544	100%	$360,223
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$749,378	156	6.5%	$531,330	38	1.6%	$14,475	2,402	100%	$1,295,184
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$700,638	132	6.6%	$294,669	46	2.3%	$62,096	2,010	100%	$1,057,403
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$14,794,078**	**4,527**	**6.7%**	**$5,958,176**	**1,266**	**1.9%**	**$1,755,819**	**67,103**	**100%**	**$22,508,074**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$28,764,898**	**9,295**	**6%**	**$7,794,236**	**2,698**	**1.7%**	**$2,822,679**	**154,398**	**100%**	**$39,381,814**

Source: GIS Analysis

Table 5-68: Buildings Impacted by the 50 Year Thunderstorm Winds

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$3,390,798	1,837	12.9%	$1,261,182	422	3%	$156,778	14,249	100%	$4,808,757
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$17,317,546	1,174	2.1%	$533,284	683	1.2%	$1,329,535	55,469	100%	$19,180,366
Town of Harmony	444	438	98.6%	376	84.7%	$82,592	41	9.2%	$3,923	27	6.1%	$3,267	444	100%	$89,782
Town of Love Valley	258	258	100%	236	91.5%	$34,531	21	8.1%	$1,775	1	0.4%	$19	258	100%	$36,325
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$3,938,602	1,466	10.2%	$1,577,574	241	1.7%	$651,685	14,437	100%	$6,167,861
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$510,013	229	9.4%	$55,957	58	2.4%	$15,887	2,438	100%	$581,856

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$25,274,082**	**4,768**	**5.5%**	**$3,433,695**	**1,432**	**1.6%**	**$2,157,171**	**87,295**	**100%**	**$30,864,947**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$4,726,139	1,446	10.4%	$2,285,022	438	3.1%	$585,742	13,958	100%	$7,596,903
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$12,862,341	2,169	5.6%	$5,439,776	541	1.4%	$1,562,250	38,876	100%	$19,864,367
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$880,662	203	8%	$148,571	56	2.2%	$45,934	2,546	100%	$1,075,167
Town of Cleveland	812	812	100%	729	89.8%	$303,619	58	7.1%	$71,508	25	3.1%	$109,003	812	100%	$484,130
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$293,178	33	3.3%	$867,958	37	3.6%	$122,433	1,015	100%	$1,283,569
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$560,282	76	4.8%	$121,944	13	0.8%	$7,720	1,590	100%	$689,946
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$707,615	142	6%	$204,626	33	1.4%	$370,983	2,350	100%	$1,283,224
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$495,617	112	7.3%	$132,717	39	2.5%	$62,441	1,544	100%	$690,774
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$765,387	156	6.5%	$549,439	38	1.6%	$14,475	2,402	100%	$1,329,301
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$700,638	132	6.6%	$294,669	46	2.3%	$62,096	2,010	100%	$1,057,403
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$22,295,478**	**4,527**	**6.7%**	**$10,116,230**	**1,266**	**1.9%**	**$2,943,077**	**67,103**	**100%**	**$35,354,784**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$47,569,560**	**9,295**	**6%**	**$13,549,925**	**2,698**	**1.7%**	**$5,100,248**	**154,398**	**100%**	**$66,219,731**

Source: GIS Analysis

Table 5-69: Buildings Impacted by the 100 Year Thunderstorm Winds

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$5,501,965	1,837	12.9%	$2,257,438	422	3%	$301,268	14,249	100%	$8,060,672
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$28,020,036	1,174	2.1%	$1,066,869	683	1.2%	$2,404,916	55,469	100%	$31,491,820
Town of Harmony	444	438	98.6%	376	84.7%	$128,849	41	9.2%	$6,659	27	6.1%	$6,999	444	100%	$142,507
Town of Love Valley	258	258	100%	236	91.5%	$55,083	21	8.1%	$3,371	1	0.4%	$61	258	100%	$58,515
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$6,532,878	1,466	10.2%	$2,941,215	241	1.7%	$1,177,918	14,437	100%	$10,652,012
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$835,963	229	9.4%	$103,189	58	2.4%	$32,190	2,438	100%	$971,342
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$41,074,774**	**4,768**	**5.5%**	**$6,378,741**	**1,432**	**1.6%**	**$3,923,352**	**87,295**	**100%**	**$51,376,868**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$7,561,020	1,446	10.4%	$4,636,570	438	3.1%	$1,178,536	13,958	100%	$13,376,125
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$19,332,501	2,169	5.6%	$9,939,017	541	1.4%	$2,856,581	38,876	100%	$32,128,099
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$1,392,197	203	8%	$285,140	56	2.2%	$92,142	2,546	100%	$1,769,478
Town of Cleveland	812	812	100%	729	89.8%	$545,906	58	7.1%	$151,582	25	3.1%	$225,496	812	100%	$922,984
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$486,158	33	3.3%	$1,774,999	37	3.6%	$253,827	1,015	100%	$2,514,985
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$883,326	76	4.8%	$239,282	13	0.8%	$16,132	1,590	100%	$1,138,740
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$1,165,356	142	6%	$405,427	33	1.4%	$673,173	2,350	100%	$2,243,955

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$810,306	112	7.3%	$274,697	39	2.5%	$125,902	1,544	100%	$1,210,904
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$1,234,660	156	6.5%	$1,014,811	38	1.6%	$29,291	2,402	100%	$2,278,762
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$1,100,795	132	6.6%	$602,278	46	2.3%	$127,262	2,010	100%	$1,830,336
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$34,512,225**	**4,527**	**6.7%**	**$19,323,803**	**1,266**	**1.9%**	**$5,578,342**	**67,103**	**100%**	**$59,414,368**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$75,586,999**	**9,295**	**6%**	**$25,702,544**	**2,698**	**1.7%**	**$9,501,694**	**154,398**	**100%**	**$110,791,236**

Source: GIS Analysis

Table 5-70: Buildings Impacted by the 300 Year Thunderstorm Winds

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$12,657,453	1,837	12.9%	$7,075,680	422	3%	$1,123,965	14,249	100%	$20,857,098
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$66,391,877	1,174	2.1%	$3,779,493	683	1.2%	$5,840,461	55,469	100%	$76,011,830
Town of Harmony	444	438	98.6%	376	84.7%	$280,485	41	9.2%	$19,630	27	6.1%	$37,917	444	100%	$338,032
Town of Love Valley	258	258	100%	236	91.5%	$129,482	21	8.1%	$10,360	1	0.4%	$169	258	100%	$140,010
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$16,014,343	1,466	10.2%	$9,002,991	241	1.7%	$3,042,810	14,437	100%	$28,060,144
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$1,874,218	229	9.4%	$377,303	58	2.4%	$117,610	2,438	100%	$2,369,131

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$97,347,858**	**4,768**	**5.5%**	**$20,265,457**	**1,432**	**1.6%**	**$10,162,932**	**87,295**	**100%**	**$127,776,245**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$19,574,413	1,446	10.4%	$15,266,889	438	3.1%	$3,868,921	13,958	100%	$38,710,223
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$44,798,476	2,169	5.6%	$28,124,707	541	1.4%	$8,296,145	38,876	100%	$81,219,328
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$3,657,300	203	8%	$860,716	56	2.2%	$356,765	2,546	100%	$4,874,781
Town of Cleveland	812	812	100%	729	89.8%	$1,636,710	58	7.1%	$581,980	25	3.1%	$701,614	812	100%	$2,920,304
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$1,329,299	33	3.3%	$5,154,619	37	3.6%	$784,480	1,015	100%	$7,268,397
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$2,134,518	76	4.8%	$670,200	13	0.8%	$60,227	1,590	100%	$2,864,945
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$2,914,663	142	6%	$1,171,592	33	1.4%	$1,558,222	2,350	100%	$5,644,478
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$2,034,523	112	7.3%	$992,451	39	2.5%	$443,128	1,544	100%	$3,470,102
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$3,220,212	156	6.5%	$2,691,278	38	1.6%	$129,424	2,402	100%	$6,040,914
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$2,885,715	132	6.6%	$1,890,212	46	2.3%	$465,223	2,010	100%	$5,241,150
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$84,185,829**	**4,527**	**6.7%**	**$57,404,644**	**1,266**	**1.9%**	**$16,664,149**	**67,103**	**100%**	**$158,254,622**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$181,533,687**	**9,295**	**6%**	**$77,670,101**	**2,698**	**1.7%**	**$26,827,081**	**154,398**	**100%**	**$286,030,867**

Source: GIS Analysis

Table 5-71: Buildings Impacted by the 700 Year Thunderstorm Winds

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$15,226,687	1,837	12.9%	$9,273,668	422	3%	$1,500,460	14,249	100%	$26,000,815
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$92,126,798	1,174	2.1%	$5,299,077	683	1.2%	$7,702,577	55,469	100%	$105,128,451
Town of Harmony	444	438	98.6%	376	84.7%	$427,748	41	9.2%	$34,127	27	6.1%	$82,217	444	100%	$544,093
Town of Love Valley	258	258	100%	236	91.5%	$129,486	21	8.1%	$10,333	1	0.4%	$169	258	100%	$139,989
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$25,877,299	1,466	10.2%	$14,814,870	241	1.7%	$4,428,474	14,437	100%	$45,120,643
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$2,687,926	229	9.4%	$706,311	58	2.4%	$201,543	2,438	100%	$3,595,781
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$136,475,944**	**4,768**	**5.5%**	**$30,138,386**	**1,432**	**1.6%**	**$13,915,440**	**87,295**	**100%**	**$180,529,772**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$33,343,058	1,446	10.4%	$24,927,530	438	3.1%	$6,348,950	13,958	100%	$64,619,539
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$73,553,696	2,169	5.6%	$42,706,015	541	1.4%	$12,803,182	38,876	100%	$129,062,892
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$6,495,900	203	8%	$1,387,636	56	2.2%	$679,376	2,546	100%	$8,562,912
Town of Cleveland	812	812	100%	729	89.8%	$2,779,131	58	7.1%	$1,050,316	25	3.1%	$1,065,587	812	100%	$4,895,034
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$2,267,284	33	3.3%	$7,434,274	37	3.6%	$1,192,126	1,015	100%	$10,893,685
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$3,544,041	76	4.8%	$969,229	13	0.8%	$106,332	1,590	100%	$4,619,603
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$4,680,536	142	6%	$1,734,146	33	1.4%	$2,076,879	2,350	100%	$8,491,560

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$3,422,633	112	7.3%	$1,742,962	39	2.5%	$785,300	1,544	100%	$5,950,895
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$5,474,338	156	6.5%	$3,862,296	38	1.6%	$258,140	2,402	100%	$9,594,774
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$4,975,383	132	6.6%	$2,907,508	46	2.3%	$803,426	2,010	100%	$8,686,316
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$140,536,000**	**4,527**	**6.7%**	**$88,721,912**	**1,266**	**1.9%**	**$26,119,298**	**67,103**	**100%**	**$255,377,210**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$277,011,944**	**9,295**	**6%**	**$118,860,298**	**2,698**	**1.7%**	**$40,034,738**	**154,398**	**100%**	**$435,906,982**

Source: GIS Analysis

The following tables provide counts and estimated damages for CIKR buildings by jurisdiction in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event. Totals across all sectors are shown at the bottom of each table.

Table 5-72: Critical Facilities Exposed to the Thunderstorm Winds - City of Statesville

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	24	$30,011
Banking and Finance	50 Year	24	$50,940
Banking and Finance	100 Year	24	$81,541
Banking and Finance	300 Year	24	$180,026
Banking and Finance	700 Year	24	$189,821
Commercial Facilities	25 Year	1,205	$419,709
Commercial Facilities	50 Year	1,205	$771,569
Commercial Facilities	100 Year	1,205	$1,396,547
Commercial Facilities	300 Year	1,205	$4,187,997
Commercial Facilities	700 Year	1,205	$5,254,799
Communications	25 Year	1	$66
Communications	50 Year	1	$88
Communications	100 Year	1	$128
Communications	300 Year	1	$362
Communications	700 Year	1	$362
Critical Manufacturing	25 Year	460	$161,835
Critical Manufacturing	50 Year	460	$278,271
Critical Manufacturing	100 Year	460	$513,127
Critical Manufacturing	300 Year	460	$1,972,945
Critical Manufacturing	700 Year	460	$2,937,128
Emergency Services	25 Year	1	$256
Emergency Services	50 Year	1	$389

Sector	Event	Number of Buildings At Risk	Estimated Damages
Emergency Services	100 Year	1	$642
Emergency Services	300 Year	1	$2,503
Emergency Services	700 Year	1	$2,586
Energy	25 Year	7	$130,718
Energy	50 Year	7	$203,712
Energy	100 Year	7	$350,117
Energy	300 Year	7	$1,503,378
Energy	700 Year	7	$3,197,354
Food and Agriculture	25 Year	1	$319
Food and Agriculture	50 Year	1	$521
Food and Agriculture	100 Year	1	$758
Food and Agriculture	300 Year	1	$1,414
Food and Agriculture	700 Year	1	$2,027
Government Facilities	25 Year	174	$36,887
Government Facilities	50 Year	174	$66,502
Government Facilities	100 Year	174	$126,497
Government Facilities	300 Year	174	$487,734
Government Facilities	700 Year	174	$611,628
Healthcare and Public Health	25 Year	172	$43,679
Healthcare and Public Health	50 Year	172	$75,099
Healthcare and Public Health	100 Year	172	$135,091
Healthcare and Public Health	300 Year	172	$504,627
Healthcare and Public Health	700 Year	172	$658,070
Transportation Systems	25 Year	185	$79,671
Transportation Systems	50 Year	185	$137,503

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	100 Year	185	$233,684
Transportation Systems	300 Year	185	$652,232
Transportation Systems	700 Year	185	$791,891
All Categories	**25 Year**	**2,230**	**$903,151**
All Categories	**50 Year**	**2,230**	**$1,584,594**
All Categories	**100 Year**	**2,230**	**$2,838,132**
All Categories	**300 Year**	**2,230**	**$9,493,218**
All Categories	**700 Year**	**2,230**	**$13,645,666**

Source: GIS Analysis

Table 5-73: Critical Facilities Exposed to the Thunderstorm Winds - Iredell County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	2	$268
Banking and Finance	50 Year	2	$582
Banking and Finance	100 Year	2	$1,220
Banking and Finance	300 Year	2	$4,589
Banking and Finance	700 Year	2	$4,589
Commercial Facilities	25 Year	1,146	$712,804
Commercial Facilities	50 Year	1,146	$1,497,196
Commercial Facilities	100 Year	1,146	$2,754,505
Commercial Facilities	300 Year	1,146	$7,026,111
Commercial Facilities	700 Year	1,146	$9,173,084
Critical Manufacturing	25 Year	279	$94,273
Critical Manufacturing	50 Year	279	$178,866
Critical Manufacturing	100 Year	279	$350,603
Critical Manufacturing	300 Year	279	$1,290,061

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	700 Year	279	$1,824,002
Energy	25 Year	3	$107,233
Energy	50 Year	3	$208,119
Energy	100 Year	3	$494,479
Energy	300 Year	3	$3,018,393
Energy	700 Year	3	$3,019,659
Food and Agriculture	25 Year	18	$6,945
Food and Agriculture	50 Year	18	$15,004
Food and Agriculture	100 Year	18	$30,284
Food and Agriculture	300 Year	18	$88,471
Food and Agriculture	700 Year	18	$132,531
Government Facilities	25 Year	238	$49,222
Government Facilities	50 Year	238	$85,208
Government Facilities	100 Year	238	$158,155
Government Facilities	300 Year	238	$569,508
Government Facilities	700 Year	238	$866,446
Healthcare and Public Health	25 Year	20	$5,339
Healthcare and Public Health	50 Year	20	$10,965
Healthcare and Public Health	100 Year	20	$22,481
Healthcare and Public Health	300 Year	20	$76,046
Healthcare and Public Health	700 Year	20	$80,701
Transportation Systems	25 Year	137	$34,018
Transportation Systems	50 Year	137	$73,434
Transportation Systems	100 Year	137	$151,716
Transportation Systems	300 Year	137	$555,604

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	700 Year	137	$904,449
Water	25 Year	3	$431
Water	50 Year	3	$764
Water	100 Year	3	$1,192
Water	300 Year	3	$2,308
Water	700 Year	3	$3,143
All Categories	**25 Year**	**1,846**	**$1,010,533**
All Categories	**50 Year**	**1,846**	**$2,070,138**
All Categories	**100 Year**	**1,846**	**$3,964,635**
All Categories	**300 Year**	**1,846**	**$12,631,091**
All Categories	**700 Year**	**1,846**	**$16,008,604**

Source: GIS Analysis

Table 5-74: Critical Facilities Exposed to the Thunderstorm Winds - Town of Harmony

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	2	$85
Banking and Finance	50 Year	2	$119
Banking and Finance	100 Year	2	$183
Banking and Finance	300 Year	2	$514
Banking and Finance	700 Year	2	$877
Commercial Facilities	25 Year	31	$1,510
Commercial Facilities	50 Year	31	$2,115
Commercial Facilities	100 Year	31	$3,744
Commercial Facilities	300 Year	31	$12,102
Commercial Facilities	700 Year	31	$21,985
Critical Manufacturing	25 Year	12	$1,540

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	50 Year	12	$2,358
Critical Manufacturing	100 Year	12	$3,828
Critical Manufacturing	300 Year	12	$10,235
Critical Manufacturing	700 Year	12	$16,626
Government Facilities	25 Year	18	$1,405
Government Facilities	50 Year	18	$2,257
Government Facilities	100 Year	18	$5,321
Government Facilities	300 Year	18	$32,744
Government Facilities	700 Year	18	$73,286
Healthcare and Public Health	25 Year	1	$42
Healthcare and Public Health	50 Year	1	$55
Healthcare and Public Health	100 Year	1	$81
Healthcare and Public Health	300 Year	1	$225
Healthcare and Public Health	700 Year	1	$366
Transportation Systems	25 Year	4	$183
Transportation Systems	50 Year	4	$286
Transportation Systems	100 Year	4	$502
Transportation Systems	300 Year	4	$1,726
Transportation Systems	700 Year	4	$3,204
All Categories	**25 Year**	**68**	**$4,765**
All Categories	**50 Year**	**68**	**$7,190**
All Categories	**100 Year**	**68**	**$13,659**
All Categories	**300 Year**	**68**	**$57,546**
All Categories	**700 Year**	**68**	**$116,344**

Source: GIS Analysis

Table 5-75: Critical Facilities Exposed to the Thunderstorm Winds - Town of Love Valley

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	25 Year	21	$996
Commercial Facilities	50 Year	21	$1,761
Commercial Facilities	100 Year	21	$3,343
Commercial Facilities	300 Year	21	$10,092
Commercial Facilities	700 Year	21	$10,065
Food and Agriculture	25 Year	1	$1
Food and Agriculture	50 Year	1	$34
Food and Agriculture	100 Year	1	$89
Food and Agriculture	300 Year	1	$437
Food and Agriculture	700 Year	1	$437
All Categories	**25 Year**	**22**	**$997**
All Categories	**50 Year**	**22**	**$1,795**
All Categories	**100 Year**	**22**	**$3,432**
All Categories	**300 Year**	**22**	**$10,529**
All Categories	**700 Year**	**22**	**$10,502**

Source: GIS Analysis

Table 5-76: Critical Facilities Exposed to the Thunderstorm Winds - Town of Mooresville

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	37	$29,306
Banking and Finance	50 Year	37	$58,107
Banking and Finance	100 Year	37	$108,810
Banking and Finance	300 Year	37	$314,863
Banking and Finance	700 Year	37	$486,233
Commercial Facilities	25 Year	902	$525,106

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	50 Year	902	$1,028,475
Commercial Facilities	100 Year	902	$1,923,935
Commercial Facilities	300 Year	902	$5,584,097
Commercial Facilities	700 Year	902	$8,754,934
Critical Manufacturing	25 Year	301	$105,527
Critical Manufacturing	50 Year	301	$183,135
Critical Manufacturing	100 Year	301	$330,709
Critical Manufacturing	300 Year	301	$1,097,289
Critical Manufacturing	700 Year	301	$1,986,021
Energy	25 Year	2	$176,589
Energy	50 Year	2	$261,969
Energy	100 Year	2	$431,573
Energy	300 Year	2	$1,605,166
Energy	700 Year	2	$3,347,306
Food and Agriculture	25 Year	2	$31
Food and Agriculture	50 Year	2	$106
Food and Agriculture	100 Year	2	$234
Food and Agriculture	300 Year	2	$1,092
Food and Agriculture	700 Year	2	$2,091
Government Facilities	25 Year	120	$305,503
Government Facilities	50 Year	120	$603,212
Government Facilities	100 Year	120	$1,087,143
Government Facilities	300 Year	120	$2,742,084
Government Facilities	700 Year	120	$3,907,282
Healthcare and Public Health	25 Year	121	$89,319

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	50 Year	121	$175,222
Healthcare and Public Health	100 Year	121	$331,253
Healthcare and Public Health	300 Year	121	$1,000,723
Healthcare and Public Health	700 Year	121	$1,626,047
Nuclear Reactors, Materials and Waste	25 Year	1	$318
Nuclear Reactors, Materials and Waste	50 Year	1	$440
Nuclear Reactors, Materials and Waste	100 Year	1	$687
Nuclear Reactors, Materials and Waste	300 Year	1	$2,130
Nuclear Reactors, Materials and Waste	700 Year	1	$3,756
Transportation Systems	25 Year	214	$104,767
Transportation Systems	50 Year	214	$177,911
Transportation Systems	100 Year	214	$331,583
Transportation Systems	300 Year	214	$1,286,367
Transportation Systems	700 Year	214	$2,445,082
Water	25 Year	1	$187
Water	50 Year	1	$307
Water	100 Year	1	$568
Water	300 Year	1	$2,528
Water	700 Year	1	$5,155
All Categories	**25 Year**	**1,701**	**$1,336,653**
All Categories	**50 Year**	**1,701**	**$2,488,884**
All Categories	**100 Year**	**1,701**	**$4,546,495**
All Categories	**300 Year**	**1,701**	**$13,636,339**
All Categories	**700 Year**	**1,701**	**$22,563,907**

Source: GIS Analysis

Table 5-77: Critical Facilities Exposed to the Thunderstorm Winds - Town of Troutman

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	3	$350
Banking and Finance	50 Year	3	$625
Banking and Finance	100 Year	3	$1,163
Banking and Finance	300 Year	3	$3,978
Banking and Finance	700 Year	3	$7,006
Commercial Facilities	25 Year	170	$20,907
Commercial Facilities	50 Year	170	$36,256
Commercial Facilities	100 Year	170	$68,430
Commercial Facilities	300 Year	170	$265,526
Commercial Facilities	700 Year	170	$505,996
Critical Manufacturing	25 Year	73	$15,258
Critical Manufacturing	50 Year	73	$26,060
Critical Manufacturing	100 Year	73	$46,874
Critical Manufacturing	300 Year	73	$156,904
Critical Manufacturing	700 Year	73	$283,478
Energy	25 Year	1	$95,917
Energy	50 Year	1	$137,116
Energy	100 Year	1	$225,245
Energy	300 Year	1	$725,623
Energy	700 Year	1	$1,359,536
Government Facilities	25 Year	27	$2,374
Government Facilities	50 Year	27	$4,054
Government Facilities	100 Year	27	$9,172
Government Facilities	300 Year	27	$38,173

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	700 Year	27	$64,040
Healthcare and Public Health	25 Year	5	$182
Healthcare and Public Health	50 Year	5	$291
Healthcare and Public Health	100 Year	5	$463
Healthcare and Public Health	300 Year	5	$1,574
Healthcare and Public Health	700 Year	5	$2,999
Transportation Systems	25 Year	9	$2,074
Transportation Systems	50 Year	9	$4,557
Transportation Systems	100 Year	9	$9,277
Transportation Systems	300 Year	9	$28,757
Transportation Systems	700 Year	9	$44,335
All Categories	**25 Year**	**288**	**$137,062**
All Categories	**50 Year**	**288**	**$208,959**
All Categories	**100 Year**	**288**	**$360,624**
All Categories	**300 Year**	**288**	**$1,220,535**
All Categories	**700 Year**	**288**	**$2,267,390**

Source: GIS Analysis

Table 5-78: Critical Facilities Exposed to the Thunderstorm Winds - City of Salisbury

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	26	$3,925
Banking and Finance	50 Year	26	$6,362
Banking and Finance	100 Year	26	$11,735
Banking and Finance	300 Year	26	$47,314
Banking and Finance	700 Year	26	$93,611
Commercial Facilities	25 Year	892	$772,803

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	50 Year	892	$1,501,574
Commercial Facilities	100 Year	892	$3,048,579
Commercial Facilities	300 Year	892	$9,773,993
Commercial Facilities	700 Year	892	$15,678,679
Communications	25 Year	1	$283
Communications	50 Year	1	$616
Communications	100 Year	1	$1,378
Communications	300 Year	1	$6,469
Communications	700 Year	1	$11,778
Critical Manufacturing	25 Year	311	$140,037
Critical Manufacturing	50 Year	311	$249,616
Critical Manufacturing	100 Year	311	$486,571
Critical Manufacturing	300 Year	311	$1,639,510
Critical Manufacturing	700 Year	311	$2,829,943
Energy	25 Year	1	$7,132
Energy	50 Year	1	$10,929
Energy	100 Year	1	$18,446
Energy	300 Year	1	$78,343
Energy	700 Year	1	$172,579
Food and Agriculture	25 Year	2	$32
Food and Agriculture	50 Year	2	$99
Food and Agriculture	100 Year	2	$264
Food and Agriculture	300 Year	2	$1,348
Food and Agriculture	700 Year	2	$2,555
Government Facilities	25 Year	198	$142,527

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	50 Year	198	$252,856
Government Facilities	100 Year	198	$518,007
Government Facilities	300 Year	198	$1,756,473
Government Facilities	700 Year	198	$2,921,449
Healthcare and Public Health	25 Year	130	$112,920
Healthcare and Public Health	50 Year	130	$233,483
Healthcare and Public Health	100 Year	130	$497,726
Healthcare and Public Health	300 Year	130	$1,899,218
Healthcare and Public Health	700 Year	130	$3,277,719
Transportation Systems	25 Year	277	$281,549
Transportation Systems	50 Year	277	$564,042
Transportation Systems	100 Year	277	$1,141,615
Transportation Systems	300 Year	277	$3,702,866
Transportation Systems	700 Year	277	$5,972,672
All Categories	**25 Year**	**1,838**	**$1,461,208**
All Categories	**50 Year**	**1,838**	**$2,819,577**
All Categories	**100 Year**	**1,838**	**$5,724,321**
All Categories	**300 Year**	**1,838**	**$18,905,534**
All Categories	**700 Year**	**1,838**	**$30,960,985**

Source: GIS Analysis

Table 5-79: Critical Facilities Exposed to the Thunderstorm Winds - Rowan County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	7	$4,834
Banking and Finance	50 Year	7	$8,408

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	100 Year	7	$10,844
Banking and Finance	300 Year	7	$31,503
Banking and Finance	700 Year	7	$52,495
Commercial Facilities	25 Year	1,290	$1,437,666
Commercial Facilities	50 Year	1,290	$2,936,599
Commercial Facilities	100 Year	1,290	$5,322,874
Commercial Facilities	300 Year	1,290	$15,508,695
Commercial Facilities	700 Year	1,290	$24,004,033
Critical Manufacturing	25 Year	686	$1,033,987
Critical Manufacturing	50 Year	686	$2,127,680
Critical Manufacturing	100 Year	686	$4,021,206
Critical Manufacturing	300 Year	686	$11,310,952
Critical Manufacturing	700 Year	686	$16,527,602
Energy	25 Year	4	$18,502
Energy	50 Year	4	$40,182
Energy	100 Year	4	$43,967
Energy	300 Year	4	$183,543
Energy	700 Year	4	$353,081
Food and Agriculture	25 Year	184	$5,358
Food and Agriculture	50 Year	184	$11,387
Food and Agriculture	100 Year	184	$24,091
Food and Agriculture	300 Year	184	$109,171
Food and Agriculture	700 Year	184	$210,237
Government Facilities	25 Year	137	$339,957
Government Facilities	50 Year	137	$699,350

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	100 Year	137	$1,319,455
Government Facilities	300 Year	137	$3,687,987
Government Facilities	700 Year	137	$5,642,566
Healthcare and Public Health	25 Year	22	$41,844
Healthcare and Public Health	50 Year	22	$75,859
Healthcare and Public Health	100 Year	22	$150,529
Healthcare and Public Health	300 Year	22	$424,072
Healthcare and Public Health	700 Year	22	$618,294
Nuclear Reactors, Materials and Waste	25 Year	1	$272
Nuclear Reactors, Materials and Waste	50 Year	1	$485
Nuclear Reactors, Materials and Waste	100 Year	1	$896
Nuclear Reactors, Materials and Waste	300 Year	1	$1,785
Nuclear Reactors, Materials and Waste	700 Year	1	$3,304
Transportation Systems	25 Year	362	$543,369
Transportation Systems	50 Year	362	$1,089,129
Transportation Systems	100 Year	362	$1,880,193
Transportation Systems	300 Year	362	$5,119,755
Transportation Systems	700 Year	362	$8,044,649
Water	25 Year	3	$7
Water	50 Year	3	$11
Water	100 Year	3	$17
Water	300 Year	3	$71
Water	700 Year	3	$155
All Categories	**25 Year**	**2,696**	**$3,425,796**

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**50 Year**	**2,696**	**$6,989,090**
All Categories	**100 Year**	**2,696**	**$12,774,072**
All Categories	**300 Year**	**2,696**	**$36,377,534**
All Categories	**700 Year**	**2,696**	**$55,456,416**

Source: GIS Analysis

Table 5-80: Critical Facilities Exposed to the Thunderstorm Winds - Town of China Grove

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	4	$345
Banking and Finance	50 Year	4	$809
Banking and Finance	100 Year	4	$1,718
Banking and Finance	300 Year	4	$6,201
Banking and Finance	700 Year	4	$10,675
Commercial Facilities	25 Year	142	$32,091
Commercial Facilities	50 Year	142	$66,767
Commercial Facilities	100 Year	142	$134,250
Commercial Facilities	300 Year	142	$462,065
Commercial Facilities	700 Year	142	$793,683
Critical Manufacturing	25 Year	47	$19,567
Critical Manufacturing	50 Year	47	$39,591
Critical Manufacturing	100 Year	47	$73,457
Critical Manufacturing	300 Year	47	$206,669
Critical Manufacturing	700 Year	47	$322,732
Food and Agriculture	25 Year	1	$20
Food and Agriculture	50 Year	1	$60
Food and Agriculture	100 Year	1	$160

Sector	Event	Number of Buildings At Risk	Estimated Damages
Food and Agriculture	300 Year	1	$799
Food and Agriculture	700 Year	1	$1,499
Government Facilities	25 Year	15	$11,036
Government Facilities	50 Year	15	$19,052
Government Facilities	100 Year	15	$38,740
Government Facilities	300 Year	15	$182,439
Government Facilities	700 Year	15	$385,100
Healthcare and Public Health	25 Year	5	$7,524
Healthcare and Public Health	50 Year	5	$15,505
Healthcare and Public Health	100 Year	5	$27,914
Healthcare and Public Health	300 Year	5	$67,256
Healthcare and Public Health	700 Year	5	$94,079
Transportation Systems	25 Year	43	$24,963
Transportation Systems	50 Year	43	$52,418
Transportation Systems	100 Year	43	$100,490
Transportation Systems	300 Year	43	$289,814
Transportation Systems	700 Year	43	$454,891
All Categories	**25 Year**	**257**	**$95,546**
All Categories	**50 Year**	**257**	**$194,202**
All Categories	**100 Year**	**257**	**$376,729**
All Categories	**300 Year**	**257**	**$1,215,243**
All Categories	**700 Year**	**257**	**$2,062,659**

Source: GIS Analysis

Table 5-81: Critical Facilities Exposed to the Thunderstorm Winds - Town of Cleveland

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	25 Year	41	$57,097
Commercial Facilities	50 Year	41	$127,488
Commercial Facilities	100 Year	41	$263,840
Commercial Facilities	300 Year	41	$838,707
Commercial Facilities	700 Year	41	$1,297,586
Critical Manufacturing	25 Year	17	$13,167
Critical Manufacturing	50 Year	17	$30,281
Critical Manufacturing	100 Year	17	$66,306
Critical Manufacturing	300 Year	17	$277,134
Critical Manufacturing	700 Year	17	$527,444
Government Facilities	25 Year	7	$1,720
Government Facilities	50 Year	7	$3,135
Government Facilities	100 Year	7	$6,202
Government Facilities	300 Year	7	$26,979
Government Facilities	700 Year	7	$54,096
Healthcare and Public Health	25 Year	1	$76
Healthcare and Public Health	50 Year	1	$113
Healthcare and Public Health	100 Year	1	$187
Healthcare and Public Health	300 Year	1	$705
Healthcare and Public Health	700 Year	1	$1,486
Transportation Systems	25 Year	15	$8,427
Transportation Systems	50 Year	15	$19,365
Transportation Systems	100 Year	15	$40,333
Transportation Systems	300 Year	15	$139,373

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	700 Year	15	$234,001
All Categories	**25 Year**	**81**	**$80,487**
All Categories	**50 Year**	**81**	**$180,382**
All Categories	**100 Year**	**81**	**$376,868**
All Categories	**300 Year**	**81**	**$1,282,898**
All Categories	**700 Year**	**81**	**$2,114,613**

Source: GIS Analysis

Table 5-82: Critical Facilities Exposed to the Thunderstorm Winds - Town of East Spencer

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	25 Year	47	$821,312
Commercial Facilities	50 Year	47	$821,312
Commercial Facilities	100 Year	47	$1,679,187
Commercial Facilities	300 Year	47	$4,883,504
Commercial Facilities	700 Year	47	$7,057,223
Critical Manufacturing	25 Year	8	$64,470
Critical Manufacturing	50 Year	8	$64,470
Critical Manufacturing	100 Year	8	$130,768
Critical Manufacturing	300 Year	8	$410,654
Critical Manufacturing	700 Year	8	$638,104
Government Facilities	25 Year	8	$103,369
Government Facilities	50 Year	8	$103,369
Government Facilities	100 Year	8	$216,481
Government Facilities	300 Year	8	$636,341
Government Facilities	700 Year	8	$915,726
Healthcare and Public Health	25 Year	1	$56

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	50 Year	1	$56
Healthcare and Public Health	100 Year	1	$92
Healthcare and Public Health	300 Year	1	$303
Healthcare and Public Health	700 Year	1	$560
Transportation Systems	25 Year	5	$1,079
Transportation Systems	50 Year	5	$1,079
Transportation Systems	100 Year	5	$2,134
Transportation Systems	300 Year	5	$7,898
Transportation Systems	700 Year	5	$14,169
All Categories	**25 Year**	**69**	**$990,286**
All Categories	**50 Year**	**69**	**$990,286**
All Categories	**100 Year**	**69**	**$2,028,662**
All Categories	**300 Year**	**69**	**$5,938,700**
All Categories	**700 Year**	**69**	**$8,625,782**

Source: GIS Analysis

Table 5-83: Critical Facilities Exposed to the Thunderstorm Winds - Town of Faith

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	25 Year	48	$39,257
Commercial Facilities	50 Year	48	$87,533
Commercial Facilities	100 Year	48	$174,036
Commercial Facilities	300 Year	48	$499,645
Commercial Facilities	700 Year	48	$731,724
Critical Manufacturing	25 Year	29	$7,034
Critical Manufacturing	50 Year	29	$14,796
Critical Manufacturing	100 Year	29	$29,028

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	300 Year	29	$83,704
Critical Manufacturing	700 Year	29	$124,921
Government Facilities	25 Year	5	$1,302
Government Facilities	50 Year	5	$1,938
Government Facilities	100 Year	5	$3,106
Government Facilities	300 Year	5	$10,106
Government Facilities	700 Year	5	$18,624
Healthcare and Public Health	25 Year	1	$6,611
Healthcare and Public Health	50 Year	1	$14,513
Healthcare and Public Health	100 Year	1	$26,146
Healthcare and Public Health	300 Year	1	$61,658
Healthcare and Public Health	700 Year	1	$83,053
Transportation Systems	25 Year	6	$10,380
Transportation Systems	50 Year	6	$10,884
Transportation Systems	100 Year	6	$23,099
Transportation Systems	300 Year	6	$75,314
Transportation Systems	700 Year	6	$117,240
All Categories	**25 Year**	**89**	**$64,584**
All Categories	**50 Year**	**89**	**$129,664**
All Categories	**100 Year**	**89**	**$255,415**
All Categories	**300 Year**	**89**	**$730,427**
All Categories	**700 Year**	**89**	**$1,075,562**

Source: GIS Analysis

Table 5-84: Critical Facilities Exposed to the Thunderstorm Winds - Town of Granite Quarry

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	4	$2,348
Banking and Finance	50 Year	4	$2,348
Banking and Finance	100 Year	4	$4,791
Banking and Finance	300 Year	4	$16,377
Banking and Finance	700 Year	4	$28,291
Commercial Facilities	25 Year	72	$26,055
Commercial Facilities	50 Year	72	$26,078
Commercial Facilities	100 Year	72	$52,331
Commercial Facilities	300 Year	72	$169,649
Commercial Facilities	700 Year	72	$275,535
Critical Manufacturing	25 Year	39	$17,795
Critical Manufacturing	50 Year	39	$19,789
Critical Manufacturing	100 Year	39	$35,825
Critical Manufacturing	300 Year	39	$109,472
Critical Manufacturing	700 Year	39	$177,517
Government Facilities	25 Year	15	$366,934
Government Facilities	50 Year	15	$366,934
Government Facilities	100 Year	15	$664,870
Government Facilities	300 Year	15	$1,526,080
Government Facilities	700 Year	15	$2,017,614
Healthcare and Public Health	25 Year	3	$200
Healthcare and Public Health	50 Year	3	$200
Healthcare and Public Health	100 Year	3	$359
Healthcare and Public Health	300 Year	3	$1,489

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	700 Year	3	$3,072
Transportation Systems	25 Year	41	$152,395
Transportation Systems	50 Year	41	$159,992
Transportation Systems	100 Year	41	$319,940
Transportation Systems	300 Year	41	$905,094
Transportation Systems	700 Year	41	$1,306,083
All Categories	**25 Year**	**174**	**$565,727**
All Categories	**50 Year**	**174**	**$575,341**
All Categories	**100 Year**	**174**	**$1,078,116**
All Categories	**300 Year**	**174**	**$2,728,161**
All Categories	**700 Year**	**174**	**$3,808,112**

Source: GIS Analysis

Table 5-85: Critical Facilities Exposed to the Thunderstorm Winds - Town of Landis

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	2	$252
Banking and Finance	50 Year	2	$438
Banking and Finance	100 Year	2	$791
Banking and Finance	300 Year	2	$2,951
Banking and Finance	700 Year	2	$5,618
Commercial Facilities	25 Year	80	$30,538
Commercial Facilities	50 Year	80	$68,388
Commercial Facilities	100 Year	80	$144,180
Commercial Facilities	300 Year	80	$519,782
Commercial Facilities	700 Year	80	$896,991
Critical Manufacturing	25 Year	32	$23,668

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	50 Year	32	$48,571
Critical Manufacturing	100 Year	32	$93,569
Critical Manufacturing	300 Year	32	$311,835
Critical Manufacturing	700 Year	32	$541,601
Government Facilities	25 Year	13	$21,911
Government Facilities	50 Year	13	$44,573
Government Facilities	100 Year	13	$89,038
Government Facilities	300 Year	13	$317,281
Government Facilities	700 Year	13	$573,369
Healthcare and Public Health	25 Year	3	$503
Healthcare and Public Health	50 Year	3	$1,006
Healthcare and Public Health	100 Year	3	$2,040
Healthcare and Public Health	300 Year	3	$8,271
Healthcare and Public Health	700 Year	3	$15,162
Transportation Systems	25 Year	21	$12,890
Transportation Systems	50 Year	21	$32,182
Transportation Systems	100 Year	21	$70,981
Transportation Systems	300 Year	21	$275,458
Transportation Systems	700 Year	21	$495,521
All Categories	**25 Year**	**151**	**$89,762**
All Categories	**50 Year**	**151**	**$195,158**
All Categories	**100 Year**	**151**	**$400,599**
All Categories	**300 Year**	**151**	**$1,435,578**
All Categories	**700 Year**	**151**	**$2,528,262**

Source: GIS Analysis

Table 5-86: Critical Facilities Exposed to the Thunderstorm Winds - Town of Rockwell

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	2	$342
Banking and Finance	50 Year	2	$342
Banking and Finance	100 Year	2	$642
Banking and Finance	300 Year	2	$2,773
Banking and Finance	700 Year	2	$5,722
Commercial Facilities	25 Year	100	$127,848
Commercial Facilities	50 Year	100	$136,735
Commercial Facilities	100 Year	100	$244,400
Commercial Facilities	300 Year	100	$694,859
Commercial Facilities	700 Year	100	$1,074,307
Critical Manufacturing	25 Year	46	$376,190
Critical Manufacturing	50 Year	46	$385,348
Critical Manufacturing	100 Year	46	$714,280
Critical Manufacturing	300 Year	46	$1,823,860
Critical Manufacturing	700 Year	46	$2,521,325
Government Facilities	25 Year	12	$3,547
Government Facilities	50 Year	12	$3,547
Government Facilities	100 Year	12	$7,241
Government Facilities	300 Year	12	$41,748
Government Facilities	700 Year	12	$98,213
Healthcare and Public Health	25 Year	6	$3,000
Healthcare and Public Health	50 Year	6	$3,000
Healthcare and Public Health	100 Year	6	$6,405
Healthcare and Public Health	300 Year	6	$26,959

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	700 Year	6	$50,586
Transportation Systems	25 Year	21	$30,676
Transportation Systems	50 Year	21	$30,740
Transportation Systems	100 Year	21	$62,363
Transportation Systems	300 Year	21	$193,766
Transportation Systems	700 Year	21	$303,533
All Categories	**25 Year**	**187**	**$541,603**
All Categories	**50 Year**	**187**	**$559,712**
All Categories	**100 Year**	**187**	**$1,035,331**
All Categories	**300 Year**	**187**	**$2,783,965**
All Categories	**700 Year**	**187**	**$4,053,686**

Source: GIS Analysis

Table 5-87: Critical Facilities Exposed to the Thunderstorm Winds - Town of Spencer

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	25 Year	95	$226,064
Commercial Facilities	50 Year	95	$226,064
Commercial Facilities	100 Year	95	$460,828
Commercial Facilities	300 Year	95	$1,447,326
Commercial Facilities	700 Year	95	$2,214,125
Critical Manufacturing	25 Year	23	$24,009
Critical Manufacturing	50 Year	23	$24,009
Critical Manufacturing	100 Year	23	$48,274
Critical Manufacturing	300 Year	23	$155,446
Critical Manufacturing	700 Year	23	$257,002
Government Facilities	25 Year	12	$36,141

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	50 Year	12	$36,141
Government Facilities	100 Year	12	$77,171
Government Facilities	300 Year	12	$305,916
Government Facilities	700 Year	12	$544,866
Healthcare and Public Health	25 Year	7	$2,846
Healthcare and Public Health	50 Year	7	$2,846
Healthcare and Public Health	100 Year	7	$6,336
Healthcare and Public Health	300 Year	7	$28,494
Healthcare and Public Health	700 Year	7	$51,850
Transportation Systems	25 Year	33	$62,572
Transportation Systems	50 Year	33	$62,572
Transportation Systems	100 Year	33	$128,535
Transportation Systems	300 Year	33	$398,965
Transportation Systems	700 Year	33	$615,850
All Categories	**25 Year**	**170**	**$351,632**
All Categories	**50 Year**	**170**	**$351,632**
All Categories	**100 Year**	**170**	**$721,144**
All Categories	**300 Year**	**170**	**$2,336,147**
All Categories	**700 Year**	**170**	**$3,683,693**

Source: GIS Analysis

The following table provides counts and estimated damages for CIKR buildings across all jurisdictions, by sector, in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event.

Table 5-88: Critical Facilities Exposed to the Thunderstorm Winds (by Sector)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	25 Year	5,531	$7,019,919
Banking and Finance	50 Year	5,531	$13,815,896
Banking and Finance	100 Year	5,531	$24,865,387
Banking and Finance	300 Year	5,531	$63,951,794
Banking and Finance	700 Year	5,531	$101,207,292
Chemical	25 Year	64	$533,947
Chemical	50 Year	64	$1,053,034
Chemical	100 Year	64	$1,980,725
Chemical	300 Year	64	$6,416,265
Chemical	700 Year	64	$10,770,715
Commercial Facilities	25 Year	196,888	$180,471,048
Commercial Facilities	50 Year	196,888	$360,198,003
Commercial Facilities	100 Year	196,889	$639,073,405
Commercial Facilities	300 Year	196,889	$1,665,306,517
Commercial Facilities	700 Year	196,889	$2,542,996,041
Communications	25 Year	227	$713,781
Communications	50 Year	227	$1,429,585
Communications	100 Year	227	$2,346,804
Communications	300 Year	227	$6,123,880
Communications	700 Year	227	$9,415,550
Critical Manufacturing	25 Year	61,887	$79,108,018
Critical Manufacturing	50 Year	61,887	$147,004,147
Critical Manufacturing	100 Year	61,887	$256,235,164
Critical Manufacturing	300 Year	61,887	$639,002,705

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	700 Year	61,887	$980,123,026
Defense Industrial Base	25 Year	77	$1,223,311
Defense Industrial Base	50 Year	77	$3,225,488
Defense Industrial Base	100 Year	77	$5,178,909
Defense Industrial Base	300 Year	77	$13,924,255
Defense Industrial Base	700 Year	77	$19,487,130
Emergency Services	25 Year	2,557	$4,251,418
Emergency Services	50 Year	2,557	$8,621,597
Emergency Services	100 Year	2,557	$15,775,125
Emergency Services	300 Year	2,557	$42,141,791
Emergency Services	700 Year	2,557	$65,207,964
Energy	25 Year	1,777	$9,223,961
Energy	50 Year	1,777	$17,511,124
Energy	100 Year	1,777	$33,142,920
Energy	300 Year	1,777	$131,486,083
Energy	700 Year	1,777	$265,496,050
Food and Agriculture	25 Year	152,109	$6,430,974
Food and Agriculture	50 Year	152,109	$14,378,603
Food and Agriculture	100 Year	152,109	$28,908,915
Food and Agriculture	300 Year	152,109	$89,496,319
Food and Agriculture	700 Year	152,109	$157,272,389
Government Facilities	25 Year	38,707	$72,586,012
Government Facilities	50 Year	38,707	$140,848,333
Government Facilities	100 Year	38,707	$254,161,391
Government Facilities	300 Year	38,707	$632,576,811

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	700 Year	38,707	$981,802,595
Healthcare and Public Health	25 Year	13,594	$20,291,639
Healthcare and Public Health	50 Year	13,594	$40,720,551
Healthcare and Public Health	100 Year	13,594	$71,133,449
Healthcare and Public Health	300 Year	13,594	$196,570,079
Healthcare and Public Health	700 Year	13,594	$316,376,463
Information Technology	25 Year	3	$8,734
Information Technology	50 Year	3	$18,467
Information Technology	100 Year	3	$34,171
Information Technology	300 Year	3	$57,578
Information Technology	700 Year	3	$119,296
National Monuments and Icons	25 Year	2	$860
National Monuments and Icons	50 Year	2	$1,762
National Monuments and Icons	100 Year	2	$2,073
National Monuments and Icons	300 Year	2	$8,829
National Monuments and Icons	700 Year	2	$22,664
Nuclear Reactors, Materials and Waste	25 Year	65	$528,559
Nuclear Reactors, Materials and Waste	50 Year	65	$828,864
Nuclear Reactors, Materials and Waste	100 Year	65	$1,213,238
Nuclear Reactors, Materials and Waste	300 Year	65	$2,187,916
Nuclear Reactors, Materials and Waste	700 Year	65	$3,326,820
Other	25 Year	12	$20,871
Other	50 Year	12	$39,049
Other	100 Year	12	$73,224

Sector	Event	Number of Buildings At Risk	Estimated Damages
Other	300 Year	12	$193,921
Other	700 Year	12	$240,696
Postal and Shipping	25 Year	246	$61,833
Postal and Shipping	50 Year	246	$127,087
Postal and Shipping	100 Year	246	$242,758
Postal and Shipping	300 Year	246	$793,380
Postal and Shipping	700 Year	246	$1,434,221
Transportation Systems	25 Year	36,772	$43,251,962
Transportation Systems	50 Year	36,772	$86,807,382
Transportation Systems	100 Year	36,772	$158,249,491
Transportation Systems	300 Year	36,772	$411,991,147
Transportation Systems	700 Year	36,772	$626,034,265
Water	25 Year	1,359	$6,195,087
Water	50 Year	1,359	$11,359,156
Water	100 Year	1,359	$19,783,664
Water	300 Year	1,359	$75,282,946
Water	700 Year	1,359	$169,771,579
All Categories	**25 Year**	**511,877**	**$431,921,934**
All Categories	**50 Year**	**511,877**	**$847,988,128**
All Categories	**100 Year**	**511,878**	**$1,512,400,813**
All Categories	**300 Year**	**511,878**	**$3,977,512,216**
All Categories	**700 Year**	**511,878**	**$6,251,104,756**

Source: GIS Analysis

The following tables provide counts and estimated damages for High Potential Loss Properties by jurisdiction in the plan. Because there is a large number of categories and events, the table is sorted by category and then by event. Totals across all categories are shown at the bottom of each table.

Table 5-89: High Potential Loss Properties Exposed to the Thunderstorm Winds - City of Statesville

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	95	$234,199
Commercial	50 Year	95	$427,437
Commercial	100 Year	95	$761,613
Commercial	300 Year	95	$2,198,862
Commercial	700 Year	95	$2,770,600
Government	25 Year	29	$22,640
Government	50 Year	29	$41,931
Government	100 Year	29	$80,397
Government	300 Year	29	$301,769
Government	700 Year	29	$384,456
Industrial	25 Year	53	$88,194
Industrial	50 Year	53	$157,321
Industrial	100 Year	53	$291,918
Industrial	300 Year	53	$1,050,393
Industrial	700 Year	53	$1,597,700
Religious	25 Year	19	$12,129
Religious	50 Year	19	$23,070
Religious	100 Year	19	$45,533
Religious	300 Year	19	$183,954
Religious	700 Year	19	$223,675
Residential	25 Year	11	$25,458
Residential	50 Year	11	$52,859
Residential	100 Year	11	$96,476
Residential	300 Year	11	$244,992

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	700 Year	11	$335,390
Utilities	25 Year	5	$130,521
Utilities	50 Year	5	$203,409
Utilities	100 Year	5	$349,602
Utilities	300 Year	5	$1,501,422
Utilities	700 Year	5	$3,194,432
All Categories	**25 Year**	**212**	**$513,141**
All Categories	**50 Year**	**212**	**$906,027**
All Categories	**100 Year**	**212**	**$1,625,539**
All Categories	**300 Year**	**212**	**$5,481,392**
All Categories	**700 Year**	**212**	**$8,506,253**

Source: GIS Analysis

Table 5-90: High Potential Loss Properties Exposed to the Thunderstorm Winds - Iredell County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	34	$69,418
Commercial	50 Year	34	$157,556
Commercial	100 Year	34	$324,255
Commercial	300 Year	34	$1,054,776
Commercial	700 Year	34	$1,367,267
Government	25 Year	27	$29,624
Government	50 Year	27	$49,512
Government	100 Year	27	$90,067
Government	300 Year	27	$318,880
Government	700 Year	27	$518,966
Industrial	25 Year	24	$60,949

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	50 Year	24	$116,301
Industrial	100 Year	24	$228,555
Industrial	300 Year	24	$828,436
Industrial	700 Year	24	$1,169,452
Religious	25 Year	24	$532,514
Religious	50 Year	24	$1,137,570
Religious	100 Year	24	$2,048,355
Religious	300 Year	24	$4,645,765
Religious	700 Year	24	$6,006,249
Residential	25 Year	235	$610,659
Residential	50 Year	235	$1,057,732
Residential	100 Year	235	$1,730,344
Residential	300 Year	235	$5,169,901
Residential	700 Year	235	$8,518,353
Utilities	25 Year	2	$107,037
Utilities	50 Year	2	$207,832
Utilities	100 Year	2	$494,012
Utilities	300 Year	2	$3,016,864
Utilities	700 Year	2	$3,016,864
All Categories	**25 Year**	**346**	**$1,410,201**
All Categories	**50 Year**	**346**	**$2,726,503**
All Categories	**100 Year**	**346**	**$4,915,588**
All Categories	**300 Year**	**346**	**$15,034,622**
All Categories	**700 Year**	**346**	**$20,597,151**

Source: GIS Analysis

Table 5-91: High Potential Loss Properties Exposed to the Thunderstorm Winds - Town of Mooresville

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	174	$550,928
Commercial	50 Year	174	$1,071,663
Commercial	100 Year	174	$2,003,984
Commercial	300 Year	174	$5,930,922
Commercial	700 Year	174	$9,437,477
Government	25 Year	17	$266,053
Government	50 Year	17	$526,535
Government	100 Year	17	$944,689
Government	300 Year	17	$2,327,759
Government	700 Year	17	$3,257,993
Industrial	25 Year	32	$38,310
Industrial	50 Year	32	$59,746
Industrial	100 Year	32	$108,078
Industrial	300 Year	32	$433,709
Industrial	700 Year	32	$869,206
Religious	25 Year	20	$12,853
Religious	50 Year	20	$24,181
Religious	100 Year	20	$46,044
Religious	300 Year	20	$151,329
Religious	700 Year	20	$255,932
Residential	25 Year	13	$16,784
Residential	50 Year	13	$38,058
Residential	100 Year	13	$75,773
Residential	300 Year	13	$239,248

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	700 Year	13	$403,385
Utilities	25 Year	3	$176,776
Utilities	50 Year	3	$262,276
Utilities	100 Year	3	$432,142
Utilities	300 Year	3	$1,607,694
Utilities	700 Year	3	$3,352,461
All Categories	**25 Year**	**259**	**$1,061,704**
All Categories	**50 Year**	**259**	**$1,982,459**
All Categories	**100 Year**	**259**	**$3,610,710**
All Categories	**300 Year**	**259**	**$10,690,661**
All Categories	**700 Year**	**259**	**$17,576,454**

Source: GIS Analysis

Table 5-92: High Potential Loss Properties Exposed to the Thunderstorm Winds - Town of Troutman

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	9	$8,950
Commercial	50 Year	9	$13,937
Commercial	100 Year	9	$25,295
Commercial	300 Year	9	$111,208
Commercial	700 Year	9	$229,861
Government	25 Year	3	$1,121
Government	50 Year	3	$2,111
Government	100 Year	3	$5,649
Government	300 Year	3	$24,545
Government	700 Year	3	$39,744
Industrial	25 Year	5	$6,589

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	50 Year	5	$10,038
Industrial	100 Year	5	$16,957
Industrial	300 Year	5	$55,768
Industrial	700 Year	5	$100,313
Religious	25 Year	3	$1,505
Religious	50 Year	3	$2,369
Religious	100 Year	3	$4,209
Religious	300 Year	3	$17,387
Religious	700 Year	3	$34,760
Residential	25 Year	3	$23,933
Residential	50 Year	3	$40,356
Residential	100 Year	3	$62,542
Residential	300 Year	3	$152,444
Residential	700 Year	3	$256,549
Utilities	25 Year	1	$95,917
Utilities	50 Year	1	$137,116
Utilities	100 Year	1	$225,245
Utilities	300 Year	1	$725,623
Utilities	700 Year	1	$1,359,536
All Categories	**25 Year**	**24**	**$138,015**
All Categories	**50 Year**	**24**	**$205,927**
All Categories	**100 Year**	**24**	**$339,897**
All Categories	**300 Year**	**24**	**$1,086,975**
All Categories	**700 Year**	**24**	**$2,020,763**

Source: GIS Analysis

Table 5-93: High Potential Loss Properties Exposed to the Thunderstorm Winds - City of Salisbury

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	111	$536,969
Commercial	50 Year	111	$1,136,212
Commercial	100 Year	111	$2,347,749
Commercial	300 Year	111	$7,848,380
Commercial	700 Year	111	$12,731,462
Government	25 Year	35	$96,543
Government	50 Year	35	$159,495
Government	100 Year	35	$326,299
Government	300 Year	35	$1,048,023
Government	700 Year	35	$1,665,373
Industrial	25 Year	32	$51,173
Industrial	50 Year	32	$97,031
Industrial	100 Year	32	$188,156
Industrial	300 Year	32	$635,049
Industrial	700 Year	32	$1,101,171
Religious	25 Year	14	$25,428
Religious	50 Year	14	$52,855
Religious	100 Year	14	$108,101
Religious	300 Year	14	$378,267
Religious	700 Year	14	$656,193
Residential	25 Year	77	$88,803
Residential	50 Year	77	$176,382
Residential	100 Year	77	$325,961
Residential	300 Year	77	$946,120

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	700 Year	77	$1,545,496
Utilities	25 Year	1	$7,132
Utilities	50 Year	1	$10,929
Utilities	100 Year	1	$18,446
Utilities	300 Year	1	$78,343
Utilities	700 Year	1	$172,579
All Categories	**25 Year**	**270**	**$806,048**
All Categories	**50 Year**	**270**	**$1,632,904**
All Categories	**100 Year**	**270**	**$3,314,712**
All Categories	**300 Year**	**270**	**$10,934,182**
All Categories	**700 Year**	**270**	**$17,872,274**

Source: GIS Analysis

Table 5-94: High Potential Loss Properties Exposed to the Thunderstorm Winds - Rowan County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Agricultural	25 Year	1	$36
Agricultural	50 Year	1	$111
Agricultural	100 Year	1	$303
Agricultural	300 Year	1	$1,620
Agricultural	700 Year	1	$3,140
Commercial	25 Year	33	$116,683
Commercial	50 Year	33	$249,377
Commercial	100 Year	33	$494,624
Commercial	300 Year	33	$1,786,091
Commercial	700 Year	33	$3,039,088
Government	25 Year	20	$184,152

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	50 Year	20	$384,956
Government	100 Year	20	$708,440
Government	300 Year	20	$2,074,513
Government	700 Year	20	$3,294,805
Industrial	25 Year	18	$467,187
Industrial	50 Year	18	$1,043,292
Industrial	100 Year	18	$2,095,066
Industrial	300 Year	18	$5,916,940
Industrial	700 Year	18	$8,454,457
Religious	25 Year	11	$25,147
Religious	50 Year	11	$51,986
Religious	100 Year	11	$101,583
Religious	300 Year	11	$323,236
Religious	700 Year	11	$512,692
Residential	25 Year	16	$33,823
Residential	50 Year	16	$64,728
Residential	100 Year	16	$123,068
Residential	300 Year	16	$425,723
Residential	700 Year	16	$771,491
Utilities	25 Year	2	$2,976
Utilities	50 Year	2	$4,465
Utilities	100 Year	2	$7,361
Utilities	300 Year	2	$28,464
Utilities	700 Year	2	$60,863
All Categories	**25 Year**	**101**	**$830,004**

Category	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**50 Year**	**101**	**$1,798,915**
All Categories	**100 Year**	**101**	**$3,530,445**
All Categories	**300 Year**	**101**	**$10,556,587**
All Categories	**700 Year**	**101**	**$16,136,536**

Source: GIS Analysis

Table 5-95: High Potential Loss Properties Exposed to the Thunderstorm Winds - Town of China Grove

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	5	$6,647
Commercial	50 Year	5	$12,696
Commercial	100 Year	5	$25,024
Commercial	300 Year	5	$101,335
Commercial	700 Year	5	$195,646
Government	25 Year	2	$7,818
Government	50 Year	2	$13,209
Government	100 Year	2	$27,250
Government	300 Year	2	$129,931
Government	700 Year	2	$272,971
Industrial	25 Year	3	$2,091
Industrial	50 Year	3	$4,000
Industrial	100 Year	3	$8,289
Industrial	300 Year	3	$37,388
Industrial	700 Year	3	$73,811
Religious	25 Year	1	$268
Religious	50 Year	1	$405
Religious	100 Year	1	$668

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	300 Year	1	$2,654
Religious	700 Year	1	$5,769
Residential	25 Year	3	$3,583
Residential	50 Year	3	$6,354
Residential	100 Year	3	$10,506
Residential	300 Year	3	$28,257
Residential	700 Year	3	$47,056
All Categories	**25 Year**	**14**	**$20,407**
All Categories	**50 Year**	**14**	**$36,664**
All Categories	**100 Year**	**14**	**$71,737**
All Categories	**300 Year**	**14**	**$299,565**
All Categories	**700 Year**	**14**	**$595,253**

Source: GIS Analysis

Table 5-96: High Potential Loss Properties Exposed to the Thunderstorm Winds - Town of Cleveland

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	2	$3,395
Commercial	50 Year	2	$7,706
Commercial	100 Year	2	$16,453
Commercial	300 Year	2	$66,144
Commercial	700 Year	2	$120,650
Government	25 Year	1	$602
Government	50 Year	1	$933
Government	100 Year	1	$1,578
Government	300 Year	1	$6,708
Government	700 Year	1	$14,767

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	25 Year	6	$12,483
Industrial	50 Year	6	$28,897
Industrial	100 Year	6	$63,474
Industrial	300 Year	6	$266,496
Industrial	700 Year	6	$508,233
Religious	25 Year	1	$41,261
Religious	50 Year	1	$93,462
Religious	100 Year	1	$192,897
Religious	300 Year	1	$572,401
Religious	700 Year	1	$831,719
Residential	25 Year	2	$31,330
Residential	50 Year	2	$82,661
Residential	100 Year	2	$184,080
Residential	300 Year	2	$688,010
Residential	700 Year	2	$1,189,084
All Categories	**25 Year**	**12**	**$89,071**
All Categories	**50 Year**	**12**	**$213,659**
All Categories	**100 Year**	**12**	**$458,482**
All Categories	**300 Year**	**12**	**$1,599,759**
All Categories	**700 Year**	**12**	**$2,664,453**

Source: GIS Analysis

Table 5-97: High Potential Loss Properties Exposed to the Thunderstorm Winds - Town of East Spencer

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	1	$801,015
Commercial	50 Year	1	$801,015

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	100 Year	1	$1,639,484
Commercial	300 Year	1	$4,724,843
Commercial	700 Year	1	$6,758,783
Government	25 Year	2	$101,638
Government	50 Year	2	$101,638
Government	100 Year	2	$212,846
Government	300 Year	2	$622,459
Government	700 Year	2	$890,719
Industrial	25 Year	1	$5,754
Industrial	50 Year	1	$5,754
Industrial	100 Year	1	$11,374
Industrial	300 Year	1	$47,678
Industrial	700 Year	1	$89,030
Residential	25 Year	1	$275
Residential	50 Year	1	$275
Residential	100 Year	1	$757
Residential	300 Year	1	$4,091
Residential	700 Year	1	$8,023
All Categories	**25 Year**	**5**	**$908,682**
All Categories	**50 Year**	**5**	**$908,682**
All Categories	**100 Year**	**5**	**$1,864,461**
All Categories	**300 Year**	**5**	**$5,399,071**
All Categories	**700 Year**	**5**	**$7,746,555**

Source: GIS Analysis

Table 5-98: High Potential Loss Properties Exposed to the Thunderstorm Winds - Town of Faith

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	25 Year	2	$1,046
Religious	50 Year	2	$2,795
Religious	100 Year	2	$6,579
Religious	300 Year	2	$26,733
Religious	700 Year	2	$47,474
Residential	25 Year	1	$3,407
Residential	50 Year	1	$7,249
Residential	100 Year	1	$15,211
Residential	300 Year	1	$57,393
Residential	700 Year	1	$98,393
All Categories	**25 Year**	**3**	**$4,453**
All Categories	**50 Year**	**3**	**$10,044**
All Categories	**100 Year**	**3**	**$21,790**
All Categories	**300 Year**	**3**	**$84,126**
All Categories	**700 Year**	**3**	**$145,867**

Source: GIS Analysis

Table 5-99: High Potential Loss Properties Exposed to the Thunderstorm Winds - Town of Granite Quarry

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	1	$960
Commercial	50 Year	1	$960
Commercial	100 Year	1	$1,895
Commercial	300 Year	1	$7,909
Commercial	700 Year	1	$14,790
Government	25 Year	2	$11,794

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	50 Year	2	$11,794
Government	100 Year	2	$25,971
Government	300 Year	2	$97,402
Government	700 Year	2	$169,265
Industrial	25 Year	1	$6,234
Industrial	50 Year	1	$8,158
Industrial	100 Year	1	$12,167
Industrial	300 Year	1	$30,819
Industrial	700 Year	1	$49,367
All Categories	**25 Year**	**4**	**$18,988**
All Categories	**50 Year**	**4**	**$20,912**
All Categories	**100 Year**	**4**	**$40,033**
All Categories	**300 Year**	**4**	**$136,130**
All Categories	**700 Year**	**4**	**$233,422**

Source: GIS Analysis

Table 5-100: High Potential Loss Properties Exposed to the Thunderstorm Winds - Town of Landis

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	1	$9,534
Commercial	50 Year	1	$23,865
Commercial	100 Year	1	$52,583
Commercial	300 Year	1	$206,236
Commercial	700 Year	1	$376,385
Government	25 Year	3	$19,072
Government	50 Year	3	$38,406
Government	100 Year	3	$76,314

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	300 Year	3	$271,086
Government	700 Year	3	$491,685
Industrial	25 Year	1	$2,545
Industrial	50 Year	1	$6,721
Industrial	100 Year	1	$14,888
Industrial	300 Year	1	$53,376
Industrial	700 Year	1	$88,826
Religious	25 Year	1	$264
Religious	50 Year	1	$506
Religious	100 Year	1	$985
Religious	300 Year	1	$4,241
Religious	700 Year	1	$8,254
Residential	25 Year	3	$3,005
Residential	50 Year	3	$7,004
Residential	100 Year	3	$13,641
Residential	300 Year	3	$40,078
Residential	700 Year	3	$63,374
All Categories	**25 Year**	**9**	**$34,420**
All Categories	**50 Year**	**9**	**$76,502**
All Categories	**100 Year**	**9**	**$158,411**
All Categories	**300 Year**	**9**	**$575,017**
All Categories	**700 Year**	**9**	**$1,028,524**

Source: GIS Analysis

Table 5-101: High Potential Loss Properties Exposed to the Thunderstorm Winds - Town of Rockwell

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	4	$2,515
Commercial	50 Year	4	$2,515
Commercial	100 Year	4	$4,643
Commercial	300 Year	4	$21,204
Commercial	700 Year	4	$45,092
Government	25 Year	1	$1,649
Government	50 Year	1	$1,649
Government	100 Year	1	$3,523
Government	300 Year	1	$24,284
Government	700 Year	1	$60,792
Industrial	25 Year	2	$2,250
Industrial	50 Year	2	$2,250
Industrial	100 Year	2	$3,484
Industrial	300 Year	2	$10,018
Industrial	700 Year	2	$17,534
Religious	25 Year	1	$2,682
Religious	50 Year	1	$2,682
Religious	100 Year	1	$6,185
Religious	300 Year	1	$25,134
Religious	700 Year	1	$45,041
Residential	25 Year	3	$3,544
Residential	50 Year	3	$3,544
Residential	100 Year	3	$8,452
Residential	300 Year	3	$35,657

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	700 Year	3	$63,967
All Categories	**25 Year**	**11**	**$12,640**
All Categories	**50 Year**	**11**	**$12,640**
All Categories	**100 Year**	**11**	**$26,287**
All Categories	**300 Year**	**11**	**$116,297**
All Categories	**700 Year**	**11**	**$232,426**

Source: GIS Analysis

Table 5-102: High Potential Loss Properties Exposed to the Thunderstorm Winds - Town of Spencer

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	25 Year	11	$174,637
Commercial	50 Year	11	$174,637
Commercial	100 Year	11	$363,637
Commercial	300 Year	11	$1,141,092
Commercial	700 Year	11	$1,719,555
Government	25 Year	4	$27,982
Government	50 Year	4	$27,982
Government	100 Year	4	$60,717
Government	300 Year	4	$254,826
Government	700 Year	4	$465,498
Industrial	25 Year	2	$8,183
Industrial	50 Year	2	$8,183
Industrial	100 Year	2	$18,962
Industrial	300 Year	2	$80,402
Industrial	700 Year	2	$150,044
Religious	25 Year	3	$1,028

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	50 Year	3	$1,028
Religious	100 Year	3	$1,777
Religious	300 Year	3	$6,201
Religious	700 Year	3	$11,229
Residential	25 Year	2	$6,612
Residential	50 Year	2	$6,612
Residential	100 Year	2	$15,706
Residential	300 Year	2	$58,225
Residential	700 Year	2	$96,907
All Categories	**25 Year**	**22**	**$218,442**
All Categories	**50 Year**	**22**	**$218,442**
All Categories	**100 Year**	**22**	**$460,799**
All Categories	**300 Year**	**22**	**$1,540,746**
All Categories	**700 Year**	**22**	**$2,443,233**

Source: GIS Analysis

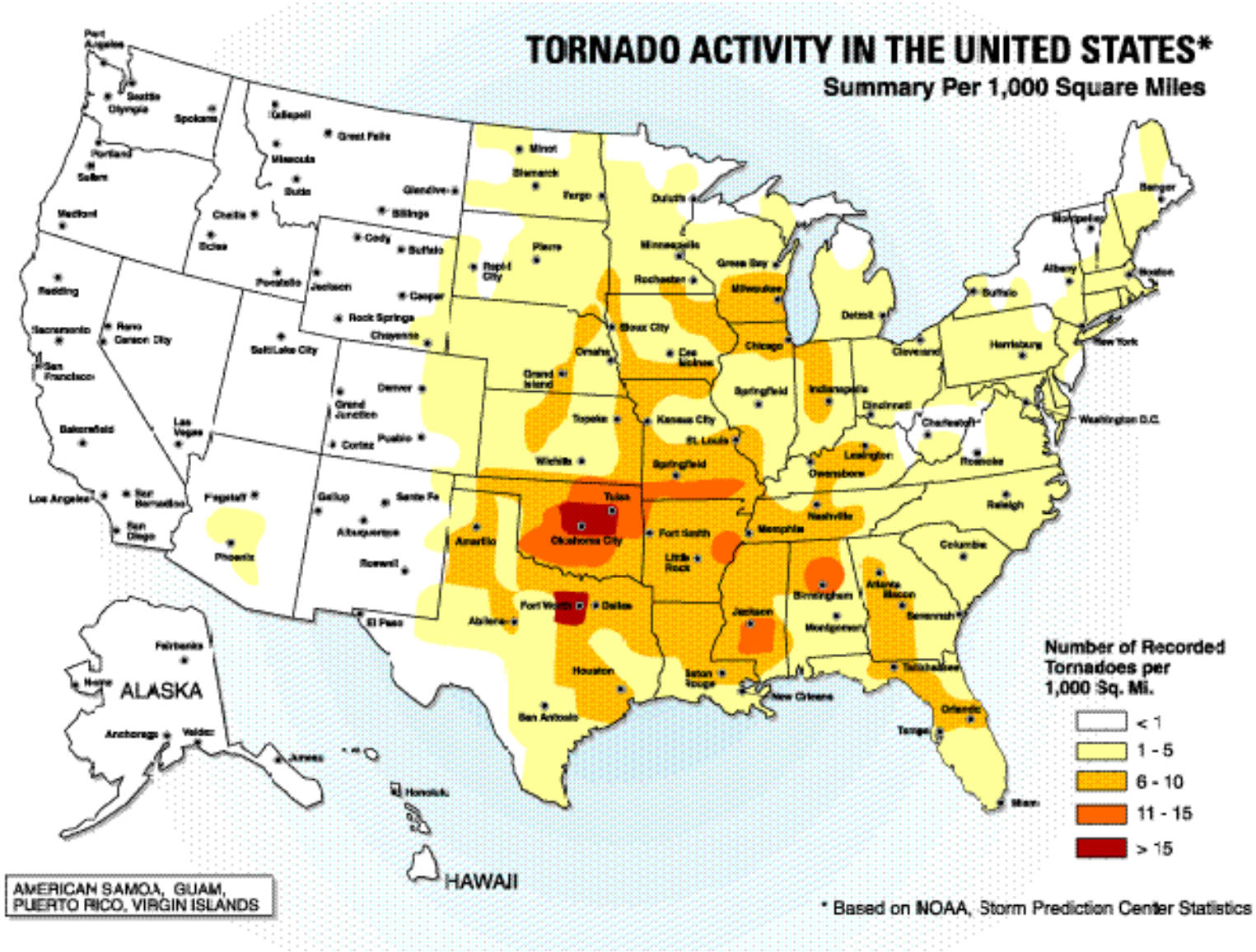
5.10 TORNADO

5.10.1 Background

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

Each year, an average of over 800 tornadoes is reported nationwide, resulting in an average of 80 deaths and 1,500 injuries.[9] According to the NOAA Storm Prediction Center (SPC), the highest concentration of tornadoes in the United States has been in Oklahoma, Texas, Kansas, and Florida respectively. Although the Great Plains region of the Central United States does favor the development of the largest and most dangerous tornadoes (earning the designation of "tornado alley"), Florida experiences the greatest number of tornadoes per square mile of all U.S. states (SPC, 2002). **Figure 5-26** shows tornado activity in the United States based on the number of recorded tornadoes per 1,000 square miles.

[9] NOAA, 2009.



Source: Federal Emergency Management Agency

Figure 5-26: Tornado Activity in the United States

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

The destruction caused by tornadoes ranges from light to inconceivable depending on the intensity, size, and duration of the storm. Typically, tornadoes cause the greatest damage to structures of light construction, including residential dwellings (particularly mobile homes). Tornadic magnitude is reported according to the Fujita and Enhanced Fujita Scales. Tornado magnitudes prior to 2005 were determined using the traditional version of the Fujita Scale (**Table 5-103**). Tornado magnitudes that were determined in 2005 and later were determined using the Enhanced Fujita Scale (**Table 5-104**).

Table 5-103: The Fujita Scale (Effective Prior to 2005)

F-SCALE NUMBER	INTENSITY	WIND SPEED	TYPE OF DAMAGE DONE
F0	GALE TORNADO	40–72 MPH	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages to sign boards.
F1	MODERATE TORNADO	73–112 MPH	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 MPH	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.
F3	SEVERE TORNADO	158–206 MPH	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted.
F4	DEVASTATING TORNADO	207–260 MPH	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown, and large missiles
F5	INCREDIBLE TORNADO	261–318 MPH	Strong frame houses lifted off foundations and carried considerable distances to disintegrate; automobile sized missiles fly through the air in excess of 100 meters; trees debarked; steel re-enforced concrete structures badly damaged.
F6	INCONCEIVABLE TORNADO	319–379 MPH	These winds are very unlikely. The small area of damage they might produce would probably not be recognizable 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 5-104: The Enhanced Fujita Scale (Effective 2005 and Later)

Storm Category	Damage Level	3 Second Gust (mph)	Description of Damages	Photo Example
F0	GALE	65–85	Some damage to chimneys; breaks branches off trees; pushes over shallow-rooted trees; damages to sign boards	
F1	WEAK	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 might be destroyed.	
F2	STRONG	111–135	Considerable damage. Roofs torn off frame houses; mobile homes demolished; boxcars pushed over; large trees snapped or uprooted; light object missiles generated.	
F3	SEVERE	136–165	Roof and some walls torn off well-constructed houses; trains overturned; most trees in forest uprooted.	
F4	DEVASTATING	166–200	Well-constructed houses leveled; structures with weak foundations blown off some distance; cars thrown, and large missiles generated.	
F5	INCREDIBLE	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

5.10.2 Location and Spatial Extent

Tornadoes occur throughout the state of North Carolina, and thus in the Iredell Rowan Region. Tornadoes typically impact a relatively small area, but damage may be extensive. Event locations are completely random, and it is not possible to predict specific areas that are more susceptible to tornado strikes over time. Therefore, it is assumed that the Iredell Rowan Region is uniformly exposed to this hazard. The figures below illustrate the paths of previous tornadoes in the Region.

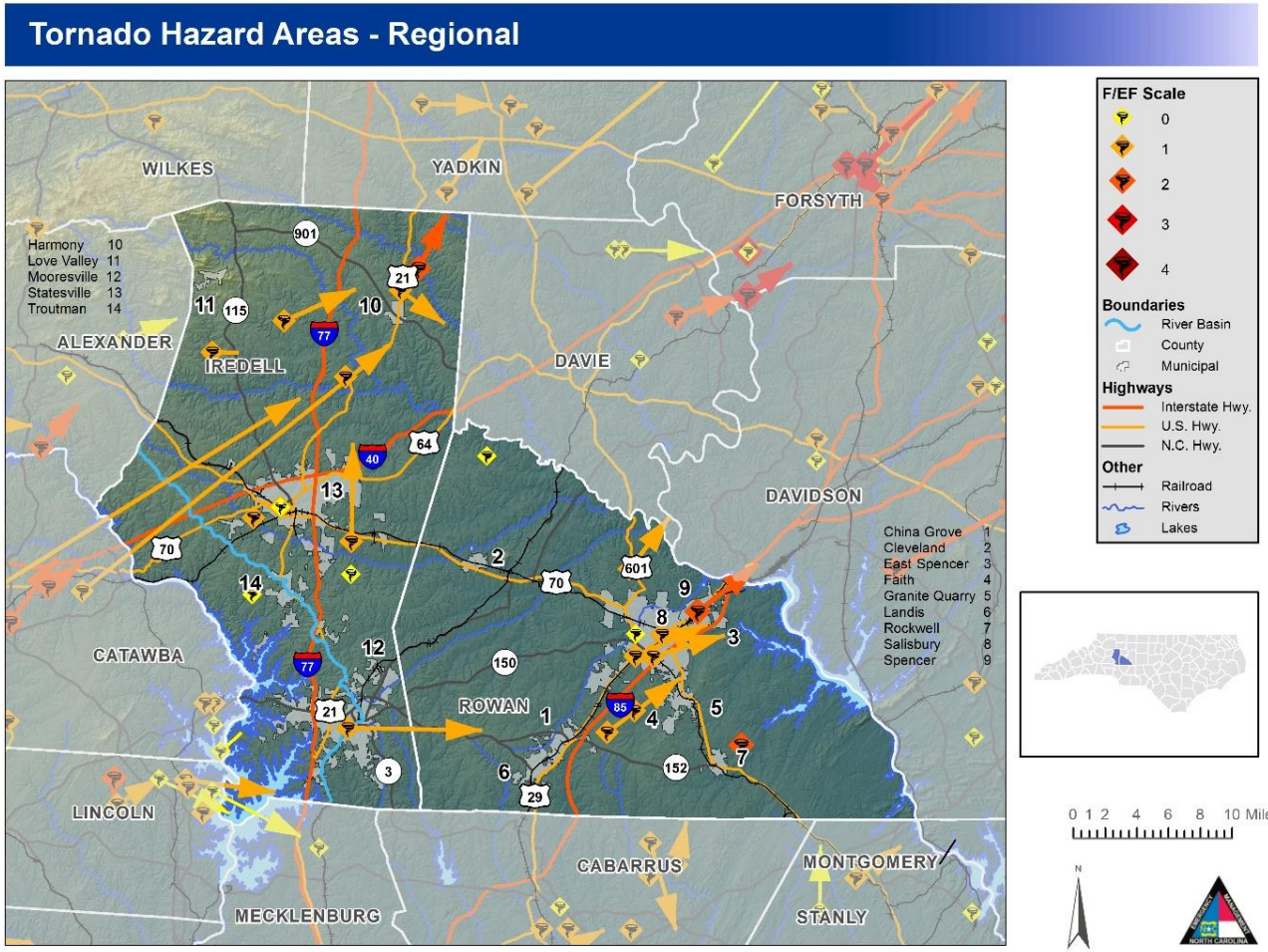


Figure 5-27: Tornado Hazard Areas – Regional

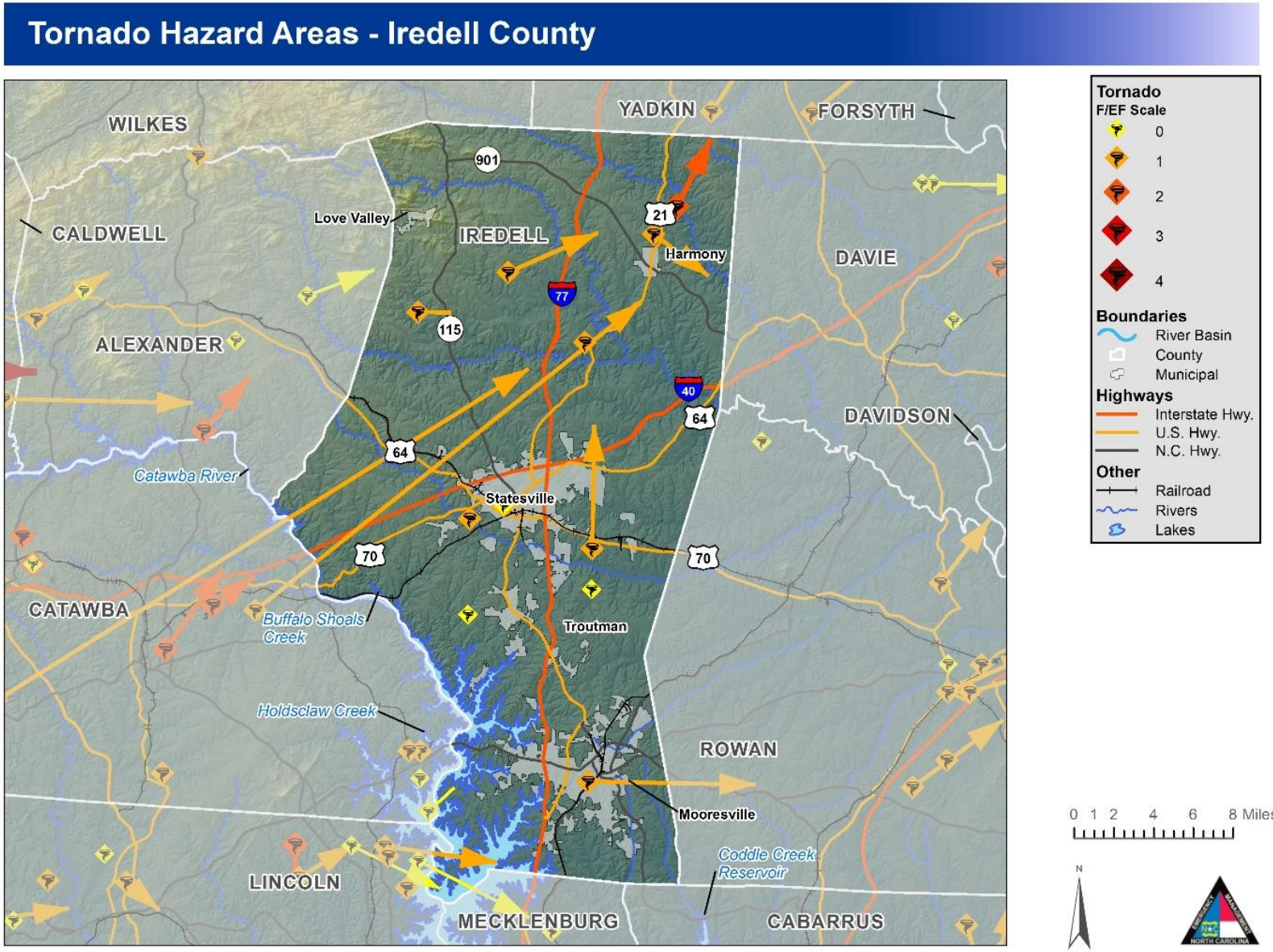


Figure 5-28: Tornado Hazard Areas – Iredell County

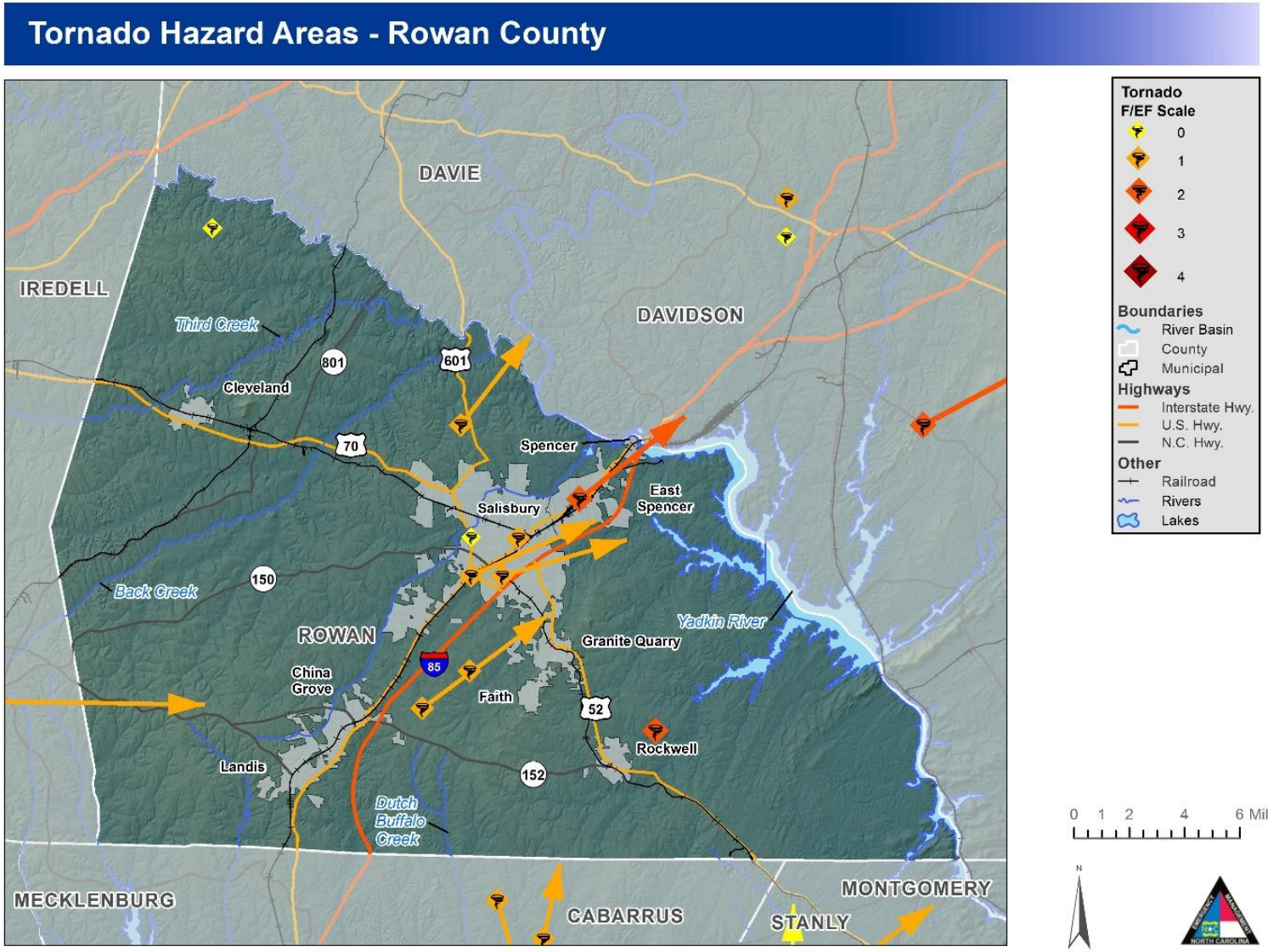


Figure 5-29: Tornado Hazard Areas – Rowan County

5.10.3 Extent

Tornado hazard extent is measured by tornado occurrences in the US provided by FEMA (Figure 5.6) as well as the Fujita/Enhanced Fujita Scale. According to NCDC, on May 24, 2017 Scattered to numerous thunderstorms developed in advance of a cold front across western North Carolina during the afternoon. Multiple severe storms produced isolated tornadoes. NWS storm survey found the path of a second, more significant tornado in Iredell County. This one touched near the intersection of New Salem Rd and Highway 64. The tornado moved northeast, crossing Highway 64 between Crooked Ln and Hunters Ridge Ln. The most significant damage occurred in this location, as a brick home had its roof completely removed and interior walls collapsed. Material from this home along with tree debris acted as projectiles, causing damage to the exterior of adjacent homes. About a dozen homes were damaged in this fashion. The tornado apparently weakened as it continued northeast, but uprooted or snapped dozens of trees before lifting in the vicinity of 5th Creek Rd. This was only the strongest tornado to impact Iredell County since 2005 and was only the second official significant tornado (E/F2 or greater) in the county's history. The following table provides the highest recorded events in the jurisdictions (except Harmony, Love Valley, Troutman, China Grove, Cleveland, East Spencer, Faith, Granite Falls, Landis, Rockwell and Spencer; which haven't experienced tornadoes in their jurisdictions) in the Region below:

Location	Date	Magnitude
City of Statesville	01/29/57	F1
City of Statesville	08/28/88	F1
Iredell County (Unincorporated Area)	07/07/05	F2
Iredell County (Unincorporated Area)	05/24/17	EF2
Town of Mooresville	05/29/96	F1
City of Salisbury	04/27/65	F1
City of Salisbury	01/08/78	F1
City of Salisbury	05/29/96	F1
Rowan County (Unincorporated Area)	01/14/05	F2
Rowan County (Unincorporated Area)	03/28/10	EF2

Location	Date	Magnitude
Town of Spencer	03/28/10	EF1

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, and farms, the wrecking of cars and trucks, and the loss of power distribution systems. Winds as high as 300 mph blow down walls, tear up trees, and throw debris in every direction at high speeds. Indirect losses include workers who cannot report to jobs and commercial entities that most close to repair damages. The rate of onset of tornado events is rapid, giving those in danger minimal time to seek shelter. The current average lead time according to NOAA is 13 minutes. Injury may result from the direct impact of a tornado, or it may occur afterward when people walk among debris and enter damaged buildings. A study of injuries after a tornado in Marion, Illinois, showed that 50 percent of all tornado-related injuries were suffered 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.

5.10.4 Historical Occurrences

The following historical occurrences ranging from 1957 to 2019 have been identified based on the NCDC Storm Events database **Table 5-105**. 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 5-105: Historical Occurrences of Tornado (1957 to 2019)

Location	Date	Magnitude	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
Iredell								
City of Statesville	01/29/57	F1	0	0	$2,500	$287	$0	$0
City of Statesville	08/28/88	F1	0	0	$250,000	$85,233	$0	$0
Iredell County (Unincorporated Area)	01/21/59	F1	0	0	$25,000	$3,076	$0	$0

Location	Date	Magnitude	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
Iredell County (Unincorporated Area)	06/19/75	F1	0	0	$25,000	$5,411	$0	$0
Iredell County (Unincorporated Area)	05/15/76	F0	0	0	$0	$0	$0	$0
Iredell County (Unincorporated Area)	06/24/78	F0	0	3	$250,000	$60,029	$0	$0
Iredell County (Unincorporated Area)	10/05/91	F0	0	0	$2,500	$948	$0	$0
Iredell County (Unincorporated Area)	11/22/92	F1	0	0	$250,000	$98,583	$0	$0
Iredell County (Unincorporated Area)	05/07/98	F1	0	0	$100,000	$47,581	0	$0
Iredell County (Unincorporated Area)	05/07/98	F1	0	0	$1,000,000	$475,815	0	$0
Iredell County (Unincorporated Area)	07/07/05	F2	0	0	$150,000	$91,338	0	$0
Iredell County (Unincorporated Area)	11/15/06	F1	1	1	$110,000	$70,189	$0	$0
Iredell County (Unincorporated Area)	05/24/17	EF0	0	0	$10,000	$9,166	$0	$0
Iredell County (Unincorporated Area)	05/24/17	EF2	0	0	$250,000	$229,161	$0	$0
Town of Mooresville	05/29/96	F1	0	0	$250,000	$111,274	0	$0
Subtotal Iredell	**15 Events**		**1**	**4**	**$2,675,000**	**$1,288,092**	**$0**	**$0**
Rowan								
City of Salisbury	04/27/65	F1	0	0	$250,000	$38,159	$0	$0
City of Salisbury	01/08/78	F1	0	0	$25,000	$5,909	$0	$0

Location	Date	Magnitude	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
City of Salisbury	05/29/96	F1	0	0	$150,000	$66,764	0	$0
Rowan County (Unincorporated Area)	04/05/66	F1	0	0	$2,500	$394	$0	$0
Rowan County (Unincorporated Area)	02/25/79	F1	0	3	$250,000	$61,429	$0	$0
Rowan County (Unincorporated Area)	03/06/83	F0	0	0	$2,500	$706	$0	$0
Rowan County (Unincorporated Area)	05/29/96	F1	0	0	$200,000	$89,019	0	$0
Rowan County (Unincorporated Area)	01/14/05	F2	0	0	$500,000	$299,577	0	$0
Rowan County (Unincorporated Area)	03/28/10	EF2	0	5	$1,250,000	$895,649	$0	$0
Rowan County (Unincorporated Area)	04/16/11	EF1	0	0	0	$0	0	$0
Town of Spencer	03/28/10	EF1	0	0	$500,000	$358,260	0	$0
Subtotal Rowan	**11 Events**		**0**	**8**	**$3,130,000**	**$1,815,866**	**$0**	**$0**
TOTAL PLAN	**26 Events**		**1**	**12**	**$5,805,000**	**$3,103,958**	**$0**	**$0**

Source: National Climatic Data Center (NCDC) Storm Events Database and or potential user entered data.

According to the information provided in the preceding table, 26 recorded instances of tornado have affected the planning area since 1957, causing an estimated $5,805,000 in property damage, $0 in crop damages, 1 death(s), and 12 injury(ies). The highest magnitude tornado on record is an EF2. The lowest magnitude tornado on record is an EF0

Table 5-106 provides a summary of this historical information by participating jurisdiction. It is important to note that many of the events attributed to the county are countywide or cover large portions of the county. The individual counts by jurisdiction are for those events that are only attributed to that one jurisdiction.

Table 5-106: Summary of Historical Tornado Occurrences by Participating Jurisdiction

Jurisdiction	Number of Occurrences	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
Iredell							
City of Statesville	2	0	0	$252,500	$29,028	$0	$0
Iredell County (Unincorporated Area)	12	1	4	$2,172,500	$267,266	$0	$0
Town of Mooresville	1	0	0	$250,000	$111,274	0	$0
Subtotal Iredell	**15**	**1**	**4**	**$2,675,000**	**$407,567**	**$0**	**$0**
Rowan							
City of Salisbury	3	0	0	$425,000	$64,871	$0	$0
Rowan County (Unincorporated Area)	7	0	8	$2,205,000	$347,626	$0	$0
Town of Spencer	1	0	0	$500,000	$358,260	0	$0
Subtotal Rowan	**11**	**0**	**8**	**$3,130,000**	**$770,756**	**$0**	**$0**
TOTAL PLAN	**26**	**1**	**12**	**$5,805,000**	**$1,178,323**	**$0**	**$0**

Source: National Climatic Data Center (NCDC) Storm Events Database and or potential user entered data.

5.10.5 Probability of Future Occurrences

Based on the analyses performed in IRISK, the probability of future Tornado is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Less Than 1% Annual Probability of EF2 Event
- Between 1% And 10% Annual Probability of EF2 Event
- More Than 10% Annual Probability of EF2 Event

Jurisdiction	IRISK Probability of Future Occurrence
City of Salisbury	Low
City of Statesville	Low
Iredell County (Unincorporated Area)	Low
Rowan County (Unincorporated Area)	Low
Town of China Grove	Low
Town of Cleveland	Low
Town of East Spencer	Low
Town of Faith	Low
Town of Granite Quarry	Low
Town of Harmony	Low
Town of Landis	Low
Town of Love Valley	Low
Town of Mooresville	Low
Town of Rockwell	Low
Town of Spencer	Low
Town of Troutman	Low

Tornado Hazard Vulnerability and Impact

There is not sufficient data to identify a preferred path that tornados seek in the Region. The jurisdictions of Mooresville and Salisbury will experience more damage, as they are the most densely developed areas of the county; however, all of the Region and the jurisdictions in the planning area are vulnerable to the effects of a tornado. All mitigation projects will consider a countywide approach. All of the inventoried assets in the Region are exposed to potential tornado activity. Any specific vulnerability of individual assets would depend greatly on individual design, building characteristics, and any existing mitigation measures currently in place. Such site-specific vulnerability determinations are outside the scope of this risk assessment but may be considered during future plan updates.

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, and farms, the wrecking of cars and trucks, and the loss of power distribution systems. Winds as high as 300 mph blow down walls, tear up trees, and throw debris in every direction at high speeds. Indirect losses include workers who cannot report to jobs and commercial entities that most close to repair damages. The rate of onset of tornado events is rapid, giving those in danger minimal time to seek shelter. The current average lead time according to NOAA is 13 minutes. Injury may result from the direct impact of a tornado, or it may occur afterward when people walk among debris and enter damaged buildings. A study of injuries after a tornado in Marion, Illinois, showed that 50 percent of the tornado-related injuries were suffered 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.

The following tables provide counts and values by jurisdiction relevant to Tornado hazard vulnerability in the Iredell-Rowan Regional HMP Area.

Table 5-107: Population Impacted by the EF0 Tornado

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,632**	**169,631**	**100%100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%100%**	**23741**	**23741**	**100%100%**	**11475**	**11475**	**100%100%**
TOTAL PLAN	**341,380**	**341,380**	**100%100%**	**45085**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-108: Population Impacted by the EF1 Tornado

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-109: Population Impacted by the EF2 Tornado

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-110: Population Impacted by the EF3 Tornado

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-111: Population Impacted by the EF4 Tornado

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Kannapolis	11,289	44,500	394.2%	1,629	5,377	330.1%	737	3,166	429.6%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-112: Population Impacted by the EF5 Tornado

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
City of Statesville	29,163	0	0%	3,740	0	0%	1,825	0	0%
Iredell County (Unincorporated Area)	87,091	0	0%	11,168	0	0%	5,449	0	0%
Town of Harmony	525	0	0%	67	0	0%	33	0	0%
Town of Love Valley	100	0	0%	13	0	0%	6	0	0%
Town of Mooresville	38,203	0	0%	4,899	0	0%	2,390	0	0%
Town of Troutman	4,068	0	0%	522	0	0%	254	0	0%
Subtotal Iredell	**159,434**	**0**	**0%**	**20445**	**0**	**0%**	**9975**	**0**	**0%**
Rowan									
City of Salisbury	35,981	0	0%	5,193	0	0%	2,349	0	0%
Rowan County (Unincorporated Area)	63,003	0	0%	9,092	0	0%	4,113	0	0%
Town of China Grove	5,344	0	0%	771	0	0%	349	0	0%
Town of Cleveland	1,219	0	0%	176	0	0%	80	0	0%
Town of East Spencer	1,726	0	0%	249	0	0%	113	0	0%
Town of Faith	3,288	0	0%	475	0	0%	215	0	0%
Town of Granite Quarry	4,957	0	0%	715	0	0%	324	0	0%
Town of Landis	3,124	0	0%	451	0	0%	204	0	0%
Town of Rockwell	4,767	0	0%	688	0	0%	311	0	0%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Spencer	3,840	0	0%	554	0	0%	251	0	0%
Subtotal Rowan	**138,538**	**0**	**0%**	**19993**	**0**	**0%**	**9046**	**0**	**0%**
TOTAL PLAN	**297,972**	**0**	**0%**	**40438**	**0**	**0%**	**19021**	**0**	**0%**

Source: GIS Analysis

Table 5-113: Buildings Impacted by the EF0 Tornado

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$89,118,819	1,837	12.9%	$94,125,948	422	3%	$9,020,757	14,249	100%	$192,265,525
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$459,556,867	1,174	2.1%	$39,456,187	683	1.2%	$17,326,002	55,469	100%	$516,339,056
Town of Harmony	444	438	98.6%	376	84.7%	$2,038,933	41	9.2%	$562,023	27	6.1%	$416,450	444	100%	$3,017,405
Town of Love Valley	258	258	100%	236	91.5%	$1,128,651	21	8.1%	$134,827	1	0.4%	$5,134	258	100%	$1,268,612
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$108,654,342	1,466	10.2%	$89,906,754	241	1.7%	$9,324,556	14,437	100%	$207,885,651
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$15,881,266	229	9.4%	$9,634,675	58	2.4%	$1,714,149	2,438	100%	$27,230,089
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$676,378,878**	**4,768**	**5.5%**	**$233,820,414**	**1,432**	**1.6%**	**$37,807,048**	**87,295**	**100%**	**$948,006,338**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$120,324,843	1,446	10.4%	$118,365,268	438	3.1%	$17,507,815	13,958	100%	$256,197,926

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$303,041,396	2,169	5.6%	$132,522,724	541	1.4%	$24,918,627	38,876	100%	$460,482,747
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$20,749,408	203	8%	$8,083,479	56	2.2%	$3,096,904	2,546	100%	$31,929,791
Town of Cleveland	812	812	100%	729	89.8%	$8,694,547	58	7.1%	$5,323,878	25	3.1%	$1,349,447	812	100%	$15,367,872
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$7,839,426	33	3.3%	$13,202,226	37	3.6%	$2,521,982	1,015	100%	$23,563,635
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$13,292,710	76	4.8%	$2,463,832	13	0.8%	$552,807	1,590	100%	$16,309,349
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$19,844,178	142	6%	$7,820,467	33	1.4%	$3,625,726	2,350	100%	$31,290,372
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$13,578,110	112	7.3%	$9,009,855	39	2.5%	$3,810,332	1,544	100%	$26,398,297
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$20,220,601	156	6.5%	$10,540,377	38	1.6%	$1,004,564	2,402	100%	$31,765,542
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$16,661,795	132	6.6%	$9,873,060	46	2.3%	$3,548,786	2,010	100%	$30,083,641
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$544,247,014**	**4,527**	**6.7%**	**$317,205,166**	**1,266**	**1.9%**	**$61,936,990**	**67,103**	**100%**	**$923,389,172**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$1,220,625,892**	**9,295**	**6%**	**$551,025,580**	**2,698**	**1.7%**	**$99,744,038**	**154,398**	**100%**	**$1,871,395,510**

Source: GIS Analysis

Table 5-114: Buildings Impacted by the EF1 Tornado

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$652,614,905	1,837	12.9%	$623,797,288	422	3%	$60,224,930	14,249	100%	$1,336,637,123
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$3,342,664,386	1,174	2.1%	$276,256,923	683	1.2%	$102,331,298	55,469	100%	$3,721,252,606
Town of Harmony	444	438	98.6%	376	84.7%	$14,832,594	41	9.2%	$3,919,607	27	6.1%	$2,341,931	444	100%	$21,094,132
Town of Love Valley	258	258	100%	236	91.5%	$8,290,191	21	8.1%	$973,196	1	0.4%	$41,330	258	100%	$9,304,716
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$796,788,974	1,466	10.2%	$561,816,589	241	1.7%	$51,021,978	14,437	100%	$1,409,627,540
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$115,489,741	229	9.4%	$69,411,987	58	2.4%	$9,205,711	2,438	100%	$194,107,439
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$4,930,680,791**	**4,768**	**5.5%**	**$1,536,175,590**	**1,432**	**1.6%**	**$225,167,178**	**87,295**	**100%**	**$6,692,023,556**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$851,790,230	1,446	10.4%	$737,711,649	438	3.1%	$122,686,079	13,958	100%	$1,712,187,957
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$2,180,095,124	2,169	5.6%	$873,834,052	541	1.4%	$150,635,475	38,876	100%	$3,204,564,650
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$146,999,100	203	8%	$51,646,407	56	2.2%	$15,800,569	2,546	100%	$214,446,075
Town of Cleveland	812	812	100%	729	89.8%	$58,124,170	58	7.1%	$35,176,537	25	3.1%	$9,795,276	812	100%	$103,095,983
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$54,185,018	33	3.3%	$130,008,185	37	3.6%	$14,512,275	1,015	100%	$198,705,478
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$95,456,210	76	4.8%	$15,273,440	13	0.8%	$3,173,805	1,590	100%	$113,903,455
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$141,876,369	142	6%	$50,235,522	33	1.4%	$16,090,223	2,350	100%	$208,202,114
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$96,848,919	112	7.3%	$58,827,708	39	2.5%	$17,744,836	1,544	100%	$173,421,463

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$143,005,079	156	6.5%	$69,871,603	38	1.6%	$6,813,189	2,402	100%	$219,689,870
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$117,524,408	132	6.6%	$54,934,730	46	2.3%	$17,860,984	2,010	100%	$190,320,122
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$3,885,904,627**	**4,527**	**6.7%**	**$2,077,519,833**	**1,266**	**1.9%**	**$375,112,711**	**67,103**	**100%**	**$6,338,537,167**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$8,816,585,418**	**9,295**	**6%**	**$3,613,695,423**	**2,698**	**1.7%**	**$600,279,889**	**154,398**	**100%**	**$13,030,560,723**

Source: GIS Analysis

Table 5-115: Buildings Impacted by the EF2 Tornado

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$1,244,167,092	1,837	12.9%	$1,421,769,335	422	3%	$205,096,401	14,249	100%	$2,871,032,829
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$6,099,216,059	1,174	2.1%	$617,659,285	683	1.2%	$331,838,841	55,469	100%	$7,048,714,185
Town of Harmony	444	438	98.6%	376	84.7%	$27,059,303	41	9.2%	$8,826,919	27	6.1%	$7,428,321	444	100%	$43,314,542
Town of Love Valley	258	258	100%	236	91.5%	$15,510,631	21	8.1%	$2,199,149	1	0.4%	$149,554	258	100%	$17,859,334
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$1,508,208,941	1,466	10.2%	$1,317,766,227	241	1.7%	$159,738,537	14,437	100%	$2,985,713,706
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$210,554,831	229	9.4%	$153,475,617	58	2.4%	$28,556,469	2,438	100%	$392,586,917
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$9,104,716,857**	**4,768**	**5.5%**	**$3,521,696,532**	**1,432**	**1.6%**	**$732,808,123**	**87,295**	**100%**	**$13,359,221,513**

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$1,719,788,680	1,446	10.4%	$1,744,784,225	438	3.1%	$424,915,227	13,958	100%	$3,889,488,131
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$4,008,918,851	2,169	5.6%	$1,972,850,733	541	1.4%	$493,211,842	38,876	100%	$6,474,981,426
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$286,128,500	203	8%	$119,972,981	56	2.2%	$47,710,457	2,546	100%	$453,811,939
Town of Cleveland	812	812	100%	729	89.8%	$129,421,620	58	7.1%	$81,692,018	25	3.1%	$34,328,254	812	100%	$245,441,892
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$116,377,723	33	3.3%	$252,623,083	37	3.6%	$46,505,801	1,015	100%	$415,506,608
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$183,438,794	76	4.8%	$35,497,850	13	0.8%	$10,160,276	1,590	100%	$229,096,921
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$282,476,783	142	6%	$112,962,061	33	1.4%	$44,653,399	2,350	100%	$440,092,243
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$187,384,141	112	7.3%	$130,788,805	39	2.5%	$50,813,107	1,544	100%	$368,986,053
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$281,637,998	156	6.5%	$159,344,352	38	1.6%	$23,328,067	2,402	100%	$464,310,417
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$242,639,978	132	6.6%	$143,006,526	46	2.3%	$53,531,834	2,010	100%	$439,178,338
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$7,438,213,068**	**4,527**	**6.7%**	**$4,753,522,634**	**1,266**	**1.9%**	**$1,229,158,264**	**67,103**	**100%**	**$13,420,893,968**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$16,542,929,925**	**9,295**	**6%**	**$8,275,219,166**	**2,698**	**1.7%**	**$1,961,966,387**	**154,398**	**100%**	**$26,780,115,481**

Source: GIS Analysis

Table 5-116: Buildings Impacted by the EF3 Tornado

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$1,488,800,813	1,837	12.9%	$1,700,432,999	422	3%	$323,357,285	14,249	100%	$3,512,591,096
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$7,058,317,828	1,174	2.1%	$720,152,909	683	1.2%	$519,221,681	55,469	100%	$8,297,692,418
Town of Harmony	444	438	98.6%	376	84.7%	$31,297,517	41	9.2%	$10,299,300	27	6.1%	$11,581,479	444	100%	$53,178,297
Town of Love Valley	258	258	100%	236	91.5%	$18,061,862	21	8.1%	$2,357,702	1	0.4%	$237,883	258	100%	$20,657,447
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$1,785,487,869	1,466	10.2%	$1,701,373,684	241	1.7%	$248,512,687	14,437	100%	$3,735,374,240
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$243,558,176	229	9.4%	$173,175,546	58	2.4%	$44,358,200	2,438	100%	$461,091,922
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$10,625,524,065**	**4,768**	**5.5%**	**$4,307,792,140**	**1,432**	**1.6%**	**$1,147,269,215**	**87,295**	**100%**	**$16,080,585,420**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$2,324,464,113	1,446	10.4%	$2,244,389,114	438	3.1%	$671,639,940	13,958	100%	$5,240,493,167
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$4,803,793,180	2,169	5.6%	$2,385,219,855	541	1.4%	$772,918,640	38,876	100%	$7,961,931,676
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$374,184,774	203	8%	$148,416,513	56	2.2%	$73,771,073	2,546	100%	$596,372,359
Town of Cleveland	812	812	100%	729	89.8%	$205,522,036	58	7.1%	$96,990,360	25	3.1%	$54,355,115	812	100%	$356,867,511
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$171,656,255	33	3.3%	$278,373,440	37	3.6%	$72,629,594	1,015	100%	$522,659,289
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$230,751,875	76	4.8%	$44,201,749	13	0.8%	$15,864,984	1,590	100%	$290,818,607
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$370,376,633	142	6%	$140,264,153	33	1.4%	$67,988,286	2,350	100%	$578,629,071

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$240,479,546	112	7.3%	$165,883,897	39	2.5%	$77,825,055	1,544	100%	$484,188,498
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$373,377,621	156	6.5%	$188,086,008	38	1.6%	$36,810,405	2,402	100%	$598,274,035
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$336,088,119	132	6.6%	$194,314,152	46	2.3%	$82,664,769	2,010	100%	$613,067,040
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$9,430,694,152**	**4,527**	**6.7%**	**$5,886,139,241**	**1,266**	**1.9%**	**$1,926,467,861**	**67,103**	**100%**	**$17,243,301,253**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$20,056,218,217**	**9,295**	**6%**	**$10,193,931,381**	**2,698**	**1.7%**	**$3,073,737,076**	**154,398**	**100%**	**$33,323,886,673**

Source: GIS Analysis

Table 5-117: Buildings Impacted by the EF4 Tornado

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$1,497,587,067	1,837	12.9%	$1,738,297,283	422	3%	$340,195,238	14,249	100%	$3,576,079,587
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$7,059,236,819	1,174	2.1%	$734,489,237	683	1.2%	$553,539,872	55,469	100%	$8,347,265,928
Town of Harmony	444	438	98.6%	376	84.7%	$31,297,517	41	9.2%	$10,514,130	27	6.1%	$12,423,805	444	100%	$54,235,453
Town of Love Valley	258	258	100%	236	91.5%	$18,061,862	21	8.1%	$2,357,702	1	0.4%	$246,419	258	100%	$20,665,984
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$1,791,860,078	1,466	10.2%	$1,764,210,479	241	1.7%	$267,582,686	14,437	100%	$3,823,653,243
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$243,576,142	229	9.4%	$175,682,861	58	2.4%	$47,889,627	2,438	100%	$467,148,631

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$10,641,619,485**	**4,768**	**5.5%**	**$4,425,551,692**	**1,432**	**1.6%**	**$1,221,877,647**	**87,295**	**100%**	**$16,289,048,826**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$2,400,079,335	1,446	10.4%	$2,332,405,901	438	3.1%	$703,490,826	13,958	100%	$5,435,976,063
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$4,845,739,122	2,169	5.6%	$2,451,530,100	541	1.4%	$821,792,637	38,876	100%	$8,119,061,860
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$384,225,105	203	8%	$153,355,829	56	2.2%	$80,276,399	2,546	100%	$617,857,333
Town of Cleveland	812	812	100%	729	89.8%	$218,467,448	58	7.1%	$99,408,933	25	3.1%	$56,760,021	812	100%	$374,636,402
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$180,078,447	33	3.3%	$278,658,928	37	3.6%	$77,684,350	1,015	100%	$536,421,725
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$234,933,665	76	4.8%	$45,989,004	13	0.8%	$16,974,028	1,590	100%	$297,896,698
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$380,048,720	142	6%	$143,902,530	33	1.4%	$75,960,070	2,350	100%	$599,911,320
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$245,922,634	112	7.3%	$170,557,422	39	2.5%	$86,079,378	1,544	100%	$502,559,434
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$384,354,382	156	6.5%	$192,492,728	38	1.6%	$38,671,360	2,402	100%	$615,518,470
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$348,522,556	132	6.6%	$207,030,820	46	2.3%	$90,155,504	2,010	100%	$645,708,880
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$9,622,371,414**	**4,527**	**6.7%**	**$6,075,332,195**	**1,266**	**1.9%**	**$2,047,844,573**	**67,103**	**100%**	**$17,745,548,185**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$20,263,990,899**	**9,295**	**6%**	**$10,500,883,887**	**2,698**	**1.7%**	**$3,269,722,220**	**154,398**	**100%**	**$34,034,597,011**

Source: GIS Analysis

Table 5-118: Buildings Impacted by the EF5 Tornado

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Iredell County (Unincorporated Area)	55,474	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Harmony	444	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Love Valley	258	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Mooresville	14,440	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Troutman	2,439	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Iredell	**87,309**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
Rowan															
City of Salisbury	13,960	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Rowan County (Unincorporated Area)	38,881	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of China Grove	2,546	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Cleveland	812	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of East Spencer	1,015	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Faith	1,590	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Granite Quarry	2,350	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Landis	1,544	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Rockwell	2,402	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Spencer	2,010	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Rowan	**67,110**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
TOTAL PLAN	**154,419**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**

Source: GIS Analysis

The following tables provide counts and estimated damages for CIKR buildings by jurisdiction in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event. Totals across all sectors are shown at the bottom of each table.

Table 5-119: Critical Facilities Exposed to the Tornado - City of Statesville

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	24	$863,796
Banking and Finance	EF1	24	$5,420,510
Banking and Finance	EF2	24	$14,108,188
Banking and Finance	EF3	24	$17,902,353
Banking and Finance	EF4	24	$18,156,716
Commercial Facilities	EF0	1,205	$33,331,398
Commercial Facilities	EF1	1,205	$229,493,470
Commercial Facilities	EF2	1,205	$560,441,549
Commercial Facilities	EF3	1,205	$735,799,225
Commercial Facilities	EF4	1,205	$765,567,740
Communications	EF0	1	$23,308
Communications	EF1	1	$168,242
Communications	EF2	1	$380,179
Communications	EF3	1	$407,589
Communications	EF4	1	$407,589
Critical Manufacturing	EF0	460	$43,173,069
Critical Manufacturing	EF1	460	$311,490,161
Critical Manufacturing	EF2	460	$703,822,204
Critical Manufacturing	EF3	460	$755,017,571
Critical Manufacturing	EF4	460	$755,088,500
Emergency Services	EF0	1	$86,703
Emergency Services	EF1	1	$495,724

Sector	Event	Number of Buildings At Risk	Estimated Damages
Emergency Services	EF2	1	$1,065,704
Emergency Services	EF3	1	$1,568,085
Emergency Services	EF4	1	$1,634,939
Energy	EF0	7	$47,512,205
Energy	EF1	7	$342,943,686
Energy	EF2	7	$775,074,077
Energy	EF3	7	$831,210,030
Energy	EF4	7	$831,241,608
Food and Agriculture	EF0	1	$8,943
Food and Agriculture	EF1	1	$64,549
Food and Agriculture	EF2	1	$145,863
Food and Agriculture	EF3	1	$156,379
Food and Agriculture	EF4	1	$156,379
Government Facilities	EF0	174	$5,499,780
Government Facilities	EF1	174	$31,878,911
Government Facilities	EF2	174	$102,524,434
Government Facilities	EF3	174	$160,205,171
Government Facilities	EF4	174	$171,188,315
Healthcare and Public Health	EF0	172	$12,110,521
Healthcare and Public Health	EF1	172	$57,894,292
Healthcare and Public Health	EF2	172	$137,722,626
Healthcare and Public Health	EF3	172	$194,371,860
Healthcare and Public Health	EF4	172	$201,336,405
Transportation Systems	EF0	185	$7,560,592
Transportation Systems	EF1	185	$43,227,774

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	EF2	185	$92,930,686
Transportation Systems	EF3	185	$136,738,940
Transportation Systems	EF4	185	$142,568,715
All Categories	**EF0**	**2,230**	**$150,170,315**
All Categories	**EF1**	**2,230**	**$1,023,077,319**
All Categories	**EF2**	**2,230**	**$2,388,215,510**
All Categories	**EF3**	**2,230**	**$2,833,377,203**
All Categories	**EF4**	**2,230**	**$2,887,346,906**

Source: GIS Analysis

Table 5-120: Critical Facilities Exposed to the Tornado - Iredell County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	2	$35,331
Banking and Finance	EF1	2	$219,414
Banking and Finance	EF2	2	$622,268
Banking and Finance	EF3	2	$790,864
Banking and Finance	EF4	2	$798,616
Commercial Facilities	EF0	1,146	$21,512,317
Commercial Facilities	EF1	1,146	$161,120,076
Commercial Facilities	EF2	1,146	$436,544,907
Commercial Facilities	EF3	1,146	$601,990,965
Commercial Facilities	EF4	1,146	$623,475,686
Critical Manufacturing	EF0	279	$18,663,795
Critical Manufacturing	EF1	279	$134,552,781
Critical Manufacturing	EF2	279	$303,982,420
Critical Manufacturing	EF3	279	$326,437,349

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	EF4	279	$326,521,953
Energy	EF0	3	$31,518,503
Energy	EF1	3	$227,404,616
Energy	EF2	3	$513,828,665
Energy	EF3	3	$551,200,176
Energy	EF4	3	$551,251,344
Food and Agriculture	EF0	18	$728,787
Food and Agriculture	EF1	18	$4,965,144
Food and Agriculture	EF2	18	$8,589,056
Food and Agriculture	EF3	18	$8,999,052
Food and Agriculture	EF4	18	$8,999,052
Government Facilities	EF0	238	$10,439,264
Government Facilities	EF1	238	$46,888,845
Government Facilities	EF2	238	$131,216,613
Government Facilities	EF3	238	$200,109,731
Government Facilities	EF4	238	$222,976,402
Healthcare and Public Health	EF0	20	$506,540
Healthcare and Public Health	EF1	20	$2,695,401
Healthcare and Public Health	EF2	20	$7,292,777
Healthcare and Public Health	EF3	20	$10,738,102
Healthcare and Public Health	EF4	20	$11,121,754
Transportation Systems	EF0	137	$4,767,468
Transportation Systems	EF1	137	$27,265,375
Transportation Systems	EF2	137	$58,618,731
Transportation Systems	EF3	137	$86,220,298

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	EF4	137	$89,892,608
Water	EF0	3	$12,624
Water	EF1	3	$91,118
Water	EF2	3	$205,901
Water	EF3	3	$220,746
Water	EF4	3	$220,746
All Categories	**EF0**	**1,846**	**$88,184,629**
All Categories	**EF1**	**1,846**	**$605,202,770**
All Categories	**EF2**	**1,846**	**$1,460,901,338**
All Categories	**EF3**	**1,846**	**$1,786,707,283**
All Categories	**EF4**	**1,846**	**$1,835,258,161**

Source: GIS Analysis

Table 5-121: Critical Facilities Exposed to the Tornado - Town of Harmony

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	2	$21,210
Banking and Finance	EF1	2	$131,721
Banking and Finance	EF2	2	$373,567
Banking and Finance	EF3	2	$474,780
Banking and Finance	EF4	2	$479,434
Commercial Facilities	EF0	31	$331,644
Commercial Facilities	EF1	31	$2,509,428
Commercial Facilities	EF2	31	$6,682,818
Commercial Facilities	EF3	31	$9,114,926
Commercial Facilities	EF4	31	$9,440,815
Critical Manufacturing	EF0	12	$233,469

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	EF1	12	$1,685,204
Critical Manufacturing	EF2	12	$3,808,087
Critical Manufacturing	EF3	12	$4,082,641
Critical Manufacturing	EF4	12	$4,082,641
Government Facilities	EF0	18	$320,745
Government Facilities	EF1	18	$1,571,453
Government Facilities	EF2	18	$4,640,295
Government Facilities	EF3	18	$7,146,815
Government Facilities	EF4	18	$7,830,001
Healthcare and Public Health	EF0	1	$26,659
Healthcare and Public Health	EF1	1	$107,895
Healthcare and Public Health	EF2	1	$200,477
Healthcare and Public Health	EF3	1	$252,351
Healthcare and Public Health	EF4	1	$261,276
Transportation Systems	EF0	4	$44,746
Transportation Systems	EF1	4	$255,836
Transportation Systems	EF2	4	$549,994
Transportation Systems	EF3	4	$809,266
Transportation Systems	EF4	4	$843,768
All Categories	**EF0**	**68**	**$978,473**
All Categories	**EF1**	**68**	**$6,261,537**
All Categories	**EF2**	**68**	**$16,255,238**
All Categories	**EF3**	**68**	**$21,880,779**
All Categories	**EF4**	**68**	**$22,937,935**

Source: GIS Analysis

Table 5-122: Critical Facilities Exposed to the Tornado - Town of Love Valley

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	EF0	21	$130,524
Commercial Facilities	EF1	21	$946,414
Commercial Facilities	EF2	21	$2,194,790
Commercial Facilities	EF3	21	$2,430,575
Commercial Facilities	EF4	21	$2,439,111
Food and Agriculture	EF0	1	$9,436
Food and Agriculture	EF1	1	$68,112
Food and Agriculture	EF2	1	$153,913
Food and Agriculture	EF3	1	$165,010
Food and Agriculture	EF4	1	$165,010
All Categories	**EF0**	**22**	**$139,960**
All Categories	**EF1**	**22**	**$1,014,526**
All Categories	**EF2**	**22**	**$2,348,703**
All Categories	**EF3**	**22**	**$2,595,585**
All Categories	**EF4**	**22**	**$2,604,121**

Source: GIS Analysis

Table 5-123: Critical Facilities Exposed to the Tornado - Town of Mooresville

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	37	$1,430,487
Banking and Finance	EF1	37	$8,807,276
Banking and Finance	EF2	37	$24,369,425
Banking and Finance	EF3	37	$31,354,098
Banking and Finance	EF4	37	$31,753,500
Commercial Facilities	EF0	902	$34,656,248

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	EF1	902	$222,931,628
Commercial Facilities	EF2	902	$565,934,498
Commercial Facilities	EF3	902	$755,761,742
Commercial Facilities	EF4	902	$796,655,963
Critical Manufacturing	EF0	301	$22,378,726
Critical Manufacturing	EF1	301	$161,387,937
Critical Manufacturing	EF2	301	$364,760,252
Critical Manufacturing	EF3	301	$391,483,048
Critical Manufacturing	EF4	301	$391,578,330
Energy	EF0	2	$69,766,571
Energy	EF1	2	$503,583,171
Energy	EF2	2	$1,137,956,109
Energy	EF3	2	$1,220,000,000
Energy	EF4	2	$1,220,000,000
Food and Agriculture	EF0	2	$69,533
Food and Agriculture	EF1	2	$447,878
Food and Agriculture	EF2	2	$530,878
Food and Agriculture	EF3	2	$530,878
Food and Agriculture	EF4	2	$530,878
Government Facilities	EF0	120	$7,344,826
Government Facilities	EF1	120	$35,083,940
Government Facilities	EF2	120	$102,065,678
Government Facilities	EF3	120	$156,777,595
Government Facilities	EF4	120	$172,555,626
Healthcare and Public Health	EF0	121	$10,445,018

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	EF1	121	$52,645,360
Healthcare and Public Health	EF2	121	$134,536,818
Healthcare and Public Health	EF3	121	$194,394,222
Healthcare and Public Health	EF4	121	$201,331,723
Nuclear Reactors, Materials and Waste	EF0	1	$129,353
Nuclear Reactors, Materials and Waste	EF1	1	$933,682
Nuclear Reactors, Materials and Waste	EF2	1	$2,109,858
Nuclear Reactors, Materials and Waste	EF3	1	$2,261,973
Nuclear Reactors, Materials and Waste	EF4	1	$2,261,973
Transportation Systems	EF0	214	$22,595,045
Transportation Systems	EF1	214	$129,135,055
Transportation Systems	EF2	214	$277,893,221
Transportation Systems	EF3	214	$408,885,996
Transportation Systems	EF4	214	$426,385,593
Water	EF0	1	$60,045
Water	EF1	1	$433,412
Water	EF2	1	$979,388
Water	EF3	1	$1,050,000
Water	EF4	1	$1,050,000
All Categories	**EF0**	**1,701**	**$168,875,852**
All Categories	**EF1**	**1,701**	**$1,115,389,339**
All Categories	**EF2**	**1,701**	**$2,611,136,125**
All Categories	**EF3**	**1,701**	**$3,162,499,552**
All Categories	**EF4**	**1,701**	**$3,244,103,586**

Source: GIS Analysis

Table 5-124: Critical Facilities Exposed to the Tornado - Town of Troutman

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	3	$46,484
Banking and Finance	EF1	3	$281,414
Banking and Finance	EF2	3	$740,266
Banking and Finance	EF3	3	$977,154
Banking and Finance	EF4	3	$995,484
Commercial Facilities	EF0	170	$5,008,470
Commercial Facilities	EF1	170	$36,892,089
Commercial Facilities	EF2	170	$85,030,181
Commercial Facilities	EF3	170	$105,448,320
Commercial Facilities	EF4	170	$108,527,421
Critical Manufacturing	EF0	73	$4,793,570
Critical Manufacturing	EF1	73	$34,600,540
Critical Manufacturing	EF2	73	$78,187,475
Critical Manufacturing	EF3	73	$83,824,603
Critical Manufacturing	EF4	73	$83,824,603
Energy	EF0	1	$41,173,714
Energy	EF1	1	$297,196,625
Energy	EF2	1	$671,580,655
Energy	EF3	1	$720,000,000
Energy	EF4	1	$720,000,000
Government Facilities	EF0	27	$1,245,954
Government Facilities	EF1	27	$5,436,458
Government Facilities	EF2	27	$14,917,175
Government Facilities	EF3	27	$22,663,387

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	EF4	27	$25,416,283
Healthcare and Public Health	EF0	5	$67,036
Healthcare and Public Health	EF1	5	$336,254
Healthcare and Public Health	EF2	5	$854,684
Healthcare and Public Health	EF3	5	$1,232,654
Healthcare and Public Health	EF4	5	$1,276,640
Transportation Systems	EF0	9	$187,309
Transportation Systems	EF1	9	$1,070,943
Transportation Systems	EF2	9	$2,302,304
Transportation Systems	EF3	9	$3,387,629
Transportation Systems	EF4	9	$3,532,058
All Categories	**EF0**	**288**	**$52,522,537**
All Categories	**EF1**	**288**	**$375,814,323**
All Categories	**EF2**	**288**	**$853,612,740**
All Categories	**EF3**	**288**	**$937,533,747**
All Categories	**EF4**	**288**	**$943,572,489**

Source: GIS Analysis

Table 5-125: Critical Facilities Exposed to the Tornado - City of Salisbury

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	26	$952,384
Banking and Finance	EF1	26	$5,919,003
Banking and Finance	EF2	26	$16,789,543
Banking and Finance	EF3	26	$21,338,147
Banking and Finance	EF4	26	$21,547,155
Commercial Facilities	EF0	892	$59,551,391

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	EF1	892	$387,780,407
Commercial Facilities	EF2	892	$1,002,210,018
Commercial Facilities	EF3	892	$1,329,091,597
Commercial Facilities	EF4	892	$1,395,010,090
Communications	EF0	1	$36,129
Communications	EF1	1	$171,993
Communications	EF2	1	$554,606
Communications	EF3	1	$810,633
Communications	EF4	1	$889,493
Critical Manufacturing	EF0	311	$23,317,024
Critical Manufacturing	EF1	311	$166,927,858
Critical Manufacturing	EF2	311	$379,722,371
Critical Manufacturing	EF3	311	$410,355,355
Critical Manufacturing	EF4	311	$411,551,485
Energy	EF0	1	$2,860,000
Energy	EF1	1	$20,640,000
Energy	EF2	1	$46,640,000
Energy	EF3	1	$50,000,000
Energy	EF4	1	$50,000,000
Food and Agriculture	EF0	2	$77,024
Food and Agriculture	EF1	2	$499,878
Food and Agriculture	EF2	2	$630,488
Food and Agriculture	EF3	2	$636,246
Food and Agriculture	EF4	2	$636,246
Government Facilities	EF0	198	$9,760,723

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	EF1	198	$60,225,158
Government Facilities	EF2	198	$198,871,499
Government Facilities	EF3	198	$312,070,629
Government Facilities	EF4	198	$331,034,527
Healthcare and Public Health	EF0	130	$13,519,033
Healthcare and Public Health	EF1	130	$69,138,054
Healthcare and Public Health	EF2	130	$175,583,949
Healthcare and Public Health	EF3	130	$251,275,298
Healthcare and Public Health	EF4	130	$260,275,568
Transportation Systems	EF0	277	$26,198,109
Transportation Systems	EF1	277	$149,843,056
Transportation Systems	EF2	277	$322,786,309
Transportation Systems	EF3	277	$474,560,490
Transportation Systems	EF4	277	$494,872,138
All Categories	**EF0**	**1,838**	**$136,271,817**
All Categories	**EF1**	**1,838**	**$861,145,407**
All Categories	**EF2**	**1,838**	**$2,143,788,783**
All Categories	**EF3**	**1,838**	**$2,850,138,395**
All Categories	**EF4**	**1,838**	**$2,965,816,702**

Source: GIS Analysis

Table 5-126: Critical Facilities Exposed to the Tornado - Rowan County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	7	$301,231
Banking and Finance	EF1	7	$1,872,128
Banking and Finance	EF2	7	$5,310,383

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF3	7	$6,749,066
Banking and Finance	EF4	7	$6,815,173
Commercial Facilities	EF0	1,290	$62,042,892
Commercial Facilities	EF1	1,290	$425,389,837
Commercial Facilities	EF2	1,290	$1,081,818,061
Commercial Facilities	EF3	1,290	$1,415,556,230
Commercial Facilities	EF4	1,290	$1,472,766,573
Critical Manufacturing	EF0	686	$45,309,080
Critical Manufacturing	EF1	686	$326,423,869
Critical Manufacturing	EF2	686	$738,667,578
Critical Manufacturing	EF3	686	$793,250,254
Critical Manufacturing	EF4	686	$793,749,606
Energy	EF0	4	$1,762,249
Energy	EF1	4	$12,963,571
Energy	EF2	4	$35,534,993
Energy	EF3	4	$46,683,285
Energy	EF4	4	$47,755,288
Food and Agriculture	EF0	184	$2,393,578
Food and Agriculture	EF1	184	$16,332,501
Food and Agriculture	EF2	184	$28,514,815
Food and Agriculture	EF3	184	$29,902,162
Food and Agriculture	EF4	184	$29,902,162
Government Facilities	EF0	137	$15,104,248
Government Facilities	EF1	137	$71,507,045
Government Facilities	EF2	137	$206,849,030

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	EF3	137	$317,399,348
Government Facilities	EF4	137	$349,947,503
Healthcare and Public Health	EF0	22	$2,819,493
Healthcare and Public Health	EF1	22	$11,699,797
Healthcare and Public Health	EF2	22	$22,748,745
Healthcare and Public Health	EF3	22	$29,324,617
Healthcare and Public Health	EF4	22	$30,362,650
Nuclear Reactors, Materials and Waste	EF0	1	$46,444
Nuclear Reactors, Materials and Waste	EF1	1	$335,175
Nuclear Reactors, Materials and Waste	EF2	1	$757,392
Nuclear Reactors, Materials and Waste	EF3	1	$811,956
Nuclear Reactors, Materials and Waste	EF4	1	$811,956
Transportation Systems	EF0	362	$28,200,476
Transportation Systems	EF1	362	$161,318,478
Transportation Systems	EF2	362	$346,845,735
Transportation Systems	EF3	362	$510,350,857
Transportation Systems	EF4	362	$532,093,614
Water	EF0	3	$2,860
Water	EF1	3	$20,640
Water	EF2	3	$46,640
Water	EF3	3	$50,000
Water	EF4	3	$50,000
All Categories	**EF0**	**2,696**	**$157,982,551**
All Categories	**EF1**	**2,696**	**$1,027,863,041**

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**EF2**	**2,696**	**$2,467,093,372**
All Categories	**EF3**	**2,696**	**$3,150,077,775**
All Categories	**EF4**	**2,696**	**$3,264,254,525**

Source: GIS Analysis

Table 5-127: Critical Facilities Exposed to the Tornado - Town of China Grove

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	4	$65,251
Banking and Finance	EF1	4	$405,529
Banking and Finance	EF2	4	$1,150,303
Banking and Finance	EF3	4	$1,461,942
Banking and Finance	EF4	4	$1,476,262
Commercial Facilities	EF0	142	$3,619,433
Commercial Facilities	EF1	142	$24,361,821
Commercial Facilities	EF2	142	$63,877,187
Commercial Facilities	EF3	142	$85,385,960
Commercial Facilities	EF4	142	$89,011,255
Critical Manufacturing	EF0	47	$2,565,471
Critical Manufacturing	EF1	47	$18,514,448
Critical Manufacturing	EF2	47	$41,836,911
Critical Manufacturing	EF3	47	$44,850,891
Critical Manufacturing	EF4	47	$44,850,891
Food and Agriculture	EF0	1	$19,205
Food and Agriculture	EF1	1	$138,596
Food and Agriculture	EF2	1	$313,183
Food and Agriculture	EF3	1	$335,745

Sector	Event	Number of Buildings At Risk	Estimated Damages
Food and Agriculture	EF4	1	$335,745
Government Facilities	EF0	15	$2,452,239
Government Facilities	EF1	15	$10,602,955
Government Facilities	EF2	15	$28,900,488
Government Facilities	EF3	15	$43,849,925
Government Facilities	EF4	15	$49,282,875
Healthcare and Public Health	EF0	5	$391,456
Healthcare and Public Health	EF1	5	$1,885,705
Healthcare and Public Health	EF2	5	$4,568,175
Healthcare and Public Health	EF3	5	$6,476,451
Healthcare and Public Health	EF4	5	$6,707,075
Transportation Systems	EF0	43	$2,038,763
Transportation Systems	EF1	43	$11,307,604
Transportation Systems	EF2	43	$26,203,676
Transportation Systems	EF3	43	$38,500,793
Transportation Systems	EF4	43	$40,594,727
All Categories	**EF0**	**257**	**$11,151,818**
All Categories	**EF1**	**257**	**$67,216,658**
All Categories	**EF2**	**257**	**$166,849,923**
All Categories	**EF3**	**257**	**$220,861,707**
All Categories	**EF4**	**257**	**$232,258,830**

Source: GIS Analysis

Table 5-128: Critical Facilities Exposed to the Tornado - Town of Cleveland

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	EF0	41	$2,191,342
Commercial Facilities	EF1	41	$14,906,845
Commercial Facilities	EF2	41	$47,255,515
Commercial Facilities	EF3	41	$70,457,485
Commercial Facilities	EF4	41	$73,794,484
Critical Manufacturing	EF0	17	$3,174,603
Critical Manufacturing	EF1	17	$22,896,005
Critical Manufacturing	EF2	17	$51,764,827
Critical Manufacturing	EF3	17	$55,529,122
Critical Manufacturing	EF4	17	$55,541,931
Government Facilities	EF0	7	$354,959
Government Facilities	EF1	7	$1,777,216
Government Facilities	EF2	7	$5,311,198
Government Facilities	EF3	7	$8,197,485
Government Facilities	EF4	7	$8,948,099
Healthcare and Public Health	EF0	1	$52,752
Healthcare and Public Health	EF1	1	$213,558
Healthcare and Public Health	EF2	1	$396,809
Healthcare and Public Health	EF3	1	$499,501
Healthcare and Public Health	EF4	1	$517,154
Transportation Systems	EF0	15	$886,210
Transportation Systems	EF1	15	$5,069,665
Transportation Systems	EF2	15	$10,899,182
Transportation Systems	EF3	15	$16,037,149

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	EF4	15	$16,720,162
All Categories	**EF0**	**81**	**$6,659,866**
All Categories	**EF1**	**81**	**$44,863,289**
All Categories	**EF2**	**81**	**$115,627,531**
All Categories	**EF3**	**81**	**$150,720,742**
All Categories	**EF4**	**81**	**$155,521,830**

Source: GIS Analysis

Table 5-129: Critical Facilities Exposed to the Tornado - Town of East Spencer

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	EF0	47	$11,313,400
Commercial Facilities	EF1	47	$117,326,528
Commercial Facilities	EF2	47	$233,879,078
Commercial Facilities	EF3	47	$271,230,424
Commercial Facilities	EF4	47	$272,910,064
Critical Manufacturing	EF0	8	$2,658,481
Critical Manufacturing	EF1	8	$19,185,679
Critical Manufacturing	EF2	8	$43,353,685
Critical Manufacturing	EF3	8	$46,476,935
Critical Manufacturing	EF4	8	$46,476,935
Government Facilities	EF0	8	$1,607,468
Government Facilities	EF1	8	$7,139,009
Government Facilities	EF2	8	$19,822,226
Government Facilities	EF3	8	$30,183,847
Government Facilities	EF4	8	$33,717,345
Healthcare and Public Health	EF0	1	$4,839

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	EF1	1	$39,016
Healthcare and Public Health	EF2	1	$141,198
Healthcare and Public Health	EF3	1	$224,605
Healthcare and Public Health	EF4	1	$232,655
Transportation Systems	EF0	5	$127,542
Transportation Systems	EF1	5	$729,619
Transportation Systems	EF2	5	$1,568,595
Transportation Systems	EF3	5	$2,308,044
Transportation Systems	EF4	5	$2,406,343
All Categories	**EF0**	**69**	**$15,711,730**
All Categories	**EF1**	**69**	**$144,419,851**
All Categories	**EF2**	**69**	**$298,764,782**
All Categories	**EF3**	**69**	**$350,423,855**
All Categories	**EF4**	**69**	**$355,743,342**

Source: GIS Analysis

Table 5-130: Critical Facilities Exposed to the Tornado - Town of Faith

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	EF0	48	$1,580,972
Commercial Facilities	EF1	48	$10,245,071
Commercial Facilities	EF2	48	$26,768,979
Commercial Facilities	EF3	48	$35,622,091
Commercial Facilities	EF4	48	$37,373,826
Critical Manufacturing	EF0	29	$504,493
Critical Manufacturing	EF1	29	$3,640,820
Critical Manufacturing	EF2	29	$8,227,125

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	EF3	29	$8,819,816
Critical Manufacturing	EF4	29	$8,819,816
Government Facilities	EF0	5	$363,165
Government Facilities	EF1	5	$1,644,817
Government Facilities	EF2	5	$4,626,925
Government Facilities	EF3	5	$7,063,044
Government Facilities	EF4	5	$7,856,626
Healthcare and Public Health	EF0	1	$199,028
Healthcare and Public Health	EF1	1	$805,737
Healthcare and Public Health	EF2	1	$1,497,127
Healthcare and Public Health	EF3	1	$1,884,573
Healthcare and Public Health	EF4	1	$1,951,177
Transportation Systems	EF0	6	$368,981
Transportation Systems	EF1	6	$2,110,800
Transportation Systems	EF2	6	$4,537,971
Transportation Systems	EF3	6	$6,677,208
Transportation Systems	EF4	6	$6,961,587
All Categories	**EF0**	**89**	**$3,016,639**
All Categories	**EF1**	**89**	**$18,447,245**
All Categories	**EF2**	**89**	**$45,658,127**
All Categories	**EF3**	**89**	**$60,066,732**
All Categories	**EF4**	**89**	**$62,963,032**

Source: GIS Analysis

Table 5-131: Critical Facilities Exposed to the Tornado - Town of Granite Quarry

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	4	$138,695
Banking and Finance	EF1	4	$861,977
Banking and Finance	EF2	4	$2,445,041
Banking and Finance	EF3	4	$3,107,449
Banking and Finance	EF4	4	$3,137,886
Commercial Facilities	EF0	72	$1,511,940
Commercial Facilities	EF1	72	$9,938,287
Commercial Facilities	EF2	72	$25,583,641
Commercial Facilities	EF3	72	$33,689,460
Commercial Facilities	EF4	72	$35,202,961
Critical Manufacturing	EF0	39	$3,175,927
Critical Manufacturing	EF1	39	$22,919,980
Critical Manufacturing	EF2	39	$51,792,047
Critical Manufacturing	EF3	39	$55,523,207
Critical Manufacturing	EF4	39	$55,523,207
Government Facilities	EF0	15	$3,416,035
Government Facilities	EF1	15	$14,399,582
Government Facilities	EF2	15	$38,535,033
Government Facilities	EF3	15	$58,255,759
Government Facilities	EF4	15	$65,878,729
Healthcare and Public Health	EF0	3	$100,219
Healthcare and Public Health	EF1	3	$405,724
Healthcare and Public Health	EF2	3	$753,870
Healthcare and Public Health	EF3	3	$948,966

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	EF4	3	$982,504
Transportation Systems	EF0	41	$3,083,326
Transportation Systems	EF1	41	$17,638,524
Transportation Systems	EF2	41	$37,920,748
Transportation Systems	EF3	41	$55,796,908
Transportation Systems	EF4	41	$58,173,267
All Categories	**EF0**	**174**	**$11,426,142**
All Categories	**EF1**	**174**	**$66,164,074**
All Categories	**EF2**	**174**	**$157,030,380**
All Categories	**EF3**	**174**	**$207,321,749**
All Categories	**EF4**	**174**	**$218,898,554**

Source: GIS Analysis

Table 5-132: Critical Facilities Exposed to the Tornado - Town of Landis

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	2	$60,616
Banking and Finance	EF1	2	$376,722
Banking and Finance	EF2	2	$1,068,591
Banking and Finance	EF3	2	$1,358,092
Banking and Finance	EF4	2	$1,371,394
Commercial Facilities	EF0	80	$3,585,641
Commercial Facilities	EF1	80	$24,021,901
Commercial Facilities	EF2	80	$57,205,576
Commercial Facilities	EF3	80	$81,193,474
Commercial Facilities	EF4	80	$84,618,259
Critical Manufacturing	EF0	32	$3,406,777

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	EF1	32	$24,429,143
Critical Manufacturing	EF2	32	$55,495,568
Critical Manufacturing	EF3	32	$59,875,379
Critical Manufacturing	EF4	32	$60,014,742
Government Facilities	EF0	13	$3,453,519
Government Facilities	EF1	13	$14,868,033
Government Facilities	EF2	13	$40,402,063
Government Facilities	EF3	13	$61,264,135
Government Facilities	EF4	13	$68,924,914
Healthcare and Public Health	EF0	3	$214,482
Healthcare and Public Health	EF1	3	$868,304
Healthcare and Public Health	EF2	3	$1,613,382
Healthcare and Public Health	EF3	3	$2,030,913
Healthcare and Public Health	EF4	3	$2,102,690
Transportation Systems	EF0	21	$2,099,152
Transportation Systems	EF1	21	$12,008,441
Transportation Systems	EF2	21	$25,816,733
Transportation Systems	EF3	21	$37,986,958
Transportation Systems	EF4	21	$39,604,801
All Categories	**EF0**	**151**	**$12,820,187**
All Categories	**EF1**	**151**	**$76,572,544**
All Categories	**EF2**	**151**	**$181,601,913**
All Categories	**EF3**	**151**	**$243,708,951**
All Categories	**EF4**	**151**	**$256,636,800**

Source: GIS Analysis

Table 5-133: Critical Facilities Exposed to the Tornado - Town of Rockwell

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	2	$44,230
Banking and Finance	EF1	2	$274,883
Banking and Finance	EF2	2	$779,720
Banking and Finance	EF3	2	$990,961
Banking and Finance	EF4	2	$1,000,668
Commercial Facilities	EF0	100	$3,399,593
Commercial Facilities	EF1	100	$22,579,243
Commercial Facilities	EF2	100	$58,519,452
Commercial Facilities	EF3	100	$77,930,487
Commercial Facilities	EF4	100	$81,681,295
Critical Manufacturing	EF0	46	$5,498,957
Critical Manufacturing	EF1	46	$39,684,782
Critical Manufacturing	EF2	46	$89,675,303
Critical Manufacturing	EF3	46	$96,135,616
Critical Manufacturing	EF4	46	$96,135,616
Government Facilities	EF0	12	$422,474
Government Facilities	EF1	12	$2,120,093
Government Facilities	EF2	12	$6,343,929
Government Facilities	EF3	12	$9,793,621
Government Facilities	EF4	12	$10,686,292
Healthcare and Public Health	EF0	6	$514,319
Healthcare and Public Health	EF1	6	$2,082,155
Healthcare and Public Health	EF2	6	$3,868,817
Healthcare and Public Health	EF3	6	$4,870,038

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	EF4	6	$5,042,155
Transportation Systems	EF0	21	$1,487,432
Transportation Systems	EF1	21	$8,509,028
Transportation Systems	EF2	21	$18,293,406
Transportation Systems	EF3	21	$26,917,072
Transportation Systems	EF4	21	$28,063,455
All Categories	**EF0**	**187**	**$11,367,005**
All Categories	**EF1**	**187**	**$75,250,184**
All Categories	**EF2**	**187**	**$177,480,627**
All Categories	**EF3**	**187**	**$216,637,795**
All Categories	**EF4**	**187**	**$222,609,481**

Source: GIS Analysis

Table 5-134: Critical Facilities Exposed to the Tornado - Town of Spencer

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	EF0	95	$6,399,773
Commercial Facilities	EF1	95	$35,247,217
Commercial Facilities	EF2	95	$106,163,079
Commercial Facilities	EF3	95	$151,794,988
Commercial Facilities	EF4	95	$163,444,430
Critical Manufacturing	EF0	23	$1,374,426
Critical Manufacturing	EF1	23	$9,918,936
Critical Manufacturing	EF2	23	$22,413,719
Critical Manufacturing	EF3	23	$24,028,430
Critical Manufacturing	EF4	23	$24,028,430
Government Facilities	EF0	12	$2,842,759

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	EF1	12	$12,168,643
Government Facilities	EF2	12	$32,931,464
Government Facilities	EF3	12	$49,895,619
Government Facilities	EF4	12	$56,211,906
Healthcare and Public Health	EF0	7	$496,209
Healthcare and Public Health	EF1	7	$2,008,840
Healthcare and Public Health	EF2	7	$3,732,592
Healthcare and Public Health	EF3	7	$4,698,559
Healthcare and Public Health	EF4	7	$4,864,615
Transportation Systems	EF0	33	$2,157,272
Transportation Systems	EF1	33	$12,231,366
Transportation Systems	EF2	33	$26,879,791
Transportation Systems	EF3	33	$39,534,035
Transportation Systems	EF4	33	$41,357,795
All Categories	**EF0**	**170**	**$13,270,439**
All Categories	**EF1**	**170**	**$71,575,002**
All Categories	**EF2**	**170**	**$192,120,645**
All Categories	**EF3**	**170**	**$269,951,631**
All Categories	**EF4**	**170**	**$289,907,176**

Source: GIS Analysis

The following table provides counts and estimated damages for CIKR buildings across all jurisdictions, by sector, in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event.

Table 5-135: Critical Facilities Exposed to the Tornado (by Sector)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	EF0	5,533	$350,431,575
Banking and Finance	EF1	5,533	$2,110,883,438
Banking and Finance	EF2	5,533	$5,566,617,964
Banking and Finance	EF3	5,533	$7,323,700,466
Banking and Finance	EF4	5,533	$7,484,179,334
Banking and Finance	EF5	101	$93,069,516
Chemical	EF0	64	$52,248,200
Chemical	EF1	64	$375,386,311
Chemical	EF2	64	$849,840,193
Chemical	EF3	64	$911,997,818
Chemical	EF4	64	$912,672,229
Chemical	EF5	2	$1,197,745
Commercial Facilities	EF0	197,140	$7,479,863,645
Commercial Facilities	EF1	197,140	$49,924,800,940
Commercial Facilities	EF2	197,140	$131,471,285,459
Commercial Facilities	EF3	197,140	$173,100,250,274
Commercial Facilities	EF4	197,140	$180,952,783,217
Commercial Facilities	EF5	1,499	$1,372,855,116
Communications	EF0	227	$26,654,123
Communications	EF1	227	$171,514,343
Communications	EF2	227	$437,992,717
Communications	EF3	227	$554,390,424
Communications	EF4	227	$575,302,248
Communications	EF5	11	$9,005,944

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	EF0	61,924	$4,797,528,405
Critical Manufacturing	EF1	61,924	$34,346,835,155
Critical Manufacturing	EF2	61,924	$78,369,380,653
Critical Manufacturing	EF3	61,924	$84,366,213,158
Critical Manufacturing	EF4	61,924	$84,574,994,789
Critical Manufacturing	EF5	607	$588,296,844
Defense Industrial Base	EF0	77	$45,169,657
Defense Industrial Base	EF1	77	$309,569,062
Defense Industrial Base	EF2	77	$722,115,525
Defense Industrial Base	EF3	77	$817,004,123
Defense Industrial Base	EF4	77	$830,327,774
Defense Industrial Base	EF5	3	$43,069,558
Emergency Services	EF0	2,561	$73,317,632
Emergency Services	EF1	2,561	$581,099,757
Emergency Services	EF2	2,561	$2,079,791,657
Emergency Services	EF3	2,561	$3,301,310,982
Emergency Services	EF4	2,561	$3,422,337,586
Emergency Services	EF5	10	$12,177,624
Energy	EF0	1,779	$2,524,973,111
Energy	EF1	1,779	$18,128,292,006
Energy	EF2	1,779	$41,200,465,260
Energy	EF3	1,779	$44,369,974,299
Energy	EF4	1,779	$44,455,564,876
Energy	EF5	9	$712,805,497
Food and Agriculture	EF0	152,163	$1,293,157,284

Sector	Event	Number of Buildings At Risk	Estimated Damages
Food and Agriculture	EF1	152,163	$8,628,269,797
Food and Agriculture	EF2	152,163	$13,155,693,085
Food and Agriculture	EF3	152,163	$13,641,663,633
Food and Agriculture	EF4	152,163	$13,657,876,610
Food and Agriculture	EF5	334	$30,450,936
Government Facilities	EF0	38,750	$2,549,825,312
Government Facilities	EF1	38,750	$13,080,599,949
Government Facilities	EF2	38,750	$40,641,376,035
Government Facilities	EF3	38,750	$60,932,011,096
Government Facilities	EF4	38,750	$65,988,196,610
Government Facilities	EF5	269	$337,870,107
Healthcare and Public Health	EF0	13,597	$1,468,226,476
Healthcare and Public Health	EF1	13,597	$7,367,823,408
Healthcare and Public Health	EF2	13,597	$18,907,877,219
Healthcare and Public Health	EF3	13,597	$26,437,214,160
Healthcare and Public Health	EF4	13,597	$27,325,309,037
Healthcare and Public Health	EF5	121	$155,593,667
Information Technology	EF0	3	$187,766
Information Technology	EF1	3	$1,560,026
Information Technology	EF2	3	$3,309,102
Information Technology	EF3	3	$4,063,873
Information Technology	EF4	3	$4,199,497
National Monuments and Icons	EF0	2	$56,764
National Monuments and Icons	EF1	2	$430,920

Sector	Event	Number of Buildings At Risk	Estimated Damages
National Monuments and Icons	EF2	2	$2,327,004
National Monuments and Icons	EF3	2	$2,540,176
National Monuments and Icons	EF4	2	$2,581,687
Nuclear Reactors, Materials and Waste	EF0	65	$7,746,320
Nuclear Reactors, Materials and Waste	EF1	65	$55,320,812
Nuclear Reactors, Materials and Waste	EF2	65	$135,285,831
Nuclear Reactors, Materials and Waste	EF3	65	$157,719,509
Nuclear Reactors, Materials and Waste	EF4	65	$159,879,516
Other	EF0	12	$831,598
Other	EF1	12	$6,388,302
Other	EF2	12	$23,109,655
Other	EF3	12	$30,208,469
Other	EF4	12	$30,873,333
Postal and Shipping	EF0	246	$3,922,150
Postal and Shipping	EF1	246	$24,843,358
Postal and Shipping	EF2	246	$68,625,014
Postal and Shipping	EF3	246	$79,276,017
Postal and Shipping	EF4	246	$81,702,947
Transportation Systems	EF0	36,806	$2,627,177,104
Transportation Systems	EF1	36,806	$15,079,664,767
Transportation Systems	EF2	36,806	$34,148,881,169
Transportation Systems	EF3	36,806	$47,886,473,085
Transportation Systems	EF4	36,806	$49,720,288,186
Transportation Systems	EF5	373	$445,490,169

Sector	Event	Number of Buildings At Risk	Estimated Damages
Water	EF0	1,366	$1,686,370,783
Water	EF1	1,366	$12,171,287,133
Water	EF2	1,366	$27,587,723,465
Water	EF3	1,366	$29,491,949,574
Water	EF4	1,366	$29,492,380,292
Water	EF5	16	$1,181,325,000
All Categories	**EF0**	**512,315**	**$24,987,687,905**
All Categories	**EF1**	**512,315**	**$162,364,569,484**
All Categories	**EF2**	**512,315**	**$395,371,697,007**
All Categories	**EF3**	**512,315**	**$493,407,961,136**
All Categories	**EF4**	**512,315**	**$509,671,449,768**
All Categories	**EF5**	**3,355**	**$4,983,207,723**

Source: GIS Analysis

The following tables provide counts and estimated damages for High Potential Loss Properties by jurisdiction in the plan. Because there is a large number of categories and events, the table is sorted by category and then by event. Totals across all categories are shown at the bottom of each table.

Table 5-136: High Potential Loss Properties Exposed to the Tornado - City of Statesville

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	95	$19,206,839
Commercial	EF1	95	$114,302,205
Commercial	EF2	95	$271,490,995
Commercial	EF3	95	$365,842,391
Commercial	EF4	95	$381,285,465
Government	EF0	29	$3,468,914
Government	EF1	29	$19,114,003
Government	EF2	29	$60,044,017

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	EF3	29	$93,465,597
Government	EF4	29	$100,540,309
Industrial	EF0	53	$20,141,856
Industrial	EF1	53	$145,386,243
Industrial	EF2	53	$328,531,954
Industrial	EF3	53	$352,218,315
Industrial	EF4	53	$352,218,315
Religious	EF0	19	$1,213,013
Religious	EF1	19	$9,765,496
Religious	EF2	19	$35,337,102
Religious	EF3	19	$56,207,587
Religious	EF4	19	$58,224,630
Residential	EF0	11	$2,173,893
Residential	EF1	11	$16,056,285
Residential	EF2	11	$30,466,807
Residential	EF3	11	$35,608,981
Residential	EF4	11	$35,608,981
Utilities	EF0	5	$47,464,143
Utilities	EF1	5	$342,601,665
Utilities	EF2	5	$774,183,255
Utilities	EF3	5	$830,000,000
Utilities	EF4	5	$830,000,000
All Categories	**EF0**	**212**	**$93,668,658**
All Categories	**EF1**	**212**	**$647,225,897**
All Categories	**EF2**	**212**	**$1,500,054,130**

Category	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**EF3**	**212**	**$1,733,342,871**
All Categories	**EF4**	**212**	**$1,757,877,700**

Source: GIS Analysis

Table 5-137: High Potential Loss Properties Exposed to the Tornado - Iredell County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	34	$4,871,512
Commercial	EF1	34	$30,146,362
Commercial	EF2	34	$70,020,050
Commercial	EF3	34	$93,075,061
Commercial	EF4	34	$97,608,069
Government	EF0	27	$8,027,484
Government	EF1	27	$34,051,339
Government	EF2	27	$91,572,258
Government	EF3	27	$138,574,645
Government	EF4	27	$156,455,639
Industrial	EF0	24	$11,200,662
Industrial	EF1	24	$80,847,671
Industrial	EF2	24	$182,692,963
Industrial	EF3	24	$195,864,685
Industrial	EF4	24	$195,864,685
Religious	EF0	24	$3,665,437
Religious	EF1	24	$29,509,005
Religious	EF2	24	$106,780,310
Religious	EF3	24	$169,845,950
Religious	EF4	24	$175,940,972

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	EF0	235	$24,807,737
Residential	EF1	235	$180,237,950
Residential	EF2	235	$327,690,556
Residential	EF3	235	$378,662,825
Residential	EF4	235	$378,662,825
Utilities	EF0	2	$31,452,143
Utilities	EF1	2	$227,025,200
Utilities	EF2	2	$513,013,000
Utilities	EF3	2	$550,000,000
Utilities	EF4	2	$550,000,000
All Categories	**EF0**	**346**	**$84,024,975**
All Categories	**EF1**	**346**	**$581,817,527**
All Categories	**EF2**	**346**	**$1,291,769,137**
All Categories	**EF3**	**346**	**$1,526,023,166**
All Categories	**EF4**	**346**	**$1,554,532,190**

Source: GIS Analysis

Table 5-138: High Potential Loss Properties Exposed to the Tornado - Town of Mooresville

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	174	$41,053,364
Commercial	EF1	174	$240,998,389
Commercial	EF2	174	$587,062,161
Commercial	EF3	174	$830,741,258
Commercial	EF4	174	$872,981,580
Government	EF0	17	$5,331,391
Government	EF1	17	$24,446,986

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	EF2	17	$69,342,585
Government	EF3	17	$106,018,469
Government	EF4	17	$117,622,395
Industrial	EF0	32	$13,131,990
Industrial	EF1	32	$94,788,218
Industrial	EF2	32	$214,194,671
Industrial	EF3	32	$229,637,590
Industrial	EF4	32	$229,637,590
Religious	EF0	20	$1,005,767
Religious	EF1	20	$8,097,041
Religious	EF2	20	$29,299,686
Religious	EF3	20	$46,604,407
Religious	EF4	20	$48,276,833
Residential	EF0	13	$3,112,694
Residential	EF1	13	$22,794,876
Residential	EF2	13	$44,705,220
Residential	EF3	13	$54,983,819
Residential	EF4	13	$55,576,494
Utilities	EF0	3	$69,826,616
Utilities	EF1	3	$504,016,583
Utilities	EF2	3	$1,138,935,498
Utilities	EF3	3	$1,221,050,000
Utilities	EF4	3	$1,221,050,000
All Categories	**EF0**	**259**	**$133,461,822**
All Categories	**EF1**	**259**	**$895,142,093**

Category	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**EF2**	**259**	**$2,083,539,821**
All Categories	**EF3**	**259**	**$2,489,035,543**
All Categories	**EF4**	**259**	**$2,545,144,892**

Source: GIS Analysis

Table 5-139: High Potential Loss Properties Exposed to the Tornado - Town of Troutman

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	9	$3,113,128
Commercial	EF1	9	$23,195,430
Commercial	EF2	9	$48,411,871
Commercial	EF3	9	$55,469,939
Commercial	EF4	9	$56,556,477
Government	EF0	3	$865,395
Government	EF1	3	$3,622,164
Government	EF2	3	$9,645,198
Government	EF3	3	$14,567,096
Government	EF4	3	$16,501,959
Industrial	EF0	5	$2,584,064
Industrial	EF1	5	$18,652,072
Industrial	EF2	5	$42,148,429
Industrial	EF3	5	$45,187,229
Industrial	EF4	5	$45,187,229
Religious	EF0	3	$192,978
Religious	EF1	3	$1,553,591
Religious	EF2	3	$5,621,773
Religious	EF3	3	$8,942,054

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	EF4	3	$9,262,945
Residential	EF0	3	$1,166,834
Residential	EF1	3	$7,688,274
Residential	EF2	3	$10,139,069
Residential	EF3	3	$10,502,482
Residential	EF4	3	$10,502,482
Utilities	EF0	1	$41,173,714
Utilities	EF1	1	$297,196,625
Utilities	EF2	1	$671,580,655
Utilities	EF3	1	$720,000,000
Utilities	EF4	1	$720,000,000
All Categories	**EF0**	**24**	**$49,096,113**
All Categories	**EF1**	**24**	**$351,908,156**
All Categories	**EF2**	**24**	**$787,546,995**
All Categories	**EF3**	**24**	**$854,668,800**
All Categories	**EF4**	**24**	**$858,011,092**

Source: GIS Analysis

Table 5-140: High Potential Loss Properties Exposed to the Tornado - City of Salisbury

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	111	$46,761,691
Commercial	EF1	111	$266,853,404
Commercial	EF2	111	$698,428,375
Commercial	EF3	111	$981,801,881
Commercial	EF4	111	$1,039,717,166
Government	EF0	35	$5,352,884

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	EF1	35	$31,284,477
Government	EF2	35	$100,951,817
Government	EF3	35	$157,836,327
Government	EF4	35	$168,493,789
Industrial	EF0	32	$9,907,397
Industrial	EF1	32	$71,499,538
Industrial	EF2	32	$161,566,786
Industrial	EF3	32	$173,206,246
Industrial	EF4	32	$173,206,246
Religious	EF0	14	$1,535,300
Religious	EF1	14	$12,378,352
Religious	EF2	14	$44,796,792
Religious	EF3	14	$71,258,565
Religious	EF4	14	$73,812,477
Residential	EF0	77	$8,273,227
Residential	EF1	77	$58,028,169
Residential	EF2	77	$141,444,737
Residential	EF3	77	$217,725,417
Residential	EF4	77	$228,536,066
Utilities	EF0	1	$2,860,000
Utilities	EF1	1	$20,640,000
Utilities	EF2	1	$46,640,000
Utilities	EF3	1	$50,000,000
Utilities	EF4	1	$50,000,000
All Categories	**EF0**	**270**	**$74,690,499**

Category	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**EF1**	**270**	**$460,683,940**
All Categories	**EF2**	**270**	**$1,193,828,507**
All Categories	**EF3**	**270**	**$1,651,828,436**
All Categories	**EF4**	**270**	**$1,733,765,744**

Source: GIS Analysis

Table 5-141: High Potential Loss Properties Exposed to the Tornado - Rowan County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Agricultural	EF0	1	$143,955
Agricultural	EF1	1	$927,134
Agricultural	EF2	1	$1,098,890
Agricultural	EF3	1	$1,098,890
Agricultural	EF4	1	$1,098,890
Commercial	EF0	33	$11,622,631
Commercial	EF1	33	$60,217,275
Commercial	EF2	33	$171,434,651
Commercial	EF3	33	$246,818,633
Commercial	EF4	33	$267,076,458
Government	EF0	20	$10,022,582
Government	EF1	20	$46,080,151
Government	EF2	20	$130,887,783
Government	EF3	20	$200,165,437
Government	EF4	20	$221,965,262
Industrial	EF0	18	$19,429,225
Industrial	EF1	18	$140,216,508
Industrial	EF2	18	$316,845,830

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	EF3	18	$339,671,774
Industrial	EF4	18	$339,671,774
Religious	EF0	11	$697,299
Religious	EF1	11	$5,621,977
Religious	EF2	11	$20,345,724
Religious	EF3	11	$32,364,083
Religious	EF4	11	$33,524,014
Residential	EF0	16	$2,405,295
Residential	EF1	16	$15,322,314
Residential	EF2	16	$37,734,644
Residential	EF3	16	$67,121,511
Residential	EF4	16	$72,569,394
Utilities	EF0	2	$1,144,000
Utilities	EF1	2	$8,256,000
Utilities	EF2	2	$18,656,000
Utilities	EF3	2	$20,000,000
Utilities	EF4	2	$20,000,000
All Categories	**EF0**	**101**	**$45,464,987**
All Categories	**EF1**	**101**	**$276,641,359**
All Categories	**EF2**	**101**	**$697,003,522**
All Categories	**EF3**	**101**	**$907,240,328**
All Categories	**EF4**	**101**	**$955,905,792**

Source: GIS Analysis

Table 5-142: High Potential Loss Properties Exposed to the Tornado - Town of China Grove

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	5	$1,330,363
Commercial	EF1	5	$7,004,313
Commercial	EF2	5	$20,035,383
Commercial	EF3	5	$28,040,979
Commercial	EF4	5	$30,242,707
Government	EF0	2	$1,875,140
Government	EF1	2	$7,850,539
Government	EF2	2	$20,902,843
Government	EF3	2	$31,567,934
Government	EF4	2	$35,760,292
Industrial	EF0	3	$1,157,642
Industrial	EF1	3	$8,354,449
Industrial	EF2	3	$18,878,464
Industrial	EF3	3	$20,238,491
Industrial	EF4	3	$20,238,491
Religious	EF0	1	$36,632
Religious	EF1	1	$295,347
Religious	EF2	1	$1,068,848
Religious	EF3	1	$1,700,224
Religious	EF4	1	$1,761,160
Residential	EF0	3	$317,005
Residential	EF1	3	$2,157,328
Residential	EF2	3	$3,592,019
Residential	EF3	3	$4,428,222

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	EF4	3	$4,530,242
All Categories	**EF0**	**14**	**$4,716,782**
All Categories	**EF1**	**14**	**$25,661,976**
All Categories	**EF2**	**14**	**$64,477,557**
All Categories	**EF3**	**14**	**$85,975,850**
All Categories	**EF4**	**14**	**$92,532,892**

Source: GIS Analysis

Table 5-143: High Potential Loss Properties Exposed to the Tornado - Town of Cleveland

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	2	$361,850
Commercial	EF1	2	$1,722,584
Commercial	EF2	2	$5,554,618
Commercial	EF3	2	$8,118,838
Commercial	EF4	2	$8,908,653
Government	EF0	1	$194,370
Government	EF1	1	$813,758
Government	EF2	1	$2,166,713
Government	EF3	1	$3,272,218
Government	EF4	1	$3,706,782
Industrial	EF0	6	$2,964,084
Industrial	EF1	6	$21,391,150
Industrial	EF2	6	$48,337,365
Industrial	EF3	6	$51,819,645
Industrial	EF4	6	$51,819,645
Religious	EF0	1	$592,758

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	EF1	1	$4,779,108
Religious	EF2	1	$17,295,411
Religious	EF3	1	$27,511,930
Religious	EF4	1	$28,497,959
Residential	EF0	2	$2,950,946
Residential	EF1	2	$17,716,527
Residential	EF2	2	$49,829,768
Residential	EF3	2	$98,932,648
Residential	EF4	2	$108,490,677
All Categories	**EF0**	**12**	**$7,064,008**
All Categories	**EF1**	**12**	**$46,423,127**
All Categories	**EF2**	**12**	**$123,183,875**
All Categories	**EF3**	**12**	**$189,655,279**
All Categories	**EF4**	**12**	**$201,423,716**

Source: GIS Analysis

Table 5-144: High Potential Loss Properties Exposed to the Tornado - Town of East Spencer

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	1	$10,117,258
Commercial	EF1	1	$107,947,324
Commercial	EF2	1	$203,040,572
Commercial	EF3	1	$224,239,703
Commercial	EF4	1	$224,329,435
Government	EF0	2	$1,536,987
Government	EF1	2	$6,570,758
Government	EF2	2	$17,765,749

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	EF3	2	$26,912,595
Government	EF4	2	$30,328,851
Industrial	EF0	1	$770,326
Industrial	EF1	1	$5,559,274
Industrial	EF2	1	$12,562,236
Industrial	EF3	1	$13,467,234
Industrial	EF4	1	$13,467,234
Residential	EF0	1	$67,792
Residential	EF1	1	$407,004
Residential	EF2	1	$1,144,746
Residential	EF3	1	$2,272,793
Residential	EF4	1	$2,492,371
All Categories	**EF0**	**5**	**$12,492,363**
All Categories	**EF1**	**5**	**$120,484,360**
All Categories	**EF2**	**5**	**$234,513,303**
All Categories	**EF3**	**5**	**$266,892,325**
All Categories	**EF4**	**5**	**$270,617,891**

Source: GIS Analysis

Table 5-145: High Potential Loss Properties Exposed to the Tornado - Town of Faith

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	EF0	2	$122,588
Religious	EF1	2	$988,365
Religious	EF2	2	$3,576,856
Religious	EF3	2	$5,689,729
Religious	EF4	2	$5,893,650

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	EF0	1	$104,904
Residential	EF1	1	$629,811
Residential	EF2	1	$1,771,417
Residential	EF3	1	$3,516,993
Residential	EF4	1	$3,856,774
All Categories	**EF0**	**3**	**$227,492**
All Categories	**EF1**	**3**	**$1,618,176**
All Categories	**EF2**	**3**	**$5,348,273**
All Categories	**EF3**	**3**	**$9,206,722**
All Categories	**EF4**	**3**	**$9,750,424**

Source: GIS Analysis

Table 5-146: High Potential Loss Properties Exposed to the Tornado - Town of Granite Quarry

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	1	$93,701
Commercial	EF1	1	$446,064
Commercial	EF2	1	$1,438,371
Commercial	EF3	1	$2,102,377
Commercial	EF4	1	$2,306,900
Government	EF0	2	$1,159,727
Government	EF1	2	$4,855,359
Government	EF2	2	$12,927,878
Government	EF3	2	$19,523,966
Government	EF4	2	$22,116,833
Industrial	EF0	1	$2,479,811
Industrial	EF1	1	$17,896,260

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	EF2	1	$40,439,999
Industrial	EF3	1	$43,353,344
Industrial	EF4	1	$43,353,344
All Categories	**EF0**	**4**	**$3,733,239**
All Categories	**EF1**	**4**	**$23,197,683**
All Categories	**EF2**	**4**	**$54,806,248**
All Categories	**EF3**	**4**	**$64,979,687**
All Categories	**EF4**	**4**	**$67,777,077**

Source: GIS Analysis

Table 5-147: High Potential Loss Properties Exposed to the Tornado - Town of Landis

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	1	$1,349,056
Commercial	EF1	1	$7,717,430
Commercial	EF2	1	$16,591,564
Commercial	EF3	1	$24,412,967
Commercial	EF4	1	$25,452,701
Government	EF0	3	$3,037,051
Government	EF1	3	$12,715,040
Government	EF2	3	$33,855,061
Government	EF3	3	$51,128,660
Government	EF4	3	$57,918,766
Industrial	EF0	1	$498,624
Industrial	EF1	1	$3,598,463
Industrial	EF2	1	$8,131,411
Industrial	EF3	1	$8,717,207

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	EF4	1	$8,717,207
Religious	EF0	1	$22,854
Religious	EF1	1	$184,258
Religious	EF2	1	$666,822
Religious	EF3	1	$1,060,719
Religious	EF4	1	$1,098,735
Residential	EF0	3	$253,271
Residential	EF1	3	$1,732,380
Residential	EF2	3	$3,840,345
Residential	EF3	3	$5,876,765
Residential	EF4	3	$6,202,847
All Categories	**EF0**	**9**	**$5,160,856**
All Categories	**EF1**	**9**	**$25,947,571**
All Categories	**EF2**	**9**	**$63,085,203**
All Categories	**EF3**	**9**	**$91,196,318**
All Categories	**EF4**	**9**	**$99,390,256**

Source: GIS Analysis

Table 5-148: High Potential Loss Properties Exposed to the Tornado - Town of Rockwell

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	4	$399,947
Commercial	EF1	4	$2,045,910
Commercial	EF2	4	$5,688,157
Commercial	EF3	4	$8,331,792
Commercial	EF4	4	$8,995,980
Government	EF0	1	$240,079

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	EF1	1	$1,005,123
Government	EF2	1	$2,676,240
Government	EF3	1	$4,041,717
Government	EF4	1	$4,578,474
Industrial	EF0	2	$556,848
Industrial	EF1	2	$4,018,651
Industrial	EF2	2	$9,080,904
Industrial	EF3	2	$9,735,103
Industrial	EF4	2	$9,735,103
Religious	EF0	1	$83,738
Religious	EF1	1	$675,134
Religious	EF2	1	$2,443,285
Religious	EF3	1	$3,886,549
Religious	EF4	1	$4,025,844
Residential	EF0	3	$247,487
Residential	EF1	3	$1,485,832
Residential	EF2	3	$4,179,074
Residential	EF3	3	$8,297,187
Residential	EF4	3	$9,098,790
All Categories	**EF0**	**11**	**$1,528,099**
All Categories	**EF1**	**11**	**$9,230,650**
All Categories	**EF2**	**11**	**$24,067,660**
All Categories	**EF3**	**11**	**$34,292,348**
All Categories	**EF4**	**11**	**$36,434,191**

Source: GIS Analysis

Table 5-149: High Potential Loss Properties Exposed to the Tornado - Town of Spencer

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	EF0	11	$3,226,559
Commercial	EF1	11	$16,024,813
Commercial	EF2	11	$47,788,249
Commercial	EF3	11	$69,485,371
Commercial	EF4	11	$75,621,799
Government	EF0	4	$2,551,870
Government	EF1	4	$10,875,223
Government	EF2	4	$29,337,257
Government	EF3	4	$44,421,777
Government	EF4	4	$50,098,867
Industrial	EF0	2	$908,299
Industrial	EF1	2	$6,554,997
Industrial	EF2	2	$14,812,261
Industrial	EF3	2	$15,879,354
Industrial	EF4	2	$15,879,354
Religious	EF0	3	$77,467
Religious	EF1	3	$624,574
Religious	EF2	3	$2,260,310
Religious	EF3	3	$3,595,491
Religious	EF4	3	$3,724,353
Residential	EF0	2	$414,465
Residential	EF1	2	$2,702,301
Residential	EF2	2	$6,557,829
Residential	EF3	2	$11,254,265

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	EF4	2	$12,097,409
All Categories	**EF0**	**22**	**$7,178,660**
All Categories	**EF1**	**22**	**$36,781,908**
All Categories	**EF2**	**22**	**$100,755,906**
All Categories	**EF3**	**22**	**$144,636,258**
All Categories	**EF4**	**22**	**$157,421,782**

Source: GIS Analysis

5.11 WINTER STORM AND FREEZE

5.11.1 Background

A winter storm can range from a moderate snow over a period of a few hours to blizzard conditions with blinding wind-driven snow that lasts for several days. Events may include snow, sleet, freezing rain, or a mix of these wintry forms of precipitation. Some winter storms might be large enough to affect several states, while others might affect only localized areas. Occasionally, heavy snow might also cause significant property damages, such as roof collapses on older buildings.

All winter storm events have the potential to present dangerous conditions to the affected area. Larger snowfalls pose a greater risk, reducing visibility due to blowing snow and making driving conditions treacherous. A heavy snow event is defined by the National Weather Service as an accumulation of 4 of more inches in 12 hours or less. A blizzard is the most severe form of winter storm. It combines low temperatures, heavy snow, and winds of 35 miles per hour or more, which reduces visibility to a quarter mile or less for at least 3 hours. Winter storms are often accompanied by sleet, freezing rain, or an ice storm. Such freeze events are particularly hazardous as they create treacherous surfaces.

Ice storms are defined as storms with significant amounts of freezing rain and are a result of cold air damming (CAD). CAD is a shallow, surface-based layer of relatively cold, stably-stratified air entrenched against the eastern slopes of the Appalachian Mountains. With warmer air above, falling precipitation in the form of snow melts, then becomes either super-cooled (liquid below the melting point of water) or re-freezes. In the former case, super-cooled droplets can freeze on impact (freezing rain), while in the latter case, the re-frozen water particles are ice pellets (or sleet). Sleet is defined as partially frozen raindrops or refrozen snowflakes that form into small ice pellets before reaching the ground. They typically bounce when they hit the ground and do not stick to the surface. However, it does accumulate like snow, posing similar problems and has the potential to accumulate into a layer of ice on surfaces. Freezing rain, conversely, usually sticks to the ground, creating a sheet of ice on the roadways and other surfaces. All of the winter storm elements – snow, low temperatures, sleet, ice, etcetera – have the potential to cause significant hazard to a community. Even small accumulations can down power lines and trees limbs and create hazardous driving conditions. Furthermore, communication and power may be disrupted for days.

5.11.2 Location and Spatial Extent

Nearly the entire continental United States is susceptible to winter storm and freeze events. Some ice and winter storms may be large enough to affect several states, while others might affect limited, localized areas. The degree of exposure typically depends on the normal expected severity of local winter weather. The Iredell Rowan Region is accustomed to severe winter weather conditions and often receives winter weather during the winter months. Given the atmospheric nature of the hazard, the entire region has uniform exposure to a winter storm. The maps below depict extent characteristics of the hazard for greatest all-time one day snow; High being 36 inches and Low being 1 inches.

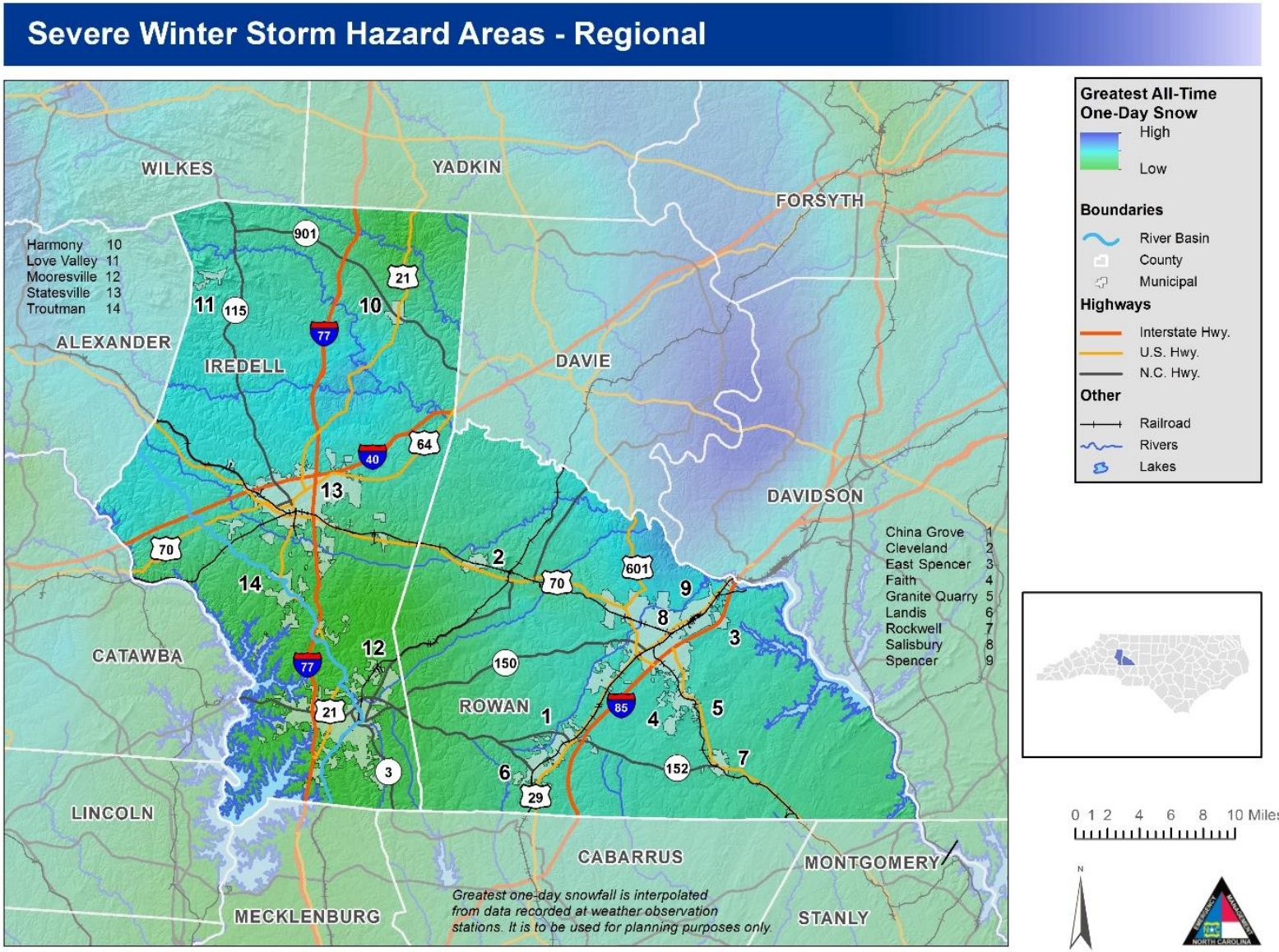


Figure 5-30: Severe Winter Storm Hazard Areas – Regional

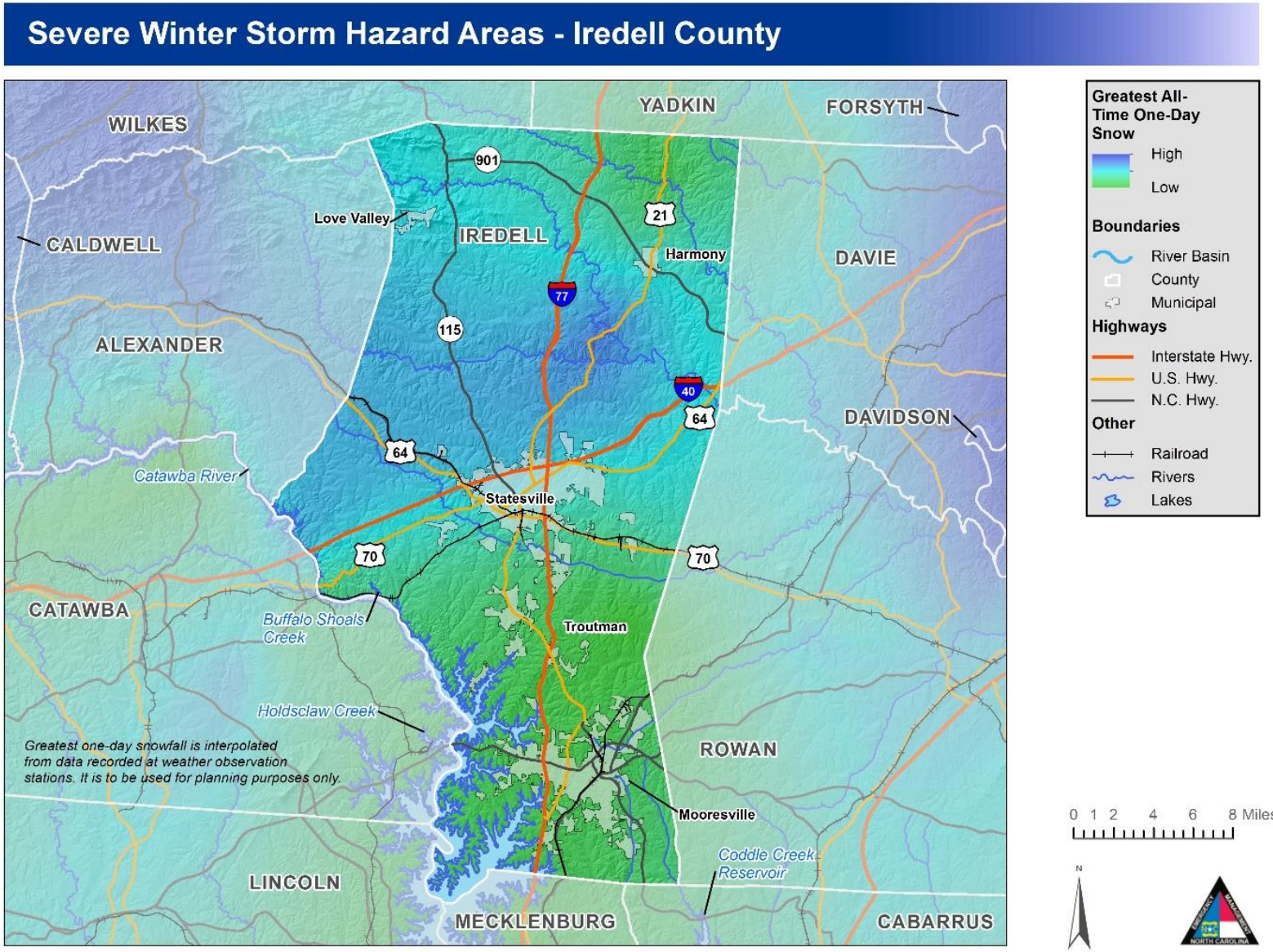


Figure 5-31: Severe Winter Storm Hazard Areas – Iredell County

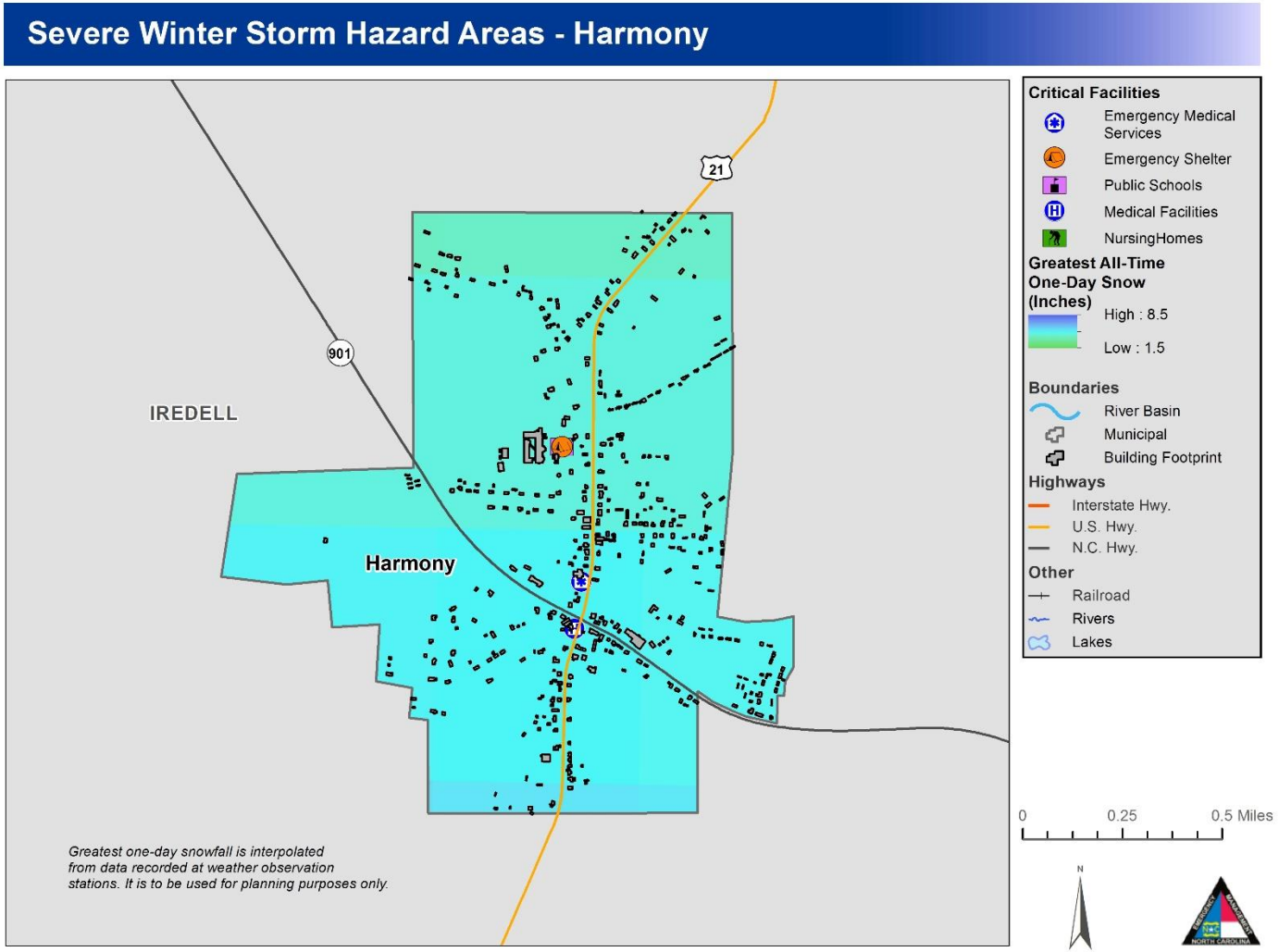


Figure 5-32: Severe Winter Storm Hazard Areas – Harmony

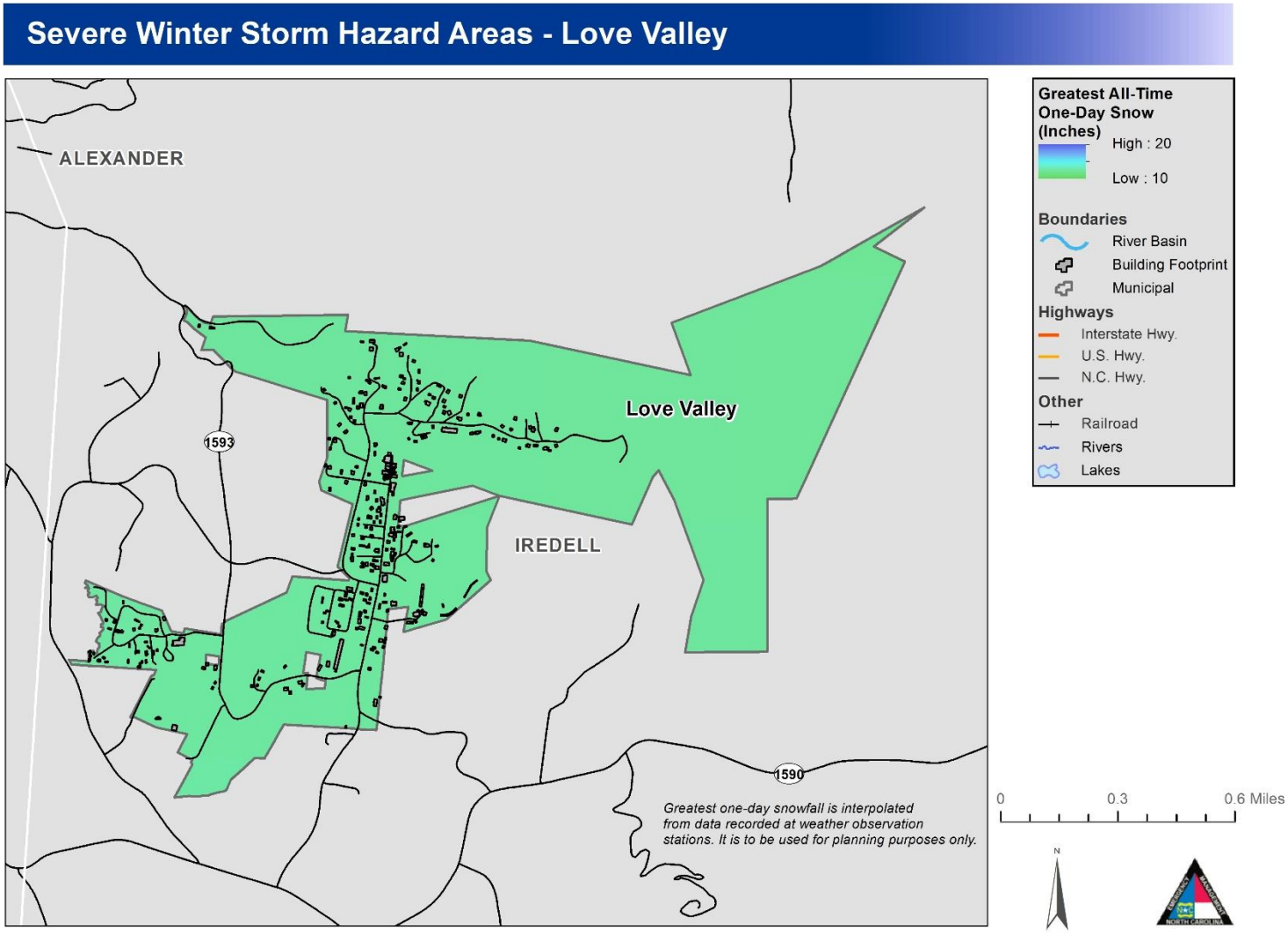


Figure 5-33: Severe Winter Storm Hazard Areas – Love Valley

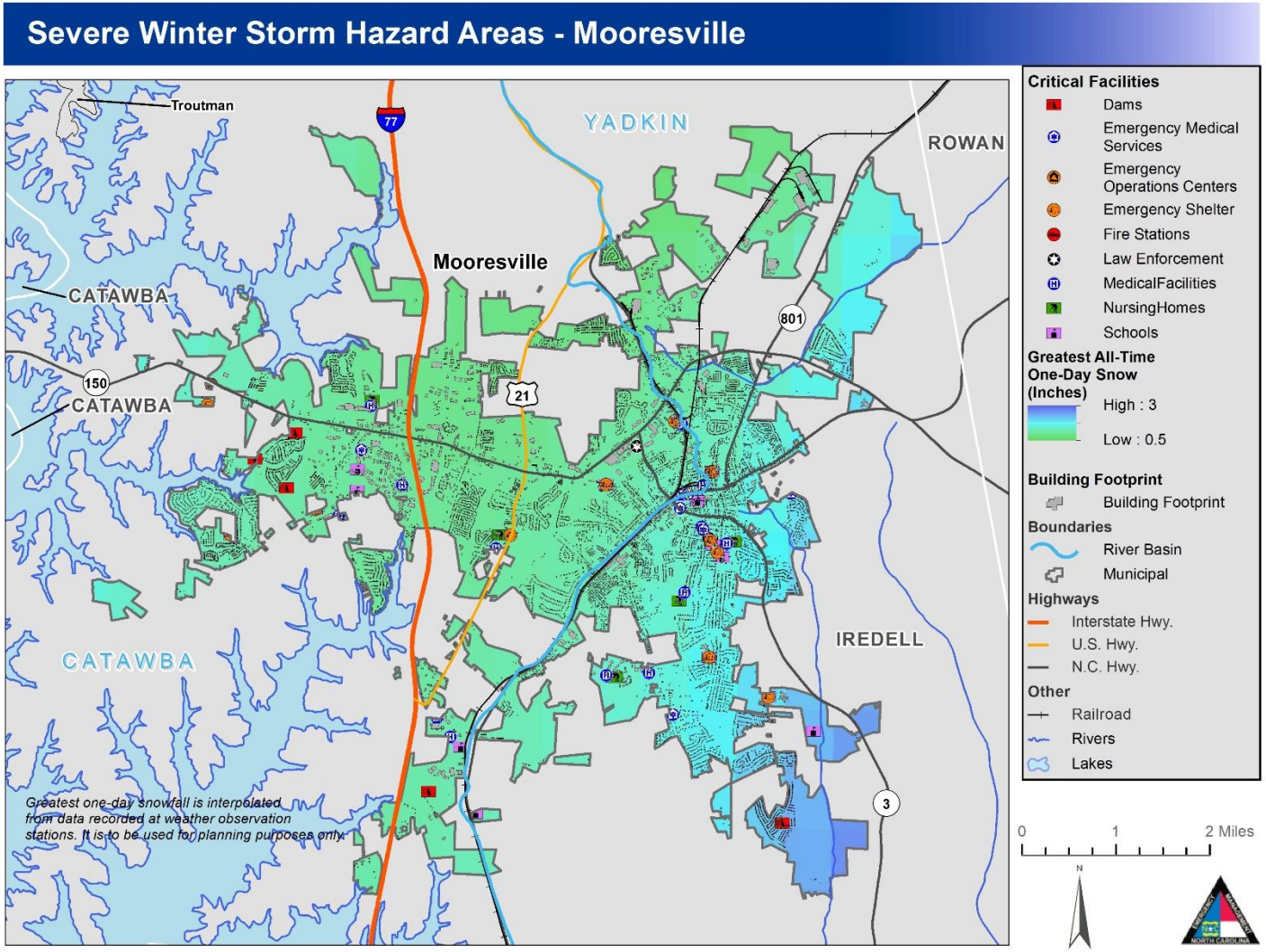


Figure 5-34: Severe Winter Storm Hazard Areas – Mooresville

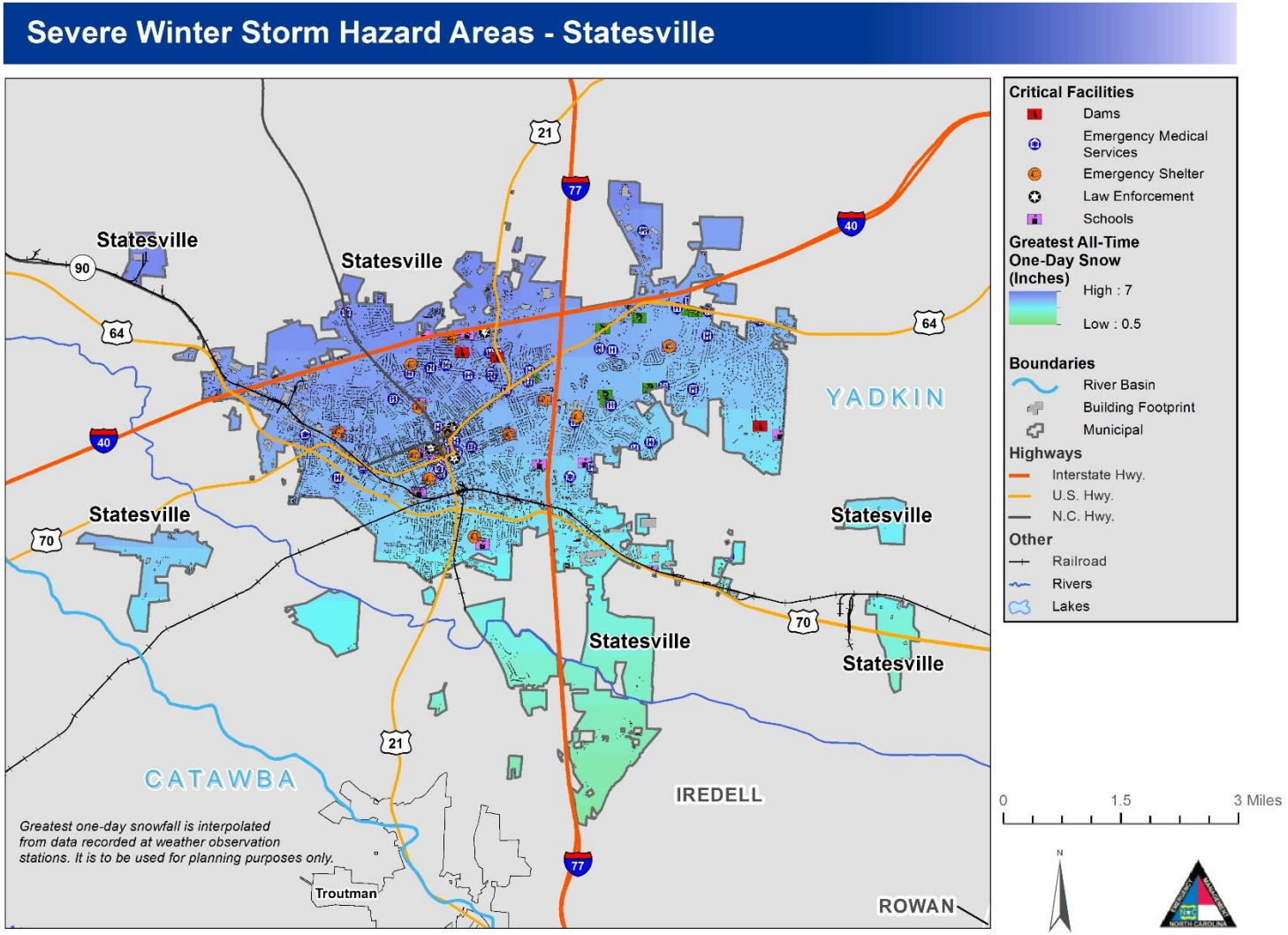


Figure 5-35: Severe Winter Storm Hazard Areas – Statesville

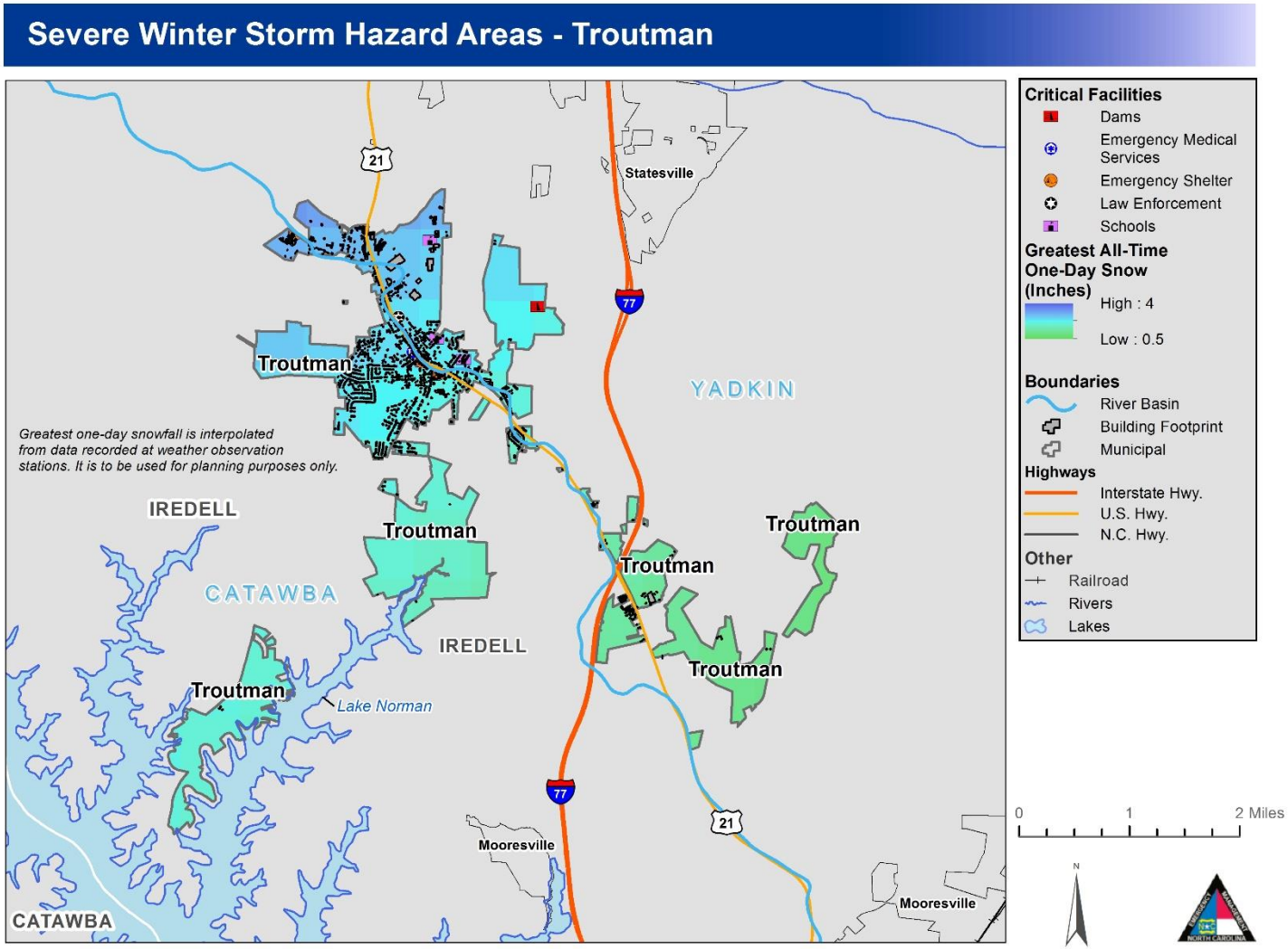


Figure 5-36: Severe Winter Storm Hazard Areas – Troutman

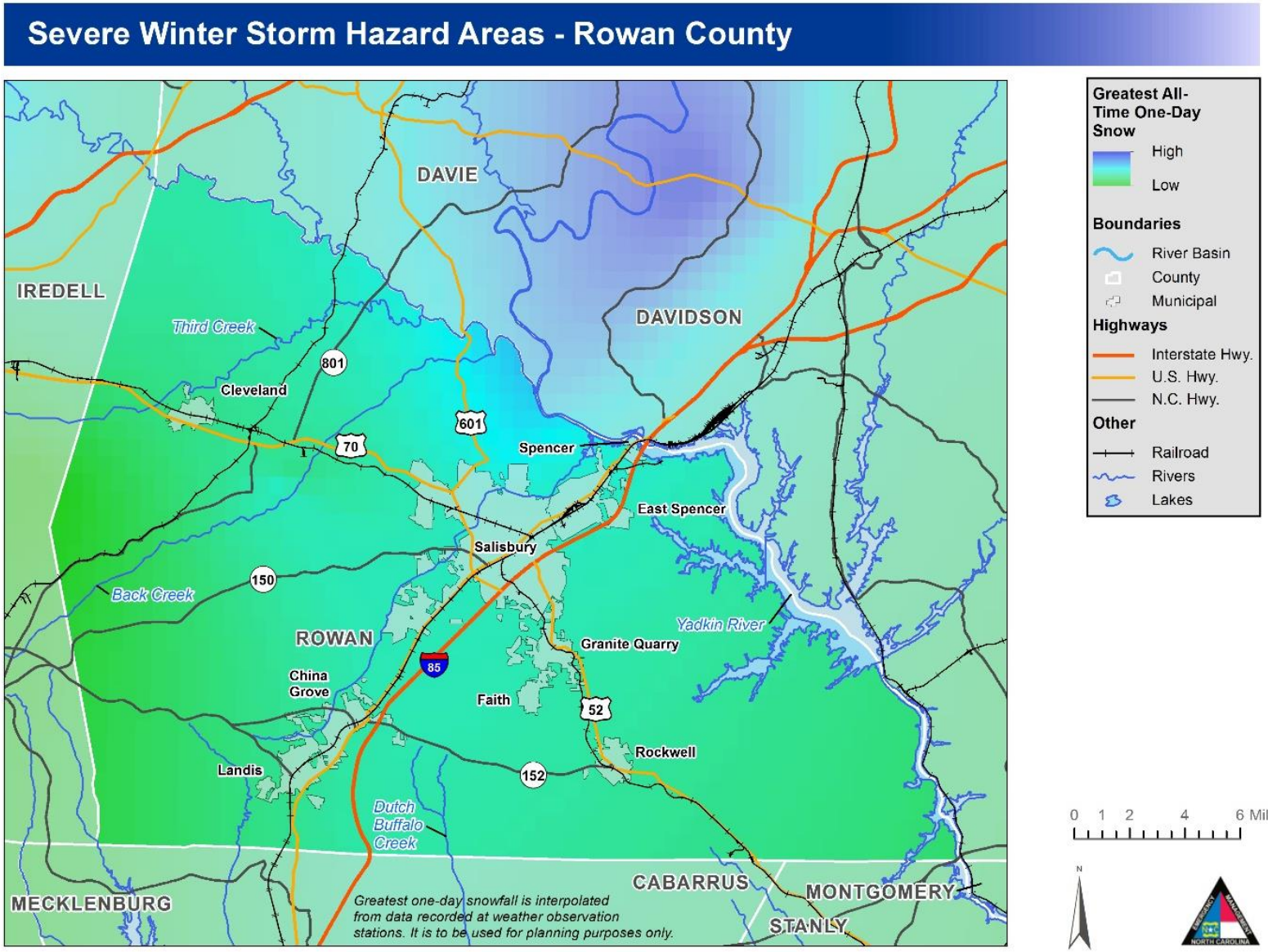


Figure 5-37: Severe Winter Storm Hazard Areas – Rowan County

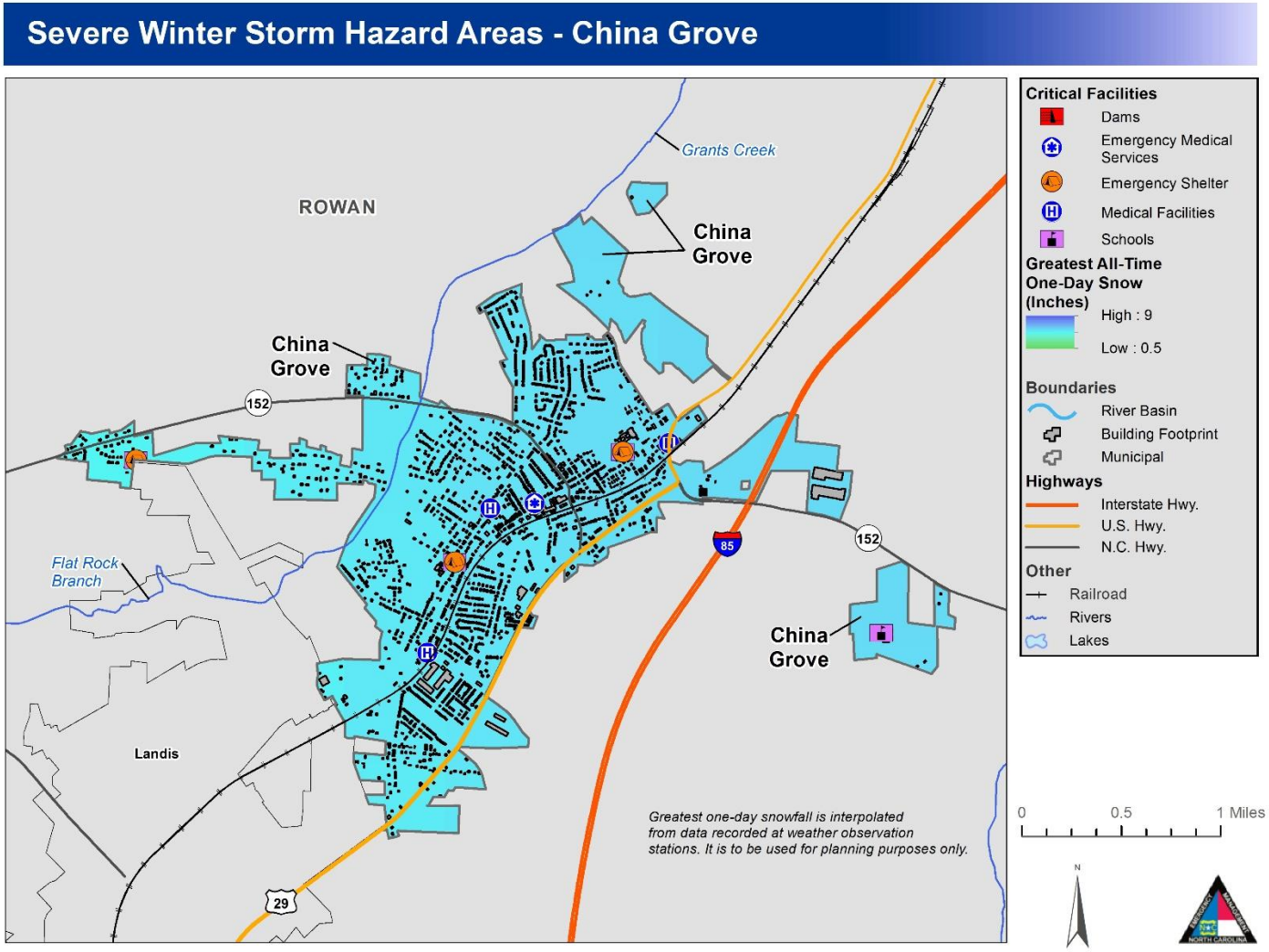


Figure 5-38: Severe Winter Storm Hazard Areas – China Grove

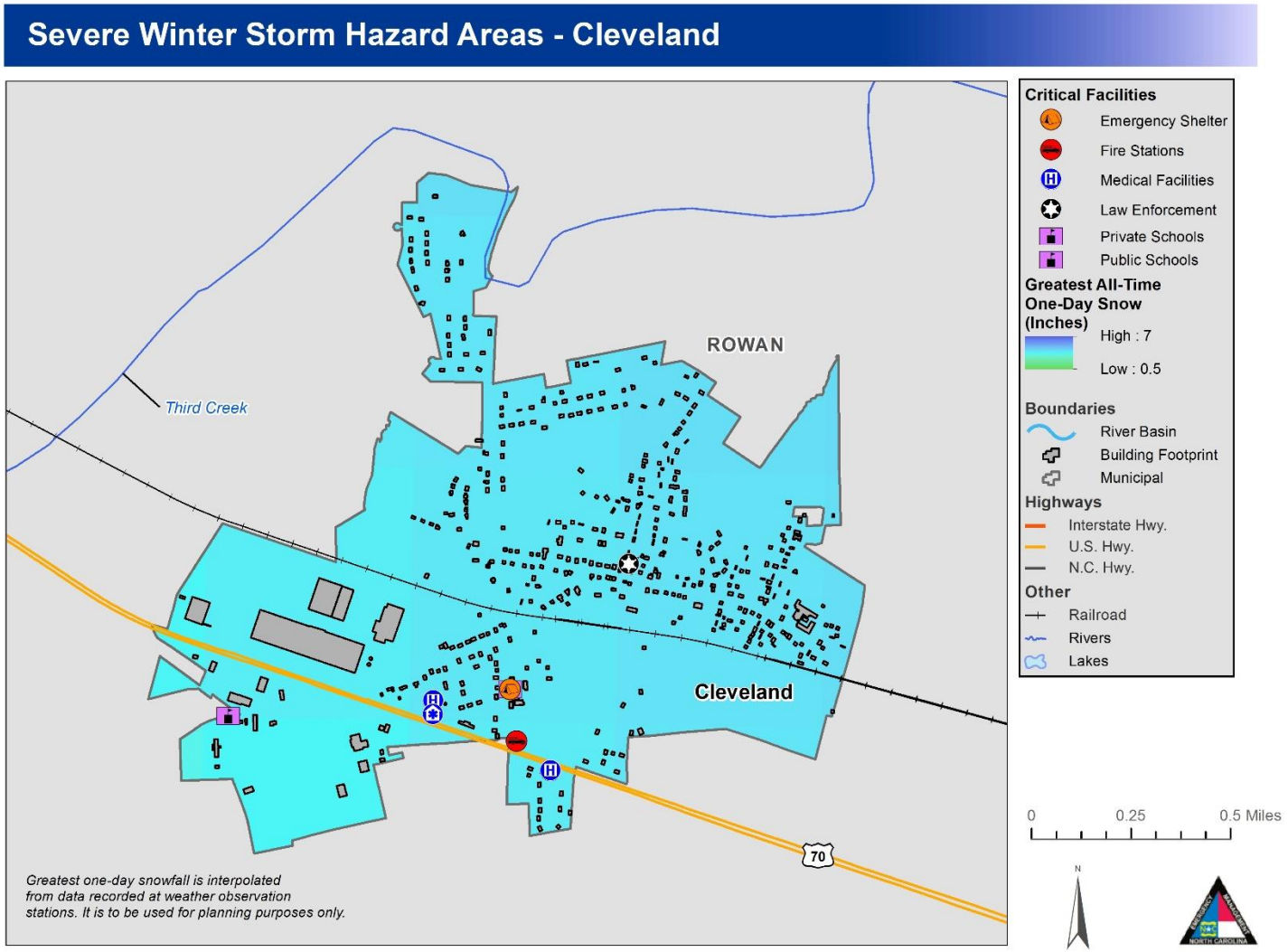


Figure 5-39: Severe Winter Storm Hazard Areas – Cleveland

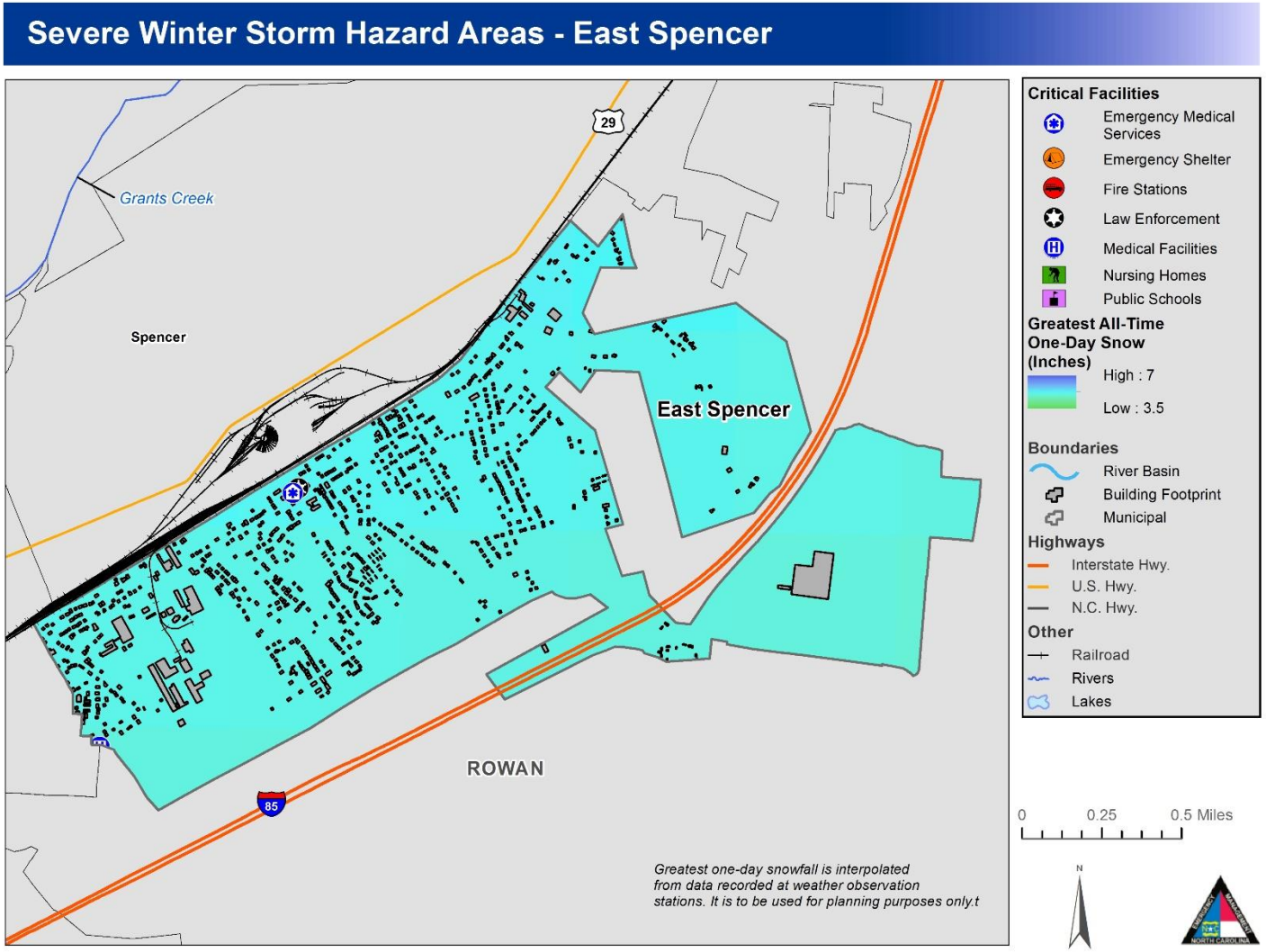


Figure 5-40: Severe Winter Storm Hazard Areas – East Spencer

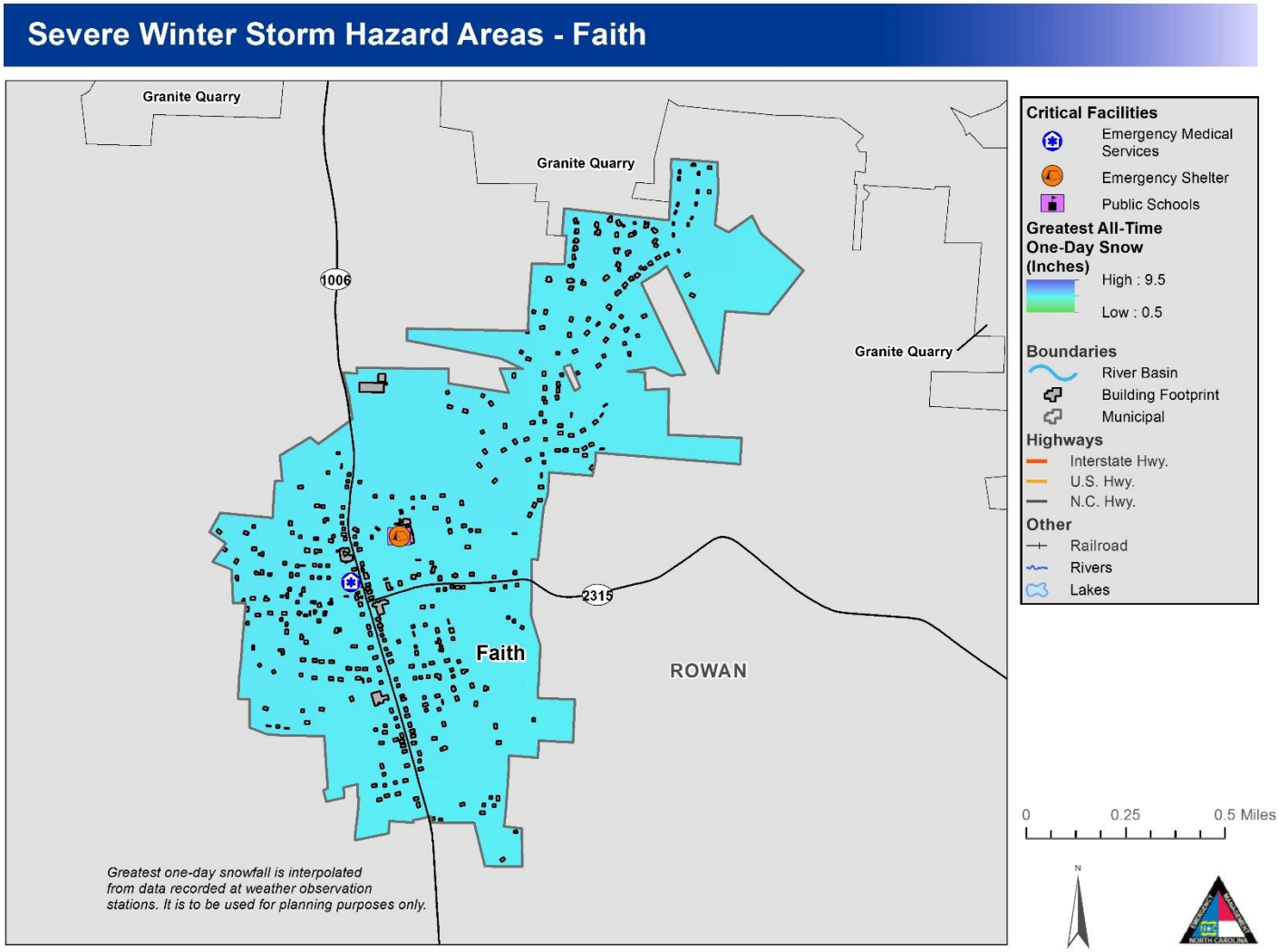


Figure 5-41: Severe Winter Storm Hazard Areas – Faith

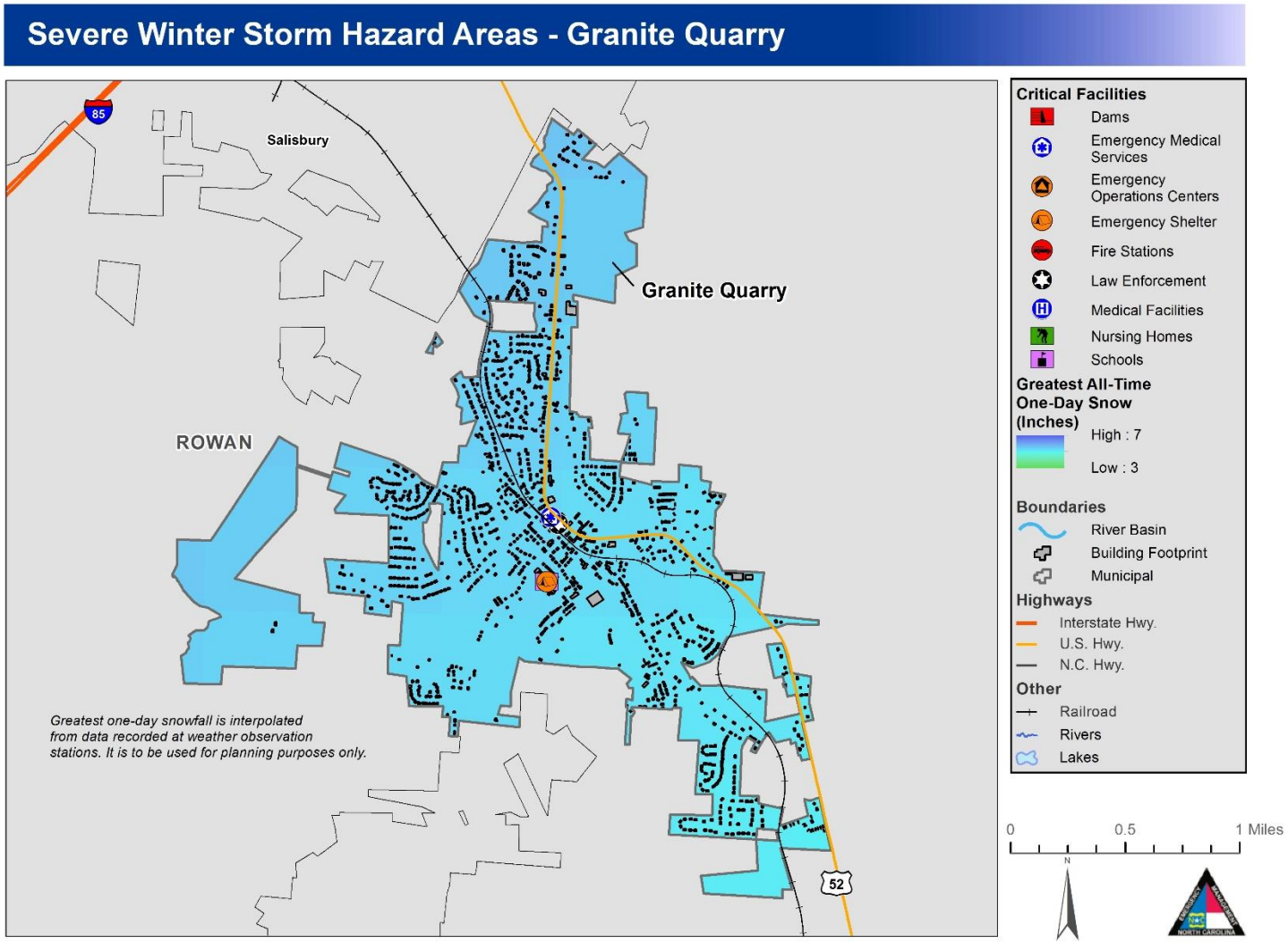


Figure 5-42: Severe Winter Storm Hazard Areas – Granite Quarry

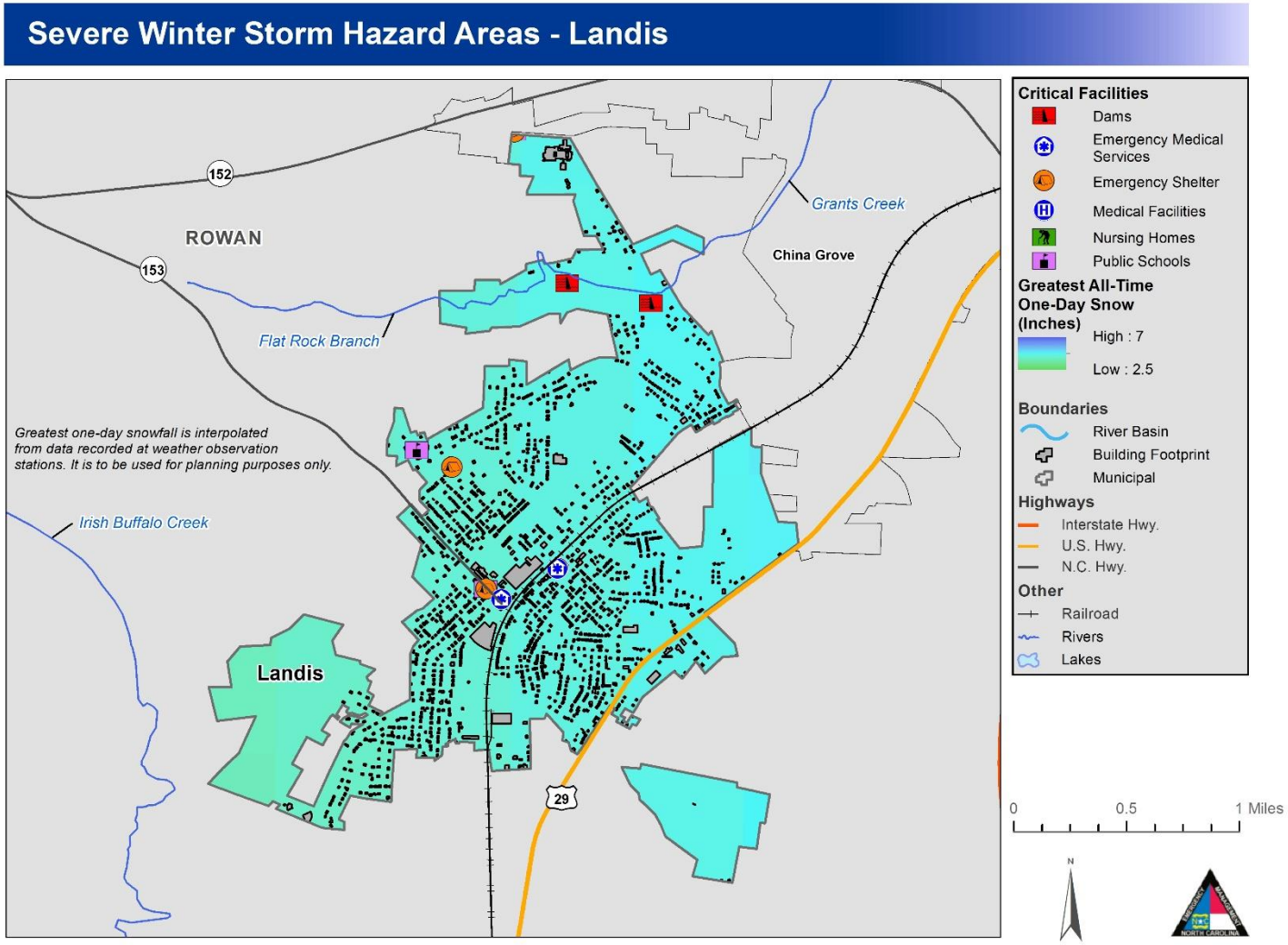


Figure 5-43: Severe Winter Storm Hazard Areas – Landis

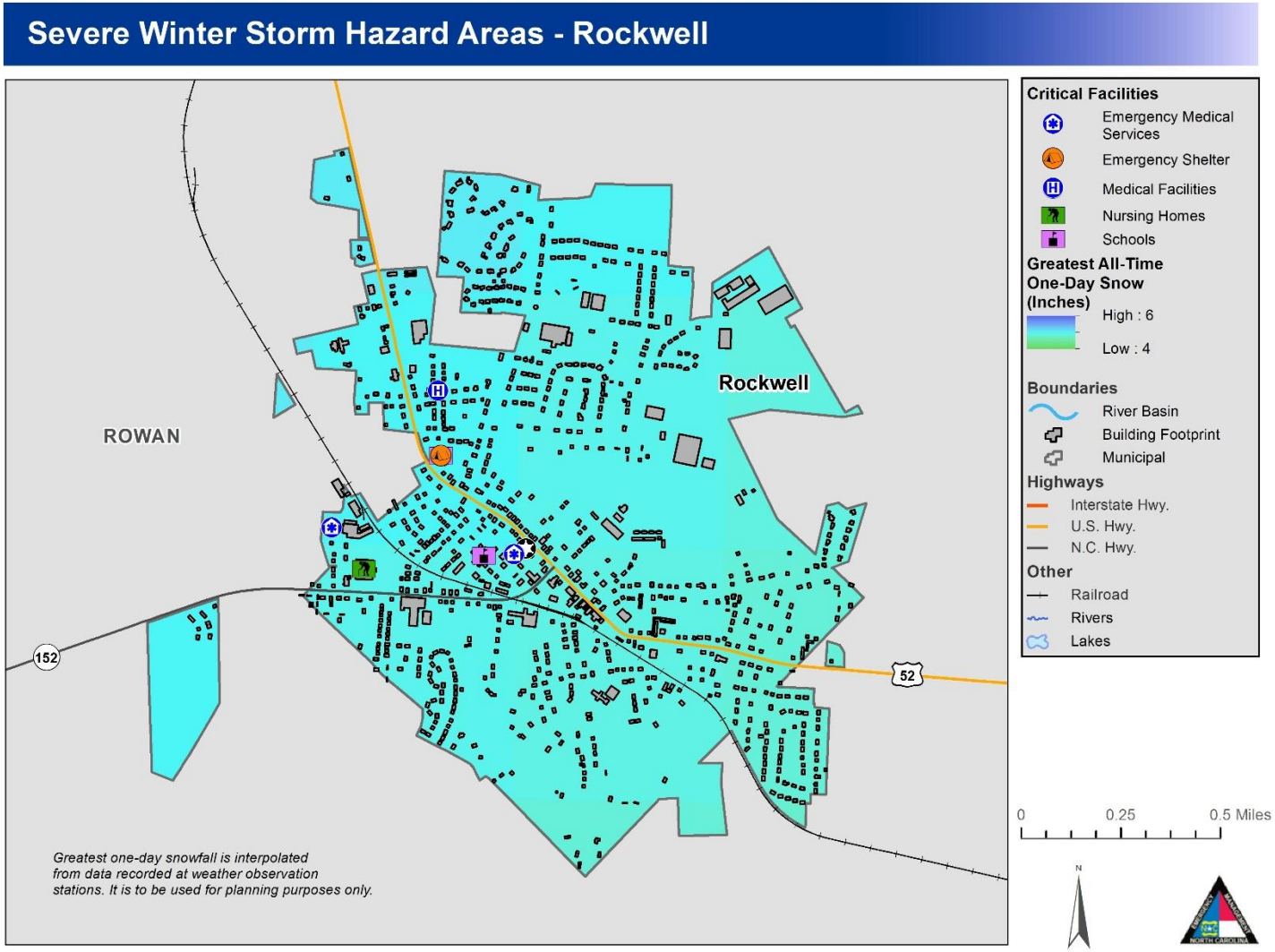


Figure 5-44: Severe Winter Storm Hazard Areas – Rockwell

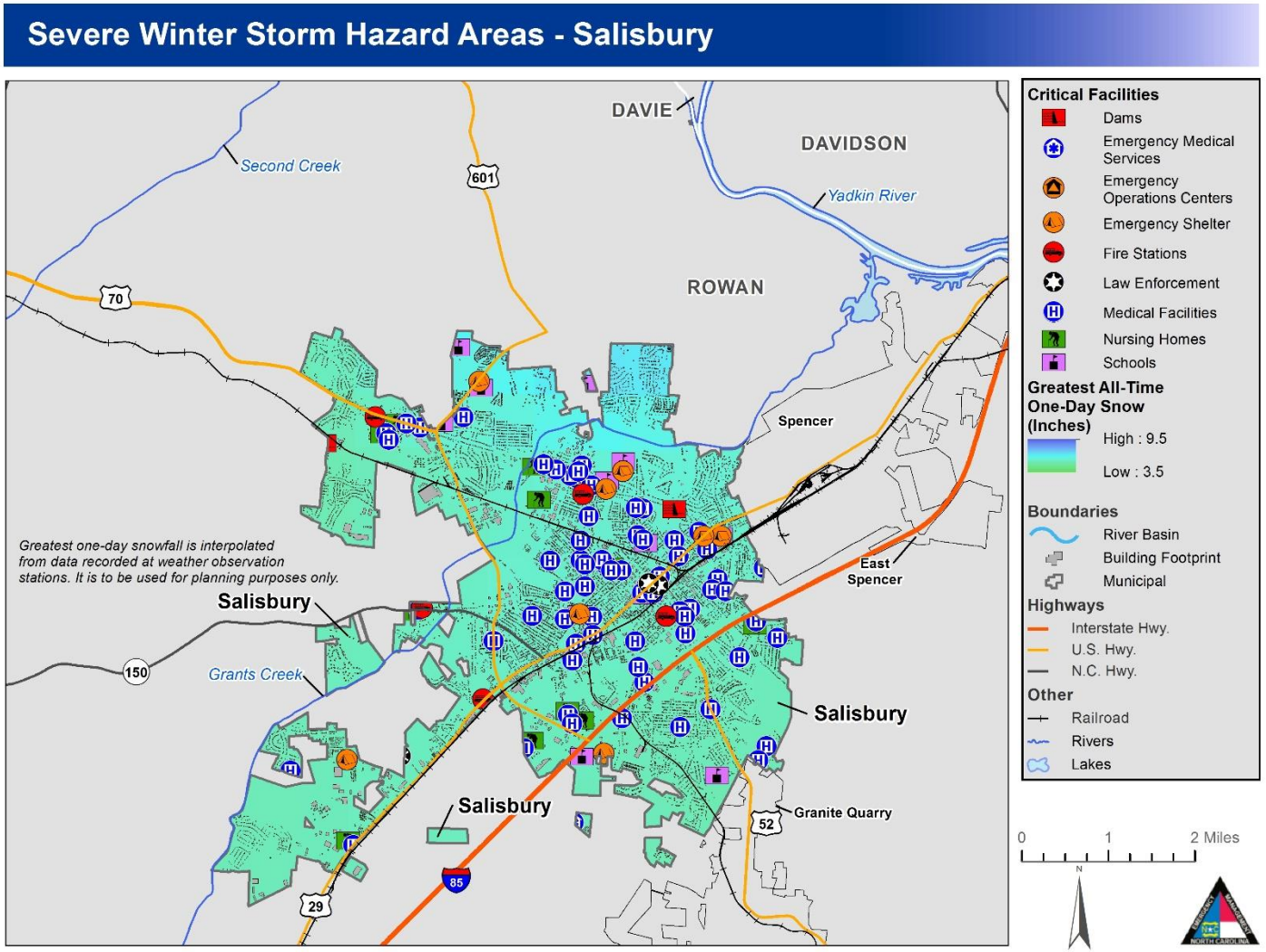


Figure 5-45: Severe Winter Storm Hazard Areas – Salisbury

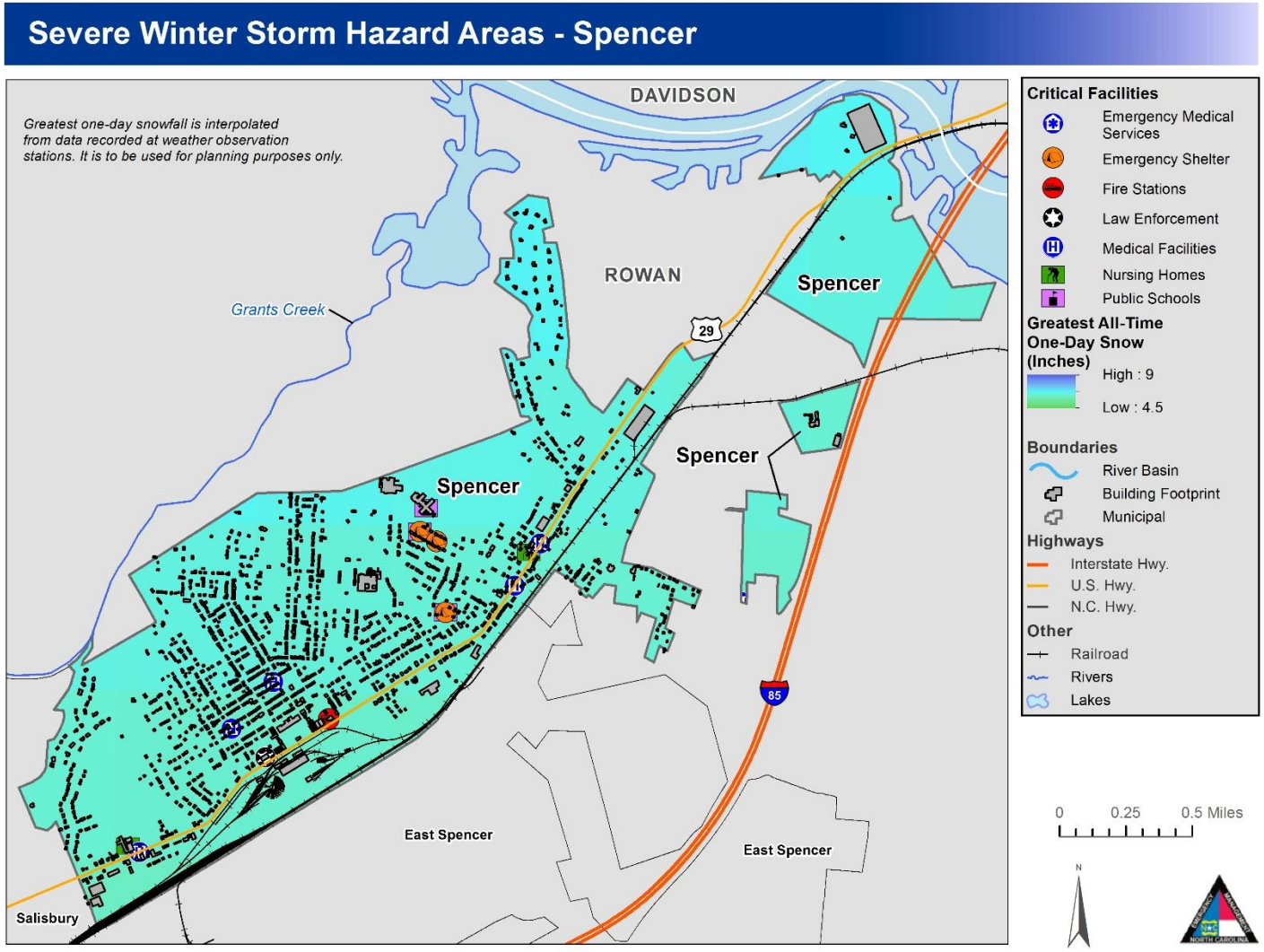


Figure 5-46: Severe Winter Storm Hazard Areas – Spencer

5.11.3 Extent

The table below shows the worst recorded events for the Region.

Table 5-150: Iredell Rowan Extent

Community	Number of Days with Winter Weather Occurrences July 1950- July 2019	Source	Maximum Snowfall Data
Iredell County	75	NCDC	20.5 inches
Harmony	75	NCDC	8.5 inches
Love Valley	75	NCDC	10 inches
Mooresville	75	NCDC	3 inches
Statesville	75	NCDC	7 inches
Troutman	75	NCDC	4 inches
Rowan County	59	NCDC	20 inches
China Grove	59	NCDC	9 inches
Cleveland	59	NCDC	7 inches
East Spencer	59	NCDC	7 inches
Faith	59	NCDC	9.5 inches
Grainte Quarry	59	NCDC	7 inches
Landis	59	NCDC	7 inches
Rockwell	59	NCDC	6 inches
Salisbury	59	NCDC	9.5 inches
Spencer	59	NCDC	9 inches

5.11.4 Historical Occurrences

Winter weather has resulted in three disaster declarations in the Iredell Rowan Region. This includes the Blizzard of 1996, one subsequent 1996 winter storm, and a severe ice storm in 2002.[10] According to the National Climatic Data Center, there have been a total of 134 recorded winter storm events in the Iredell Rowan Region since 1993 (**Table 5-151**).[11] These events resulted in over $20 million in damages.

Table 5-151: Winter Storm Events in the Iredell Rowan Region (1996-2019)

Location	Date	Type	Mag	Deaths	Injuries	Property Damage	Crop Damage
Iredell (Zone)	01/06/1996	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	01/06/1996	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	01/11/1996	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	01/11/1996	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	01/26/1996	Ice Storm		0	0	0.00K	0.00K
Rowan (Zone)	01/26/1996	Ice Storm		0	0	0.00K	0.00K
Iredell (Zone)	02/02/1996	Ice Storm		0	0	0.00K	0.00K

[10] Not all of the participating counties were declared disaster areas for these events. A complete listing of historical disaster declarations, including the affected counties, can be found in Section 4: *Hazard Profiles*.

[11] These ice and winter storm events are only inclusive of those reported by the National Climatic Data Center (NCDC). It is likely that additional winter storm conditions have affected the Iredell Rowan Region

Rowan (Zone)	02/02/1996	Ice Storm		0	0	0.00K	0.00K
Rowan (Zone)	02/03/1996	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/03/1996	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/16/1996	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/06/1996	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	12/06/1996	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/18/1996	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	01/09/1997	Ice Storm		0	0	0.00K	0.00K
Iredell (Zone)	01/15/1997	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/15/1997	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/13/1997	Ice Storm		0	0	0.00K	0.00K
Rowan (Zone)	02/13/1997	Ice Storm		0	0	0.00K	0.00K
Iredell (Zone)	12/29/1997	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	12/29/1997	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	12/30/1997	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	12/24/1998	Ice Storm		0	0	0.00K	0.00K
Iredell (Zone)	01/02/1999	Ice Storm		0	0	0.00K	0.00K
Iredell (Zone)	02/01/1999	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/01/1999	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/19/1999	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/19/1999	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/24/1999	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/24/1999	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/24/1999	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/18/2000	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	01/18/2000	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	01/20/2000	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	01/20/2000	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	01/22/2000	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	01/22/2000	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	01/24/2000	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	01/24/2000	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	01/29/2000	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/29/2000	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	11/19/2000	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	11/19/2000	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	12/13/2000	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/19/2000	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	04/17/2001	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	04/17/2001	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/03/2002	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	01/03/2002	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	12/04/2002	Heavy Snow		0	0	0.00K	0.00K

Iredell (Zone)	12/04/2002	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	12/04/2002	Ice Storm		0	0	10.000M	0.00K
Rowan (Zone)	12/04/2002	Ice Storm		0	0	10.000M	0.00K
Rowan (Zone)	01/16/2003	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/16/2003	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/23/2003	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	01/23/2003	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	02/06/2003	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/06/2003	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/27/2003	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/27/2003	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/27/2003	Ice Storm		0	0	0.00K	0.00K
Iredell (Zone)	03/30/2003	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	03/30/2003	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	12/04/2003	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/04/2003	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/14/2003	Ice Storm		0	0	1.00K	0.00K
Rowan (Zone)	01/09/2004	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/09/2004	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/25/2004	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	01/25/2004	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	02/05/2004	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/05/2004	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/12/2004	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/15/2004	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/15/2004	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/26/2004	Heavy Snow		0	0	5.00K	0.00K
Iredell (Zone)	02/26/2004	Heavy Snow		0	0	5.00K	0.00K
Iredell (Zone)	01/22/2005	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/22/2005	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/29/2005	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/29/2005	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/29/2005	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	02/27/2005	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	03/17/2005	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	03/17/2005	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/08/2005	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/15/2005	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	12/15/2005	Ice Storm		1	0	25.00K	0.00K
Iredell (Zone)	12/15/2005	Ice Storm		0	0	25.00K	0.00K
Iredell (Zone)	03/20/2006	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/18/2007	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/18/2007	Winter Weather		0	0	0.00K	0.00K

Rowan (Zone)	01/21/2007	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/21/2007	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/01/2007	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/01/2007	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/16/2008	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/16/2008	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/19/2008	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/22/2008	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/22/2008	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/13/2008	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/13/2008	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/20/2009	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/20/2009	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/03/2009	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/03/2009	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	03/01/2009	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	03/01/2009	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	12/12/2009	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	12/18/2009	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	12/18/2009	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	01/29/2010	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	01/29/2010	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	02/04/2010	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/04/2010	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/12/2010	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	02/12/2010	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	03/02/2010	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	03/02/2010	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	12/16/2010	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/16/2010	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/25/2010	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	12/25/2010	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	01/10/2011	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/10/2011	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/18/2011	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/19/2012	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/19/2012	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/17/2013	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/17/2013	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/25/2013	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/25/2013	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/16/2013	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/26/2013	Winter Weather		0	0	0.00K	0.00K

Iredell (Zone)	11/26/2013	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	11/26/2013	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/28/2014	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/28/2014	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/12/2014	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	03/06/2014	Winter Storm		0	0	0.00K	0.00K
Rowan (Zone)	03/06/2014	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	03/17/2014	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	03/17/2014	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/13/2015	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/16/2015	Winter Storm		0	0	0.00K	0.00K
Rowan (Zone)	02/16/2015	Winter Storm		0	0	0.00K	0.00K
Rowan (Zone)	02/23/2015	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/23/2015	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/25/2015	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	02/25/2015	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	03/01/2015	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	03/01/2015	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/22/2016	Winter Storm		0	0	0.00K	0.00K
Rowan (Zone)	01/22/2016	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	02/15/2016	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/15/2016	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	01/06/2017	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	01/06/2017	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	02/05/2017	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/05/2017	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	03/12/2017	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	03/12/2017	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/08/2017	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	01/17/2018	Heavy Snow		0	0	0.00K	0.00K
Rowan (Zone)	01/17/2018	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	02/04/2018	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	02/04/2018	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	03/12/2018	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	03/12/2018	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	03/24/2018	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	11/24/2018	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	11/24/2018	Winter Weather		0	0	0.00K	0.00K
Rowan (Zone)	12/08/2018	Winter Storm		0	0	0.00K	0.00K
Iredell (Zone)	12/08/2018	Heavy Snow		0	0	0.00K	0.00K
Iredell (Zone)	01/12/2019	Ice Storm		0	0	0.00K	0.00K
Rowan (Zone)	01/12/2019	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	01/23/2019	Winter Weather		0	0	0.00K	0.00K

Rowan (Zone)	01/23/2019	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	02/19/2019	Winter Weather		0	0	0.00K	0.00K
Iredell (Zone)	12/13/2019	Winter Weather		0	0	0.00K	0.00K
Totals:				1	0	20.061M	0.00K

There have been several severe winter weather events in the Iredell Rowan Region. The text below describes one of the major events and associated impacts on the region. Similar impacts can be expected with severe winter weather.

1996 Winter Storm

This storm left two feet of snow and several thousand citizens without power for up to nine days. Although shelters were opened, some roads were impassible for up to four days. This event caused considerable disruption to business, industry, schools, and government services.

Winter storms throughout the planning area have several negative externalities including hypothermia, cost of snow and debris cleanup, business and government service interruption, traffic accidents, and power outages. Furthermore, citizens may resort to using inappropriate heating devices that could to fire or an accumulation of toxic fumes.

5.11.5 Probability of Future Occurrences

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

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Low: Less than 1% annual probability
- Medium: Between 1% and 10% annual probability
- High: Greater than 10% annual probability

Jurisdiction	Probability of Future Occurrence
City of Salisbury	**Medium**
City of Statesville	**Medium**
Iredell County (Unincorporated Area)	**Medium**
Rowan County (Unincorporated Area)	**Medium**
Town of China Grove	**Medium**
Town of Cleveland	**Medium**
Town of East Spencer	**Medium**
Town of Faith	**Medium**
Town of Granite Quarry	**Medium**

Jurisdiction	Probability of Future Occurrence
Town of Harmony	Medium
Town of Landis	Medium
Town of Love Valley	Medium
Town of Mooresville	Medium
Town of Rockwell	Medium
Town of Spencer	Medium
Town of Troutman	Medium

Winter Weather Hazard Vulnerability and Impact

All of the inventoried assets in the Region are exposed to potential winter weather. Any specific vulnerabilities of individual assets would depend greatly on individual design, building characteristics (such as a flat roof), and any existing mitigation measures currently in place. Such site-specific vulnerability determinations are outside the scope of this risk assessment but may be considered during future plan updates. A qualitative factor in terms of vulnerability is a general lack of awareness on the part of county residents in preparing for and responding to winter storm conditions, such as snow in a manner that will minimize the danger to themselves and others. This lack of awareness is especially apparent when driving/roadway conditions catch motorists off-guard.

Potential losses associated with winter storms, such as snow include the cost of the removal of snow from roadways, debris clean-up, and some indirect losses from power outages, etc. All future structures and infrastructure in the region will be vulnerable to winter storms.

Geologic Hazards

5.12 EARTHQUAKE

5.12.1 Background

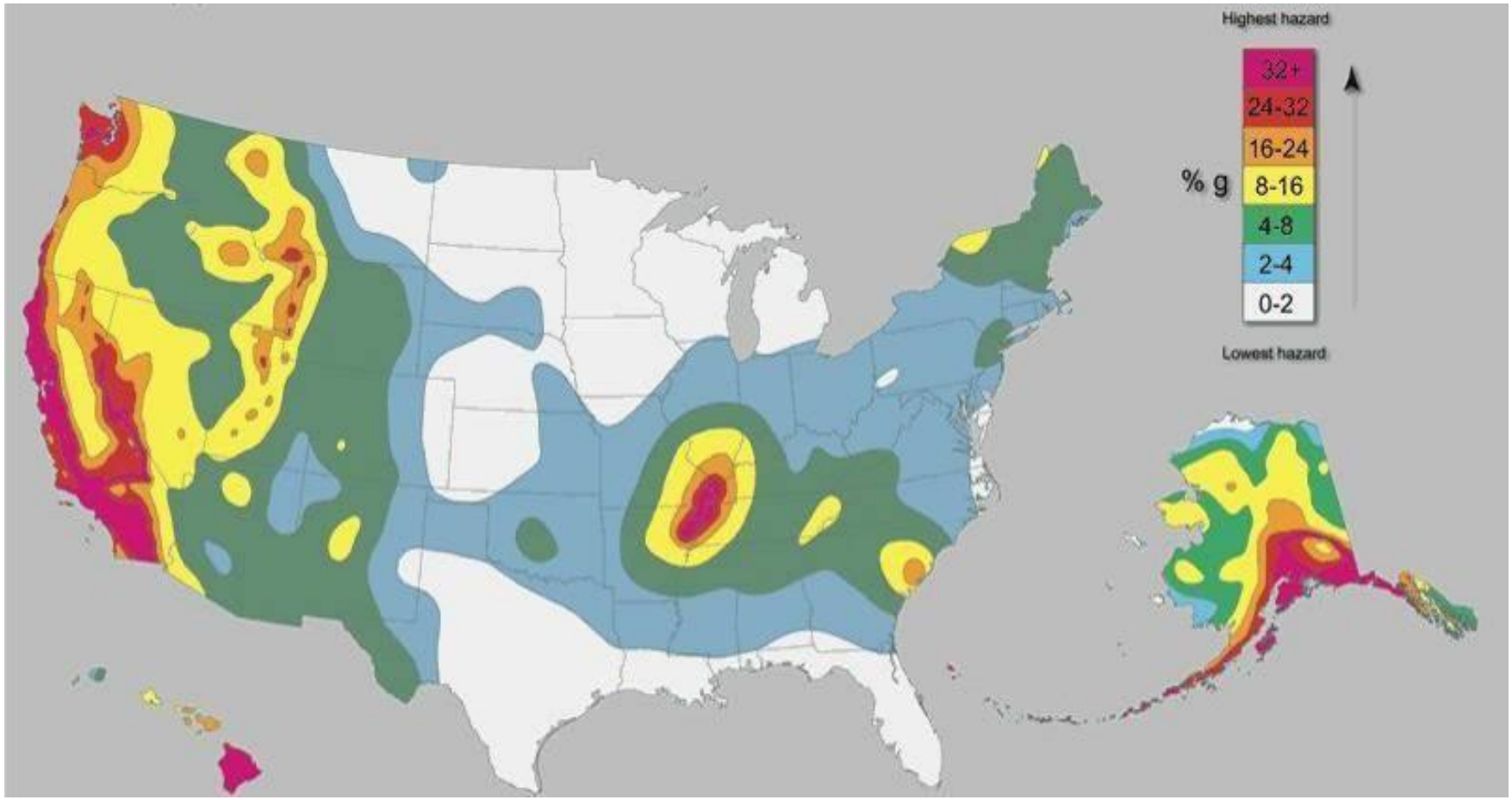
An earthquake is movement or trembling of the ground produced by sudden displacement of rock in the Earth's crust. Earthquakes result from crustal strain, volcanism, landslides, or the collapse of caverns. Earthquakes can affect hundreds of thousands of square miles, cause damage to property measured in the tens of billions of dollars, result in loss of life and injury to hundreds of thousands of persons, and disrupt the social and economic functioning of the affected area.

Most property damage and earthquake-related deaths are caused by the failure and collapse of structures due to ground shaking. The level of damage depends upon the amplitude and duration of the shaking, which are directly related to the earthquake size, distance from the fault, site, and regional geology. Other damaging earthquake effects include landslides, the down-slope movement of soil and rock (mountain regions and along hillsides), and liquefaction, in which ground soil loses the ability to

resist shear and flows much like quick sand. In the case of liquefaction, anything relying on the substrata for support can shift, tilt, rupture, or collapse.

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

The greatest earthquake threat in the United States is along tectonic plate boundaries and seismic fault lines located in the central and western states; however, the Eastern United State does face moderate risk to less frequent, less intense earthquake events. **Figure 5-47** shows relative seismic risk for the United States.



Source: United States Geological Survey

Figure 5-47: United States Earthquake Hazard Map

Earthquakes are measured in terms of their magnitude and intensity. Magnitude is measured using the Richter Scale, an open-ended logarithmic scale that describes the energy release of an earthquake through a measure of shock wave amplitude (**Table 5-152**). Each unit increase in magnitude on the Richter Scale corresponds to a 10-fold increase in wave amplitude, or a 32-fold increase in energy. Intensity is most commonly measured using the Modified Mercalli Intensity (MMI) Scale based on direct and indirect measurements of seismic effects. The scale levels are typically described using roman numerals, ranging from "I" corresponding to imperceptible (instrumental) events to "XII" for catastrophic (total destruction). A detailed description of the Modified Mercalli Intensity Scale of earthquake intensity and its correspondence to the Richter Scale is given in **Table 5-153**.

Table 5-152: Richter Scale

RICHTER MAGNITUDES	EARTHQUAKE EFFECTS
< 3.5	Generally, not felt, but recorded.
3.5 - 5.4	Often felt, but rarely causes damage.
5.4 - 6.0	At most slight damage to well-designed buildings. 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 >	Great earthquake. Can cause serious damage in areas several hundred kilometers across.

Source: Federal Emergency Management Agency

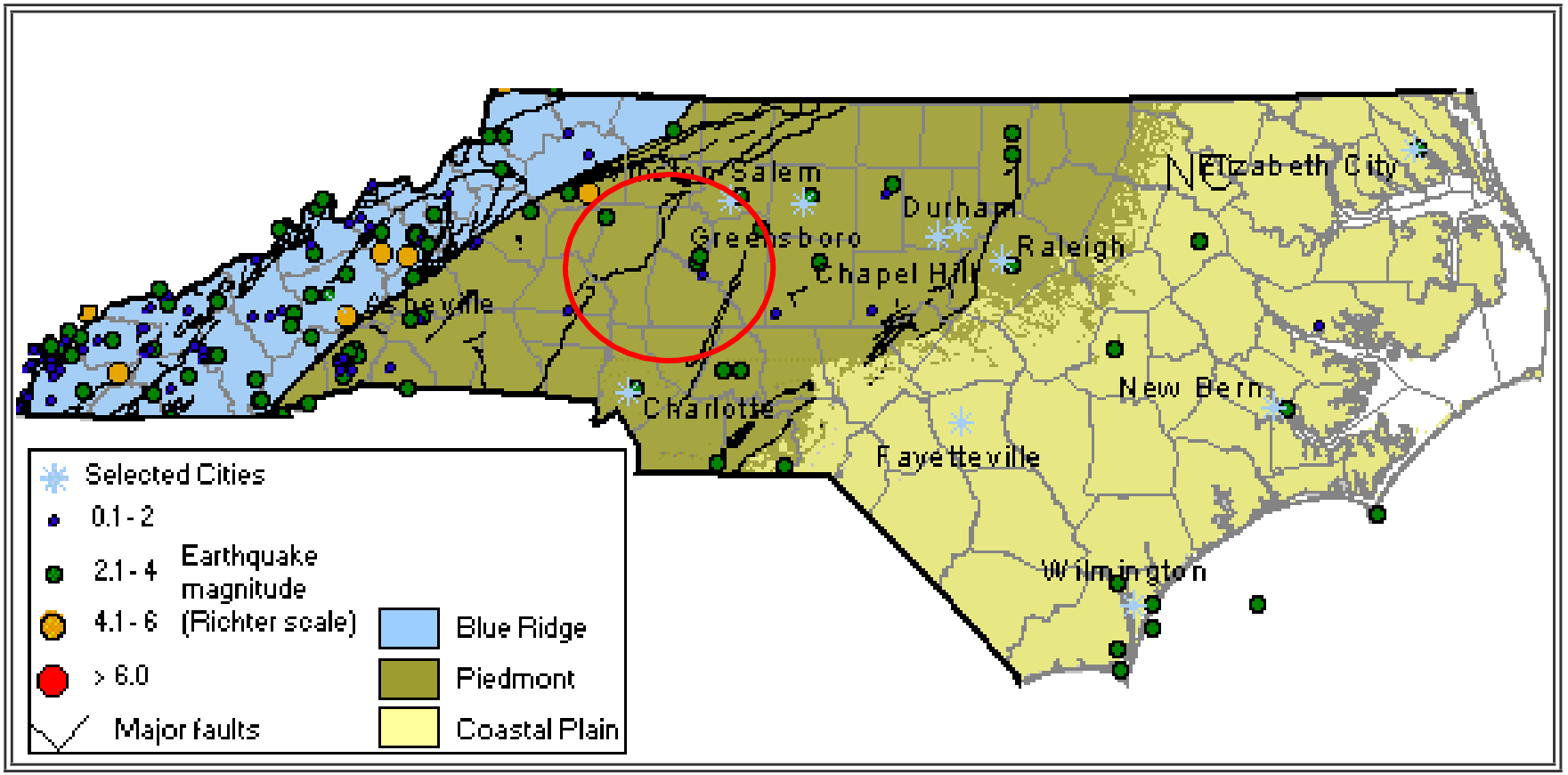
Table 5-153: Modified Mercalli Intensity Scale for Earthquakes

SCALE	INTENSITY	DESCRIPTION OF EFFECTS	CORRESPONDING RICHTER SCALE MAGNITUDE
I	INSTRUMENTAL	Detected only on seismographs.	
II	FEEBLE	Some people feel it.	< 4.2
III	SLIGHT	Felt by people resting; like a truck rumbling by.	
IV	MODERATE	Felt by people walking.	
V	SLIGHTLY STRONG	Sleepers awake; church bells ring.	< 4.8
VI	STRONG	Trees sway; suspended objects swing, objects fall off shelves.	< 5.4
VII	VERY STRONG	Mild alarm; walls crack; plaster falls.	< 6.1
VIII	DESTRUCTIVE	Moving cars uncontrollable; masonry fractures, poorly constructed buildings damaged.	
IX	RUINOUS	Some houses collapse; ground cracks; pipes break open.	< 6.9
X	DISASTROUS	Ground cracks profusely; many buildings destroyed; liquefaction and landslides widespread.	< 7.3
XI	VERY DISASTROUS	Most buildings and bridges collapse; roads, railways, pipes and cables destroyed; general triggering of other hazards.	< 8.1
XII	CATASTROPHIC	Total destruction; trees fall; ground rises and falls in waves.	> 8.1

Source: Federal Emergency Management Agency

5.12.2 Location and Spatial Extent

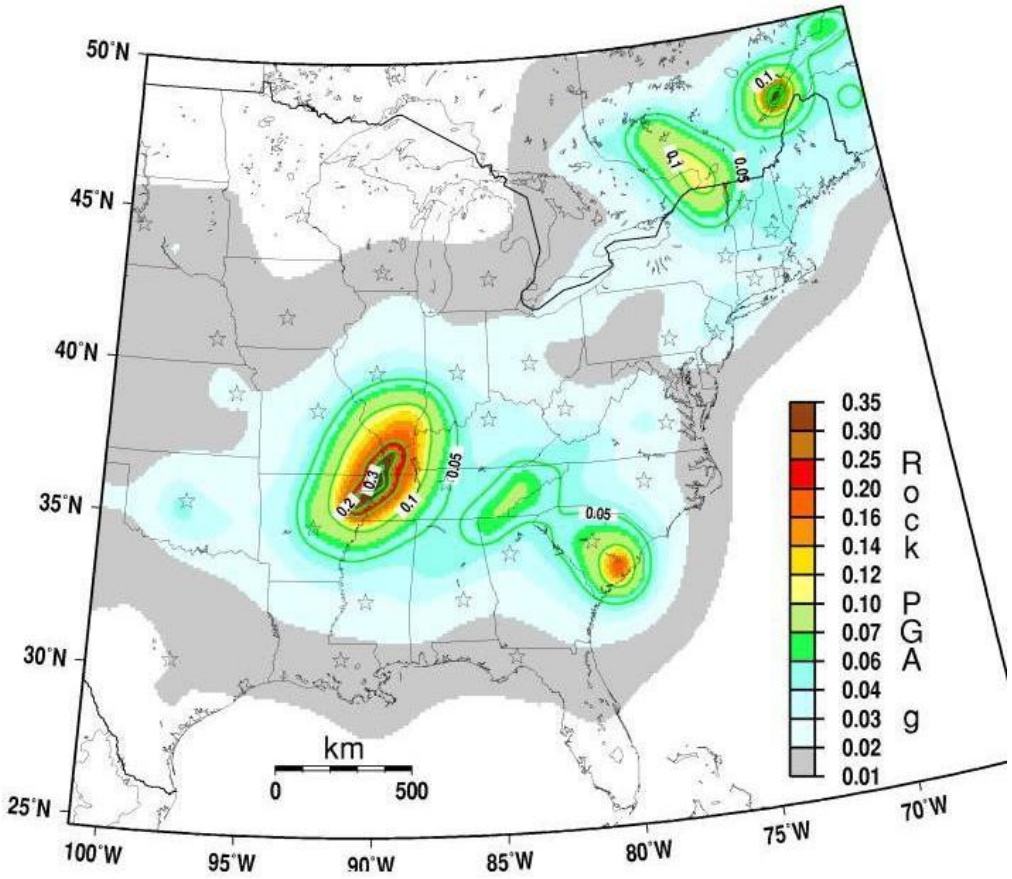
Approximately two-thirds of North Carolina is subject to earthquakes, with the western and southeast region most vulnerable to a very damaging earthquake. The state is affected by both the Charleston Fault in South Carolina and New Madrid Fault in Tennessee. Both of these faults have generated earthquakes measuring greater than 8 on the Richter Scale during the last 200 years. In addition, there are several smaller fault lines throughout North Carolina. **Figure 5-48** is a map showing geological and seismic information for North Carolina.



Source: North Carolina Geological Survey

Figure 5-48: Geological and Seismic Information for North Carolina

Figure 5-49 shows the intensity level associated with the Iredell Rowan Region, based on the national USGS map of peak acceleration with 10 percent probability of exceedance in 50 years. It is the probability that ground motion will reach a certain level during an earthquake. The data show peak horizontal ground acceleration (the fastest measured change in speed, for a particle at ground level that is moving horizontally due to an earthquake) with a 10 percent probability of exceedance in 50 years. The map was compiled by the U.S. Geological Survey (USGS) Geologic Hazards Team, which conducts global investigations of earthquake, geomagnetic, and landslide hazards. According to this map, all of the Iredell Rowan Region lies within an approximate zone of level "3" to "5" ground acceleration. This indicates that the region as a whole exists within an area of moderate seismic risk. The below figures show peak ground acceleration and historic earthquake epicenters for the Region.



Source: USGS, 2008

Figure 5-49: Peak Acceleration with 10 Percent Probability of Exceedance In 50 Years

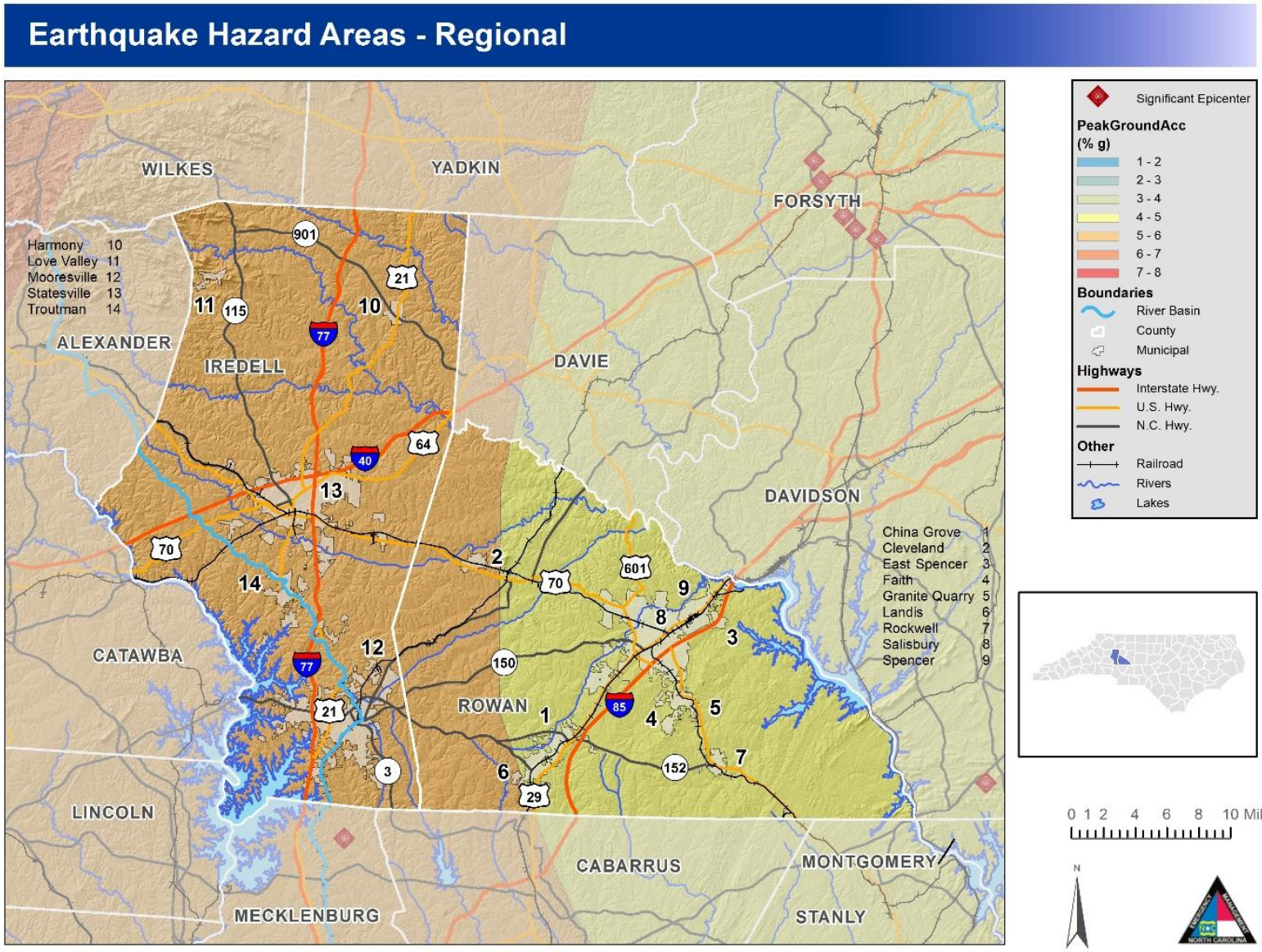


Figure 5-50: Earthquake Hazard Areas – Regional

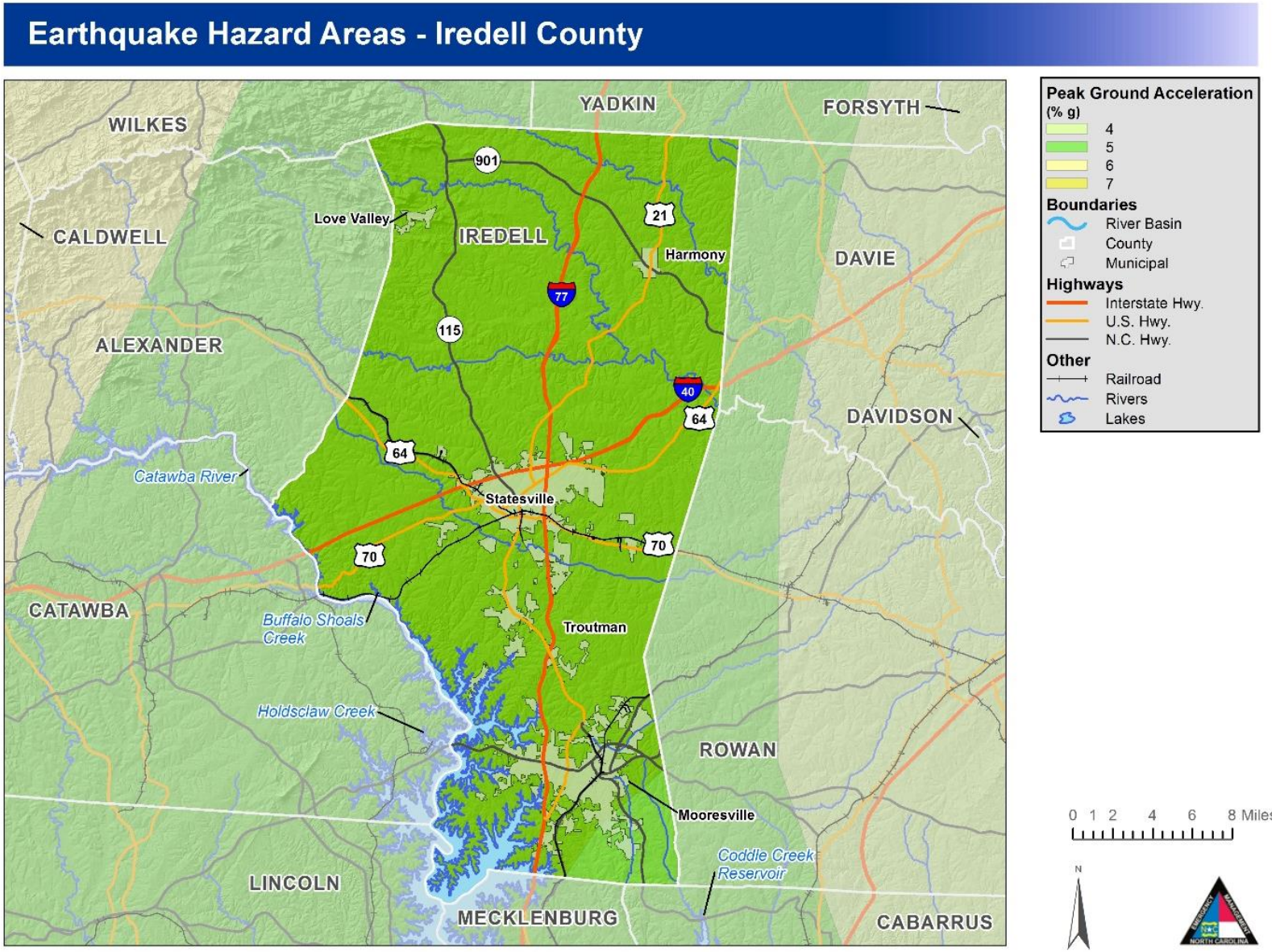


Figure 5-51: Earthquake Hazard Areas – Iredell County

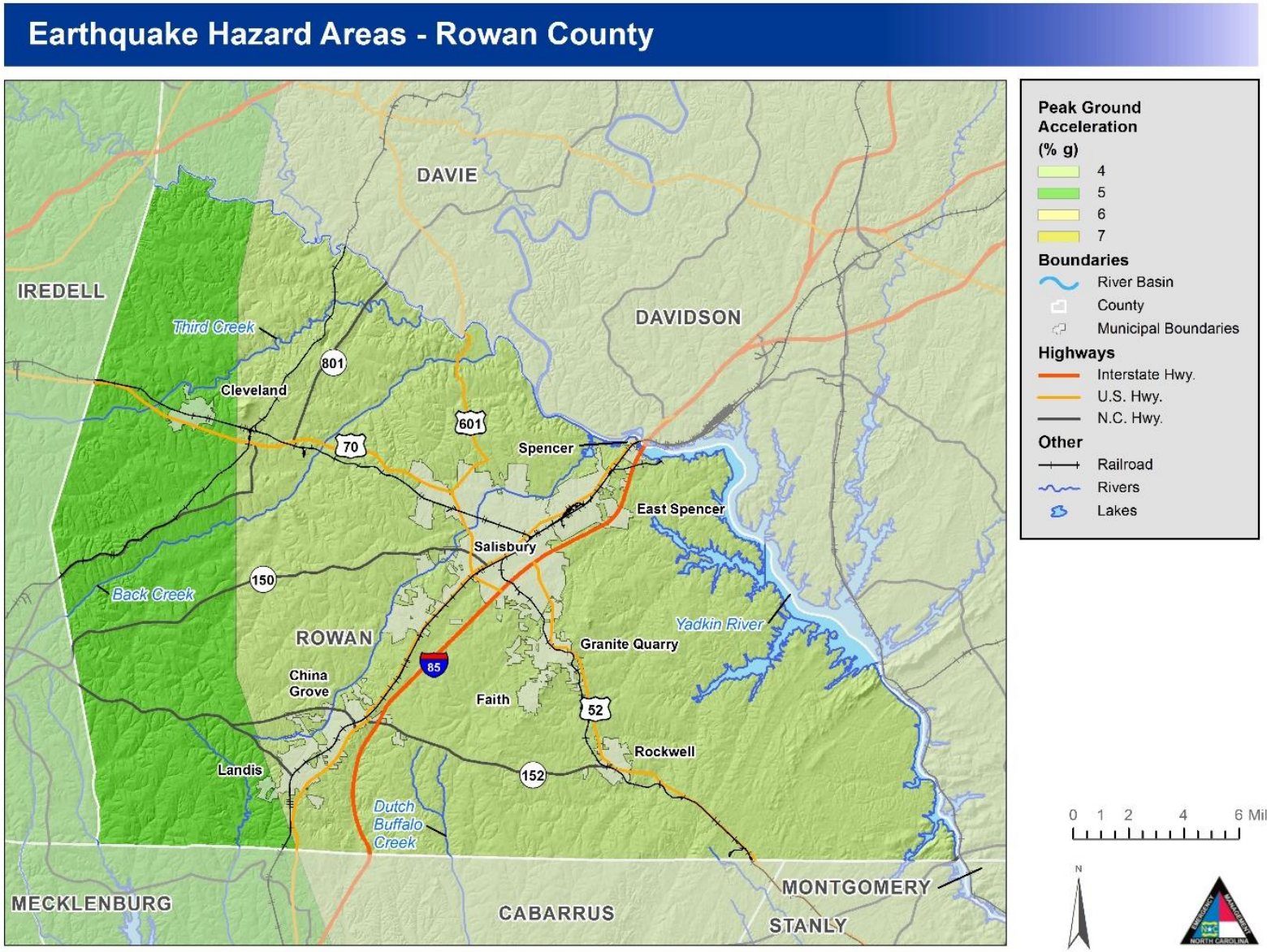


Figure 5-52: Earthquake Hazard Areas – Rowan County

5.12.3 Extent

Earthquake extent can be measured by the Richter Scale and the Modified Mercalli Intensity (MMI) scale. The most severe earthquake felt in the Iredell Rowan Region since the mid-1800s was a six (VI) on the Modified Mercalli Intensity Scale. This event occurred in 1886, and the effects of this magnitude earthquake typically include trees swaying, suspended objects swinging, and objects falling off of shelves. Extent for the all jurisdictions is depicted below in Table 5-152. Earthquakes of greater magnitude may be possible within the Region; however this is known to be the greatest severity currently on record.

5.12.4 Historical Occurrences

At least 19 earthquakes are known to have affected the Iredell Rowan Region since 1886. The strongest of these measured a V on the Modified Mercalli Intensity (MMI) scale. **Table 5-154** provides a summary of earthquake events reported by the National Geophysical Data Center between 1886 and 1985

Table 5-154: Summary of Seismic Activity in the Iredell Rowan Region

Location	Number of Occurrences	Greatest MMI Reported	Richter Scale Equivalent
Iredell County	**13**	**V**	**< 5.4**
Harmony	2	IV	< 5.4
Love Valley	0	--	--
Mooresville	1	III	< 5.4
Statesville	7	V	< 5.4
Troutman	0	--	--
Unincorporated Area	3	IV	< 5.4
Rowan County	**6**	**V**	**< 5.4**
China Grove	0	--	--
Cleveland	0	--	--
East Spencer	1		
Faith	0	--	--
Granite Quarry	0	--	--
Landis	1	IV	< 5.4
Rockwell	0	--	--
Salisbury	4	V	< 5.4
Spencer	0	--	--
Unincorporated Area	0	--	--
IREDELL ROWAN REGION TOTAL	**19**	**V**	**< 5.4**

Source: National Geophysical Data Center

In addition to those earthquakes specifically affecting the Iredell Rowan Region, a list of earthquakes that have caused damage throughout North Carolina is presented below in **Table 5-155**.

Table 5-155: Earthquakes which have Caused Damage in North Carolina

Date	Location	Richter Scale (Magnitude)	MMI (Intensity)	MMI in North Carolina
12/16/1811 - 1	NE Arkansas	8.5	XI	VI
12/16/1811 – 2	NE Arkansas	8.0	X	VI

12/18/1811 - 3	NE Arkansas	8.0	X	VI
01/23/1812	New Madrid, MO	8.4	XI	VI
02/071812	New Madrid, MO	8.7	XII	VI
04/29/1852	Wytheville, VA	5.0	VI	VI
08/31/1861	Wilkesboro, NC	5.1	VII	VII
12/23/1875	Central Virginia	5.0	VII	VI
08/31/1886 *	Charleston, SC	7.3	X	VII
05/31/1897	Giles County, VA	5.8	VIII	VI
01/01/1913	Union County, SC	4.8	VII	VI
02/21/1916*	Asheville, NC	5.5	VII	VII
07/08/1926	Mitchell County, NC	5.2	VII	VII
11/03/1928*	Newport, TN	4.5	VI	VI
05/13/1957	McDowell County, NC	4.1	VI	VI
07/02/1957	Buncombe County, NC	3.7	VI	VI
11/24/1957	Jackson County, NC	4.0	VI	VI
10/27/1959 **	Chesterfield, SC	4.0	VI	VI
07/13/1971	Newry, SC	3.8	VI	VI
11/30/1973*	Alcoa, TN	4.6	VI	VI
11/13/1976	Southwest Virginia	4.1	VI	VI
05/05/1981	Henderson County, NC	3.5	VI	VI

*This event is accounted for in the Iredell Rowan occurrences.

** Conflicting reports on this event, intensity in North Carolina could have been either V or VI

Source: This information compiled by Dr. Kenneth B. Taylor and provided by Tiawana Ramsey of NCEM. Information was compiled from the National Earthquake Center, Earthquakes of the US by Carl von Hake (1983), and a compilation of newspaper reports in the Eastern Tennessee Seismic Zone compiled by Arch Johnston, CERI, Memphis State University (1983).

5.12.5 Probability of Future Occurrences

Based on the analyses performed in IRISK, the probability of future Earthquake is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Less Than 4% Annual Probability Of 500-Year Earthquake
- Between 4% And 20% Annual Probability Of 500-Year Earthquake
- More Than 20% Annual Probability Of 500-Year Earthquake

Jurisdiction	IRISK Probability of Future Occurrence
City of Salisbury	**Medium**
City of Statesville	**Medium**
Iredell County (Unincorporated Area)	**Medium**
Rowan County (Unincorporated Area)	**Medium**
Town of China Grove	**Medium**
Town of Cleveland	**Medium**
Town of East Spencer	**Medium**
Town of Faith	**Medium**

Jurisdiction	IRISK Probability of Future Occurrence
Town of Granite Quarry	Medium
Town of Harmony	Medium
Town of Landis	Medium
Town of Love Valley	Medium
Town of Mooresville	Medium
Town of Rockwell	Medium
Town of Spencer	Medium
Town of Troutman	Medium

Earthquake Hazard Vulnerability and Impact

Vulnerability for earthquake for the area is considered, in relative terms, to be limited should a significant earthquake event occur. The following tables provide loss estimates for the 500-, 1,000- and 2,500- year return periods based on probabilistic scenarios. Loss data was provided by NCEM's IHRM Program. These estimates include structural, contents and inventory losses for agricultural, commercial, education, government, industrial, religious and residential building occupancy types. The loss ratio is the loss estimate divided by the total potential exposure (i.e., total of improved and contents value for all buildings located within the 100-year floodplain) and displayed as a percentage of loss. FEMA considers loss ratios greater than 10% to be significant and an indicator a community may have more difficulties recovering from an event. These loss estimates do not include income losses, such as lost wages, rental expenses, relocation costs, etc. that can occur following an earthquake. All future structures and infrastructure built in the Region will be vulnerable to seismic events and may also experience damage not accounted for in these estimated losses. Contents value for all buildings located within the 100-year floodplain) and displayed as a percentage of loss. FEMA considers loss ratios greater than 10% to be significant and an indicator a community may have more difficulties recovering from an event. These loss estimates do not include income losses, such as lost wages, rental expenses, relocation costs, etc. that can occur following an earthquake. All future structures and infrastructure built in the Region will be vulnerable to seismic events and may also experience damage not accounted for in these estimated losses.

Earthquakes in the region generally are not high impact events that cause injury or death. The public may typically experience some shaking in these events and the greatest threat to health and well-being is often from objects falling from shelves. Economic losses associated with an earthquake include property damage, business interruption costs, and costs to repair damaged utilities and infrastructure. Historically, there have been no economic losses associated with earthquakes in the Region.

The following tables provide counts and values by jurisdiction relevant to Earthquake hazard vulnerability in the Iredell-Rowan Regional HMP Area.

Table 5-156: Population Impacted by the 250 Year Earthquake

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%100%**	**22209**	**22209**	**100%100%100%100%**

Source: GIS Analysis

Table 5-157: Population Impacted by the 500 Year Earthquake

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%100%**	**22209**	**22209**	**100%100%100%100%**

Source: GIS Analysis

Table 5-158: Population Impacted by the 750 Year Earthquake

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%100%**	**22209**	**22209**	**100%100%100%100%**

Source: GIS Analysis

Table 5-159: Population Impacted by the 1000 Year Earthquake

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-160: Population Impacted by the 1500 Year Earthquake

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-161: Population Impacted by the 2000 Year Earthquake

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-162: Population Impacted by the 2500 Year Earthquake

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	29,163	100%	3,740	3,740	100%	1,825	1,825	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell County (Unincorporated Area)	87,091	87,091	100%	11,168	11,168	100%	5,449	5,449	100%
Town of Harmony	525	525	100%	67	67	100%	33	33	100%
Town of Love Valley	100	100	100%	13	13	100%	6	6	100%
Town of Mooresville	38,203	38,203	100%	4,899	4,899	100%	2,390	2,390	100%
Town of Troutman	4,068	4,068	100%	522	522	100%	254	254	100%
Subtotal Iredell	**169,631**	**169,631**	**100%**	**21344**	**21344**	**100%**	**10734**	**10734**	**100%**
Rowan									
City of Kannapolis	11,289	44,500	394.2%	1,629	5,377	330.1%	737	3,166	429.6%
City of Salisbury	35,981	35,981	100%	5,193	5,193	100%	2,349	2,349	100%
Rowan County (Unincorporated Area)	63,003	63,003	100%	9,092	9,092	100%	4,113	4,113	100%
Town of China Grove	5,344	5,344	100%	771	771	100%	349	349	100%
Town of Cleveland	1,219	1,219	100%	176	176	100%	80	80	100%
Town of East Spencer	1,726	1,726	100%	249	249	100%	113	113	100%
Town of Faith	3,288	3,288	100%	475	475	100%	215	215	100%
Town of Granite Quarry	4,957	4,957	100%	715	715	100%	324	324	100%
Town of Landis	3,124	3,124	100%	451	451	100%	204	204	100%
Town of Rockwell	4,767	4,767	100%	688	688	100%	311	311	100%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Spencer	3,840	3,840	100%	554	554	100%	251	251	100%
Subtotal Rowan	**171,749**	**171,749**	**100%**	**23741**	**23741**	**100%**	**11475**	**11475**	**100%**
TOTAL PLAN	**341,380**	**341,380**	**100%**	**45085**	**45085**	**100%**	**22209**	**22209**	**100%**

Source: GIS Analysis

Table 5-163: Buildings Impacted by the 250 Year Earthquake

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$354,610	1,837	12.9%	$1,062,391	422	3%	$131,567	14,249	100%	$1,548,568
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$1,346,010	1,174	2.1%	$429,067	683	1.2%	$223,634	55,469	100%	$1,998,711
Town of Harmony	444	438	98.6%	376	84.7%	$6,477	41	9.2%	$4,989	27	6.1%	$5,215	444	100%	$16,681
Town of Love Valley	258	258	100%	236	91.5%	$2,983	21	8.1%	$908	1	0.4%	$120	258	100%	$4,011
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$329,790	1,466	10.2%	$954,091	241	1.7%	$105,795	14,437	100%	$1,389,676
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$54,382	229	9.4%	$117,361	58	2.4%	$20,990	2,438	100%	$192,734
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$2,094,252**	**4,768**	**5.5%**	**$2,568,807**	**1,432**	**1.6%**	**$487,321**	**87,295**	**100%**	**$5,150,381**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$326,112	1,446	10.4%	$1,062,484	438	3.1%	$230,633	13,958	100%	$1,619,229

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$650,948	2,168	5.6%	$961,735	541	1.4%	$227,856	38,875	100%	$1,840,539
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$58,600	203	8%	$77,040	56	2.2%	$26,107	2,546	100%	$161,747
Town of Cleveland	812	812	100%	729	89.8%	$28,400	58	7.1%	$53,895	25	3.1%	$18,271	812	100%	$100,566
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$25,598	33	3.3%	$79,473	37	3.6%	$22,250	1,015	100%	$127,321
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$32,678	76	4.8%	$16,812	13	0.8%	$3,568	1,590	100%	$53,058
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$51,413	142	6%	$75,503	33	1.4%	$10,357	2,350	100%	$137,273
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$37,646	112	7.3%	$65,547	39	2.5%	$26,862	1,544	100%	$130,055
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$53,321	156	6.5%	$78,501	38	1.6%	$15,276	2,402	100%	$147,097
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$45,714	132	6.6%	$75,565	46	2.3%	$26,625	2,010	100%	$147,904
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$1,310,430**	**4,526**	**6.7%**	**$2,546,555**	**1,266**	**1.9%**	**$607,805**	**67,102**	**100%**	**$4,464,789**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$3,404,682**	**9,294**	**6%**	**$5,115,362**	**2,698**	**1.7%**	**$1,095,126**	**154,397**	**100%**	**$9,615,170**

Source: GIS Analysis

Table 5-164: Buildings Impacted by the 500 Year Earthquake

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$1,925,064	1,837	12.9%	$4,826,535	422	3%	$683,734	14,249	100%	$7,435,333
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$8,325,481	1,174	2.1%	$1,844,267	683	1.2%	$1,134,020	55,469	100%	$11,303,769
Town of Harmony	444	438	98.6%	376	84.7%	$35,621	41	9.2%	$26,410	27	6.1%	$25,953	444	100%	$87,985
Town of Love Valley	258	258	100%	236	91.5%	$14,544	21	8.1%	$4,423	1	0.4%	$573	258	100%	$19,540
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$2,067,344	1,466	10.2%	$4,414,001	241	1.7%	$536,214	14,437	100%	$7,017,559
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$302,627	229	9.4%	$511,471	58	2.4%	$103,806	2,438	100%	$917,904
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$12,670,681**	**4,768**	**5.5%**	**$11,627,107**	**1,432**	**1.6%**	**$2,484,300**	**87,295**	**100%**	**$26,782,090**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$2,266,102	1,446	10.4%	$5,359,372	438	3.1%	$1,316,490	13,958	100%	$8,941,964
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$4,409,802	2,169	5.6%	$5,232,663	541	1.4%	$1,388,092	38,876	100%	$11,030,556
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$390,880	203	8%	$380,612	56	2.2%	$154,538	2,546	100%	$926,030
Town of Cleveland	812	812	100%	729	89.8%	$207,056	58	7.1%	$255,600	25	3.1%	$100,015	812	100%	$562,671
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$182,459	33	3.3%	$530,328	37	3.6%	$140,371	1,015	100%	$853,158
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$221,291	76	4.8%	$113,303	13	0.8%	$24,680	1,590	100%	$359,274
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$360,564	142	6%	$346,071	33	1.4%	$83,784	2,350	100%	$790,419
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$248,474	112	7.3%	$374,502	39	2.5%	$158,958	1,544	100%	$781,934

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$383,627	156	6.5%	$472,828	38	1.6%	$85,895	2,402	100%	$942,350
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$325,691	132	6.6%	$464,169	46	2.3%	$162,155	2,010	100%	$952,015
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$8,995,946**	**4,527**	**6.7%**	**$13,529,448**	**1,266**	**1.9%**	**$3,614,978**	**67,103**	**100%**	**$26,140,371**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$21,666,627**	**9,295**	**6%**	**$25,156,555**	**2,698**	**1.7%**	**$6,099,278**	**154,398**	**100%**	**$52,922,461**

Source: GIS Analysis

Table 5-165: Buildings Impacted by the 750 Year Earthquake

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$4,725,426	1,837	12.9%	$10,014,159	422	3%	$1,584,936	14,249	100%	$16,324,520
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$20,255,744	1,174	2.1%	$3,574,715	683	1.2%	$2,604,218	55,469	100%	$26,434,677
Town of Harmony	444	438	98.6%	376	84.7%	$84,749	41	9.2%	$57,589	27	6.1%	$57,527	444	100%	$199,865
Town of Love Valley	258	258	100%	236	91.5%	$34,006	21	8.1%	$9,179	1	0.4%	$1,367	258	100%	$44,552
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$5,202,645	1,466	10.2%	$9,695,075	241	1.7%	$1,180,180	14,437	100%	$16,077,900
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$747,114	229	9.4%	$1,033,613	58	2.4%	$235,067	2,438	100%	$2,015,794
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$31,049,684**	**4,768**	**5.5%**	**$24,384,330**	**1,432**	**1.6%**	**$5,663,295**	**87,295**	**100%**	**$61,097,308**

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$5,835,341	1,446	10.4%	$11,467,250	438	3.1%	$2,972,647	13,958	100%	$20,275,239
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$11,202,232	2,169	5.6%	$10,850,817	541	1.4%	$3,078,693	38,876	100%	$25,131,742
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$1,024,976	203	8%	$811,691	56	2.2%	$367,917	2,546	100%	$2,204,583
Town of Cleveland	812	812	100%	729	89.8%	$537,636	58	7.1%	$498,453	25	3.1%	$228,919	812	100%	$1,265,008
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$466,503	33	3.3%	$933,985	37	3.6%	$324,255	1,015	100%	$1,724,743
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$580,212	76	4.8%	$245,605	13	0.8%	$61,047	1,590	100%	$886,863
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$934,540	142	6%	$723,161	33	1.4%	$185,373	2,350	100%	$1,843,074
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$654,984	112	7.3%	$796,050	39	2.5%	$377,164	1,544	100%	$1,828,197
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$1,010,537	156	6.5%	$1,001,754	38	1.6%	$207,863	2,402	100%	$2,220,153
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$839,605	132	6.6%	$994,938	46	2.3%	$366,071	2,010	100%	$2,200,614
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$23,086,566**	**4,527**	**6.7%**	**$28,323,704**	**1,266**	**1.9%**	**$8,169,949**	**67,103**	**100%**	**$59,580,216**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$54,136,250**	**9,295**	**6%**	**$52,708,034**	**2,698**	**1.7%**	**$13,833,244**	**154,398**	**100%**	**$120,677,524**

Source: GIS Analysis

Table 5-166: Buildings Impacted by the 1000 Year Earthquake

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$6,648,366	1,837	12.9%	$13,491,705	422	3%	$2,199,303	14,249	100%	$22,339,374
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$29,388,234	1,174	2.1%	$4,819,630	683	1.2%	$3,698,216	55,469	100%	$37,906,080
Town of Harmony	444	438	98.6%	376	84.7%	$122,889	41	9.2%	$82,761	27	6.1%	$82,259	444	100%	$287,909
Town of Love Valley	258	258	100%	236	91.5%	$48,172	21	8.1%	$12,401	1	0.4%	$1,941	258	100%	$62,514
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$7,771,936	1,466	10.2%	$13,793,646	241	1.7%	$1,667,568	14,437	100%	$23,233,151
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$1,043,979	229	9.4%	$1,383,254	58	2.4%	$325,121	2,438	100%	$2,752,354
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$45,023,576**	**4,768**	**5.5%**	**$33,583,397**	**1,432**	**1.6%**	**$7,974,408**	**87,295**	**100%**	**$86,581,382**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$8,476,681	1,446	10.4%	$16,915,448	438	3.1%	$4,358,545	13,958	100%	$29,750,674
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$16,416,719	2,169	5.6%	$15,577,891	541	1.4%	$4,469,675	38,876	100%	$36,464,285
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$1,554,301	203	8%	$1,206,865	56	2.2%	$534,236	2,546	100%	$3,295,402
Town of Cleveland	812	812	100%	729	89.8%	$772,898	58	7.1%	$651,511	25	3.1%	$308,805	812	100%	$1,733,213
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$686,004	33	3.3%	$1,436,631	37	3.6%	$502,676	1,015	100%	$2,625,311
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$853,938	76	4.8%	$393,542	13	0.8%	$88,089	1,590	100%	$1,335,569
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$1,348,808	142	6%	$1,090,472	33	1.4%	$292,952	2,350	100%	$2,732,233

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$1,008,329	112	7.3%	$1,163,839	39	2.5%	$550,340	1,544	100%	$2,722,509
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$1,521,454	156	6.5%	$1,534,298	38	1.6%	$310,155	2,402	100%	$3,365,908
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$1,240,972	132	6.6%	$1,526,705	46	2.3%	$532,643	2,010	100%	$3,300,320
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$33,880,104**	**4,527**	**6.7%**	**$41,497,202**	**1,266**	**1.9%**	**$11,948,116**	**67,103**	**100%**	**$87,325,424**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$78,903,680**	**9,295**	**6%**	**$75,080,599**	**2,698**	**1.7%**	**$19,922,524**	**154,398**	**100%**	**$173,906,806**

Source: GIS Analysis

Table 5-167: Buildings Impacted by the 1500 Year Earthquake

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$13,201,998	1,837	12.9%	$24,346,032	422	3%	$4,159,774	14,249	100%	$41,707,804
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$56,909,689	1,174	2.1%	$8,233,312	683	1.2%	$6,816,158	55,469	100%	$71,959,159
Town of Harmony	444	438	98.6%	376	84.7%	$237,981	41	9.2%	$151,229	27	6.1%	$149,774	444	100%	$538,984
Town of Love Valley	258	258	100%	236	91.5%	$103,190	21	8.1%	$23,883	1	0.4%	$3,645	258	100%	$130,718
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$15,089,519	1,466	10.2%	$24,363,508	241	1.7%	$3,083,621	14,437	100%	$42,536,648
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$2,117,752	229	9.4%	$2,490,400	58	2.4%	$625,325	2,438	100%	$5,233,477

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$87,660,129**	**4,768**	**5.5%**	**$59,608,364**	**1,432**	**1.6%**	**$14,838,297**	**87,295**	**100%**	**$162,106,790**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$17,755,476	1,446	10.4%	$31,819,011	438	3.1%	$8,319,798	13,958	100%	$57,894,285
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$33,654,651	2,169	5.6%	$26,962,129	541	1.4%	$8,088,703	38,876	100%	$68,705,484
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$3,266,008	203	8%	$2,205,632	56	2.2%	$1,051,605	2,546	100%	$6,523,245
Town of Cleveland	812	812	100%	729	89.8%	$1,588,626	58	7.1%	$1,068,284	25	3.1%	$521,857	812	100%	$3,178,767
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$1,415,401	33	3.3%	$2,157,344	37	3.6%	$908,610	1,015	100%	$4,481,355
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$1,859,161	76	4.8%	$686,860	13	0.8%	$180,639	1,590	100%	$2,726,660
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$2,841,360	142	6%	$1,841,753	33	1.4%	$533,579	2,350	100%	$5,216,692
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$2,105,605	112	7.3%	$2,129,949	39	2.5%	$1,036,804	1,544	100%	$5,272,359
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$3,183,948	156	6.5%	$2,809,918	38	1.6%	$570,394	2,402	100%	$6,564,260
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$2,573,066	132	6.6%	$2,917,467	46	2.3%	$1,025,592	2,010	100%	$6,516,125
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$70,243,302**	**4,527**	**6.7%**	**$74,598,347**	**1,266**	**1.9%**	**$22,237,581**	**67,103**	**100%**	**$167,079,232**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$157,903,431**	**9,295**	**6%**	**$134,206,711**	**2,698**	**1.7%**	**$37,075,878**	**154,398**	**100%**	**$329,186,022**

Source: GIS Analysis

Table 5-168: Buildings Impacted by the 2000 Year Earthquake

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$17,588,931	1,837	12.9%	$32,224,411	422	3%	$5,432,333	14,249	100%	$55,245,675
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$74,947,315	1,174	2.1%	$11,009,797	683	1.2%	$8,920,257	55,469	100%	$94,877,368
Town of Harmony	444	438	98.6%	376	84.7%	$329,253	41	9.2%	$201,399	27	6.1%	$200,523	444	100%	$731,175
Town of Love Valley	258	258	100%	236	91.5%	$150,064	21	8.1%	$34,100	1	0.4%	$4,703	258	100%	$188,867
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$19,533,497	1,466	10.2%	$31,490,821	241	1.7%	$4,068,269	14,437	100%	$55,092,588
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$2,825,733	229	9.4%	$3,221,677	58	2.4%	$830,842	2,438	100%	$6,878,253
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$115,374,793**	**4,768**	**5.5%**	**$78,182,205**	**1,432**	**1.6%**	**$19,456,927**	**87,295**	**100%**	**$213,013,926**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$23,965,522	1,446	10.4%	$45,904,269	438	3.1%	$11,817,657	13,958	100%	$81,687,449
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$45,006,331	2,169	5.6%	$37,388,725	541	1.4%	$11,184,023	38,876	100%	$93,579,079
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$4,351,137	203	8%	$3,098,547	56	2.2%	$1,402,086	2,546	100%	$8,851,770
Town of Cleveland	812	812	100%	729	89.8%	$2,139,173	58	7.1%	$1,384,597	25	3.1%	$664,254	812	100%	$4,188,024
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$1,926,665	33	3.3%	$3,262,010	37	3.6%	$1,273,605	1,015	100%	$6,462,281
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$2,507,501	76	4.8%	$1,008,285	13	0.8%	$236,413	1,590	100%	$3,752,199
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$3,778,275	142	6%	$2,656,261	33	1.4%	$790,582	2,350	100%	$7,225,118

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$2,800,568	112	7.3%	$2,936,377	39	2.5%	$1,344,174	1,544	100%	$7,081,119
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$4,229,831	156	6.5%	$4,029,931	38	1.6%	$765,920	2,402	100%	$9,025,682
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$3,515,524	132	6.6%	$4,343,146	46	2.3%	$1,463,837	2,010	100%	$9,322,507
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$94,220,527**	**4,527**	**6.7%**	**$106,012,148**	**1,266**	**1.9%**	**$30,942,551**	**67,103**	**100%**	**$231,175,228**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$209,595,320**	**9,295**	**6%**	**$184,194,353**	**2,698**	**1.7%**	**$50,399,478**	**154,398**	**100%**	**$444,189,154**

Source: GIS Analysis

Table 5-169: Buildings Impacted by the 2500 Year Earthquake

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	10,854	76.1%	11,990	84.1%	$22,564,312	1,837	12.9%	$41,351,685	422	3%	$6,969,641	14,249	100%	$70,885,639
Iredell County (Unincorporated Area)	55,474	25,875	46.6%	53,612	96.6%	$98,643,180	1,174	2.1%	$14,575,885	683	1.2%	$11,290,790	55,469	100%	$124,509,856
Town of Harmony	444	438	98.6%	376	84.7%	$395,087	41	9.2%	$239,406	27	6.1%	$238,886	444	100%	$873,379
Town of Love Valley	258	258	100%	236	91.5%	$201,209	21	8.1%	$47,048	1	0.4%	$5,674	258	100%	$253,931
Town of Mooresville	14,440	5,526	38.3%	12,730	88.2%	$27,313,287	1,466	10.2%	$42,199,005	241	1.7%	$5,925,111	14,437	100%	$75,437,403
Town of Troutman	2,439	2,404	98.6%	2,151	88.2%	$3,755,402	229	9.4%	$4,251,124	58	2.4%	$1,128,339	2,438	100%	$9,134,866

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Subtotal Iredell	**87,309**	**45,355**	**51.9%**	**81,095**	**92.9%**	**$152,872,477**	**4,768**	**5.5%**	**$102,664,153**	**1,432**	**1.6%**	**$25,558,441**	**87,295**	**100%**	**$281,095,074**
Rowan															
City of Salisbury	13,960	9,631	69%	12,074	86.5%	$31,379,166	1,446	10.4%	$60,176,716	438	3.1%	$15,916,865	13,958	100%	$107,472,747
Rowan County (Unincorporated Area)	38,881	12,053	31%	36,166	93%	$60,559,541	2,169	5.6%	$49,852,020	541	1.4%	$14,921,364	38,876	100%	$125,332,925
Town of China Grove	2,546	2,524	99.1%	2,287	89.8%	$5,941,004	203	8%	$4,167,168	56	2.2%	$1,963,658	2,546	100%	$12,071,830
Town of Cleveland	812	812	100%	729	89.8%	$2,724,146	58	7.1%	$1,758,467	25	3.1%	$833,889	812	100%	$5,316,501
Town of East Spencer	1,015	1,009	99.4%	945	93.1%	$2,489,023	33	3.3%	$4,090,532	37	3.6%	$1,622,633	1,015	100%	$8,202,187
Town of Faith	1,590	1,150	72.3%	1,501	94.4%	$3,408,428	76	4.8%	$1,310,950	13	0.8%	$309,021	1,590	100%	$5,028,399
Town of Granite Quarry	2,350	1,467	62.4%	2,175	92.6%	$5,099,701	142	6%	$3,444,764	33	1.4%	$1,086,831	2,350	100%	$9,631,296
Town of Landis	1,544	1,387	89.8%	1,393	90.2%	$3,855,605	112	7.3%	$4,384,569	39	2.5%	$1,878,635	1,544	100%	$10,118,809
Town of Rockwell	2,402	1,704	70.9%	2,208	91.9%	$5,844,635	156	6.5%	$5,334,935	38	1.6%	$1,059,010	2,402	100%	$12,238,580
Town of Spencer	2,010	1,982	98.6%	1,832	91.1%	$4,519,912	132	6.6%	$5,920,424	46	2.3%	$2,037,953	2,010	100%	$12,478,289
Subtotal Rowan	**67,110**	**33,719**	**50.2%**	**61,310**	**91.4%**	**$125,821,161**	**4,527**	**6.7%**	**$140,440,545**	**1,266**	**1.9%**	**$41,629,859**	**67,103**	**100%**	**$307,891,563**
TOTAL PLAN	**154,419**	**79,074**	**51.2%**	**142,405**	**92.2%**	**$278,693,638**	**9,295**	**6%**	**$243,104,698**	**2,698**	**1.7%**	**$67,188,300**	**154,398**	**100%**	**$588,986,637**

Source: GIS Analysis

The following tables provide counts and estimated damages for CIKR buildings by jurisdiction in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event. Totals across all sectors are shown at the bottom of each table.

Table 5-170: Critical Facilities Exposed to the Earthquake - City of Statesville

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	24	$8,112
Banking and Finance	500 Year	24	$41,266
Banking and Finance	750 Year	24	$91,257
Banking and Finance	1000 Year	24	$124,141
Banking and Finance	1500 Year	24	$231,488
Banking and Finance	2000 Year	24	$300,520
Banking and Finance	2500 Year	24	$387,668
Commercial Facilities	250 Year	1,205	$363,493
Commercial Facilities	500 Year	1,205	$1,706,921
Commercial Facilities	750 Year	1,205	$3,774,600
Commercial Facilities	1000 Year	1,205	$5,243,566
Commercial Facilities	1500 Year	1,205	$9,798,405
Commercial Facilities	2000 Year	1,205	$13,270,973
Commercial Facilities	2500 Year	1,205	$17,238,545
Communications	250 Year	1	$196
Communications	500 Year	1	$1,001
Communications	750 Year	1	$2,389
Communications	1000 Year	1	$3,364
Communications	1500 Year	1	$6,351
Communications	2000 Year	1	$8,194
Communications	2500 Year	1	$10,291
Critical Manufacturing	250 Year	460	$597,307

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	500 Year	460	$2,605,176
Critical Manufacturing	750 Year	460	$5,161,225
Critical Manufacturing	1000 Year	460	$6,801,377
Critical Manufacturing	1500 Year	460	$11,952,606
Critical Manufacturing	2000 Year	460	$15,553,639
Critical Manufacturing	2500 Year	460	$19,733,163
Emergency Services	250 Year	1	$805
Emergency Services	500 Year	1	$4,101
Emergency Services	750 Year	1	$9,754
Emergency Services	1000 Year	1	$13,657
Emergency Services	1500 Year	1	$25,850
Emergency Services	2000 Year	1	$32,904
Emergency Services	2500 Year	1	$40,765
Energy	250 Year	7	$885,452
Energy	500 Year	7	$2,477,763
Energy	750 Year	7	$4,644,882
Energy	1000 Year	7	$6,498,334
Energy	1500 Year	7	$9,140,390
Energy	2000 Year	7	$13,227,723
Energy	2500 Year	7	$16,125,998
Food and Agriculture	250 Year	1	$19
Food and Agriculture	500 Year	1	$145
Food and Agriculture	750 Year	1	$370
Food and Agriculture	1000 Year	1	$532
Food and Agriculture	1500 Year	1	$1,109

Sector	Event	Number of Buildings At Risk	Estimated Damages
Food and Agriculture	2000 Year	1	$1,509
Food and Agriculture	2500 Year	1	$1,915
Government Facilities	250 Year	174	$64,463
Government Facilities	500 Year	174	$347,506
Government Facilities	750 Year	174	$799,085
Government Facilities	1000 Year	174	$1,109,583
Government Facilities	1500 Year	174	$2,084,641
Government Facilities	2000 Year	174	$2,739,577
Government Facilities	2500 Year	174	$3,542,267
Healthcare and Public Health	250 Year	172	$81,016
Healthcare and Public Health	500 Year	172	$440,082
Healthcare and Public Health	750 Year	172	$992,502
Healthcare and Public Health	1000 Year	172	$1,360,325
Healthcare and Public Health	1500 Year	172	$2,481,521
Healthcare and Public Health	2000 Year	172	$3,183,594
Healthcare and Public Health	2500 Year	172	$3,992,348
Transportation Systems	250 Year	185	$72,957
Transportation Systems	500 Year	185	$335,155
Transportation Systems	750 Year	185	$703,622
Transportation Systems	1000 Year	185	$946,145
Transportation Systems	1500 Year	185	$1,745,461
Transportation Systems	2000 Year	185	$2,320,342
Transportation Systems	2500 Year	185	$3,047,989
All Categories	**250 Year**	**2,230**	**$2,073,820**

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**500 Year**	**2,230**	**$7,959,116**
All Categories	**750 Year**	**2,230**	**$16,179,686**
All Categories	**1000 Year**	**2,230**	**$22,101,024**
All Categories	**1500 Year**	**2,230**	**$37,467,822**
All Categories	**2000 Year**	**2,230**	**$50,638,975**
All Categories	**2500 Year**	**2,230**	**$64,120,949**

Source: GIS Analysis

Table 5-171: Critical Facilities Exposed to the Earthquake - Iredell County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	2	$289
Banking and Finance	500 Year	2	$1,602
Banking and Finance	750 Year	2	$3,402
Banking and Finance	1000 Year	2	$4,688
Banking and Finance	1500 Year	2	$8,435
Banking and Finance	2000 Year	2	$10,892
Banking and Finance	2500 Year	2	$13,169
Commercial Facilities	250 Year	1,146	$282,131
Commercial Facilities	500 Year	1,146	$1,333,685
Commercial Facilities	750 Year	1,146	$2,922,401
Commercial Facilities	1000 Year	1,146	$4,125,882
Commercial Facilities	1500 Year	1,146	$7,550,012
Commercial Facilities	2000 Year	1,146	$10,048,655
Commercial Facilities	2500 Year	1,146	$12,917,020
Critical Manufacturing	250 Year	279	$233,760
Critical Manufacturing	500 Year	279	$959,358

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	750 Year	279	$1,775,967
Critical Manufacturing	1000 Year	279	$2,314,194
Critical Manufacturing	1500 Year	279	$3,747,466
Critical Manufacturing	2000 Year	279	$4,896,355
Critical Manufacturing	2500 Year	279	$6,249,276
Energy	250 Year	3	$378,492
Energy	500 Year	3	$1,693,827
Energy	750 Year	3	$3,986,626
Energy	1000 Year	3	$5,554,123
Energy	1500 Year	3	$10,091,343
Energy	2000 Year	3	$12,183,401
Energy	2500 Year	3	$14,811,614
Food and Agriculture	250 Year	18	$2,482
Food and Agriculture	500 Year	18	$13,520
Food and Agriculture	750 Year	18	$29,416
Food and Agriculture	1000 Year	18	$44,647
Food and Agriculture	1500 Year	18	$85,253
Food and Agriculture	2000 Year	18	$120,932
Food and Agriculture	2500 Year	18	$164,218
Government Facilities	250 Year	238	$84,127
Government Facilities	500 Year	238	$438,987
Government Facilities	750 Year	238	$977,399
Government Facilities	1000 Year	238	$1,375,628
Government Facilities	1500 Year	238	$2,485,734
Government Facilities	2000 Year	238	$3,277,890

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	2500 Year	238	$4,355,721
Healthcare and Public Health	250 Year	20	$3,814
Healthcare and Public Health	500 Year	20	$22,429
Healthcare and Public Health	750 Year	20	$50,750
Healthcare and Public Health	1000 Year	20	$72,140
Healthcare and Public Health	1500 Year	20	$130,304
Healthcare and Public Health	2000 Year	20	$170,658
Healthcare and Public Health	2500 Year	20	$212,373
Transportation Systems	250 Year	137	$44,295
Transportation Systems	500 Year	137	$200,062
Transportation Systems	750 Year	137	$400,436
Transportation Systems	1000 Year	137	$552,353
Transportation Systems	1500 Year	137	$991,976
Transportation Systems	2000 Year	137	$1,335,126
Transportation Systems	2500 Year	137	$1,866,147
Water	250 Year	3	$123
Water	500 Year	3	$439
Water	750 Year	3	$922
Water	1000 Year	3	$1,381
Water	1500 Year	3	$3,388
Water	2000 Year	3	$5,648
Water	2500 Year	3	$7,235
All Categories	**250 Year**	**1,846**	**$1,029,513**
All Categories	**500 Year**	**1,846**	**$4,663,909**

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**750 Year**	**1,846**	**$10,147,319**
All Categories	**1000 Year**	**1,846**	**$14,045,036**
All Categories	**1500 Year**	**1,846**	**$25,093,911**
All Categories	**2000 Year**	**1,846**	**$32,049,557**
All Categories	**2500 Year**	**1,846**	**$40,596,773**

Source: GIS Analysis

Table 5-172: Critical Facilities Exposed to the Earthquake - Town of Harmony

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	2	$186
Banking and Finance	500 Year	2	$1,024
Banking and Finance	750 Year	2	$2,371
Banking and Finance	1000 Year	2	$3,496
Banking and Finance	1500 Year	2	$6,536
Banking and Finance	2000 Year	2	$8,426
Banking and Finance	2500 Year	2	$9,635
Commercial Facilities	250 Year	31	$4,045
Commercial Facilities	500 Year	31	$20,627
Commercial Facilities	750 Year	31	$45,164
Commercial Facilities	1000 Year	31	$64,569
Commercial Facilities	1500 Year	31	$117,172
Commercial Facilities	2000 Year	31	$157,241
Commercial Facilities	2500 Year	31	$187,688
Critical Manufacturing	250 Year	12	$2,303
Critical Manufacturing	500 Year	12	$12,419
Critical Manufacturing	750 Year	12	$26,998

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	1000 Year	12	$38,769
Critical Manufacturing	1500 Year	12	$71,067
Critical Manufacturing	2000 Year	12	$92,874
Critical Manufacturing	2500 Year	12	$108,837
Government Facilities	250 Year	18	$3,243
Government Facilities	500 Year	18	$15,976
Government Facilities	750 Year	18	$35,515
Government Facilities	1000 Year	18	$51,050
Government Facilities	1500 Year	18	$93,484
Government Facilities	2000 Year	18	$126,188
Government Facilities	2500 Year	18	$151,542
Healthcare and Public Health	250 Year	1	$116
Healthcare and Public Health	500 Year	1	$628
Healthcare and Public Health	750 Year	1	$1,412
Healthcare and Public Health	1000 Year	1	$2,070
Healthcare and Public Health	1500 Year	1	$3,817
Healthcare and Public Health	2000 Year	1	$4,968
Healthcare and Public Health	2500 Year	1	$5,746
Transportation Systems	250 Year	4	$312
Transportation Systems	500 Year	4	$1,688
Transportation Systems	750 Year	4	$3,657
Transportation Systems	1000 Year	4	$5,066
Transportation Systems	1500 Year	4	$8,926
Transportation Systems	2000 Year	4	$12,225

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	2500 Year	4	$14,844
All Categories	**250 Year**	**68**	**$10,205**
All Categories	**500 Year**	**68**	**$52,362**
All Categories	**750 Year**	**68**	**$115,117**
All Categories	**1000 Year**	**68**	**$165,020**
All Categories	**1500 Year**	**68**	**$301,002**
All Categories	**2000 Year**	**68**	**$401,922**
All Categories	**2500 Year**	**68**	**$478,292**

Source: GIS Analysis

Table 5-173: Critical Facilities Exposed to the Earthquake - Town of Love Valley

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	250 Year	21	$971
Commercial Facilities	500 Year	21	$4,729
Commercial Facilities	750 Year	21	$10,053
Commercial Facilities	1000 Year	21	$13,719
Commercial Facilities	1500 Year	21	$26,492
Commercial Facilities	2000 Year	21	$37,455
Commercial Facilities	2500 Year	21	$51,015
Food and Agriculture	250 Year	1	$57
Food and Agriculture	500 Year	1	$266
Food and Agriculture	750 Year	1	$493
Food and Agriculture	1000 Year	1	$622
Food and Agriculture	1500 Year	1	$1,036
Food and Agriculture	2000 Year	1	$1,348
Food and Agriculture	2500 Year	1	$1,707

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**250 Year**	**22**	**$1,028**
All Categories	**500 Year**	**22**	**$4,995**
All Categories	**750 Year**	**22**	**$10,546**
All Categories	**1000 Year**	**22**	**$14,341**
All Categories	**1500 Year**	**22**	**$27,528**
All Categories	**2000 Year**	**22**	**$38,803**
All Categories	**2500 Year**	**22**	**$52,722**

Source: GIS Analysis

Table 5-174: Critical Facilities Exposed to the Earthquake - Town of Mooresville

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	37	$13,065
Banking and Finance	500 Year	37	$73,429
Banking and Finance	750 Year	37	$166,994
Banking and Finance	1000 Year	37	$235,299
Banking and Finance	1500 Year	37	$418,598
Banking and Finance	2000 Year	37	$515,311
Banking and Finance	2500 Year	37	$687,209
Commercial Facilities	250 Year	902	$354,131
Commercial Facilities	500 Year	902	$1,761,057
Commercial Facilities	750 Year	902	$3,916,167
Commercial Facilities	1000 Year	902	$5,545,315
Commercial Facilities	1500 Year	902	$10,033,653
Commercial Facilities	2000 Year	902	$12,929,474
Commercial Facilities	2500 Year	902	$17,905,910
Critical Manufacturing	250 Year	301	$292,911

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	500 Year	301	$1,267,707
Critical Manufacturing	750 Year	301	$2,671,808
Critical Manufacturing	1000 Year	301	$3,690,404
Critical Manufacturing	1500 Year	301	$6,084,237
Critical Manufacturing	2000 Year	301	$7,612,958
Critical Manufacturing	2500 Year	301	$9,677,503
Energy	250 Year	2	$1,335,960
Energy	500 Year	2	$3,724,780
Energy	750 Year	2	$7,069,440
Energy	1000 Year	2	$9,932,320
Energy	1500 Year	2	$14,087,220
Energy	2000 Year	2	$19,821,280
Energy	2500 Year	2	$23,607,580
Food and Agriculture	250 Year	2	$171
Food and Agriculture	500 Year	2	$955
Food and Agriculture	750 Year	2	$2,091
Food and Agriculture	1000 Year	2	$2,900
Food and Agriculture	1500 Year	2	$5,220
Food and Agriculture	2000 Year	2	$6,503
Food and Agriculture	2500 Year	2	$8,900
Government Facilities	250 Year	120	$64,297
Government Facilities	500 Year	120	$318,724
Government Facilities	750 Year	120	$688,888
Government Facilities	1000 Year	120	$974,004
Government Facilities	1500 Year	120	$1,843,718

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	2000 Year	120	$2,478,025
Government Facilities	2500 Year	120	$3,668,215
Healthcare and Public Health	250 Year	121	$78,452
Healthcare and Public Health	500 Year	121	$444,528
Healthcare and Public Health	750 Year	121	$1,071,859
Healthcare and Public Health	1000 Year	121	$1,575,687
Healthcare and Public Health	1500 Year	121	$2,903,791
Healthcare and Public Health	2000 Year	121	$3,663,423
Healthcare and Public Health	2500 Year	121	$4,759,198
Nuclear Reactors, Materials and Waste	250 Year	1	$1,292
Nuclear Reactors, Materials and Waste	500 Year	1	$6,598
Nuclear Reactors, Materials and Waste	750 Year	1	$16,395
Nuclear Reactors, Materials and Waste	1000 Year	1	$23,199
Nuclear Reactors, Materials and Waste	1500 Year	1	$43,294
Nuclear Reactors, Materials and Waste	2000 Year	1	$51,777
Nuclear Reactors, Materials and Waste	2500 Year	1	$63,331
Transportation Systems	250 Year	214	$252,310
Transportation Systems	500 Year	214	$1,059,061
Transportation Systems	750 Year	214	$2,296,569
Transportation Systems	1000 Year	214	$3,347,722
Transportation Systems	1500 Year	214	$5,996,730
Transportation Systems	2000 Year	214	$8,148,735
Transportation Systems	2500 Year	214	$11,154,737
Water	250 Year	1	$629

Sector	Event	Number of Buildings At Risk	Estimated Damages
Water	500 Year	1	$3,353
Water	750 Year	1	$8,089
Water	1000 Year	1	$11,896
Water	1500 Year	1	$20,931
Water	2000 Year	1	$24,733
Water	2500 Year	1	$31,066
All Categories	**250 Year**	**1,701**	**$2,393,218**
All Categories	**500 Year**	**1,701**	**$8,660,192**
All Categories	**750 Year**	**1,701**	**$17,908,300**
All Categories	**1000 Year**	**1,701**	**$25,338,746**
All Categories	**1500 Year**	**1,701**	**$41,437,392**
All Categories	**2000 Year**	**1,701**	**$55,252,219**
All Categories	**2500 Year**	**1,701**	**$71,563,649**

Source: GIS Analysis

Table 5-175: Critical Facilities Exposed to the Earthquake - Town of Troutman

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	3	$464
Banking and Finance	500 Year	3	$2,404
Banking and Finance	750 Year	3	$5,200
Banking and Finance	1000 Year	3	$6,942
Banking and Finance	1500 Year	3	$12,665
Banking and Finance	2000 Year	3	$16,116
Banking and Finance	2500 Year	3	$21,489
Commercial Facilities	250 Year	170	$50,390
Commercial Facilities	500 Year	170	$247,711

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	750 Year	170	$566,772
Commercial Facilities	1000 Year	170	$784,310
Commercial Facilities	1500 Year	170	$1,460,901
Commercial Facilities	2000 Year	170	$1,886,218
Commercial Facilities	2500 Year	170	$2,449,991
Critical Manufacturing	250 Year	73	$75,134
Critical Manufacturing	500 Year	73	$303,807
Critical Manufacturing	750 Year	73	$560,522
Critical Manufacturing	1000 Year	73	$729,491
Critical Manufacturing	1500 Year	73	$1,271,914
Critical Manufacturing	2000 Year	73	$1,650,710
Critical Manufacturing	2500 Year	73	$2,208,883
Energy	250 Year	1	$787,680
Energy	500 Year	1	$2,137,680
Energy	750 Year	1	$4,018,320
Energy	1000 Year	1	$5,592,960
Energy	1500 Year	1	$7,752,960
Energy	2000 Year	1	$11,154,960
Energy	2500 Year	1	$13,456,080
Government Facilities	250 Year	27	$10,194
Government Facilities	500 Year	27	$50,389
Government Facilities	750 Year	27	$111,590
Government Facilities	1000 Year	27	$153,969
Government Facilities	1500 Year	27	$306,370
Government Facilities	2000 Year	27	$416,278

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	2500 Year	27	$586,922
Healthcare and Public Health	250 Year	5	$496
Healthcare and Public Health	500 Year	5	$2,766
Healthcare and Public Health	750 Year	5	$6,743
Healthcare and Public Health	1000 Year	5	$9,511
Healthcare and Public Health	1500 Year	5	$18,507
Healthcare and Public Health	2000 Year	5	$23,837
Healthcare and Public Health	2500 Year	5	$30,050
Transportation Systems	250 Year	9	$1,673
Transportation Systems	500 Year	9	$8,201
Transportation Systems	750 Year	9	$17,852
Transportation Systems	1000 Year	9	$24,151
Transportation Systems	1500 Year	9	$45,368
Transportation Systems	2000 Year	9	$59,360
Transportation Systems	2500 Year	9	$82,129
All Categories	**250 Year**	**288**	**$926,031**
All Categories	**500 Year**	**288**	**$2,752,958**
All Categories	**750 Year**	**288**	**$5,286,999**
All Categories	**1000 Year**	**288**	**$7,301,334**
All Categories	**1500 Year**	**288**	**$10,868,685**
All Categories	**2000 Year**	**288**	**$15,207,479**
All Categories	**2500 Year**	**288**	**$18,835,544**

Source: GIS Analysis

Table 5-176: Critical Facilities Exposed to the Earthquake - City of Salisbury

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	26	$9,067
Banking and Finance	500 Year	26	$50,164
Banking and Finance	750 Year	26	$112,930
Banking and Finance	1000 Year	26	$164,681
Banking and Finance	1500 Year	26	$312,411
Banking and Finance	2000 Year	26	$426,564
Banking and Finance	2500 Year	26	$548,138
Commercial Facilities	250 Year	892	$516,908
Commercial Facilities	500 Year	892	$2,839,729
Commercial Facilities	750 Year	892	$6,309,514
Commercial Facilities	1000 Year	892	$9,418,631
Commercial Facilities	1500 Year	892	$18,555,642
Commercial Facilities	2000 Year	892	$27,002,273
Commercial Facilities	2500 Year	892	$35,566,363
Communications	250 Year	1	$286
Communications	500 Year	1	$1,608
Communications	750 Year	1	$4,156
Communications	1000 Year	1	$6,070
Communications	1500 Year	1	$11,844
Communications	2000 Year	1	$14,857
Communications	2500 Year	1	$18,714
Critical Manufacturing	250 Year	311	$282,805
Critical Manufacturing	500 Year	311	$1,237,077
Critical Manufacturing	750 Year	311	$2,410,360

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	1000 Year	311	$3,365,827
Critical Manufacturing	1500 Year	311	$5,841,224
Critical Manufacturing	2000 Year	311	$7,944,599
Critical Manufacturing	2500 Year	311	$10,151,501
Energy	250 Year	1	$48,700
Energy	500 Year	1	$140,800
Energy	750 Year	1	$267,500
Energy	1000 Year	1	$375,600
Energy	1500 Year	1	$533,550
Energy	2000 Year	1	$774,000
Energy	2500 Year	1	$936,800
Food and Agriculture	250 Year	2	$178
Food and Agriculture	500 Year	2	$991
Food and Agriculture	750 Year	2	$2,143
Food and Agriculture	1000 Year	2	$2,972
Food and Agriculture	1500 Year	2	$5,776
Food and Agriculture	2000 Year	2	$8,113
Food and Agriculture	2500 Year	2	$11,516
Government Facilities	250 Year	198	$105,565
Government Facilities	500 Year	198	$601,064
Government Facilities	750 Year	198	$1,322,858
Government Facilities	1000 Year	198	$1,972,559
Government Facilities	1500 Year	198	$3,756,499
Government Facilities	2000 Year	198	$5,493,376
Government Facilities	2500 Year	198	$7,489,159

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	250 Year	130	$144,360
Healthcare and Public Health	500 Year	130	$676,226
Healthcare and Public Health	750 Year	130	$1,468,566
Healthcare and Public Health	1000 Year	130	$2,295,862
Healthcare and Public Health	1500 Year	130	$3,886,761
Healthcare and Public Health	2000 Year	130	$5,832,103
Healthcare and Public Health	2500 Year	130	$7,549,973
Transportation Systems	250 Year	277	$193,607
Transportation Systems	500 Year	277	$1,048,373
Transportation Systems	750 Year	277	$2,316,201
Transportation Systems	1000 Year	277	$3,305,892
Transportation Systems	1500 Year	277	$6,314,284
Transportation Systems	2000 Year	277	$8,871,665
Transportation Systems	2500 Year	277	$11,851,350
All Categories	**250 Year**	**1,838**	**$1,301,476**
All Categories	**500 Year**	**1,838**	**$6,596,032**
All Categories	**750 Year**	**1,838**	**$14,214,228**
All Categories	**1000 Year**	**1,838**	**$20,908,094**
All Categories	**1500 Year**	**1,838**	**$39,217,991**
All Categories	**2000 Year**	**1,838**	**$56,367,550**
All Categories	**2500 Year**	**1,838**	**$74,123,514**

Source: GIS Analysis

Table 5-177: Critical Facilities Exposed to the Earthquake - Rowan County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	7	$3,985
Banking and Finance	500 Year	7	$17,869
Banking and Finance	750 Year	7	$35,168
Banking and Finance	1000 Year	7	$50,484
Banking and Finance	1500 Year	7	$84,031
Banking and Finance	2000 Year	7	$118,216
Banking and Finance	2500 Year	7	$153,849
Commercial Facilities	250 Year	1,290	$448,510
Commercial Facilities	500 Year	1,290	$2,649,265
Commercial Facilities	750 Year	1,290	$5,796,448
Commercial Facilities	1000 Year	1,290	$8,679,302
Commercial Facilities	1500 Year	1,290	$15,557,531
Commercial Facilities	2000 Year	1,290	$22,114,487
Commercial Facilities	2500 Year	1,290	$29,637,050
Critical Manufacturing	250 Year	685	$409,814
Critical Manufacturing	500 Year	686	$2,086,643
Critical Manufacturing	750 Year	686	$4,134,787
Critical Manufacturing	1000 Year	686	$5,663,763
Critical Manufacturing	1500 Year	686	$9,366,304
Critical Manufacturing	2000 Year	686	$12,439,453
Critical Manufacturing	2500 Year	686	$16,106,742
Energy	250 Year	4	$27,133
Energy	500 Year	4	$106,299
Energy	750 Year	4	$204,995

Sector	Event	Number of Buildings At Risk	Estimated Damages
Energy	1000 Year	4	$277,430
Energy	1500 Year	4	$435,243
Energy	2000 Year	4	$597,414
Energy	2500 Year	4	$763,068
Food and Agriculture	250 Year	184	$12,116
Food and Agriculture	500 Year	184	$64,632
Food and Agriculture	750 Year	184	$144,819
Food and Agriculture	1000 Year	184	$200,080
Food and Agriculture	1500 Year	184	$366,725
Food and Agriculture	2000 Year	184	$453,846
Food and Agriculture	2500 Year	184	$570,660
Government Facilities	250 Year	137	$104,569
Government Facilities	500 Year	137	$602,274
Government Facilities	750 Year	137	$1,252,544
Government Facilities	1000 Year	137	$1,849,836
Government Facilities	1500 Year	137	$3,215,964
Government Facilities	2000 Year	137	$4,687,337
Government Facilities	2500 Year	137	$6,325,303
Healthcare and Public Health	250 Year	22	$15,274
Healthcare and Public Health	500 Year	22	$74,172
Healthcare and Public Health	750 Year	22	$156,778
Healthcare and Public Health	1000 Year	22	$226,052
Healthcare and Public Health	1500 Year	22	$432,265
Healthcare and Public Health	2000 Year	22	$606,613

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	2500 Year	22	$850,108
Nuclear Reactors, Materials and Waste	250 Year	1	$188
Nuclear Reactors, Materials and Waste	500 Year	1	$1,315
Nuclear Reactors, Materials and Waste	750 Year	1	$3,142
Nuclear Reactors, Materials and Waste	1000 Year	1	$4,244
Nuclear Reactors, Materials and Waste	1500 Year	1	$7,084
Nuclear Reactors, Materials and Waste	2000 Year	1	$8,923
Nuclear Reactors, Materials and Waste	2500 Year	1	$12,795
Transportation Systems	250 Year	362	$175,546
Transportation Systems	500 Year	362	$1,017,236
Transportation Systems	750 Year	362	$2,184,735
Transportation Systems	1000 Year	362	$3,067,914
Transportation Systems	1500 Year	362	$5,478,544
Transportation Systems	2000 Year	362	$7,390,926
Transportation Systems	2500 Year	362	$10,078,235
Water	250 Year	3	$40
Water	500 Year	3	$134
Water	750 Year	3	$274
Water	1000 Year	3	$392
Water	1500 Year	3	$635
Water	2000 Year	3	$849
Water	2500 Year	3	$1,017
All Categories	**250 Year**	**2,695**	**$1,197,175**
All Categories	**500 Year**	**2,696**	**$6,619,839**

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**750 Year**	**2,696**	**$13,913,690**
All Categories	**1000 Year**	**2,696**	**$20,019,497**
All Categories	**1500 Year**	**2,696**	**$34,944,326**
All Categories	**2000 Year**	**2,696**	**$48,418,064**
All Categories	**2500 Year**	**2,696**	**$64,498,827**

Source: GIS Analysis

Table 5-178: Critical Facilities Exposed to the Earthquake - Town of China Grove

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	4	$515
Banking and Finance	500 Year	4	$3,119
Banking and Finance	750 Year	4	$6,462
Banking and Finance	1000 Year	4	$8,928
Banking and Finance	1500 Year	4	$16,111
Banking and Finance	2000 Year	4	$21,061
Banking and Finance	2500 Year	4	$32,664
Commercial Facilities	250 Year	142	$33,838
Commercial Facilities	500 Year	142	$191,185
Commercial Facilities	750 Year	142	$445,064
Commercial Facilities	1000 Year	142	$683,671
Commercial Facilities	1500 Year	142	$1,261,735
Commercial Facilities	2000 Year	142	$1,767,595
Commercial Facilities	2500 Year	142	$2,398,266
Critical Manufacturing	250 Year	47	$31,322
Critical Manufacturing	500 Year	47	$128,694
Critical Manufacturing	750 Year	47	$243,395

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	1000 Year	47	$336,928
Critical Manufacturing	1500 Year	47	$532,104
Critical Manufacturing	2000 Year	47	$718,007
Critical Manufacturing	2500 Year	47	$946,062
Food and Agriculture	250 Year	1	$104
Food and Agriculture	500 Year	1	$561
Food and Agriculture	750 Year	1	$1,069
Food and Agriculture	1000 Year	1	$1,420
Food and Agriculture	1500 Year	1	$2,396
Food and Agriculture	2000 Year	1	$3,044
Food and Agriculture	2500 Year	1	$4,525
Government Facilities	250 Year	15	$16,492
Government Facilities	500 Year	15	$97,099
Government Facilities	750 Year	15	$229,292
Government Facilities	1000 Year	15	$333,377
Government Facilities	1500 Year	15	$671,984
Government Facilities	2000 Year	15	$909,281
Government Facilities	2500 Year	15	$1,270,754
Healthcare and Public Health	250 Year	5	$3,110
Healthcare and Public Health	500 Year	5	$15,348
Healthcare and Public Health	750 Year	5	$35,724
Healthcare and Public Health	1000 Year	5	$55,953
Healthcare and Public Health	1500 Year	5	$109,217
Healthcare and Public Health	2000 Year	5	$156,856

Sector	Event	Number of Buildings At Risk	Estimated Damages
Healthcare and Public Health	2500 Year	5	$200,884
Transportation Systems	250 Year	43	$17,060
Transportation Systems	500 Year	43	$96,074
Transportation Systems	750 Year	43	$212,739
Transportation Systems	1000 Year	43	$312,353
Transportation Systems	1500 Year	43	$644,203
Transportation Systems	2000 Year	43	$894,598
Transportation Systems	2500 Year	43	$1,226,816
All Categories	**250 Year**	**257**	**$102,441**
All Categories	**500 Year**	**257**	**$532,080**
All Categories	**750 Year**	**257**	**$1,173,745**
All Categories	**1000 Year**	**257**	**$1,732,630**
All Categories	**1500 Year**	**257**	**$3,237,750**
All Categories	**2000 Year**	**257**	**$4,470,442**
All Categories	**2500 Year**	**257**	**$6,079,971**

Source: GIS Analysis

Table 5-179: Critical Facilities Exposed to the Earthquake - Town of Cleveland

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	250 Year	41	$26,373
Commercial Facilities	500 Year	41	$137,400
Commercial Facilities	750 Year	41	$304,152
Commercial Facilities	1000 Year	41	$413,522
Commercial Facilities	1500 Year	41	$729,313
Commercial Facilities	2000 Year	41	$951,610
Commercial Facilities	2500 Year	41	$1,229,796

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	250 Year	17	$37,360
Critical Manufacturing	500 Year	17	$170,839
Critical Manufacturing	750 Year	17	$321,786
Critical Manufacturing	1000 Year	17	$408,601
Critical Manufacturing	1500 Year	17	$621,379
Critical Manufacturing	2000 Year	17	$781,517
Critical Manufacturing	2500 Year	17	$955,529
Government Facilities	250 Year	7	$2,480
Government Facilities	500 Year	7	$13,970
Government Facilities	750 Year	7	$31,289
Government Facilities	1000 Year	7	$43,698
Government Facilities	1500 Year	7	$73,906
Government Facilities	2000 Year	7	$99,807
Government Facilities	2500 Year	7	$129,640
Healthcare and Public Health	250 Year	1	$193
Healthcare and Public Health	500 Year	1	$1,110
Healthcare and Public Health	750 Year	1	$2,752
Healthcare and Public Health	1000 Year	1	$3,919
Healthcare and Public Health	1500 Year	1	$7,514
Healthcare and Public Health	2000 Year	1	$9,296
Healthcare and Public Health	2500 Year	1	$11,371
Transportation Systems	250 Year	15	$5,472
Transportation Systems	500 Year	15	$30,955
Transportation Systems	750 Year	15	$64,817

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	1000 Year	15	$87,137
Transportation Systems	1500 Year	15	$151,784
Transportation Systems	2000 Year	15	$198,468
Transportation Systems	2500 Year	15	$255,485
All Categories	**250 Year**	**81**	**$71,878**
All Categories	**500 Year**	**81**	**$354,274**
All Categories	**750 Year**	**81**	**$724,796**
All Categories	**1000 Year**	**81**	**$956,877**
All Categories	**1500 Year**	**81**	**$1,583,896**
All Categories	**2000 Year**	**81**	**$2,040,698**
All Categories	**2500 Year**	**81**	**$2,581,821**

Source: GIS Analysis

Table 5-180: Critical Facilities Exposed to the Earthquake - Town of East Spencer

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	250 Year	47	$62,962
Commercial Facilities	500 Year	47	$488,785
Commercial Facilities	750 Year	47	$897,448
Commercial Facilities	1000 Year	47	$1,361,993
Commercial Facilities	1500 Year	47	$2,120,875
Commercial Facilities	2000 Year	47	$3,066,257
Commercial Facilities	2500 Year	47	$3,861,855
Critical Manufacturing	250 Year	8	$31,372
Critical Manufacturing	500 Year	8	$125,058
Critical Manufacturing	750 Year	8	$241,135
Critical Manufacturing	1000 Year	8	$373,816

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	1500 Year	8	$603,400
Critical Manufacturing	2000 Year	8	$932,229
Critical Manufacturing	2500 Year	8	$1,155,984
Government Facilities	250 Year	8	$5,995
Government Facilities	500 Year	8	$49,440
Government Facilities	750 Year	8	$103,438
Government Facilities	1000 Year	8	$179,935
Government Facilities	1500 Year	8	$292,988
Government Facilities	2000 Year	8	$468,221
Government Facilities	2500 Year	8	$600,808
Healthcare and Public Health	250 Year	1	$160
Healthcare and Public Health	500 Year	1	$622
Healthcare and Public Health	750 Year	1	$1,156
Healthcare and Public Health	1000 Year	1	$1,694
Healthcare and Public Health	1500 Year	1	$4,126
Healthcare and Public Health	2000 Year	1	$6,262
Healthcare and Public Health	2500 Year	1	$7,960
Transportation Systems	250 Year	5	$972
Transportation Systems	500 Year	5	$5,480
Transportation Systems	750 Year	5	$12,440
Transportation Systems	1000 Year	5	$18,047
Transportation Systems	1500 Year	5	$35,217
Transportation Systems	2000 Year	5	$46,703
Transportation Systems	2500 Year	5	$59,196

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**250 Year**	**69**	**$101,461**
All Categories	**500 Year**	**69**	**$669,385**
All Categories	**750 Year**	**69**	**$1,255,617**
All Categories	**1000 Year**	**69**	**$1,935,485**
All Categories	**1500 Year**	**69**	**$3,056,606**
All Categories	**2000 Year**	**69**	**$4,519,672**
All Categories	**2500 Year**	**69**	**$5,685,803**

Source: GIS Analysis

Table 5-181: Critical Facilities Exposed to the Earthquake - Town of Faith

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	250 Year	48	$9,438
Commercial Facilities	500 Year	48	$78,162
Commercial Facilities	750 Year	48	$180,513
Commercial Facilities	1000 Year	48	$302,028
Commercial Facilities	1500 Year	48	$534,127
Commercial Facilities	2000 Year	48	$799,363
Commercial Facilities	2500 Year	48	$1,047,084
Critical Manufacturing	250 Year	29	$5,203
Critical Manufacturing	500 Year	29	$26,307
Critical Manufacturing	750 Year	29	$49,542
Critical Manufacturing	1000 Year	29	$70,135
Critical Manufacturing	1500 Year	29	$125,674
Critical Manufacturing	2000 Year	29	$176,613
Critical Manufacturing	2500 Year	29	$219,452
Government Facilities	250 Year	5	$2,662

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	500 Year	5	$15,176
Government Facilities	750 Year	5	$35,162
Government Facilities	1000 Year	5	$50,581
Government Facilities	1500 Year	5	$101,255
Government Facilities	2000 Year	5	$131,401
Government Facilities	2500 Year	5	$168,638
Healthcare and Public Health	250 Year	1	$605
Healthcare and Public Health	500 Year	1	$3,619
Healthcare and Public Health	750 Year	1	$6,095
Healthcare and Public Health	1000 Year	1	$9,024
Healthcare and Public Health	1500 Year	1	$13,103
Healthcare and Public Health	2000 Year	1	$18,883
Healthcare and Public Health	2500 Year	1	$22,763
Transportation Systems	250 Year	6	$2,472
Transportation Systems	500 Year	6	$14,718
Transportation Systems	750 Year	6	$35,341
Transportation Systems	1000 Year	6	$49,864
Transportation Systems	1500 Year	6	$93,340
Transportation Systems	2000 Year	6	$118,438
Transportation Systems	2500 Year	6	$162,033
All Categories	**250 Year**	**89**	**$20,380**
All Categories	**500 Year**	**89**	**$137,982**
All Categories	**750 Year**	**89**	**$306,653**
All Categories	**1000 Year**	**89**	**$481,632**

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**1500 Year**	**89**	**$867,499**
All Categories	**2000 Year**	**89**	**$1,244,698**
All Categories	**2500 Year**	**89**	**$1,619,970**

Source: GIS Analysis

Table 5-182: Critical Facilities Exposed to the Earthquake - Town of Granite Quarry

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	4	$1,067
Banking and Finance	500 Year	4	$6,576
Banking and Finance	750 Year	4	$13,890
Banking and Finance	1000 Year	4	$18,671
Banking and Finance	1500 Year	4	$35,983
Banking and Finance	2000 Year	4	$49,681
Banking and Finance	2500 Year	4	$78,207
Commercial Facilities	250 Year	72	$13,783
Commercial Facilities	500 Year	72	$74,991
Commercial Facilities	750 Year	72	$170,615
Commercial Facilities	1000 Year	72	$252,183
Commercial Facilities	1500 Year	72	$494,850
Commercial Facilities	2000 Year	72	$700,904
Commercial Facilities	2500 Year	72	$928,340
Critical Manufacturing	250 Year	39	$50,714
Critical Manufacturing	500 Year	39	$185,243
Critical Manufacturing	750 Year	39	$357,505
Critical Manufacturing	1000 Year	39	$531,433
Critical Manufacturing	1500 Year	39	$791,393

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	2000 Year	39	$1,149,567
Critical Manufacturing	2500 Year	39	$1,431,742
Government Facilities	250 Year	15	$7,976
Government Facilities	500 Year	15	$67,700
Government Facilities	750 Year	15	$145,408
Government Facilities	1000 Year	15	$234,547
Government Facilities	1500 Year	15	$422,125
Government Facilities	2000 Year	15	$644,671
Government Facilities	2500 Year	15	$896,577
Healthcare and Public Health	250 Year	3	$366
Healthcare and Public Health	500 Year	3	$2,241
Healthcare and Public Health	750 Year	3	$5,380
Healthcare and Public Health	1000 Year	3	$7,668
Healthcare and Public Health	1500 Year	3	$14,726
Healthcare and Public Health	2000 Year	3	$18,632
Healthcare and Public Health	2500 Year	3	$24,740
Transportation Systems	250 Year	41	$11,746
Transportation Systems	500 Year	41	$91,574
Transportation Systems	750 Year	41	$212,546
Transportation Systems	1000 Year	41	$332,965
Transportation Systems	1500 Year	41	$606,389
Transportation Systems	2000 Year	41	$866,696
Transportation Systems	2500 Year	41	$1,150,394
All Categories	**250 Year**	**174**	**$85,652**

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**500 Year**	**174**	**$428,325**
All Categories	**750 Year**	**174**	**$905,344**
All Categories	**1000 Year**	**174**	**$1,377,467**
All Categories	**1500 Year**	**174**	**$2,365,466**
All Categories	**2000 Year**	**174**	**$3,430,151**
All Categories	**2500 Year**	**174**	**$4,510,000**

Source: GIS Analysis

Table 5-183: Critical Facilities Exposed to the Earthquake - Town of Landis

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	2	$790
Banking and Finance	500 Year	2	$3,242
Banking and Finance	750 Year	2	$8,222
Banking and Finance	1000 Year	2	$13,507
Banking and Finance	1500 Year	2	$29,525
Banking and Finance	2000 Year	2	$43,528
Banking and Finance	2500 Year	2	$53,643
Commercial Facilities	250 Year	80	$22,056
Commercial Facilities	500 Year	80	$148,479
Commercial Facilities	750 Year	80	$348,331
Commercial Facilities	1000 Year	80	$541,834
Commercial Facilities	1500 Year	80	$1,006,562
Commercial Facilities	2000 Year	80	$1,404,053
Commercial Facilities	2500 Year	80	$1,945,922
Critical Manufacturing	250 Year	32	$34,240
Critical Manufacturing	500 Year	32	$172,358

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	750 Year	32	$341,091
Critical Manufacturing	1000 Year	32	$472,766
Critical Manufacturing	1500 Year	32	$828,629
Critical Manufacturing	2000 Year	32	$1,116,303
Critical Manufacturing	2500 Year	32	$1,737,036
Government Facilities	250 Year	13	$20,682
Government Facilities	500 Year	13	$123,555
Government Facilities	750 Year	13	$291,026
Government Facilities	1000 Year	13	$423,436
Government Facilities	1500 Year	13	$794,534
Government Facilities	2000 Year	13	$1,023,512
Government Facilities	2500 Year	13	$1,439,588
Healthcare and Public Health	250 Year	3	$1,556
Healthcare and Public Health	500 Year	3	$6,596
Healthcare and Public Health	750 Year	3	$14,621
Healthcare and Public Health	1000 Year	3	$22,794
Healthcare and Public Health	1500 Year	3	$36,767
Healthcare and Public Health	2000 Year	3	$53,706
Healthcare and Public Health	2500 Year	3	$69,236
Transportation Systems	250 Year	21	$13,085
Transportation Systems	500 Year	21	$79,229
Transportation Systems	750 Year	21	$169,923
Transportation Systems	1000 Year	21	$239,841
Transportation Systems	1500 Year	21	$470,736

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	2000 Year	21	$639,449
Transportation Systems	2500 Year	21	$1,017,778
All Categories	**250 Year**	**151**	**$92,409**
All Categories	**500 Year**	**151**	**$533,459**
All Categories	**750 Year**	**151**	**$1,173,214**
All Categories	**1000 Year**	**151**	**$1,714,178**
All Categories	**1500 Year**	**151**	**$3,166,753**
All Categories	**2000 Year**	**151**	**$4,280,551**
All Categories	**2500 Year**	**151**	**$6,263,203**

Source: GIS Analysis

Table 5-184: Critical Facilities Exposed to the Earthquake - Town of Rockwell

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	2	$379
Banking and Finance	500 Year	2	$2,272
Banking and Finance	750 Year	2	$5,561
Banking and Finance	1000 Year	2	$8,005
Banking and Finance	1500 Year	2	$14,496
Banking and Finance	2000 Year	2	$18,356
Banking and Finance	2500 Year	2	$25,756
Commercial Facilities	250 Year	100	$30,871
Commercial Facilities	500 Year	100	$176,580
Commercial Facilities	750 Year	100	$413,216
Commercial Facilities	1000 Year	100	$641,181
Commercial Facilities	1500 Year	100	$1,236,152
Commercial Facilities	2000 Year	100	$1,768,332

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	2500 Year	100	$2,416,063
Critical Manufacturing	250 Year	46	$39,925
Critical Manufacturing	500 Year	46	$256,786
Critical Manufacturing	750 Year	46	$503,883
Critical Manufacturing	1000 Year	46	$768,383
Critical Manufacturing	1500 Year	46	$1,312,060
Critical Manufacturing	2000 Year	46	$1,869,319
Critical Manufacturing	2500 Year	46	$2,388,583
Government Facilities	250 Year	12	$5,599
Government Facilities	500 Year	12	$28,354
Government Facilities	750 Year	12	$66,607
Government Facilities	1000 Year	12	$105,055
Government Facilities	1500 Year	12	$183,326
Government Facilities	2000 Year	12	$273,064
Government Facilities	2500 Year	12	$370,449
Healthcare and Public Health	250 Year	6	$2,054
Healthcare and Public Health	500 Year	6	$12,171
Healthcare and Public Health	750 Year	6	$27,831
Healthcare and Public Health	1000 Year	6	$39,455
Healthcare and Public Health	1500 Year	6	$75,020
Healthcare and Public Health	2000 Year	6	$99,982
Healthcare and Public Health	2500 Year	6	$141,357
Transportation Systems	250 Year	21	$11,756
Transportation Systems	500 Year	21	$63,735

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	750 Year	21	$151,229
Transportation Systems	1000 Year	21	$225,109
Transportation Systems	1500 Year	21	$455,616
Transportation Systems	2000 Year	21	$633,494
Transportation Systems	2500 Year	21	$856,575
All Categories	**250 Year**	**187**	**$90,584**
All Categories	**500 Year**	**187**	**$539,898**
All Categories	**750 Year**	**187**	**$1,168,327**
All Categories	**1000 Year**	**187**	**$1,787,188**
All Categories	**1500 Year**	**187**	**$3,276,670**
All Categories	**2000 Year**	**187**	**$4,662,547**
All Categories	**2500 Year**	**187**	**$6,198,783**

Source: GIS Analysis

Table 5-185: Critical Facilities Exposed to the Earthquake - Town of Spencer

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	250 Year	95	$55,993
Commercial Facilities	500 Year	95	$357,021
Commercial Facilities	750 Year	95	$775,566
Commercial Facilities	1000 Year	95	$1,200,150
Commercial Facilities	1500 Year	95	$2,322,099
Commercial Facilities	2000 Year	95	$3,476,160
Commercial Facilities	2500 Year	95	$4,775,382
Critical Manufacturing	250 Year	23	$13,121
Critical Manufacturing	500 Year	23	$66,550
Critical Manufacturing	750 Year	23	$132,624

Sector	Event	Number of Buildings At Risk	Estimated Damages
Critical Manufacturing	1000 Year	23	$185,574
Critical Manufacturing	1500 Year	23	$328,305
Critical Manufacturing	2000 Year	23	$454,580
Critical Manufacturing	2500 Year	23	$571,403
Government Facilities	250 Year	12	$14,971
Government Facilities	500 Year	12	$91,947
Government Facilities	750 Year	12	$206,284
Government Facilities	1000 Year	12	$301,135
Government Facilities	1500 Year	12	$599,397
Government Facilities	2000 Year	12	$866,368
Government Facilities	2500 Year	12	$1,251,868
Healthcare and Public Health	250 Year	7	$2,064
Healthcare and Public Health	500 Year	7	$11,452
Healthcare and Public Health	750 Year	7	$25,259
Healthcare and Public Health	1000 Year	7	$39,407
Healthcare and Public Health	1500 Year	7	$73,693
Healthcare and Public Health	2000 Year	7	$110,654
Healthcare and Public Health	2500 Year	7	$144,788
Transportation Systems	250 Year	33	$14,167
Transportation Systems	500 Year	33	$87,220
Transportation Systems	750 Year	33	$194,315
Transportation Systems	1000 Year	33	$290,092
Transportation Systems	1500 Year	33	$542,724
Transportation Systems	2000 Year	33	$780,318

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	2500 Year	33	$1,055,591
All Categories	**250 Year**	**170**	**$100,316**
All Categories	**500 Year**	**170**	**$614,190**
All Categories	**750 Year**	**170**	**$1,334,048**
All Categories	**1000 Year**	**170**	**$2,016,358**
All Categories	**1500 Year**	**170**	**$3,866,218**
All Categories	**2000 Year**	**170**	**$5,688,080**
All Categories	**2500 Year**	**170**	**$7,799,032**

Source: GIS Analysis

The following table provides counts and estimated damages for CIKR buildings across all jurisdictions, by sector, in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event.

Table 5-186: Critical Facilities Exposed to the Earthquake (by Sector)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	250 Year	4,612	$2,240,379
Banking and Finance	500 Year	5,489	$12,959,476
Banking and Finance	750 Year	5,532	$27,133,815
Banking and Finance	1000 Year	5,533	$43,897,717
Banking and Finance	1500 Year	5,533	$77,934,062
Banking and Finance	2000 Year	5,533	$115,248,372
Banking and Finance	2500 Year	5,533	$149,142,441
Chemical	250 Year	51	$1,496,117
Chemical	500 Year	63	$4,104,556
Chemical	750 Year	64	$7,149,358
Chemical	1000 Year	64	$9,580,116
Chemical	1500 Year	64	$16,474,845

Sector	Event	Number of Buildings At Risk	Estimated Damages
Chemical	2000 Year	64	$20,538,723
Chemical	2500 Year	64	$25,638,345
Commercial Facilities	250 Year	165,370	$58,913,254
Commercial Facilities	500 Year	195,677	$327,363,414
Commercial Facilities	750 Year	197,074	$687,608,551
Commercial Facilities	1000 Year	197,140	$1,113,016,124
Commercial Facilities	1500 Year	197,140	$1,995,191,643
Commercial Facilities	2000 Year	197,140	$2,940,270,631
Commercial Facilities	2500 Year	197,140	$3,813,023,282
Communications	250 Year	129	$103,196
Communications	500 Year	215	$800,204
Communications	750 Year	227	$1,882,578
Communications	1000 Year	227	$3,145,265
Communications	1500 Year	227	$5,746,446
Communications	2000 Year	227	$8,711,044
Communications	2500 Year	227	$11,481,813
Critical Manufacturing	250 Year	57,777	$43,865,115
Critical Manufacturing	500 Year	61,745	$214,953,349
Critical Manufacturing	750 Year	61,917	$409,497,832
Critical Manufacturing	1000 Year	61,924	$616,126,953
Critical Manufacturing	1500 Year	61,924	$1,009,312,111
Critical Manufacturing	2000 Year	61,924	$1,400,234,752
Critical Manufacturing	2500 Year	61,924	$1,745,883,839
Defense Industrial Base	250 Year	57	$368,022
Defense Industrial Base	500 Year	74	$1,722,806

Sector	Event	Number of Buildings At Risk	Estimated Damages
Defense Industrial Base	750 Year	77	$3,559,806
Defense Industrial Base	1000 Year	77	$5,484,337
Defense Industrial Base	1500 Year	77	$9,111,029
Defense Industrial Base	2000 Year	77	$12,499,356
Defense Industrial Base	2500 Year	77	$15,639,134
Emergency Services	250 Year	1,337	$716,995
Emergency Services	500 Year	2,548	$4,672,274
Emergency Services	750 Year	2,560	$10,688,717
Emergency Services	1000 Year	2,561	$17,555,374
Emergency Services	1500 Year	2,561	$31,484,845
Emergency Services	2000 Year	2,561	$46,853,133
Emergency Services	2500 Year	2,561	$61,759,026
Energy	250 Year	1,660	$26,628,397
Energy	500 Year	1,772	$114,925,250
Energy	750 Year	1,778	$235,531,048
Energy	1000 Year	1,779	$351,179,031
Energy	1500 Year	1,779	$589,600,992
Energy	2000 Year	1,779	$826,673,337
Energy	2500 Year	1,779	$1,011,922,605
Food and Agriculture	250 Year	95,110	$1,986,491
Food and Agriculture	500 Year	152,014	$15,138,603
Food and Agriculture	750 Year	152,162	$33,664,583
Food and Agriculture	1000 Year	152,163	$53,664,365
Food and Agriculture	1500 Year	152,163	$97,450,238
Food and Agriculture	2000 Year	152,163	$142,614,510

Sector	Event	Number of Buildings At Risk	Estimated Damages
Food and Agriculture	2500 Year	152,163	$187,529,219
Government Facilities	250 Year	29,738	$15,853,610
Government Facilities	500 Year	38,626	$92,941,382
Government Facilities	750 Year	38,750	$200,168,404
Government Facilities	1000 Year	38,750	$331,114,310
Government Facilities	1500 Year	38,750	$617,536,881
Government Facilities	2000 Year	38,750	$949,296,399
Government Facilities	2500 Year	38,750	$1,267,811,728
Healthcare and Public Health	250 Year	11,168	$9,462,825
Healthcare and Public Health	500 Year	13,537	$51,854,170
Healthcare and Public Health	750 Year	13,596	$107,421,024
Healthcare and Public Health	1000 Year	13,597	$172,223,146
Healthcare and Public Health	1500 Year	13,597	$302,594,563
Healthcare and Public Health	2000 Year	13,597	$445,492,233
Healthcare and Public Health	2500 Year	13,597	$573,662,103
Information Technology	250 Year	3	$593
Information Technology	500 Year	3	$3,674
Information Technology	750 Year	3	$7,542
Information Technology	1000 Year	3	$11,553
Information Technology	1500 Year	3	$20,158
Information Technology	2000 Year	3	$29,349
Information Technology	2500 Year	3	$38,644
National Monuments and Icons	500 Year	2	$1,192
National Monuments and Icons	750 Year	2	$3,048

Sector	Event	Number of Buildings At Risk	Estimated Damages
National Monuments and Icons	1000 Year	2	$5,087
National Monuments and Icons	1500 Year	2	$10,443
National Monuments and Icons	2000 Year	2	$16,253
National Monuments and Icons	2500 Year	2	$21,524
Nuclear Reactors, Materials and Waste	250 Year	39	$18,992
Nuclear Reactors, Materials and Waste	500 Year	63	$154,870
Nuclear Reactors, Materials and Waste	750 Year	65	$371,541
Nuclear Reactors, Materials and Waste	1000 Year	65	$623,654
Nuclear Reactors, Materials and Waste	1500 Year	65	$1,168,874
Nuclear Reactors, Materials and Waste	2000 Year	65	$1,702,194
Nuclear Reactors, Materials and Waste	2500 Year	65	$2,169,793
Other	250 Year	9	$24,451
Other	500 Year	12	$96,631
Other	750 Year	12	$192,611
Other	1000 Year	12	$305,413
Other	1500 Year	12	$515,477
Other	2000 Year	12	$699,556
Other	2500 Year	12	$805,266
Postal and Shipping	250 Year	231	$13,355
Postal and Shipping	500 Year	246	$106,630
Postal and Shipping	750 Year	246	$248,722
Postal and Shipping	1000 Year	246	$406,356
Postal and Shipping	1500 Year	246	$730,148
Postal and Shipping	2000 Year	246	$1,093,517

Sector	Event	Number of Buildings At Risk	Estimated Damages
Postal and Shipping	2500 Year	246	$1,399,474
Transportation Systems	250 Year	31,921	$17,815,924
Transportation Systems	500 Year	36,670	$100,960,199
Transportation Systems	750 Year	36,806	$203,834,597
Transportation Systems	1000 Year	36,806	$323,546,623
Transportation Systems	1500 Year	36,806	$562,327,262
Transportation Systems	2000 Year	36,806	$827,970,238
Transportation Systems	2500 Year	36,806	$1,070,193,902
Water	250 Year	1,286	$22,555,969
Water	500 Year	1,366	$80,554,011
Water	750 Year	1,366	$154,856,513
Water	1000 Year	1,366	$227,981,188
Water	1500 Year	1,366	$378,980,753
Water	2000 Year	1,366	$508,554,474
Water	2500 Year	1,366	$626,920,156
All Categories	**250 Year**	**400,498**	**$202,063,685**
All Categories	**500 Year**	**510,122**	**$1,023,312,691**
All Categories	**750 Year**	**512,237**	**$2,083,820,290**
All Categories	**1000 Year**	**512,315**	**$3,269,866,612**
All Categories	**1500 Year**	**512,315**	**$5,696,190,770**
All Categories	**2000 Year**	**512,315**	**$8,248,498,071**
All Categories	**2500 Year**	**512,315**	**$10,565,042,294**

Source: GIS Analysis

The following tables provide counts and estimated damages for High Potential Loss Properties by jurisdiction in the plan. Because there is a large number of categories and events, the table is sorted by category and then by event. Totals across all categories are shown at the bottom of each table.

Table 5-187: High Potential Loss Properties Exposed to the Earthquake - City of Statesville

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	95	$165,362
Commercial	500 Year	95	$822,738
Commercial	750 Year	95	$1,794,655
Commercial	1000 Year	95	$2,461,878
Commercial	1500 Year	95	$4,507,111
Commercial	2000 Year	95	$5,997,638
Commercial	2500 Year	95	$7,765,257
Government	250 Year	29	$35,362
Government	500 Year	29	$196,363
Government	750 Year	29	$457,413
Government	1000 Year	29	$638,273
Government	1500 Year	29	$1,216,062
Government	2000 Year	29	$1,597,488
Government	2500 Year	29	$2,063,319
Industrial	250 Year	53	$290,033
Industrial	500 Year	53	$1,202,628
Industrial	750 Year	53	$2,309,924
Industrial	1000 Year	53	$3,012,010
Industrial	1500 Year	53	$5,184,150
Industrial	2000 Year	53	$6,776,186
Industrial	2500 Year	53	$8,664,434
Religious	250 Year	19	$24,252
Religious	500 Year	19	$120,818
Religious	750 Year	19	$280,602

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	1000 Year	19	$385,566
Religious	1500 Year	19	$717,338
Religious	2000 Year	19	$923,365
Religious	2500 Year	19	$1,167,552
Residential	250 Year	11	$4,439
Residential	500 Year	11	$28,964
Residential	750 Year	11	$73,704
Residential	1000 Year	11	$104,773
Residential	1500 Year	11	$220,965
Residential	2000 Year	11	$296,770
Residential	2500 Year	11	$381,978
Utilities	250 Year	5	$884,850
Utilities	500 Year	5	$2,474,710
Utilities	750 Year	5	$4,639,150
Utilities	1000 Year	5	$6,491,110
Utilities	1500 Year	5	$9,127,940
Utilities	2000 Year	5	$13,211,260
Utilities	2500 Year	5	$16,103,080
All Categories	**250 Year**	**212**	**$1,404,298**
All Categories	**500 Year**	**212**	**$4,846,221**
All Categories	**750 Year**	**212**	**$9,555,448**
All Categories	**1000 Year**	**212**	**$13,093,610**
All Categories	**1500 Year**	**212**	**$20,973,566**
All Categories	**2000 Year**	**212**	**$28,802,707**
All Categories	**2500 Year**	**212**	**$36,145,620**

Source: GIS Analysis

Table 5-188: High Potential Loss Properties Exposed to the Earthquake - Iredell County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	34	$38,580
Commercial	500 Year	34	$189,353
Commercial	750 Year	34	$389,936
Commercial	1000 Year	34	$545,991
Commercial	1500 Year	34	$954,234
Commercial	2000 Year	34	$1,279,979
Commercial	2500 Year	34	$1,757,743
Government	250 Year	27	$53,576
Government	500 Year	27	$292,212
Government	750 Year	27	$658,634
Government	1000 Year	27	$921,848
Government	1500 Year	27	$1,669,577
Government	2000 Year	27	$2,150,304
Government	2500 Year	27	$2,863,661
Industrial	250 Year	24	$129,171
Industrial	500 Year	24	$546,176
Industrial	750 Year	24	$1,014,066
Industrial	1000 Year	24	$1,320,360
Industrial	1500 Year	24	$2,106,873
Industrial	2000 Year	24	$2,751,791
Industrial	2500 Year	24	$3,480,636
Religious	250 Year	24	$76,578
Religious	500 Year	24	$383,552
Religious	750 Year	24	$901,784

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	1000 Year	24	$1,295,847
Religious	1500 Year	24	$2,412,537
Religious	2000 Year	24	$3,128,800
Religious	2500 Year	24	$3,762,242
Residential	250 Year	235	$63,421
Residential	500 Year	235	$423,131
Residential	750 Year	235	$1,020,634
Residential	1000 Year	235	$1,502,087
Residential	1500 Year	235	$2,858,791
Residential	2000 Year	235	$3,748,329
Residential	2500 Year	235	$5,032,225
Utilities	250 Year	2	$377,900
Utilities	500 Year	2	$1,690,750
Utilities	750 Year	2	$3,979,350
Utilities	1000 Year	2	$5,543,800
Utilities	1500 Year	2	$10,071,850
Utilities	2000 Year	2	$12,158,450
Utilities	2500 Year	2	$14,781,100
All Categories	**250 Year**	**346**	**$739,226**
All Categories	**500 Year**	**346**	**$3,525,174**
All Categories	**750 Year**	**346**	**$7,964,404**
All Categories	**1000 Year**	**346**	**$11,129,933**
All Categories	**1500 Year**	**346**	**$20,073,862**
All Categories	**2000 Year**	**346**	**$25,217,653**
All Categories	**2500 Year**	**346**	**$31,677,607**

Source: GIS Analysis

Table 5-189: High Potential Loss Properties Exposed to the Earthquake - Town of Mooresville

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	174	$417,694
Commercial	500 Year	174	$1,965,642
Commercial	750 Year	174	$4,334,536
Commercial	1000 Year	174	$6,254,868
Commercial	1500 Year	174	$11,268,371
Commercial	2000 Year	174	$14,839,864
Commercial	2500 Year	174	$20,304,753
Government	250 Year	17	$39,569
Government	500 Year	17	$210,655
Government	750 Year	17	$467,461
Government	1000 Year	17	$659,594
Government	1500 Year	17	$1,223,365
Government	2000 Year	17	$1,613,702
Government	2500 Year	17	$2,392,335
Industrial	250 Year	32	$168,298
Industrial	500 Year	32	$736,702
Industrial	750 Year	32	$1,575,603
Industrial	1000 Year	32	$2,180,054
Industrial	1500 Year	32	$3,622,977
Industrial	2000 Year	32	$4,492,352
Industrial	2500 Year	32	$5,663,387
Religious	250 Year	20	$23,859
Religious	500 Year	20	$121,927
Religious	750 Year	20	$268,575

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	1000 Year	20	$374,486
Religious	1500 Year	20	$668,089
Religious	2000 Year	20	$857,276
Religious	2500 Year	20	$1,243,233
Residential	250 Year	13	$13,563
Residential	500 Year	13	$78,054
Residential	750 Year	13	$190,216
Residential	1000 Year	13	$284,716
Residential	1500 Year	13	$556,360
Residential	2000 Year	13	$751,609
Residential	2500 Year	13	$1,145,382
Utilities	250 Year	3	$1,336,589
Utilities	500 Year	3	$3,728,133
Utilities	750 Year	3	$7,077,529
Utilities	1000 Year	3	$9,944,216
Utilities	1500 Year	3	$14,108,151
Utilities	2000 Year	3	$19,846,013
Utilities	2500 Year	3	$23,638,646
All Categories	**250 Year**	**259**	**$1,999,572**
All Categories	**500 Year**	**259**	**$6,841,113**
All Categories	**750 Year**	**259**	**$13,913,920**
All Categories	**1000 Year**	**259**	**$19,697,934**
All Categories	**1500 Year**	**259**	**$31,447,313**
All Categories	**2000 Year**	**259**	**$42,400,816**
All Categories	**2500 Year**	**259**	**$54,387,736**

Source: GIS Analysis

Table 5-190: High Potential Loss Properties Exposed to the Earthquake - Town of Troutman

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	9	$23,685
Commercial	500 Year	9	$123,839
Commercial	750 Year	9	$285,520
Commercial	1000 Year	9	$392,410
Commercial	1500 Year	9	$717,305
Commercial	2000 Year	9	$897,987
Commercial	2500 Year	9	$1,143,710
Government	250 Year	3	$5,427
Government	500 Year	3	$30,350
Government	750 Year	3	$69,354
Government	1000 Year	3	$95,880
Government	1500 Year	3	$189,826
Government	2000 Year	3	$256,829
Government	2500 Year	3	$365,333
Industrial	250 Year	5	$42,850
Industrial	500 Year	5	$171,056
Industrial	750 Year	5	$308,952
Industrial	1000 Year	5	$398,997
Industrial	1500 Year	5	$707,543
Industrial	2000 Year	5	$924,136
Industrial	2500 Year	5	$1,278,368
Religious	250 Year	3	$4,689
Religious	500 Year	3	$23,021
Religious	750 Year	3	$55,059

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	1000 Year	3	$75,967
Religious	1500 Year	3	$141,094
Religious	2000 Year	3	$177,806
Religious	2500 Year	3	$229,820
Residential	250 Year	3	$4,328
Residential	500 Year	3	$23,524
Residential	750 Year	3	$50,032
Residential	1000 Year	3	$64,349
Residential	1500 Year	3	$111,024
Residential	2000 Year	3	$144,574
Residential	2500 Year	3	$193,653
Utilities	250 Year	1	$787,680
Utilities	500 Year	1	$2,137,680
Utilities	750 Year	1	$4,018,320
Utilities	1000 Year	1	$5,592,960
Utilities	1500 Year	1	$7,752,960
Utilities	2000 Year	1	$11,154,960
Utilities	2500 Year	1	$13,456,080
All Categories	**250 Year**	**24**	**$868,659**
All Categories	**500 Year**	**24**	**$2,509,470**
All Categories	**750 Year**	**24**	**$4,787,237**
All Categories	**1000 Year**	**24**	**$6,620,563**
All Categories	**1500 Year**	**24**	**$9,619,752**
All Categories	**2000 Year**	**24**	**$13,556,292**
All Categories	**2500 Year**	**24**	**$16,666,964**

Source: GIS Analysis

Table 5-191: High Potential Loss Properties Exposed to the Earthquake - City of Salisbury

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	111	$418,463
Commercial	500 Year	111	$2,176,292
Commercial	750 Year	111	$4,835,595
Commercial	1000 Year	111	$7,407,869
Commercial	1500 Year	111	$14,234,336
Commercial	2000 Year	111	$21,210,138
Commercial	2500 Year	111	$27,744,559
Government	250 Year	35	$53,035
Government	500 Year	35	$303,695
Government	750 Year	35	$657,141
Government	1000 Year	35	$995,690
Government	1500 Year	35	$1,835,825
Government	2000 Year	35	$2,742,321
Government	2500 Year	35	$3,778,195
Industrial	250 Year	32	$127,625
Industrial	500 Year	32	$554,259
Industrial	750 Year	32	$1,063,609
Industrial	1000 Year	32	$1,466,556
Industrial	1500 Year	32	$2,595,147
Industrial	2000 Year	32	$3,479,679
Industrial	2500 Year	32	$4,440,515
Religious	250 Year	14	$22,781
Religious	500 Year	14	$136,174
Religious	750 Year	14	$320,153

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	1000 Year	14	$446,376
Religious	1500 Year	14	$857,647
Religious	2000 Year	14	$1,135,311
Religious	2500 Year	14	$1,525,171
Residential	250 Year	77	$47,573
Residential	500 Year	77	$297,376
Residential	750 Year	77	$716,152
Residential	1000 Year	77	$1,056,904
Residential	1500 Year	77	$2,133,924
Residential	2000 Year	77	$2,952,529
Residential	2500 Year	77	$3,903,860
Utilities	250 Year	1	$48,700
Utilities	500 Year	1	$140,800
Utilities	750 Year	1	$267,500
Utilities	1000 Year	1	$375,600
Utilities	1500 Year	1	$533,550
Utilities	2000 Year	1	$774,000
Utilities	2500 Year	1	$936,800
All Categories	**250 Year**	**270**	**$718,177**
All Categories	**500 Year**	**270**	**$3,608,596**
All Categories	**750 Year**	**270**	**$7,860,150**
All Categories	**1000 Year**	**270**	**$11,748,995**
All Categories	**1500 Year**	**270**	**$22,190,429**
All Categories	**2000 Year**	**270**	**$32,293,978**
All Categories	**2500 Year**	**270**	**$42,329,100**

Source: GIS Analysis

Table 5-192: High Potential Loss Properties Exposed to the Earthquake - Rowan County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Agricultural	250 Year	1	$322
Agricultural	500 Year	1	$1,703
Agricultural	750 Year	1	$3,223
Agricultural	1000 Year	1	$4,121
Agricultural	1500 Year	1	$6,878
Agricultural	2000 Year	1	$8,963
Agricultural	2500 Year	1	$11,316
Commercial	250 Year	33	$84,147
Commercial	500 Year	33	$477,714
Commercial	750 Year	33	$1,086,350
Commercial	1000 Year	33	$1,655,495
Commercial	1500 Year	33	$2,906,117
Commercial	2000 Year	33	$4,250,096
Commercial	2500 Year	33	$5,760,933
Government	250 Year	20	$63,060
Government	500 Year	20	$369,319
Government	750 Year	20	$772,482
Government	1000 Year	20	$1,116,269
Government	1500 Year	20	$1,952,141
Government	2000 Year	20	$2,813,069
Government	2500 Year	20	$3,806,260
Industrial	250 Year	18	$187,966
Industrial	500 Year	18	$988,780
Industrial	750 Year	18	$2,061,440

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	1000 Year	18	$2,719,300
Industrial	1500 Year	18	$4,574,778
Industrial	2000 Year	18	$5,826,836
Industrial	2500 Year	18	$7,470,249
Religious	250 Year	11	$8,566
Religious	500 Year	11	$56,060
Religious	750 Year	11	$130,284
Religious	1000 Year	11	$188,716
Religious	1500 Year	11	$342,404
Religious	2000 Year	11	$461,567
Religious	2500 Year	11	$617,669
Residential	250 Year	16	$13,175
Residential	500 Year	16	$86,265
Residential	750 Year	16	$221,726
Residential	1000 Year	16	$325,059
Residential	1500 Year	16	$656,632
Residential	2000 Year	16	$858,676
Residential	2500 Year	16	$1,114,051
Utilities	250 Year	2	$19,760
Utilities	500 Year	2	$55,640
Utilities	750 Year	2	$104,120
Utilities	1000 Year	2	$144,880
Utilities	1500 Year	2	$207,660
Utilities	2000 Year	2	$297,360
Utilities	2500 Year	2	$363,840

Category	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**250 Year**	**101**	**$376,996**
All Categories	**500 Year**	**101**	**$2,035,481**
All Categories	**750 Year**	**101**	**$4,379,625**
All Categories	**1000 Year**	**101**	**$6,153,840**
All Categories	**1500 Year**	**101**	**$10,646,610**
All Categories	**2000 Year**	**101**	**$14,516,567**
All Categories	**2500 Year**	**101**	**$19,144,318**

Source: GIS Analysis

Table 5-193: High Potential Loss Properties Exposed to the Earthquake - Town of China Grove

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	5	$8,402
Commercial	500 Year	5	$57,046
Commercial	750 Year	5	$127,520
Commercial	1000 Year	5	$208,360
Commercial	1500 Year	5	$382,375
Commercial	2000 Year	5	$570,148
Commercial	2500 Year	5	$791,439
Government	250 Year	2	$12,301
Government	500 Year	2	$72,087
Government	750 Year	2	$172,305
Government	1000 Year	2	$251,467
Government	1500 Year	2	$520,797
Government	2000 Year	2	$715,774
Government	2500 Year	2	$995,622
Industrial	250 Year	3	$14,245

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	500 Year	3	$57,269
Industrial	750 Year	3	$109,218
Industrial	1000 Year	3	$148,386
Industrial	1500 Year	3	$229,442
Industrial	2000 Year	3	$301,966
Industrial	2500 Year	3	$402,576
Religious	250 Year	1	$800
Religious	500 Year	1	$4,243
Religious	750 Year	1	$10,861
Religious	1000 Year	1	$15,954
Religious	1500 Year	1	$29,506
Religious	2000 Year	1	$36,801
Religious	2500 Year	1	$50,126
Residential	250 Year	3	$938
Residential	500 Year	3	$5,404
Residential	750 Year	3	$15,208
Residential	1000 Year	3	$25,467
Residential	1500 Year	3	$66,074
Residential	2000 Year	3	$95,343
Residential	2500 Year	3	$123,571
All Categories	**250 Year**	**14**	**$36,686**
All Categories	**500 Year**	**14**	**$196,049**
All Categories	**750 Year**	**14**	**$435,112**
All Categories	**1000 Year**	**14**	**$649,634**
All Categories	**1500 Year**	**14**	**$1,228,194**

Category	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**2000 Year**	**14**	**$1,720,032**
All Categories	**2500 Year**	**14**	**$2,363,334**

Source: GIS Analysis

Table 5-194: High Potential Loss Properties Exposed to the Earthquake - Town of Cleveland

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	2	$2,922
Commercial	500 Year	2	$15,232
Commercial	750 Year	2	$34,215
Commercial	1000 Year	2	$47,634
Commercial	1500 Year	2	$88,529
Commercial	2000 Year	2	$114,085
Commercial	2500 Year	2	$143,735
Government	250 Year	1	$1,023
Government	500 Year	1	$5,155
Government	750 Year	1	$12,224
Government	1000 Year	1	$16,050
Government	1500 Year	1	$26,742
Government	2000 Year	1	$34,196
Government	2500 Year	1	$44,457
Industrial	250 Year	6	$34,654
Industrial	500 Year	6	$160,094
Industrial	750 Year	6	$301,283
Industrial	1000 Year	6	$381,351
Industrial	1500 Year	6	$576,522
Industrial	2000 Year	6	$723,430

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	2500 Year	6	$883,478
Religious	250 Year	1	$9,746
Religious	500 Year	1	$51,553
Religious	750 Year	1	$118,381
Religious	1000 Year	1	$156,254
Religious	1500 Year	1	$250,982
Religious	2000 Year	1	$310,970
Religious	2500 Year	1	$388,000
Residential	250 Year	2	$11,717
Residential	500 Year	2	$99,052
Residential	750 Year	2	$267,972
Residential	1000 Year	2	$389,590
Residential	1500 Year	2	$816,501
Residential	2000 Year	2	$1,106,171
Residential	2500 Year	2	$1,409,511
All Categories	**250 Year**	**12**	**$60,062**
All Categories	**500 Year**	**12**	**$331,086**
All Categories	**750 Year**	**12**	**$734,075**
All Categories	**1000 Year**	**12**	**$990,879**
All Categories	**1500 Year**	**12**	**$1,759,276**
All Categories	**2000 Year**	**12**	**$2,288,852**
All Categories	**2500 Year**	**12**	**$2,869,181**

Source: GIS Analysis

Table 5-195: High Potential Loss Properties Exposed to the Earthquake - Town of East Spencer

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	1	$44,417
Commercial	500 Year	1	$386,071
Commercial	750 Year	1	$650,780
Commercial	1000 Year	1	$1,000,734
Commercial	1500 Year	1	$1,429,427
Commercial	2000 Year	1	$2,153,563
Commercial	2500 Year	1	$2,708,554
Government	250 Year	2	$4,516
Government	500 Year	2	$41,650
Government	750 Year	2	$87,887
Government	1000 Year	2	$158,231
Government	1500 Year	2	$248,726
Government	2000 Year	2	$405,350
Government	2500 Year	2	$516,916
Industrial	250 Year	1	$13,521
Industrial	500 Year	1	$46,314
Industrial	750 Year	1	$89,490
Industrial	1000 Year	1	$136,329
Industrial	1500 Year	1	$194,453
Industrial	2000 Year	1	$289,869
Industrial	2500 Year	1	$357,690
Residential	250 Year	1	$219
Residential	500 Year	1	$2,161
Residential	750 Year	1	$6,069

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	1000 Year	1	$9,012
Residential	1500 Year	1	$19,266
Residential	2000 Year	1	$26,010
Residential	2500 Year	1	$34,093
All Categories	**250 Year**	**5**	**$62,673**
All Categories	**500 Year**	**5**	**$476,196**
All Categories	**750 Year**	**5**	**$834,226**
All Categories	**1000 Year**	**5**	**$1,304,306**
All Categories	**1500 Year**	**5**	**$1,891,872**
All Categories	**2000 Year**	**5**	**$2,874,792**
All Categories	**2500 Year**	**5**	**$3,617,253**

Source: GIS Analysis

Table 5-196: High Potential Loss Properties Exposed to the Earthquake - Town of Faith

Category	Event	Number of Buildings At Risk	Estimated Damages
Religious	250 Year	2	$554
Religious	500 Year	2	$6,029
Religious	750 Year	2	$16,490
Religious	1000 Year	2	$23,946
Religious	1500 Year	2	$50,939
Religious	2000 Year	2	$67,376
Religious	2500 Year	2	$89,790
Residential	250 Year	1	$953
Residential	500 Year	1	$6,661
Residential	750 Year	1	$16,006
Residential	1000 Year	1	$21,903

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	1500 Year	1	$40,218
Residential	2000 Year	1	$53,466
Residential	2500 Year	1	$78,883
All Categories	**250 Year**	**3**	**$1,507**
All Categories	**500 Year**	**3**	**$12,690**
All Categories	**750 Year**	**3**	**$32,496**
All Categories	**1000 Year**	**3**	**$45,849**
All Categories	**1500 Year**	**3**	**$91,157**
All Categories	**2000 Year**	**3**	**$120,842**
All Categories	**2500 Year**	**3**	**$168,673**

Source: GIS Analysis

Table 5-197: High Potential Loss Properties Exposed to the Earthquake - Town of Granite Quarry

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	1	$967
Commercial	500 Year	1	$5,530
Commercial	750 Year	1	$13,669
Commercial	1000 Year	1	$19,712
Commercial	1500 Year	1	$37,862
Commercial	2000 Year	1	$48,486
Commercial	2500 Year	1	$64,881
Government	250 Year	2	$6,694
Government	500 Year	2	$33,868
Government	750 Year	2	$66,009
Government	1000 Year	2	$88,408
Government	1500 Year	2	$177,983

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	2000 Year	2	$254,580
Government	2500 Year	2	$388,533
Industrial	250 Year	1	$44,090
Industrial	500 Year	1	$151,477
Industrial	750 Year	1	$295,540
Industrial	1000 Year	1	$446,930
Industrial	1500 Year	1	$648,783
Industrial	2000 Year	1	$955,508
Industrial	2500 Year	1	$1,174,746
All Categories	**250 Year**	**4**	**$51,751**
All Categories	**500 Year**	**4**	**$190,875**
All Categories	**750 Year**	**4**	**$375,218**
All Categories	**1000 Year**	**4**	**$555,050**
All Categories	**1500 Year**	**4**	**$864,628**
All Categories	**2000 Year**	**4**	**$1,258,574**
All Categories	**2500 Year**	**4**	**$1,628,160**

Source: GIS Analysis

Table 5-198: High Potential Loss Properties Exposed to the Earthquake - Town of Landis

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	1	$8,110
Commercial	500 Year	1	$50,011
Commercial	750 Year	1	$105,559
Commercial	1000 Year	1	$147,746
Commercial	1500 Year	1	$289,930
Commercial	2000 Year	1	$394,579

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	2500 Year	1	$639,229
Government	250 Year	3	$15,669
Government	500 Year	3	$98,425
Government	750 Year	3	$237,131
Government	1000 Year	3	$344,250
Government	1500 Year	3	$644,662
Government	2000 Year	3	$812,510
Government	2500 Year	3	$1,136,108
Industrial	250 Year	1	$4,489
Industrial	500 Year	1	$24,556
Industrial	750 Year	1	$49,845
Industrial	1000 Year	1	$67,602
Industrial	1500 Year	1	$116,410
Industrial	2000 Year	1	$148,123
Industrial	2500 Year	1	$214,417
Religious	250 Year	1	$430
Religious	500 Year	1	$2,757
Religious	750 Year	1	$6,487
Religious	1000 Year	1	$9,569
Religious	1500 Year	1	$19,419
Religious	2000 Year	1	$26,970
Religious	2500 Year	1	$36,500
Residential	250 Year	3	$1,244
Residential	500 Year	3	$8,384
Residential	750 Year	3	$21,437

Category	Event	Number of Buildings At Risk	Estimated Damages
Residential	1000 Year	3	$32,278
Residential	1500 Year	3	$62,089
Residential	2000 Year	3	$79,334
Residential	2500 Year	3	$109,053
All Categories	**250 Year**	**9**	**$29,942**
All Categories	**500 Year**	**9**	**$184,133**
All Categories	**750 Year**	**9**	**$420,459**
All Categories	**1000 Year**	**9**	**$601,445**
All Categories	**1500 Year**	**9**	**$1,132,510**
All Categories	**2000 Year**	**9**	**$1,461,516**
All Categories	**2500 Year**	**9**	**$2,135,307**

Source: GIS Analysis

Table 5-199: High Potential Loss Properties Exposed to the Earthquake - Town of Rockwell

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	4	$4,635
Commercial	500 Year	4	$23,955
Commercial	750 Year	4	$56,495
Commercial	1000 Year	4	$90,654
Commercial	1500 Year	4	$167,378
Commercial	2000 Year	4	$255,221
Commercial	2500 Year	4	$362,240
Government	250 Year	1	$2,863
Government	500 Year	1	$13,740
Government	750 Year	1	$34,818
Government	1000 Year	1	$60,090

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	1500 Year	1	$99,121
Government	2000 Year	1	$157,693
Government	2500 Year	1	$201,383
Industrial	250 Year	2	$4,731
Industrial	500 Year	2	$28,184
Industrial	750 Year	2	$61,779
Industrial	1000 Year	2	$86,771
Industrial	1500 Year	2	$160,540
Industrial	2000 Year	2	$207,865
Industrial	2500 Year	2	$314,159
Religious	250 Year	1	$374
Religious	500 Year	1	$4,191
Religious	750 Year	1	$11,578
Religious	1000 Year	1	$17,553
Religious	1500 Year	1	$36,108
Religious	2000 Year	1	$47,223
Religious	2500 Year	1	$64,192
Residential	250 Year	3	$1,273
Residential	500 Year	3	$10,751
Residential	750 Year	3	$28,483
Residential	1000 Year	3	$42,170
Residential	1500 Year	3	$82,995
Residential	2000 Year	3	$109,310
Residential	2500 Year	3	$157,392
All Categories	**250 Year**	**11**	**$13,876**

Category	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**500 Year**	**11**	**$80,821**
All Categories	**750 Year**	**11**	**$193,153**
All Categories	**1000 Year**	**11**	**$297,238**
All Categories	**1500 Year**	**11**	**$546,142**
All Categories	**2000 Year**	**11**	**$777,312**
All Categories	**2500 Year**	**11**	**$1,099,366**

Source: GIS Analysis

Table 5-200: High Potential Loss Properties Exposed to the Earthquake - Town of Spencer

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	250 Year	11	$24,984
Commercial	500 Year	11	$173,882
Commercial	750 Year	11	$375,431
Commercial	1000 Year	11	$622,623
Commercial	1500 Year	11	$1,139,691
Commercial	2000 Year	11	$1,734,440
Commercial	2500 Year	11	$2,286,750
Government	250 Year	4	$13,683
Government	500 Year	4	$81,428
Government	750 Year	4	$184,654
Government	1000 Year	4	$264,680
Government	1500 Year	4	$536,781
Government	2000 Year	4	$767,807
Government	2500 Year	4	$1,115,155
Industrial	250 Year	2	$7,948
Industrial	500 Year	2	$41,363
Industrial	750 Year	2	$84,430
Industrial	1000 Year	2	$114,505
Industrial	1500 Year	2	$193,839
Industrial	2000 Year	2	$257,318

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	2500 Year	2	$330,663
Religious	250 Year	3	$1,509
Religious	500 Year	3	$8,523
Religious	750 Year	3	$18,267
Religious	1000 Year	3	$26,675
Religious	1500 Year	3	$47,400
Religious	2000 Year	3	$64,952
Religious	2500 Year	3	$84,278
Residential	250 Year	2	$1,040
Residential	500 Year	2	$9,604
Residential	750 Year	2	$26,624
Residential	1000 Year	2	$40,036
Residential	1500 Year	2	$84,333
Residential	2000 Year	2	$115,946
Residential	2500 Year	2	$148,242
All Categories	**250 Year**	**22**	**$49,164**
All Categories	**500 Year**	**22**	**$314,800**
All Categories	**750 Year**	**22**	**$689,406**
All Categories	**1000 Year**	**22**	**$1,068,519**
All Categories	**1500 Year**	**22**	**$2,002,044**
All Categories	**2000 Year**	**22**	**$2,940,463**
All Categories	**2500 Year**	**22**	**$3,965,088**

Source: GIS Analysis

5.13 LANDSLIDE

5.13.1 Background

A landslide is the downward and outward movement of slope-forming soil, rock, and vegetation, which is driven by gravity. Landslides may be triggered by both natural and human-caused changes in the environment, including heavy rain, rapid snow melt, steepening of slopes due to construction or erosion, earthquakes, volcanic eruptions, and changes in groundwater levels.

There are several types of landslides: rock falls, rock topple, slides, and flows. Rock falls are rapid movements of bedrock, which result in bouncing or rolling. A topple is a section or block of rock that rotates or tilts before falling to the slope below. Slides are movements of soil or rock along a distinct surface of rupture, which separates the slide material from the more stable underlying material. Mudflows, sometimes referred to as mudslides, mudflows, lahars or debris avalanches, are fast-moving rivers of rock, earth, and other debris saturated with water. They develop when water rapidly accumulates in the ground, such as heavy rainfall or rapid snowmelt, changing the soil into a flowing river of mud or "slurry." Slurry can flow rapidly down slopes or through channels and can strike with little or no warning at avalanche speeds. Slurry can travel several miles from its source, growing in size as it picks up trees, cars, and other materials along the way. As the flows reach flatter ground, the mudflow spreads over a broad area where it can accumulate in thick deposits.

Landslides are typically associated with periods of heavy rainfall or rapid snow melt and tend to worsen the effects of flooding that often accompanies these events. In areas burned by forest and brush fires, a lower threshold of precipitation may initiate landslides. Some landslides move slowly and cause damage gradually, whereas others move so rapidly that they can destroy property and take lives suddenly and unexpectedly.

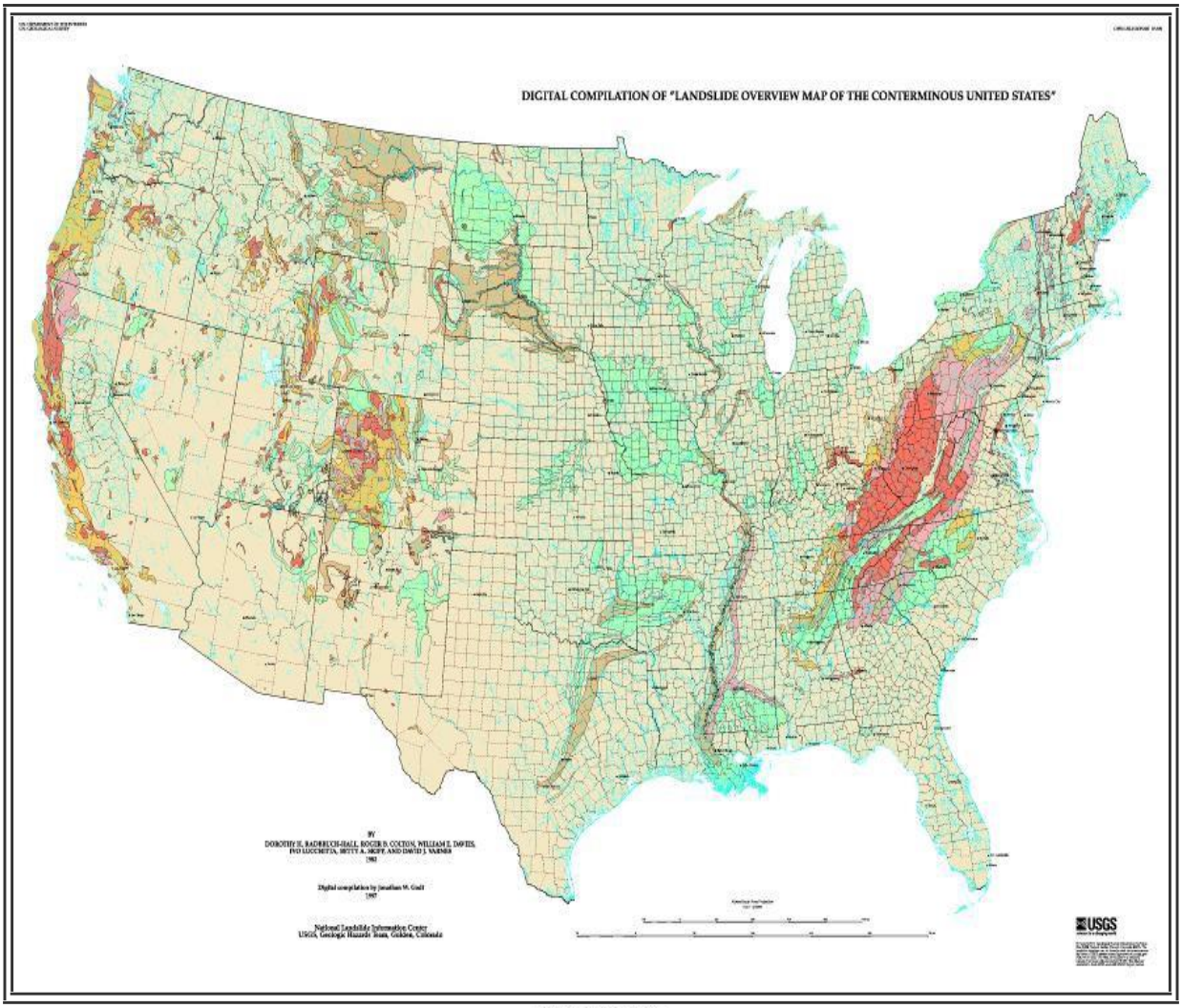
Among the most destructive types of debris flows are those that accompany volcanic eruptions. A spectacular example in the United States was a massive debris flow resulting from the 1980 eruptions of Mount St. Helens, Washington. Areas near the bases of many volcanoes in the Cascade Mountain Range of California, Oregon, and Washington are at risk from the same types of flows during future volcanic eruptions.

Areas that are generally prone to landslide hazards include previous landslide areas, the bases of steep slopes, the bases of drainage channels, and developed hillsides where leach-field septic systems are used. Areas that are typically considered safe from landslides include areas that have not moved in the past, relatively flat-lying areas away from sudden changes in slope, and areas at the top or along ridges set back from the tops of slopes.

According to the United States Geological Survey, each year landslides cause $5.1 billion (2009 dollars) in damage and between 25 and 50 deaths in the United States.[12] **Figure 5-53** delineates areas where large numbers of landslides have occurred and areas that are susceptible to landslide in the conterminous United States.[13]

[12] United States Geological Survey (USGS). United States Department of the Interior. "Landslide Hazards – A National Threat." 2005.

[13] This map layer is provided in the U.S. Geological Survey Professional Paper 1183, Landslide Overview Map of the Conterminous United States, available online at: http://landslides.usgs.gov/html_files/landslides/nationalmap/national.html.



EXPLANATION

LANDSLIDE INCIDENCE

- Low (less than 1.5% of area involved)
- Moderate (1.5%-15% of area involved)
- High (greater than 15% of area involved)

LANDSLIDE SUSCEPTIBILITY/INCIDENCE

- Moderate susceptibility/low incidence
- High susceptibility/low incidence
- High susceptibility/moderate incidence

Susceptibility not indicated where same or lower than incidence. Susceptibility to landsliding was defined as the probable degree of response of [the areal] rocks and soils to natural or artificial cutting or loading of slopes, or to anomalously high precipitation. High, moderate, and low susceptibility are delimited by the same percentages used in classifying the incidence of landsliding. Some generalization was necessary at this scale, and several small areas of high incidence and susceptibility were slightly exaggerated.

Source: USGS

Figure 5-53: Landslide Overview Map of the Conterminous United States

5.13.2 Location and Spatial Extent

Landslides occur along steep slopes when the pull of gravity can no longer be resisted (often due to heavy rain throughout the region). Human development can also exacerbate risk by building on previously undevelopable steep slopes and constructing roads by cutting through mountains. Landslides are possible throughout the Iredell Rowan Region.

According to the figures below, two small portions of the region, both in Iredell County, have moderate and high potential for landslide activity. The remaining portion of the region, including all of Rowan County, has a low potential for incidence occurrence rate. There is moderate to high susceptibility throughout the region.

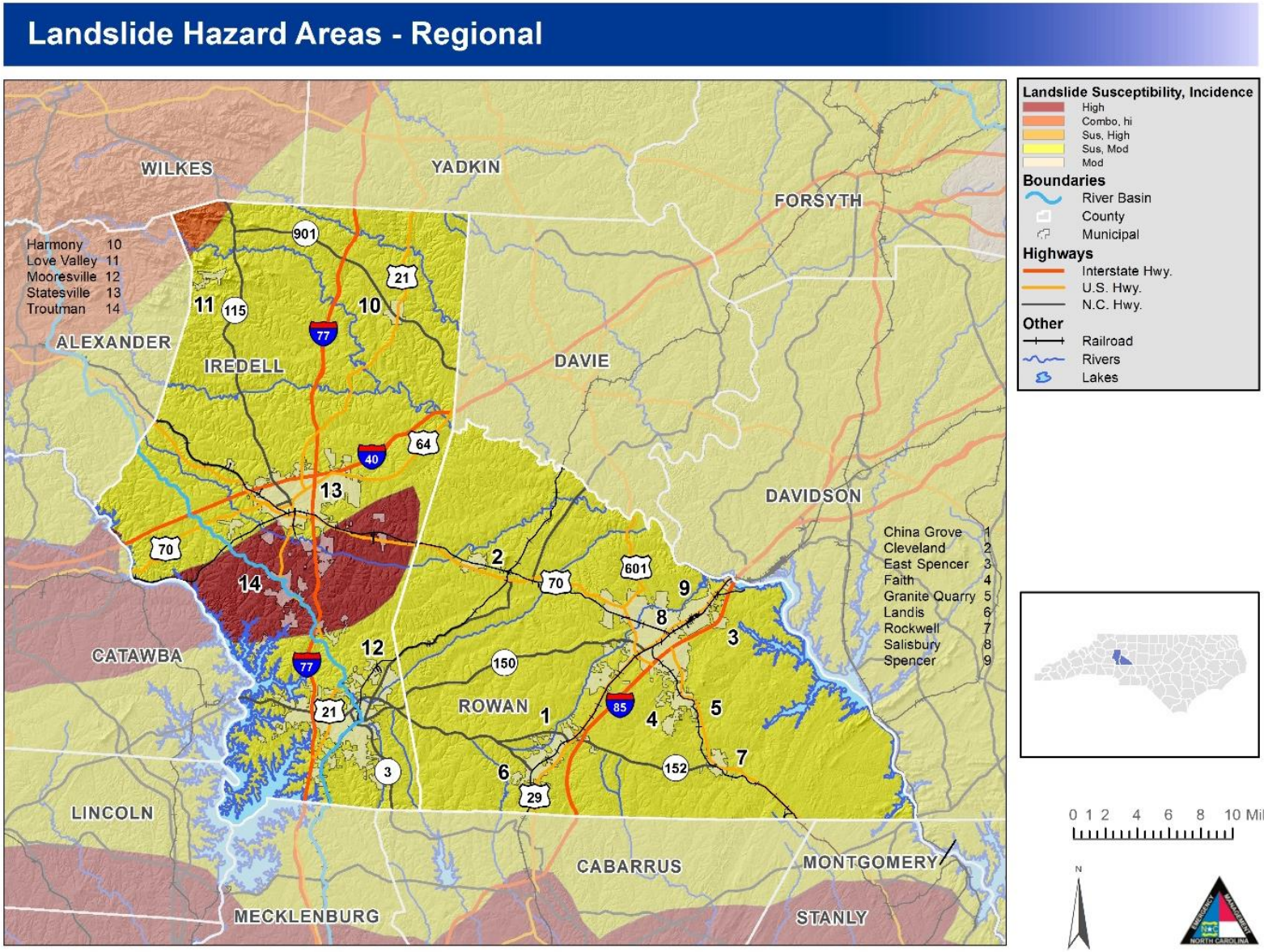


Figure 5-54: Landslide Susceptibility and Incidence Map of the Iredell Rowan Region

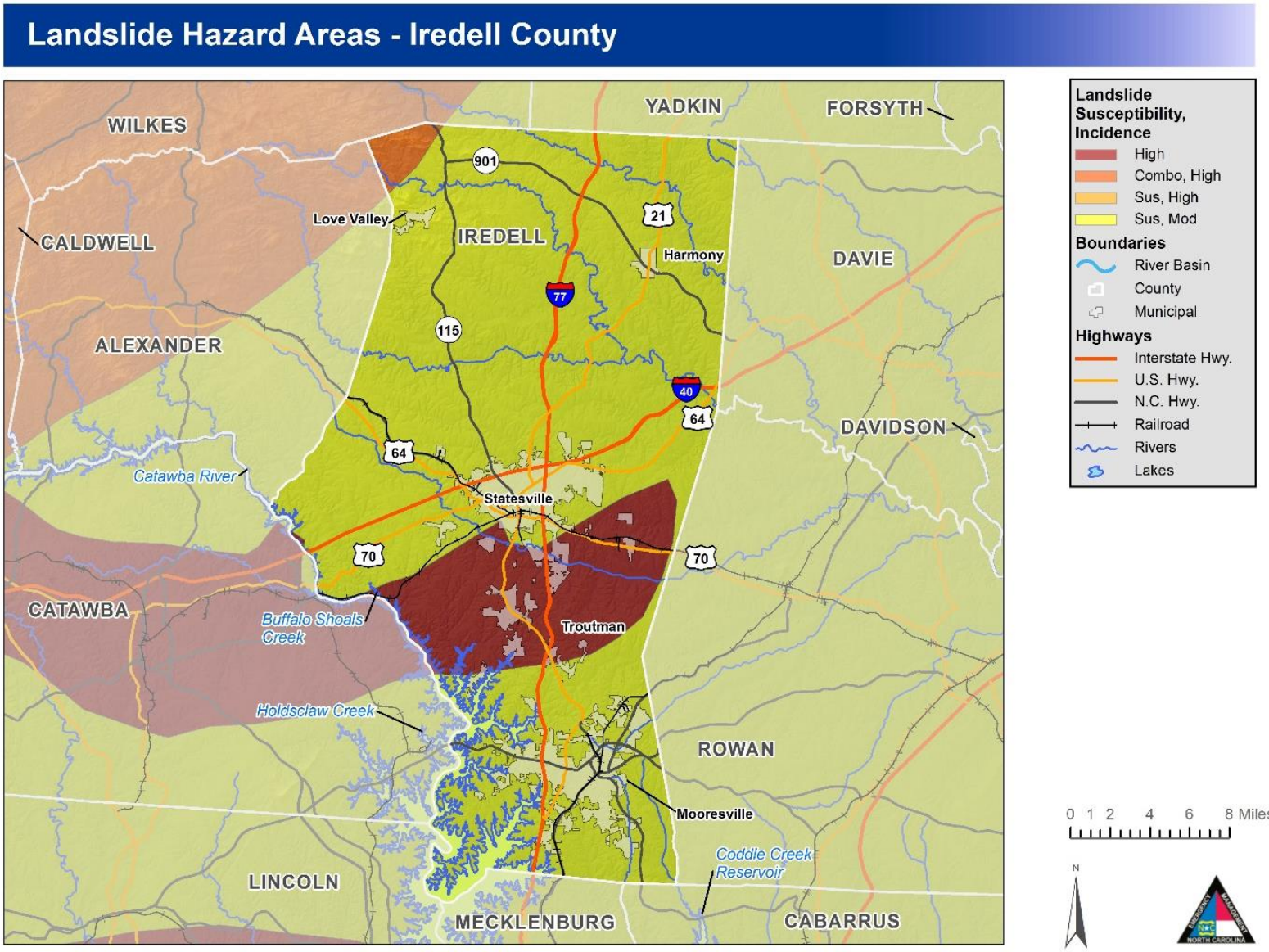


Figure 5-55: Landslide Hazard Areas – Iredell County

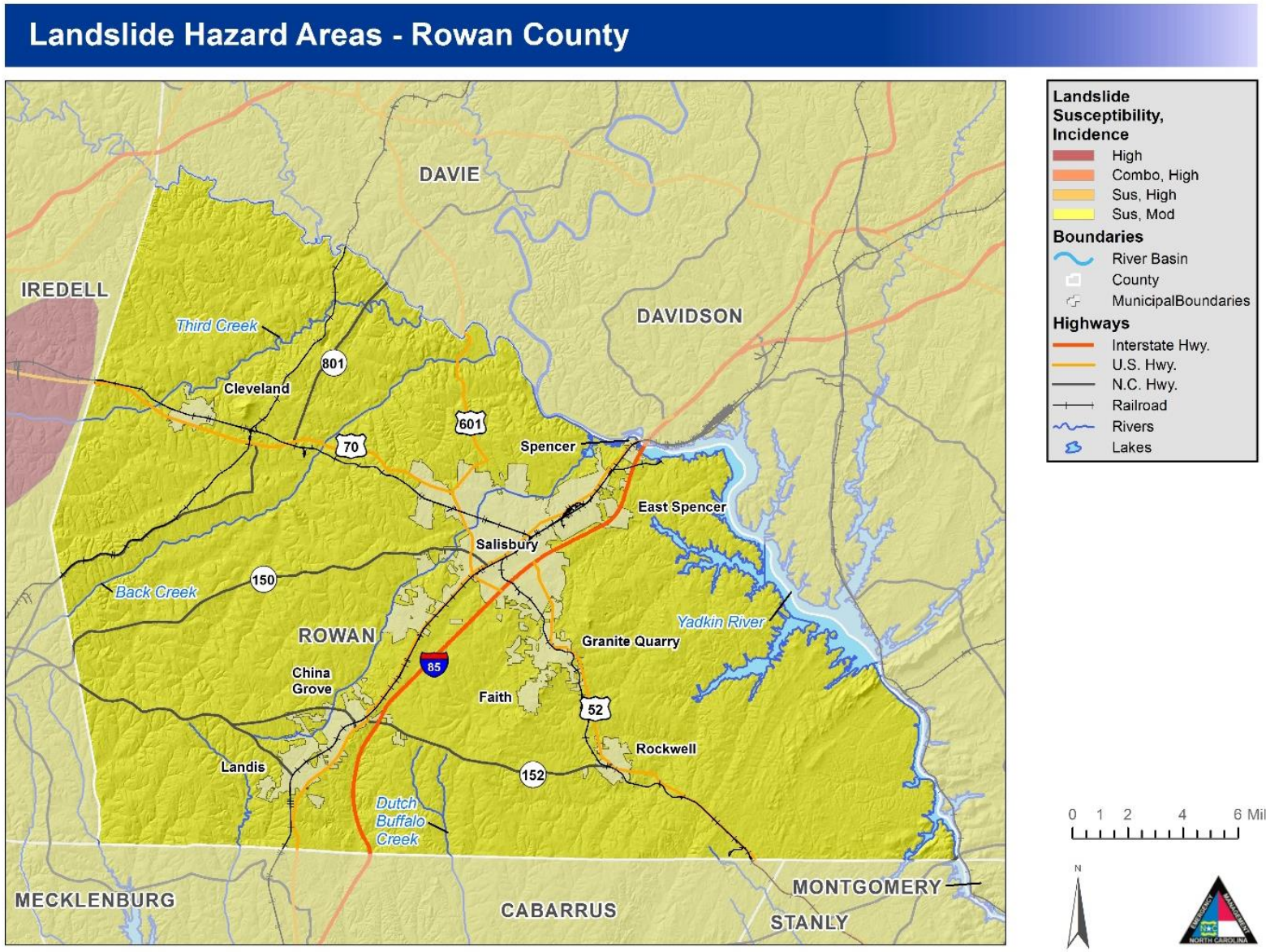


Figure 5-56: Landslide Hazard Areas – Rowan County

5.13.3 Extent

Landslide data is provided from United States Geological Survey (USGS). The magnitude and severity of landslides can vary greatly depending on terrain and other highly localized factors. There were no reported landslides in the Region and all its jurisdictions. A mitigation strategy regarding landslide identification and mapping will be considered in future mitigation actions for the Region.

5.13.4 Historical Occurrences

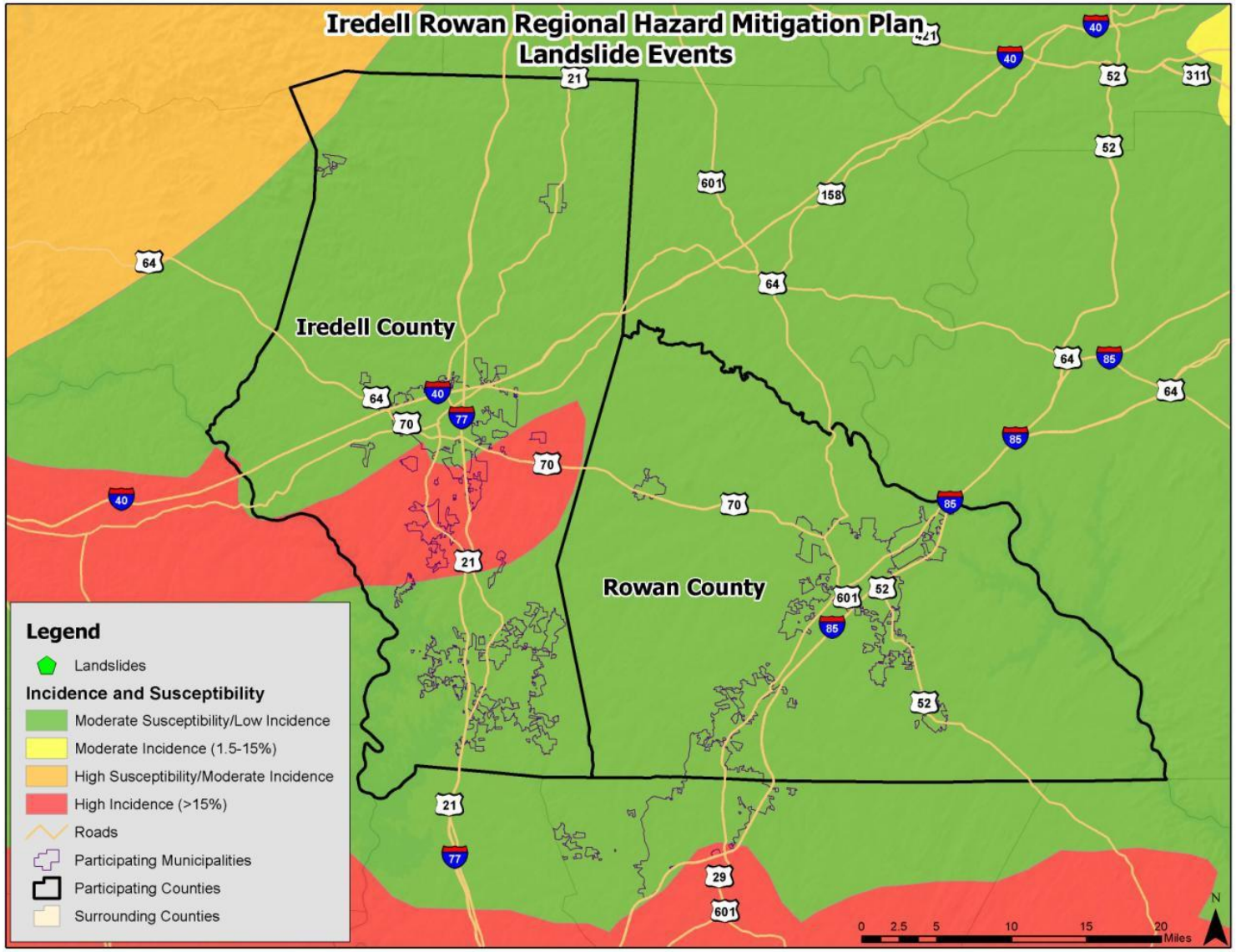
Some areas of steep topography in the Iredell Rowan Region make the planning area susceptible to landslides. Most landslides are caused by heavy rainfall in the area. Building on steep slopes that was not previously possible also contributes to risk. **Table 5-201** presents a summary of the landslide occurrence events as provided by the North Carolina Geological Survey[14]. The locations of the landslide events presented in the aforementioned tables are presented in **Figure 5-57**. Some incidence mapping has also been completed throughout the western portion of North Carolina though it is not complete. Therefore, it should be noted that many more incidents than what is reported are likely to have occurred. According to the figures below, two small portions of the region, both in Iredell County, have moderate and high potential for landslide activity. The remaining portion of the region, including all of Rowan County, has a low potential for incidence occurrence rate. There is moderate to high susceptibility throughout the Region.

Table 5-201: Summary of Landslide Activity in the Iredell Rowan Region

Location	Number of Occurrences
Iredell County	**0**
Harmony	0
Love Valley	0
Mooresville	0
Statesville	0
Troutman	0
Unincorporated Area	0
Rowan County	**0**
China Grove	0
Cleveland	0
East Spencer	0
Faith	0
Granite Quarry	0
Landis	0
Rockwell	0
Salisbury	0
Spencer	0
Unincorporated Area	0
IREDELL ROWAN REGION TOTAL	**0**

Source: North Carolina Geological Survey

[14] It should be noted that the North Carolina Geological Survey (NCGS) emphasized the dataset provided was incomplete. Therefore, there may be additional historical landslide occurrences. Furthermore, dates were not included for every event. The earliest date reported was 1940. No damage information was provided by NCGS.



Source: North Carolina Geological Survey

Figure 5-57: Location of Previous Landslide Occurrences in the Iredell Rowan Region

The information below identifies additional historical information reported in the previous hazard mitigation plan.

Iredell County

There are no occurrences of landslides recorded in Iredell County.

Rowan County

There is no history of any landslide occurrence in Rowan County.

Landslide Hazard Vulnerability and Impact

Sufficient hazard information is not currently available with which to conduct a detailed vulnerability assessment. In addition, any specific vulnerability of individual assets would depend on individual design, building characteristics, and any existing mitigation measures currently in place. Such site-specific vulnerability determinations are outside the scope of this risk assessment but may be considered during future plan updates. Mitigation strategy regarding landslide identification and mapping will be considered in future mitigation actions for the Region.

5.13.5 Probability of Future Occurrences

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

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Low: Less than 1% annual probability
- Medium: Between 1% and 10% annual probability
- High: Greater than 10% annual probability

Jurisdiction	Probability of Future Occurrence
City of Salisbury	Low
City of Statesville	Low
Iredell County (Unincorporated Area)	Low
Rowan County (Unincorporated Area)	Low
Town of China Grove	Low
Town of Cleveland	Low
Town of East Spencer	Low
Town of Faith	Low
Town of Granite Quarry	Low
Town of Harmony	Low
Town of Landis	Low

Jurisdiction	Probability of Future Occurrence
Town of Love Valley	Low
Town of Mooresville	Low
Town of Rockwell	Low
Town of Spencer	Low
Town of Troutman	Low

Landslide Hazard Vulnerability and Impact

Sufficient hazard information is not currently available with which to conduct a detailed vulnerability assessment. In addition, any specific vulnerability of individual assets would depend on individual design, building characteristics, and any existing mitigation measures currently in place. Such site-specific vulnerability determinations are outside the scope of this risk assessment but may be considered during future plan updates. Mitigation strategy regarding landslide identification and mapping will be considered in future mitigation actions for the Region.

Hydrologic Hazards

5.14 DAM AND LEVEE FAILURE

5.14.1 Background

Worldwide interest in dam and levee safety has risen significantly in recent years. Aging infrastructure, new hydrologic information, and population growth in floodplain areas downstream from dams and near levees have resulted in an increased emphasis on safety, operation, and maintenance.

There are approximately 80,000 dams in the United States today, the majority of which are privately owned. Other owners include state and local authorities, public utilities, and federal agencies. The benefits of dams are numerous: they provide water for drinking, navigation, and agricultural irrigation. Dams also provide hydroelectric power, create lakes for fishing and recreation, and save lives by preventing or reducing floods.

Though dams have many benefits, they also can pose a risk to communities if not designed, operated, and maintained properly. In the event of a dam failure, the energy of the water stored behind even a small dam is capable of causing loss of life and great property damage if development exists downstream. If a levee breaks, scores of properties may become submerged in floodwaters and residents may become trapped by rapidly rising water. The failure of dams and levees has the potential to place large numbers of people and great amounts of property in harm's way.

5.14.2 Location and Spatial Extent

According to the North Carolina Division of Energy, Mineral, and Land Resources, there are 208 dams in the Iredell Rowan Region.[15] The figures below show the dam location and the corresponding hazard ranking for each. Of these dams, 43 are classified as high hazard potential. These high hazard dams are summarized by county in **Table 5-202**. The figures below show counts and locations of high and intermediate hazard dams in each participating jurisdiction.

Table 5-202: Summary of High Hazard Dam Location

Location	Number High Hazard Dams
Iredell County	23
Rowan County	20
IREDELL ROWAN REGION TOTAL	**43**

[15] The February 8, 2012 list of high hazard dams obtained from the North Carolina Division of Energy, Mineral, and Land Resources (http://portal.ncdenr.org/web/lr/dams) was reviewed and amended by local officials to the best of their knowledge.

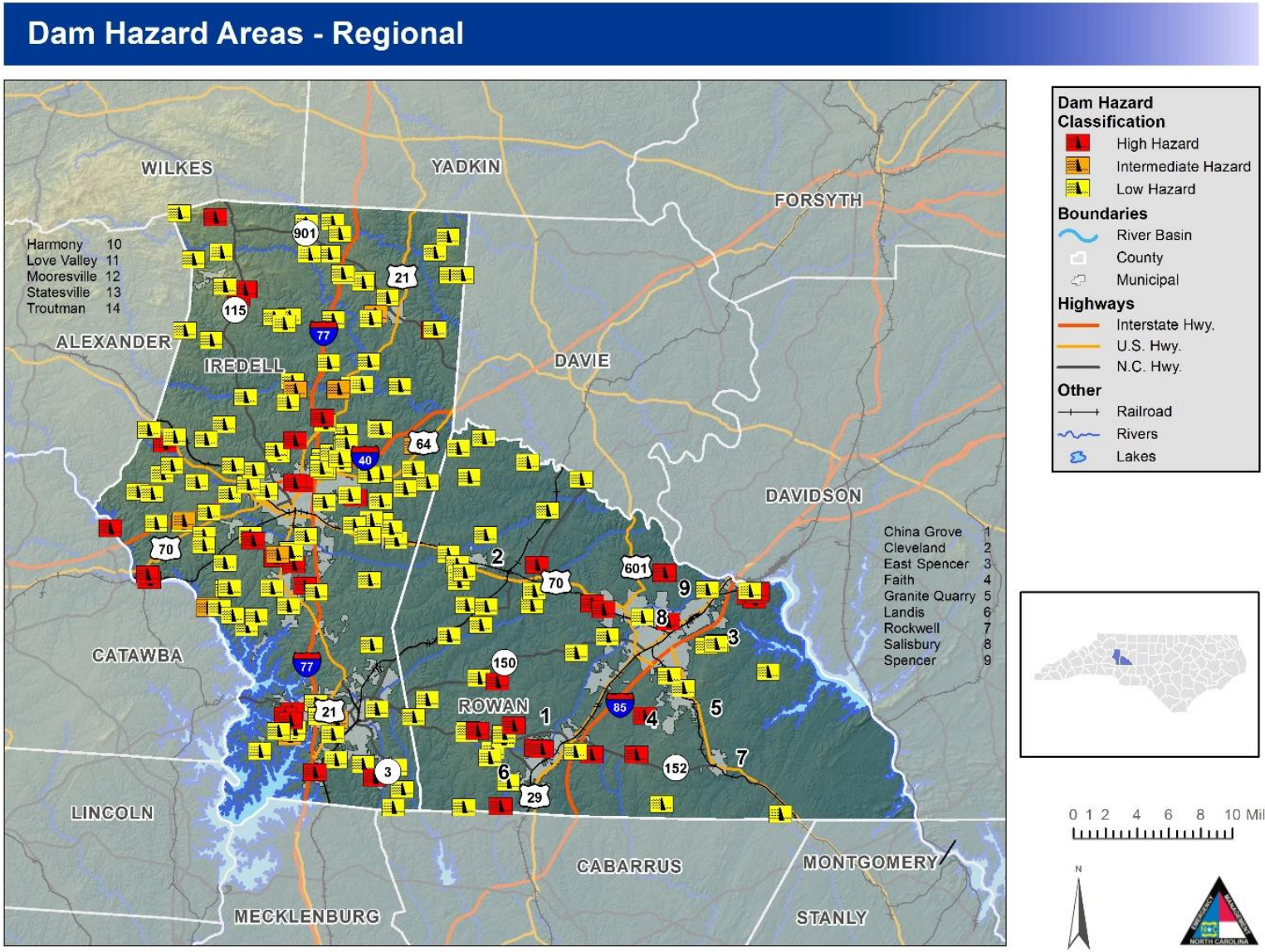


Figure 5-58: Iredell Rowan Region Dam Location and Hazard Ranking

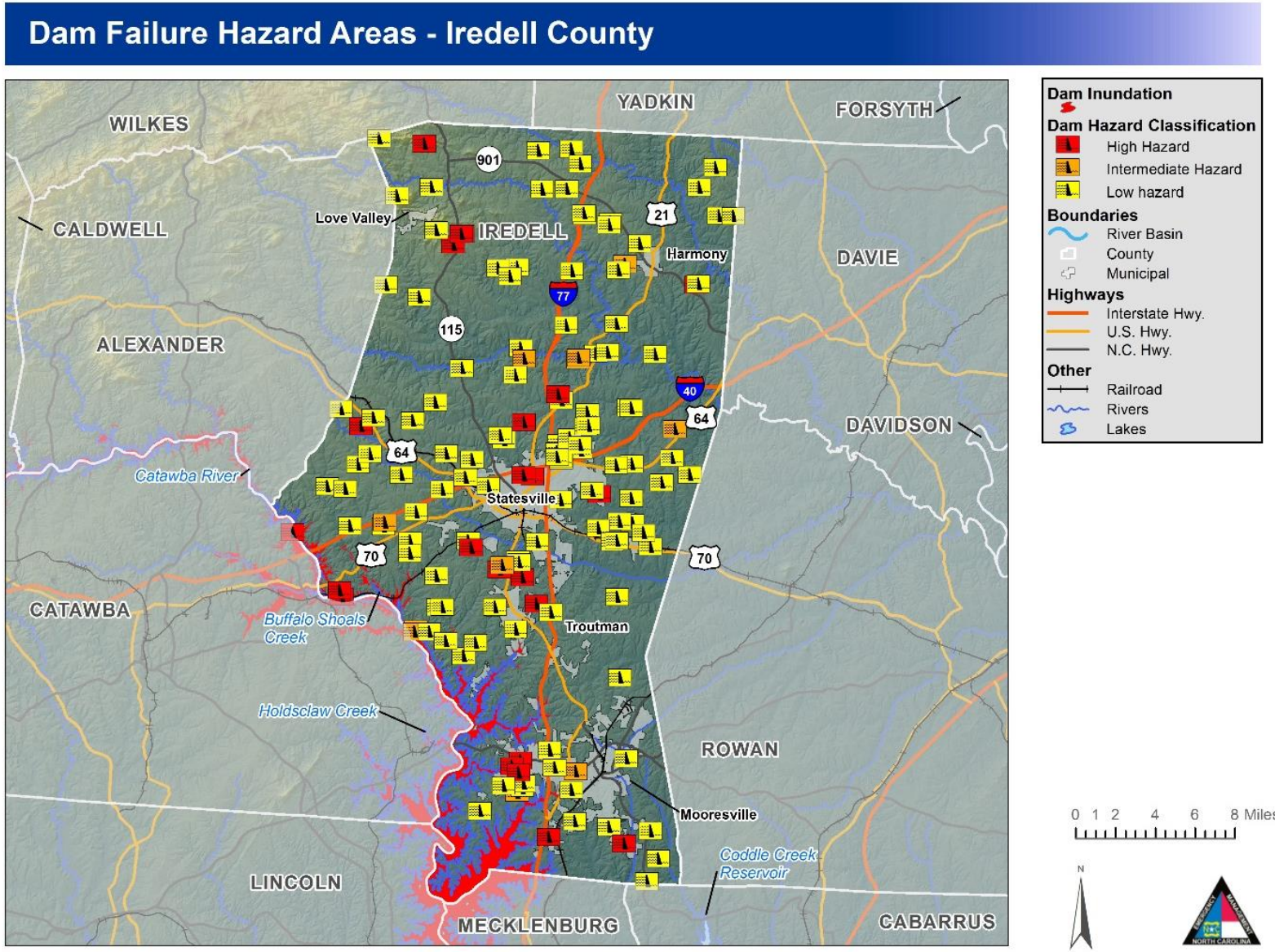


Figure 5-59: Dam Failure Hazard Areas – Iredell County

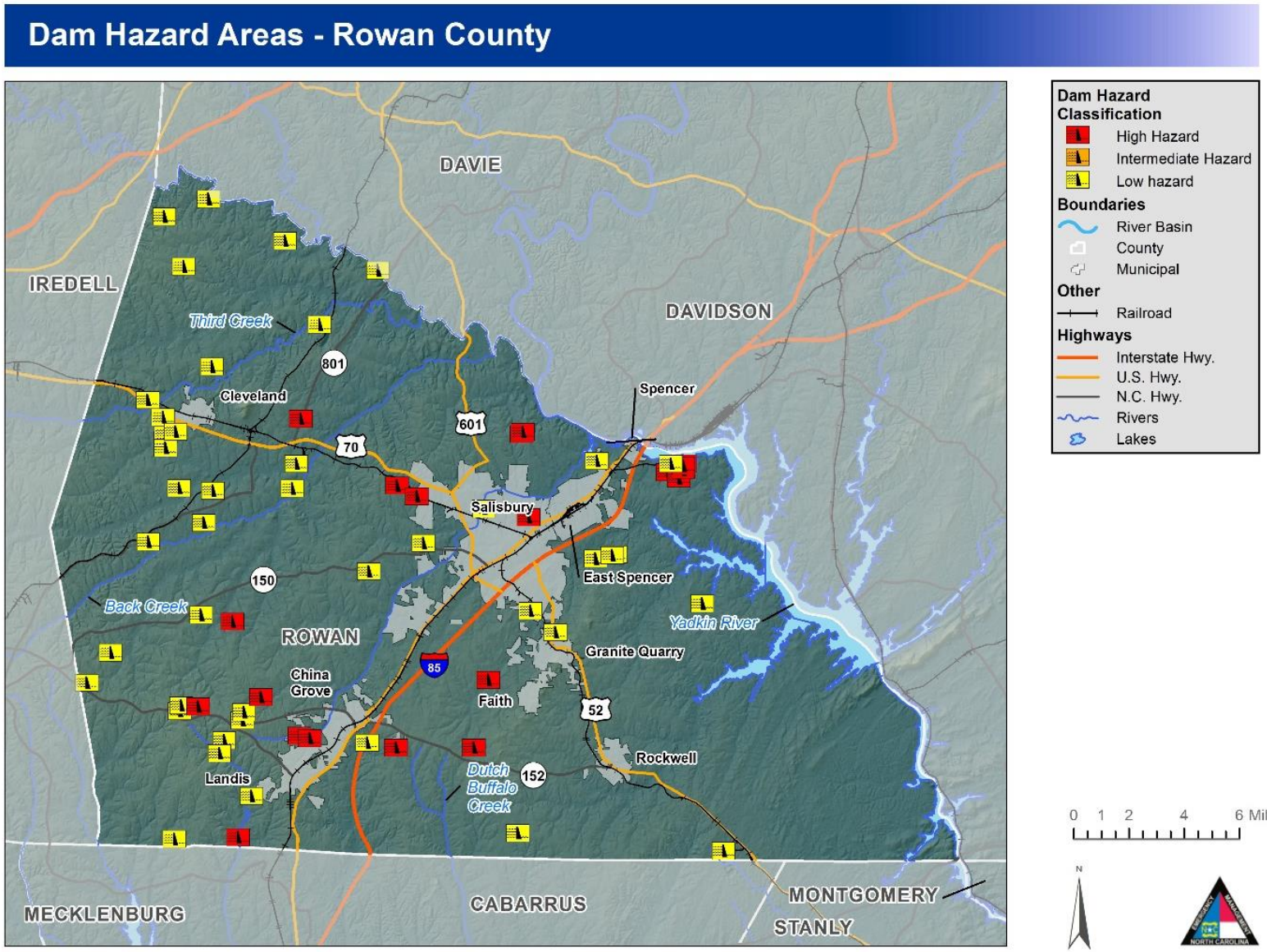


Figure 5-60: Dam Failure Hazard Areas – Rowan County

It should also be noted that dam regulations for classifying dams was recently changed. As a result, generally more dams are classified as high hazard.

5.14.3 Extent

Two factors influence the potential severity of a dam failure: the amount of water impounded, and the density, type, and value of development and infrastructure located downstream. The potential extent of dam failure may be classified according to their "hazard potential," meaning the probable damage that would occur if the structure failed, in terms of loss of human life and economic loss or environmental damage. The State of North Carolina classifies dam structures under its regulations according to hazard potential as described in **Table 5-203** It is important to note that these classifications are not based on the adequacy or structural integrity of existing dam structures. There were no reported dam failures in the Region and all its jurisdictions. Mitigation strategy regarding dam identification and mapping will be considered in future mitigation actions for the Region.

Table 5-203: North Carolina Dam Hazard Classifications

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

Source: North Carolina Division of Land Resources

5.14.4 Historical Occurrences

There is no record of significant dam failure in the Iredell Rowan Region, though little information was available. In addition, it should be noted that several breach scenarios in the area could be catastrophic.

5.14.5 Probability of Future Occurrence

Based on the analyses performed in IRISK, the probability of future Dam Failure is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Less Than 1% Of Buildings Are In 100-Year Floodplain
- Between 1% And 10% Of Buildings Are In 100-Year Floodplain
- More Than 10% Of Buildings Are In 100-Year Floodplain

Jurisdiction	IRISK Probability of Future Occurrence
City of Salisbury	**Low**

Jurisdiction	IRISK Probability of Future Occurrence
City of Statesville	Low
Iredell County (Unincorporated Area)	Low
Rowan County (Unincorporated Area)	Low
Town of China Grove	Low
Town of Cleveland	Low
Town of East Spencer	Low
Town of Faith	Low
Town of Granite Quarry	Low
Town of Harmony	Low
Town of Landis	Low
Town of Love Valley	Low
Town of Mooresville	Low
Town of Rockwell	Low
Town of Spencer	Low
Town of Troutman	Low

Given the current dam inventory and historic data, a dam breach is unlikely (less than 1 percent annual probability) in the future. However, as has been demonstrated in the past, regular monitoring is necessary to prevent these events. No further analysis will be completed in Section 6: *Vulnerability Assessment* as more sophisticated dam breach plans (typically completed by the U.S. Army Corp of Engineers) have been completed for dams of concern in the region.

Dam Failure Hazard Vulnerability and Impact

There is a fundamental limitation in the data available for vulnerability assessment for the dam/levee failure hazard in the planning area. The dam structures that are of concern are smaller, privately owned, and unregulated dams for which no GIS data or inventories are currently available. These are the facilities that could and likely would cause the most damage and disruption should a more likely failure occur.

It has been determined that any rudimentary calculations based on the point locations for the dams mapped by NCDENR would also be potentially misleading if any type of buffer or proximity analysis was performed to estimate surrounding impacts should a failure occur.

Any mitigation actions developed for this hazard therefore should be based on addressing data limitations, education and awareness programs, and/or any jurisdiction-specific concerns that may be addressable through an appropriate mitigation project.

The following tables provide counts and values by jurisdiction relevant to Dam Failure hazard vulnerability in the Iredell-Rowan Regional HMP Area.

Table 5-204: Population Impacted by the Sunny Day Failure Dam Failure

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	0	0%	3,740	0	0%	1,825	0	0%
Iredell County (Unincorporated Area)	87,091	0	0%	11,168	0	0%	5,449	0	0%
Town of Harmony	525	0	0%	67	0	0%	33	0	0%
Town of Love Valley	100	0	0%	13	0	0%	6	0	0%
Town of Mooresville	38,203	0	0%	4,899	0	0%	2,390	0	0%
Town of Troutman	4,068	0	0%	522	0	0%	254	0	0%
Subtotal Iredell	**159,434**	**0**	**0%**	**20445**	**0**	**0%**	**9975**	**0**	**0%**
Rowan									
City of Salisbury	35,981	0	0%	5,193	0	0%	2,349	0	0%
Rowan County (Unincorporated Area)	63,003	0	0%	9,092	0	0%	4,113	0	0%
Town of China Grove	5,344	0	0%	771	0	0%	349	0	0%
Town of Cleveland	1,219	0	0%	176	0	0%	80	0	0%
Town of East Spencer	1,726	0	0%	249	0	0%	113	0	0%
Town of Faith	3,288	0	0%	475	0	0%	215	0	0%
Town of Granite Quarry	4,957	0	0%	715	0	0%	324	0	0%
Town of Landis	3,124	0	0%	451	0	0%	204	0	0%
Town of Rockwell	4,767	0	0%	688	0	0%	311	0	0%
Town of Spencer	3,840	0	0%	554	0	0%	251	0	0%
Subtotal Rowan	**138,538**	**0**	**0%**	**19993**	**0**	**0%**	**9046**	**0**	**0%**
TOTAL PLAN	**297,972**	**0**	**0%**	**40438**	**0**	**0%**	**19021**	**0**	**0%**

Source: GIS Analysis

Table 5-205: Population Impacted by the Overtopping Failure Dam Failure

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	0	0%	3,740	0	0%	1,825	0	0%
Iredell County (Unincorporated Area)	87,091	0	0%	11,168	0	0%	5,449	0	0%
Town of Harmony	525	0	0%	67	0	0%	33	0	0%
Town of Love Valley	100	0	0%	13	0	0%	6	0	0%
Town of Mooresville	38,203	0	0%	4,899	0	0%	2,390	0	0%
Town of Troutman	4,068	0	0%	522	0	0%	254	0	0%
Subtotal Iredell	**159,434**	**0**	**0%**	**20445**	**0**	**0%**	**9975**	**0**	**0%**
Rowan									
City of Salisbury	35,981	0	0%	5,193	0	0%	2,349	0	0%
Rowan County (Unincorporated Area)	63,003	0	0%	9,092	0	0%	4,113	0	0%
Town of China Grove	5,344	0	0%	771	0	0%	349	0	0%
Town of Cleveland	1,219	0	0%	176	0	0%	80	0	0%
Town of East Spencer	1,726	0	0%	249	0	0%	113	0	0%
Town of Faith	3,288	0	0%	475	0	0%	215	0	0%
Town of Granite Quarry	4,957	0	0%	715	0	0%	324	0	0%
Town of Landis	3,124	0	0%	451	0	0%	204	0	0%
Town of Rockwell	4,767	0	0%	688	0	0%	311	0	0%
Town of Spencer	3,840	0	0%	554	0	0%	251	0	0%
Subtotal Rowan	**138,538**	**0**	**0%**	**19993**	**0**	**0%**	**9046**	**0**	**0%**
TOTAL PLAN	**297,972**	**0**	**0%**	**40438**	**0**	**0%**	**19021**	**0**	**0%**

Source: GIS Analysis

Table 5-206: Buildings Impacted by the Sunny Day Failure Dam Failure

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Iredell County (Unincorporated Area)	55,474	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Harmony	444	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Love Valley	258	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Mooresville	14,440	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Troutman	2,439	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Iredell	**87,309**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
Rowan															
City of Salisbury	13,960	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Rowan County (Unincorporated Area)	38,881	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of China Grove	2,546	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Cleveland	812	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of East Spencer	1,015	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Faith	1,590	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Granite Quarry	2,350	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Landis	1,544	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Rockwell	2,402	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Spencer	2,010	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Rowan	**67,110**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
TOTAL PLAN	**154,419**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**

Source: GIS Analysis

Table 5-207: Buildings Impacted by the Overtopping Failure Dam Failure

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Iredell County (Unincorporated Area)	55,474	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Harmony	444	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Love Valley	258	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Mooresville	14,440	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Troutman	2,439	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Iredell	**87,309**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
Rowan															
City of Salisbury	13,960	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Rowan County (Unincorporated Area)	38,881	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of China Grove	2,546	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Cleveland	812	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of East Spencer	1,015	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Faith	1,590	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Granite Quarry	2,350	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Landis	1,544	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Rockwell	2,402	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Spencer	2,010	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Rowan	**67,110**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
TOTAL PLAN	**154,419**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**

Source: GIS Analysis

5.15 EROSION

5.15.1 Background

Erosion is the gradual breakdown and movement of land due to both physical and chemical processes of water, wind, and general meteorological conditions. Natural, or geologic, erosion has occurred since the Earth's formation and continues at a very slow and uniform rate each year.

There are two types of soil erosion: wind erosion and water erosion. Wind erosion can cause significant soil loss. Winds blowing across sparsely vegetated or disturbed land can pick up soil particles and carry them through the air, thus displacing them. Water erosion can occur over land or in streams and channels. Water erosion that takes place over land may result from raindrops, shallow sheets of water flowing off the land, or shallow surface flow, which becomes concentrated in low spots. Stream channel erosion may occur as the volume and velocity of water flow increases enough to cause movement of the streambed and bank soils. Major storms, such hurricanes in coastal areas, may cause significant erosion by combining high winds with heavy surf and storm surge to significantly impact the shoreline.

An area's potential for erosion is determined by four factors: soil characteristics, vegetative cover, topography climate or rainfall, and topography. Soils composed of a large percentage of silt and fine sand are most susceptible to erosion. As the clay and organic content of these soils increases, the potential for erosion decreases. Well-drained and well-graded gravels and gravel-sand mixtures are the least likely to erode. Coarse gravel soils are highly permeable and have a good capacity for absorption, which can prevent or delay the amount of surface runoff. Vegetative cover can be very helpful in controlling erosion by shielding the soil surface from falling rain, absorbing water from the soil, and slowing the velocity of runoff. Runoff is also affected by the topography of the area including size, shape, and slope. The greater the slope length and gradient, the more potential an area has for erosion. Climate can affect the amount of runoff, especially the frequency, intensity, and duration of rainfall and storms. When rainstorms are frequent, intense, or of long duration, erosion risks are high. Seasonal changes in temperature and rainfall amounts define the period of highest erosion risk of the year.

During the past 20 years, the importance of erosion control has gained the increased attention of the public. Implementation of erosion control measures consistent with sound agricultural and construction operations is needed to minimize the adverse effects associated with harmful chemicals run-off due to wind or water events. The increase in government regulatory programs and public concern has resulted in a wide range of erosion control products, techniques, and analytical methodologies in the United States. The preferred method of erosion control in recent years has been the restoration of vegetation.

5.15.2 Location and Spatial Extent

Erosion in the Iredell Rowan Region is typically caused by flash flooding events. Unlike coastal areas, where the soil is mainly composed of fine-grained particles such as sand, Iredell Rowan soils have much greater organic matter content. Furthermore, extensive vegetation also helps to prevent erosion in the area. Erosion occurs in the Iredell Rowan Region, particularly along the banks of rivers and streams, but it is not an extreme threat to any of the participating counties and jurisdictions. No areas of concern were reported by the planning team.

5.15.3 Extent

The extent of erosion can be defined by the measurable rate of erosion that occurs over time for a specific land area. No data is currently available with which to determine magnitudes or severity of erosion hazard areas within the Region and all its jurisdictions. A mitigation strategy regarding erosion identification, tracking and mapping will be considered in future mitigation actions for the Region.

5.15.4 Historical Occurrences

Several sources were vetted to identify areas of erosion in the Iredell Rowan Region. This includes searching local newspapers, interviewing local officials, and reviewing previous hazard mitigation plans. Little information could be found. The Rowan County Code includes a chapter on Soil Erosion and Sedimentation, but there were no reported incidents of major erosion in the region.

5.15.5 Probability of Future Occurrences

Based on the analyses performed in IRISK, the probability of future Erosion is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Less Than 1% annual probability
- Between 1% And 10% annual probability
- More Than 10% annual probability

Jurisdiction	IRISK Probability of Future Occurrence
City of Salisbury	Low
City of Statesville	Low
Iredell County (Unincorporated Area)	Low
Rowan County (Unincorporated Area)	Low
Town of China Grove	Low
Town of Cleveland	Low
Town of East Spencer	Low
Town of Faith	Low
Town of Granite Quarry	Low
Town of Harmony	Low
Town of Landis	Low
Town of Love Valley	Low
Town of Mooresville	Low
Town of Rockwell	Low
Town of Spencer	Low
Town of Troutman	Low

Erosion Hazard Vulnerability and Impact

Based upon a lack of historical events, relevant GIS data, and any immediate threat to life or property, a detailed vulnerability assessment has not been conducted for this hazard. There were no reported erosion hazards in the Region and all its jurisdictions. Any mitigation actions developed for this hazard therefore should be based on addressing data limitations, education and awareness programs, and/or any jurisdiction-specific concerns that may be addressable through an appropriate mitigation project.

5.16 FLOOD

5.16.1 Background

Flooding is the most frequent and costly natural hazard in the United States and is a hazard that has caused more than 10,000 deaths since 1900. Nearly 90 percent of presidential disaster declarations result from natural events where flooding was a major component.

Floods generally result from excessive precipitation and can be classified under two categories: general floods, precipitation over a given river basin for a long period of time along with storm-induced wave action, and flash floods, the product of heavy localized precipitation in a short time period over a given location. The severity of a flooding event is typically determined by a combination of several major factors, including stream and river basin topography and physiography, precipitation and weather patterns, recent soil moisture conditions, and the degree of vegetative clearing and impervious surface.

General floods are usually long-term events that may last for several days. The primary types of general flooding include riverine, coastal, and urban flooding. Riverine flooding is a function of excessive precipitation levels and water runoff volumes within the watershed of a stream or river. Coastal flooding is typically a result of storm surge, wind-driven waves, and heavy rainfall produced by hurricanes, tropical storms, and other large coastal storms. Urban flooding occurs where manmade development has obstructed the natural flow of water and decreased the ability of natural groundcover to absorb and retain surface water runoff.

Most flash flooding is caused by slow-moving thunderstorms in a local area or by heavy rains associated with hurricanes and tropical storms. However, flash flooding events may also occur from a dam or levee failure within minutes or hours of heavy amounts of rainfall or from a sudden release of water held by a retention basin or other stormwater control facility. Although flash flooding occurs most often along mountain streams, it is also common in urbanized areas where much of the ground is covered by impervious surfaces.

The periodic flooding of lands adjacent to rivers, streams, and shorelines (land known as a floodplain) is a natural and inevitable occurrence that can be expected to take place based upon established recurrence intervals. The recurrence interval of a flood is defined as the average time interval, in years, expected between a flood event of a particular magnitude and an equal or larger flood. Flood magnitude increases with increasing recurrence interval.

Floodplains are designated by the frequency of the flood that is large enough to cover them. For example, the 10-year floodplain will be covered by the 10-year flood and the 100-year floodplain by the 100-year flood. Flood frequencies, such as the 100-year flood, are determined by plotting a graph of the size of all known floods for an area and determining how often floods of a particular size occur. Another way of expressing the flood frequency is the chance of occurrence in a given year, which is the percentage of the probability of flooding each year. For example, the 100-year flood has a 1 percent chance of occurring in any given year and the 500-year flood has a 0.2 percent chance of occurring in any given year.

Table 5-208 lists flooding sources that were revised or newly studied by detailed methods for previous FISs but were not part of this revision. Their effective analysis remains valid.

Table 5-208: Flooding Sources Studied by Detailed Methods: Revised or Newly Studied

Sources	Riverine Sources		Affected Communities
	From	To	
Back Creek	Approximately 4.1 miles upstream of the confluence of Sloans Creek	Approximately 6.1 miles upstream of the confluence of Sloans Creek	Rowan County
Back Creek	Approximately 6.1 miles upstream of the confluence of Sloans Creek	Approximately 90 feet downstream of Oakridge Farm Highway/NC 150	Iredell County, Rowan County, Town of Mooresville
Back Creek	The confluence with North Second Creek	Approximately 4.1 miles upstream of the confluence of Sloans Creek	Rowan County
Back Creek (North)	The confluence with Third Creek	Approximately 1,400 feet upstream of Arey Road (SR 1337)	City of Statesville, Iredell County
Back Creek Tributary 1	The confluence with Back Creek	Approximately 1.1 miles upstream of confluence with Back Creek	Iredell County, Rowan County
Beaver Creek	The confluence with Fifth Creek	Approximately 1.7 miles upstream of River Hill Road (SR 2166)	Iredell County
Beaver Creek Tributary	The confluence with Beaver Creek	Approximately 0.8 mile upstream of the confluence with Beaver Creek	Iredell County
Beaverdam Creek (East)	The confluence with North Second Creek	Approximately 0.4 mile upstream of NC Highway 801	Rowan County
Beaverdam Creek (West)	The confluence with Withrow Creek	The Iredell County/Rowan County boundary	Iredell County, Rowan County, Town of Cleveland
Bell Branch	The confluence with South Yadkin River	Approximately 2.4 miles upstream of Woodleaf Road (SR 1003)	Iredell County, Rowan County
Big Kennedy Creek	The confluence with Hunting Creek	Approximately 160 feet upstream of the Yadkin/Iredell County boundary	Iredell County
Bost Branch	The confluence with Second Creek	Approximately 0.3 mile upstream of the confluence with Second Creek	Town of Rockwell
Bostian Heights Branch	Approximately 185 feet upstream of Scercy Road (SR 1346)	Approximately 222 feet upstream of Daugherty Road (SR 1243)	Rowan County

Sources	Riverine Sources		Affected Communities
	From	To	
Brushy Creek	The confluence with Hunting Creek	Approximately 1,000 feet downstream of Zeb Road (SR 1800)	Iredell County
Buffalo Shoals Creek	The confluence with Catawba River	Approximately 0.5 mile upstream of New Sterling Road	Iredell County
Camel Branch	The confluence with Rocky Creek (into South Yadkin River)	Approximately 1,700 feet upstream of Jericho Road (SR 1849)	Iredell County
Camel Branch Tributary 1	The confluence with Camel Branch	Approximately 0.5 mile upstream of the confluence with Camel Branch	Iredell County
Catawba River	Approximately 0.6 mile downstream of Hudson Chapel Road	Toe at Lookout Shoals Dam	Iredell County
Cedar Creek	The confluence with Yadkin River	Approximately 0.4 mile upstream of River Road (SR 2152)	Rowan County
Church Creek	The confluence with Crane Creek/High Rock Lake	Approximately 1.0 mile upstream of U.S. Highway 52	Rowan County, Town of Granite Quarry
Church Creek Tributary 1	The confluence with Church Creek	Approximately 417 feet downstream of U.S. Highway 52	Rowan County, Town of Granite Quarry
Church Creek Tributary 1A	The confluence with Church Creek Tributary 1	Approximately 0.5 mile upstream Fish Pond Road (SR 2309)	Rowan County, Town of Granite Quarry
Church Creek Tributary 2	The confluence with Church Creek	Approximately 0.8 mile upstream of Stone Road	Rowan County, Town of Granite Quarry
Coddle Creek	Approximately 50 feet upstream of NC-73	Approximately 0.4 mile upstream of confluence of Coddle Creek Tributary 8	Iredell County, Rowan County, Town of Mooresville
Coddle Creek Tributary 5	The confluence with Coddle Creek	Approximately 1.2 miles upstream of confluence with Coddle Creek	Iredell County
Coddle Creek Tributary 6	The confluence with Coddle Creek	Approximately 1,640 feet upstream of confluence with Coddle Creek	Iredell County
Coddle Creek Tributary 7	The confluence with Coddle Creek	Approximately 0.4 mile upstream of confluence with Coddle Creek	Iredell County, Town of Mooresville
Coddle Creek Tributary 8	The confluence with Coddle Creek	Approximately 0.5 mile upstream of confluence with Coddle Creek	Iredell County, Town of Mooresville

Sources	Riverine Sources		Affected Communities
	From	To	
Cold Water Creek	Just upstream of Moose Road (SR 1308)	Approximately 0.5 mile upstream of Moose Road (SR 1308)	City of Kannapolis, Rowan County
Cold Water Creek	The confluence with Rocky River	At the Rowan/Cabarrus County boundary	City of Kannapolis
Cold Water Creek Tributary 1	The confluence with Cold Water Creek	Approximately 0.3 mile upstream of Interstate 85	Rowan County
Cornelius Creek	Approximately 1,700 feet upstream of Cornelius Road	Approximately 500 feet upstream of Rankinhill Road	Iredell County
Crane Creek	Approximately 0.5 mile downstream of the confluence of Town Creek	Approximately 100 feet downstream of North Main Street	City of Salisbury, Rowan County, Town of East Spencer, Town of Granite Quarry
Crane Creek Tributary 1	The confluence with Church Creek	Approximately 417 feet downstream of U.S. Highway 52	Rowan County
Crane Creek Tributary 2	The confluence with Crane Creek	Approximately 220 feet upstream of Cemetery Drive	Town of Faith
Dishmon Creek	The confluence with Rocky Creek (into South Yadkin River)	Approximately 1.1 miles upstream of the confluence with Rocky Creek (into South Yadkin River)	Iredell County
Dutch Buffalo Creek Tributary 1	The confluence with Dutch Buffalo Creek	Approximately 0.7 mile upstream of Pless Road (SR 2432)	Rowan County
Dutchman Creek	The confluence with Kinder Creek	Approximately 0.8 mile upstream of Tomlin Road (SR 1843)	Iredell County
Dutchman Creek Tributary 6	The confluence with Dutchman Creek	Approximately 120 feet downstream of Sandy Springs Road (SR 2105)	Iredell County
Dye Creek	The confluence with Rocky River	Approximately 270 feet upstream of East McLelland Avenue	Iredell County, Town of Mooresville
Dye Creek Tributary	The confluence with Dye Creek	Approximately 1.3 miles upstream of Briarcliff Road	Town of Mooresville
East Fork Creek	The confluence with Coddle Creek	Approximately 6.0 miles upstream of the confluence with Coddle Creek	Iredell County, Rowan County
Fifth Creek	The confluence with South Yadkin River	Approximately 570 feet upstream of Whites Farm Road (SR 1911N)	Iredell County

Sources	Riverine Sources		Affected Communities
	From	To	
Fisher Branch	The confluence with Second Creek	Approximately 50 feet downstream of Fisher Road (SR 2320)	Rowan County, Town of Rockwell
Fisher Town Branch	The confluence with Irish Buffalo Creek	At the Rowan/Cabarrus County boundary	City of Kannapolis, Rowan County
Flat Creek	The confluence with Yadkin River	Approximately 1.3 miles upstream of River Road (SR 2152)	Rowan County
Flat Rock Branch	The confluence with Grants Creek	Approximately 800 feet downstream of Flat Rock Road (SR 1210)	Rowan County, Town of Landis
Fourth Creek	The confluence with South Yadkin River	The Iredell/Rowan County boundary	Iredell County, Rowan County
Fourth Creek	The Iredell/Rowan County boundary	Approximately 4.7 miles upstream of Wilkesboro Highway	City of Statesville, Iredell County, Rowan County
Fourth Creek Tributary 4	The confluence with Fourth Creek	Approximately 0.5 mile upstream of the confluence with Fourth Creek	Rowan County
Fourth Creek Tributary 5	The confluence with Fourth Creek	Approximately 360 feet upstream of Baker Mill Road (SR 1957)	Rowan County
Fourth Creek Tributary 6	The confluence with Fourth Creek	Approximately 0.5 mile upstream of the confluence with Fourth Creek	Iredell County
Fourth Creek Tributary 7	The confluence with Fourth Creek	Approximately 0.5 mile upstream of the confluence with Fourth Creek	Iredell County
Fourth Creek Tributary 8	The confluence with Fourth Creek	Approximately 1.0 mile upstream of the confluence with Fourth Creek	Iredell County
Free Nancy Branch	The confluence with Fourth Creek	Approximately 270 feet upstream of North Race Street	City of Statesville
Goble Creek	The confluence with Buffalo Shoals Creek	Approximately 1.5 miles upstream of I-40	Iredell County
Grants Creek	The confluence with Yadkin River	Approximately 481 feet downstream of West Ryder Ave	City of Salisbury, Rowan County, Town of China Grove, Town of Landis, Town of Spencer
Grants Creek Tributary 2	The confluence with Grants Creek	Approximately 870 feet downstream of the Par Drive	City of Salisbury
Grants Creek Tributary 3	The confluence with Grants Creek	Approximately 0.4 mile upstream of the confluence with Grants Creek	City of Salisbury

Sources	Riverine Sources		Affected Communities
	From	To	
Grants Creek Tributary 4	The confluence with Grants Creek	Approximately 0.6 mile upstream of the confluence with Grants Creek	City of Salisbury, Rowan County
Greasy Creek	The confluence with Third Creek	Approximately 1.8 miles upstream of the confluence with Third Creek	Iredell County
Harve Creek	The confluence with South Yadkin River	Approximately 0.5 mile upstream of the confluence with South Yadkin River	Iredell County
Hunting Creek	The confluence with South Yadkin River	Approximately 1.4 miles upstream of Balls Mill Road (SR 2474)	Iredell County
I-L Creek	The confluence with Third Creek	Approximately 1,600 feet upstream of Patterson Street	City of Statesville, Iredell County, Town of Troutman
Irish Buffalo Creek	Approximately 88 feet upstream of Cannon Farm Road	Approximately 1.3 miles upstream of Echo Hollow Drive	City of Kannapolis, Rowan County
Irish Buffalo Creek	The confluence with Cold Water Creek	At the Rowan/Cabarrus County boundary	City of Kannapolis
Irish Buffalo Creek Tributary 4	The confluence with Irish Buffalo Creek	Approximately 0.9 mile upstream of the confluence with Irish Buffalo Creek	City of Kannapolis, Rowan County, Town of Landis
Irish Buffalo Creek Tributary 5	The confluence with Irish Buffalo Creek	Approximately 0.8 mile upstream of the confluence with Irish Buffalo Creek	City of Kannapolis, Town of Landis
Jump and Run Branch	The confluence with Grants Creek	Approximately 385 feet upstream of Willow Road	City of Salisbury
Kerr Creek	The confluence with Sloans Creek	Approximately 1.4 miles upstream of Corriher Springs Road (SR 1554)	Rowan County
Kinder Creek	The confluence with South Yadkin River	Approximately 1.1 miles upstream of Old Mocksville Road (SR 2158)	Iredell County
Kinder Creek Tributary 1	The confluence with Kinder Creek	Approximately 0.5 mile upstream of Vaughn Mill Road (SR 2145)	Iredell County
Kinder Creek Tributary 1A	The confluence with Kinder Creek Tributary 1	Approximately 1,900 feet upstream of the confluence with Kinder Creek Tributary 1	Iredell County
Klutz Branch	The confluence with Legion Park Branch	Approximately 1.3 mile upstream of the confluence with Legion Park Branch	Town of Granite Quarry

Sources	Riverine Sources		Affected Communities
	From	To	
Legion Park Branch	The confluence with Trexler Creek	Approximately 0.4 mile upstream of the confluence of Klutz Branch	City of Salisbury, Town of Granite Quarry
Little Creek (North)	The confluence with South Yadkin River	Approximately 0.8 mile upstream of Stroud Mill Road (SR 2146)	Iredell County
Little Creek (South)	The confluence with Third Creek	Approximately 470 feet upstream of Iredell County/Rowan County boundary	Iredell County, Rowan County
Little Rocky Creek	The confluence with Patterson Creek	Approximately 100 feet downstream of Hams Grove Road (SR 2017)	Iredell County
Little Rocky Creek Tributary 1	The confluence with Little Rocky Creek	Approximately 0.7 mile upstream of the confluence with Little Rocky Creek	Iredell County
Long Branch	The confluence with North Little Hunting Creek	Approximately 1.1 miles upstream of the Yadkin/Iredell County boundary	Iredell County
Mill Creek	The confluence with Coddle Creek	Approximately 385 feet upstream of Smith Road (SR 1361)	City of Kannapolis, Rowan County
Morrison Creek	The confluence with Fourth Creek	Approximately 1,830 feet upstream of Old Wilkesboro Road (SR 1645)	City of Statesville, Iredell County
North Little Hunting Creek	The confluence with Hunting Creek	Approximately 1,410 feet upstream of Somers Road (SR 2400)	Iredell County
North Second Creek	The confluence with South Yadkin River	The confluence with Sloan Creek and Back Creek	Rowan County
Norwood Creek	The confluence with Lake Norman (Hicks Creek)	Approximately 1.9 miles upstream of East Monbo Road	Iredell County
Olin Creek	The confluence with Patterson Creek	Approximately 600 feet upstream of Eupeptic Springs Road (SR 1858)	Iredell County
Park Creek	The confluence with Coddle Creek	Approximately 0.5 mile upstream of Smith Road (SR 1360)	Rowan County
Pasture Bottom Creek	The confluence with Brushy Creek	Approximately 200 feet downstream of Zeb Road (SR 1800)	Iredell County
Patterson Branch	The confluence with Chambers Branch	Approximately 200 feet upstream of Grace Avenue	City of Kannapolis

Sources	Riverine Sources		Affected Communities
	From	To	
Patterson Creek	The confluence with Rocky Creek (into South Yadkin River)	Approximately 1,900 feet upstream of the confluence of Patterson Creek Tributary 2	Iredell County
Patterson Creek Tributary 1	The confluence with Patterson Creek	Approximately 0.5 mile upstream of Raider Road (SR 1953)	Iredell County
Patterson Creek Tributary 2	The confluence with Patterson Creek	Approximately 0.7 mile upstream of the confluence with Patterson Creek	Iredell County
Peeler Branch	The confluence with Second Creek Tributary 1	Approximately 500 feet upstream of Sides Road	Rowan County, Town of Rockwell
Petrea Branch	The confluence with Grants Creek	Approximately 1.0 mile upstream of the confluence with Grants Creek	Town of China Grove
Powder Spring	The confluence with Lake Norman (Norwood Creek)	Approximately 1,000 feet downstream of Talley Street	Iredell County
Powder Spring Branch	The confluence with Lake Norman (Norwood Creek)	Approximately 1,100 feet upstream of Pilgrim Circle	Iredell County, Town of Troutman
Reeder Creek	The confluence with Catawba River	Approximately 0.9 mile upstream of Eufola Road	Iredell County
Reeder Creek Tributary 1	The confluence with Reeder Creek	Approximately 0.7 mile upstream of confluence with Reeder Creek	Iredell County
Reeds Creek	Approximately 500 feet downstream of US 21	Approximately 0.6 mile upstream of West Plaza Drive	Town of Mooresville
Reeds Creek Tributary 2	Approximately 650 feet downstream of East Plaza Drive	Approximately 0.5 mile upstream of East Plaza Drive	Town of Mooresville
Reeds Creek Tributary 3	The confluence with Reeds Creek Tributary 2	Approximately 0.4 mile upstream of the confluence with Reeds Creek Tributary 2	Town of Mooresville
Riles Creek	The confluence with Yadkin River	Approximately 1.3 miles upstream of Willie Road	Rowan County
Rocky Branch Tributary 1	The confluence with Rocky Branch	Approximately 0.5 mile upstream of Pickett Avenue	City of Salisbury, Town of Spencer
Rocky Creek	Approximately 0.4 mile upstream of Perth Road	Approximately 1.1 miles upstream of Perth Road	Iredell County, Town of Troutman
Rocky Creek	The confluence with South Yadkin River	The Alexander/Iredell County boundary	Iredell County
Rocky Creek	The Iredell/Alexander County boundary	Approximately 1.0 mile upstream of the confluence of Rocky Creek Tributary 1	Iredell County

Sources	Riverine Sources		Affected Communities
	From	To	
Rocky River	At the Iredell/Cabarrus County boundary	Approximately 2.1 miles upstream of Coddle Creek Highway	Iredell County, Town of Mooresville
Rocky River	At the Mecklenburg/Cabarrus County Boundary	At the Mecklenburg/Cabarrus/Iredell County boundary	Town of Davidson
Rocky River	The confluence of West Branch Rocky River	The Cabarrus/Iredell County boundary	Iredell County, Town of Davidson
Rocky River Tributary 12	The confluence with Rocky River	Approximately 1.1 miles upstream of the Iredell/Mecklenburg County boundary	Iredell County
Second Creek	The confluence with Yadkin River	Approximately 0.6 mile upstream of the confluence of Second Creek Tributary 3	Rowan County, Town of Rockwell
Second Creek Tributary 1	The confluence with Second Creek	Approximately 200 feet upstream of the confluence of Peeler Branch	Rowan County
Second Creek Tributary 2	The confluence with Second Creek	Approximately 440 feet upstream of Miller Street	Town of Rockwell
Second Creek Tributary 3	The confluence with Second Creek	Approximately 0.5 mile upstream of Winding Brook Lane	Rowan County
Shinns Creek	The confluence with Weathers Creek	Approximately 2.8 miles upstream of Weathers Creek Road (SR 2379 N)	Iredell County, Town of Troutman
Sills Creek	The confluence with Back Creek	Approximately 1,100 feet upstream of Iredell County/Rowan County boundary	Iredell County, Rowan County
Sills Creek Tributary 1	The confluence with Sills Creek	Approximately 0.6 mile upstream of the confluence with Sills Creek	Rowan County
Sloans Creek	The confluence with North Second Creek	Approximately 0.4 mile upstream of Brown Road (SR 1211)	Rowan County
Snow Creek	The confluence with South Yadkin River	Approximately 260 feet upstream of Mountain View Road (SR 1614E)	Iredell County
South Fork Withrow Creek	The confluence with Withrow Creek	Approximately 0.5 mile upstream of Withrow Creek Road (SR 2379 S)	Iredell County
South Yadkin River	The confluence with Yadkin River	Approximately 510 feet downstream of Vashti Road (SR 1403)	Iredell County, Rowan County

Sources	Riverine Sources		Affected Communities
	From	To	
South Yadkin River Tributary 6	The confluence with South Yadkin River	Approximately 0.5 mile upstream of the confluence with South Yadkin River	Iredell County
South Yadkin River Tributary 7	The confluence with South Yadkin River	Approximately 1,940 feet upstream of the confluence with South Yadkin River	Iredell County
South Yadkin River Tributary 8	The confluence with South Yadkin River	Approximately 0.7 mile upstream of the confluence with South Yadkin River	Iredell County
Third Creek	Approximately 1,130 feet downstream of Interstate 40	Approximately 0.5 mile upstream of Lentz Road	City of Statesville, Iredell County
Third Creek	The confluence with Fourth Creek	Approximately 1.0 mile upstream of Bethesda Road (SR 2359)	Iredell County, Rowan County, Town of Cleveland
Third Creek Tributary 1	The confluence with Third Creek	Approximately 1,900 feet upstream of Knox Farm Road (SR 2363)	Iredell County
Third Creek Tributary 2	The confluence with Third Creek	Approximately 0.8 mile upstream of confluence with Third Creek	Iredell County
Third Creek Tributary 3	The confluence with Third Creek	Approximately 0.7 mile upstream of Cornflower Road	Iredell County
Third Creek Tributary 3A	The confluence with Third Creek Tributary 3	Approximately 0.6 mile upstream of confluence with Third Creek Tributary 3	Iredell County
Third Creek Tributary 3B	The confluence with Third Creek Tributary 3	Approximately 0.7 mile upstream of confluence with Third Creek Tributary 3	Iredell County
Third Creek Tributary 4	The confluence with Third Creek	Approximately 1,800 feet upstream of East Lackey Farm Road	Iredell County
Town Creek	Approximately 190 feet downstream of Bringle Ferry Road	Approximately 140 feet upstream of Julian Road	City of Salisbury
Town Creek Tributary 1	The confluence with Town Creek	Approximately 110 feet upstream of Tanglewood Drive	Town of East Spencer
Trexler Creek	The confluence with Crane creek	Approximately 0.2 mile upstream of U.S. Highway 52 (North Salisbury Avenue)	Town of Granite Quarry
Tributary 2	The confluence with Third Creek	Approximately 0.4 mile upstream of Johnson Drive	City of Statesville
Tributary 2A	The confluence with Third Creek	Approximately 0.8 mile upstream of Newton Drive	City of Statesville

Sources	Riverine Sources		Affected Communities
	From	To	
Tributary 3	Approximately 1,780 feet upstream of Interstate 40	Approximately 1.2 miles upstream of Interstate 40	City of Statesville, Iredell County
Tributary 4	The confluence with Third Creek	Approximately 400 feet upstream of Winston Avenue	City of Statesville
Tributary 5	The confluence with Third Creek	Approximately 0.8 mile upstream of confluence with Third Creek	City of Statesville
Tributary 6	The confluence with Third Creek	Approximately 0.6 mile upstream of confluence of Tributary 6B	City of Statesville
Tributary 6A	The confluence with Tributary 6	Approximately 900 feet upstream of I-77	City of Statesville
Tributary 6A1	The confluence with Tributary 6A	Approximately 0.4 mile upstream of confluence with Tributary 6A	City of Statesville
Tributary 6A2	The confluence with Tributary 6A	Approximately 1,200 feet upstream of confluence with Tributary 6A	City of Statesville
Tributary 6B	The confluence with Tributary 6	Approximately 0.4 mile upstream of confluence with Tributary 6	City of Statesville
Tributary 6B1	The confluence with Tributary 6B	Approximately 900 feet upstream of confluence with Tributary 6B	City of Statesville
Tuckers Creek	The confluence with Patterson Creek	Approximately 1.7 miles upstream of the confluence with Patterson Creek	Iredell County
Unnamed Stream 2	The confluence with Fourth Creek	Approximately 0.5 mile downstream of Rary Road (SR 1978)	Rowan County
Weathers Creek	The confluence with Withrow Creek and South Fork Withrow Creek	Approximately 1.4 miles upstream of Westmoreland Road (SR 2390)	Iredell County, Town of Troutman
Weathers Creek Tributary 1	The confluence with Weathers Creek	Approximately 0.7 mile upstream of the confluence with Weathers Creek	Iredell County
West Branch Rocky River	Approximately 80 feet downstream of the Iredell/Mecklenburg County boundary	Approximately 0.5 mile upstream of Timber Road	Iredell County, Town of Mooresville
West Branch Rocky River	At the confluence with Rocky River	Approximately 0.25 mile upstream of Grey Road	Iredell County, Town of Davidson

Sources	Riverine Sources		Affected Communities
	From	To	
West Branch Rocky River Tributary	The confluence with West Branch Rocky River	Approximately 0.9 mile upstream of Mott Road	Iredell County, Town of Mooresville
West Branch Rocky River Tributary 1	The confluence with West Branch Rocky River	Approximately 0.7 mile of Midway Lake Road (SR 1137)	Iredell County, Town of Mooresville
West Branch Rocky River Tributary 2	The confluence with West Branch Rocky River	Approximately 0.7 mile upstream of Timber Road	Town of Mooresville
Westmoreland Creek	The confluence with Weathers Creek	Approximately 0.5 mile upstream of the confluence with Weathers Creek	Iredell County
Withrow Creek	The confluence with North Second Creek	The confluence of South Fork Withrow Branch and Weathers Creek	Iredell County, Rowan County
Woodleaf Branch (East)	Lincolnton Road	Approximately 100 feet upstream of Fourth Street	City of Salisbury
Woodleaf Branch (West)	The confluence with Withrow Creek	Approximately 670 feet upstream of Iredell County/Rowan County boundary	Iredell County, Rowan County
Yadkin River	The confluence of Pee Dee River and Uwharrie River	Approximately 1,600 feet downstream of Railroad	City of Salisbury, Rowan County, Town of Spencer

Table 5-209 lists flooding sources that were studied by detailed methods for the pre-statewide FIS and re-delineated for previous FISs. These flooding sources were not part of this revision and their effective analyses remain valid.

Table 5-209: Flooding Sources Studied by Detailed Methods: Re-delineation

Sources	Riverine Sources		Affected Communities
	From	To	
Back Creek	Approximately 90 feet downstream of Oakridge Farm Highway/NC 150	Approximately 60 feet upstream of Mt. Ulla Highway/NC 801	Town of Mooresville
Baker Branch	The confluence of Irish Buffalo Creek	Approximately 1,535 feet upstream of West A Street	City of Kannapolis
Beaver Creek	The confluence with Cold Water Creek	Approximately 1,750 feet upstream of Milton Street	City of Kannapolis, Rowan County, Town of Landis

Sources	Riverine Sources		Affected Communities
	From	To	
Bostian Heights Branch	The confluence with Dutch Buffalo Creek	Approximately 185 feet upstream of Scercy Road (SR 1346)	Rowan County
Catawba River (Lake Norman)	Cowans Ford Dam	Approximately 0.6 mile downstream of Hudson Chapel Road (SR 1004)	Iredell County, Town of Davidson, Town of Mooresville, Town of Troutman
Catawba River (Lookout Shoals Lake)	Toe at Lookout Shoals Dam	Approximately 0.4 mile upstream of the confluence of Elk Shoal Creek	Iredell County
Cold Water Creek	Approximately 0.5 mile upstream of Moose Road (SR 1308)	Approximately 0.5 mile upstream of Lentz Road	City of Kannapolis, Rowan County, Town of China Grove
Crane Creek	Approximately 100 feet downstream of North Main Street	Old Concord Road (SR 1002)	City of Salisbury, Rowan County, Town of Faith, Town of Granite Quarry
Draft Branch	Approximately 0.9 mile upstream of the confluence with Grants Creek	Neel Road (SR 1729)	City of Salisbury, Rowan County
Dutch Buffalo Creek	The Rowan/Cabarrus County boundary	Approximately 130 feet upstream of Rogers Road (SR 2573)	Rowan County
Fourth Creek Tributary 2	The confluence with Fourth Creek	Approximately 550 feet upstream of South Green Street	City of Statesville
Gregory Creek	The confluence with Morrison Creek	Approximately 0.9 mile upstream of Wilkesboro Highway	City of Statesville
Julian Tributary	The confluence with Town Creek	Approximately 60 feet upstream of Julian Road	City of Salisbury
Lake Norman	Cowans Ford Dam	Approximately 0.6 mile downstream of Hudson Chapel Road (SR 1004)	Iredell County, Town of Davidson, Town of Mooresville, Town of Troutman
Lake Wright Branch	Approximately 1,500 feet upstream of the confluence with Grants Creek	Approximately 0.6 mile upstream of Brown Road (SR 1211)	Rowan County, Town of China Grove, Town of Landis
Little Creek	Approximately 0.5 mile upstream of the confluence with Grants Creek	Weaver Road (SR 1535)	Rowan County

Sources	Riverine Sources		Affected Communities
	From	To	
Reeds Creek Tributary 1	The confluence with Reeds Creek	Approximately 120 feet upstream of West Iredell Avenue	Town of Mooresville
Third Creek	Approximately 1.0 mile upstream of Bethesda Road (SR 2359)	Approximately 1,130 feet downstream of Interstate 40	City of Statesville, Iredell County
Town Creek	Approximately 1,500 feet upstream of the confluence with Crane Creek	Approximately 190 feet downstream of Bringle Ferry Road	City of Salisbury, Rowan County, Town of East Spencer
Town Creek	Approximately 140 feet upstream of Julian Road	Approximately 0.4-mile downstream Interstate 85	City of Salisbury, Rowan County
Tributary 1	The downstream side of Toria Drive	Approximately 20 feet upstream of Japul Road	City of Statesville
Tributary 3	Approximately 100 feet upstream of the confluence with Fourth Creek	Approximately 1,780 feet upstream of Interstate 40	City of Statesville
Tributary A	The confluence with Gregory Creek	Approximately 125 feet upstream of Hedrick Drive	City of Statesville
Tributary B	The confluence with Third Creek	Approximately 960 feet upstream of Newton Drive	City of Statesville
Wildlife Tributary	The confluence with Draft Branch	Approximately 0.6 mile upstream of Harrison Road	City of Salisbury

Table 5-210 lists flooding sources that studied using limited detailed methods for previous FISs but were not part of this revision. Their effective analysis remains valid.

Table 5-210: Flooding Sources Studied by Detailed Methods: Limited Detailed

Sources	Riverine Sources		Affected Communities
	From	To	
Back Creek	Approximately 6.1 miles upstream of the confluence of Sloans Creek	Approximately 90 feet downstream of Oakridge Farm Highway/NC 150	Iredell County, Rowan County, Town of Mooresville

Sources	Riverine Sources		Affected Communities
	From	To	
Back Creek	The confluence with North Second Creek	Approximately 4.1 miles upstream of the confluence of Sloans Creek	Rowan County
Back Creek (North)	The confluence with Third Creek	Approximately 1,400 feet upstream of Arey Road (SR 1337)	City of Statesville, Iredell County
Back Creek Tributary 1	The confluence with Back Creek	Approximately 1.1 miles upstream of confluence with Back Creek	Iredell County, Rowan County
Beaver Creek	The confluence with Fifth Creek	Approximately 1.7 miles upstream of River Hill Road (SR 2166)	Iredell County
Beaver Creek Tributary	The confluence with Beaver Creek	Approximately 0.8 mile upstream of the confluence with Beaver Creek	Iredell County
Beaverdam Creek (East)	The confluence with North Second Creek	Approximately 0.4 mile upstream of NC Highway 801	Rowan County
Beaverdam Creek (West)	The confluence with Withrow Creek	The Iredell County/Rowan County boundary	Iredell County, Rowan County, Town of Cleveland
Bell Branch	The confluence with South Yadkin River	Approximately 2.4 miles upstream of Woodleaf Road (SR 1003)	Iredell County, Rowan County
Big Kennedy Creek	The confluence with Hunting Creek	Approximately 160 feet upstream of the Yadkin/Iredell County boundary	Iredell County
Bost Branch	The confluence with Second Creek	Approximately 0.3 mile upstream of the confluence with Second Creek	Town of Rockwell
Brushy Creek	The confluence with Hunting Creek	Approximately 1,000 feet downstream of Zeb Road (SR 1800)	Iredell County
Buffalo Shoals Creek	The confluence with Catawba River	Approximately 0.5 mile upstream of New Sterling Road	Iredell County
Camel Branch	The confluence with Rocky Creek (into South Yadkin River)	Approximately 1,700 feet upstream of Jericho Road (SR 1849)	Iredell County

Sources	Riverine Sources		Affected Communities
	From	To	
Camel Branch Tributary 1	The confluence with Camel Branch	Approximately 0.5 mile upstream of the confluence with Camel Branch	Iredell County
Catawba River	Approximately 0.6 mile downstream of Hudson Chapel Road	Toe at Lookout Shoals Dam	Iredell County
Cedar Creek	The confluence with Yadkin River	Approximately 0.4 mile upstream of River Road (SR 2152)	Rowan County
Church Creek Tributary 1	The confluence with Church Creek	Approximately 417 feet downstream of U.S. Highway 52	Rowan County, Town of Granite Quarry
Church Creek Tributary 1A	The confluence with Church Creek Tributary 1	Approximately 0.5-mile upstream Fish Pond Road (SR 2309)	Rowan County, Town of Granite Quarry
Church Creek Tributary 2	The confluence with Church Creek	Approximately 0.8 mile upstream of Stone Road	Rowan County, Town of Granite Quarry
Coddle Creek Tributary 5	The confluence with Coddle Creek	Approximately 1.2 miles upstream of confluence with Coddle Creek	Iredell County
Coddle Creek Tributary 6	The confluence with Coddle Creek	Approximately 1,640 feet upstream of confluence with Coddle Creek	Iredell County
Coddle Creek Tributary 7	The confluence with Coddle Creek	Approximately 0.4 mile upstream of confluence with Coddle Creek	Iredell County, Town of Mooresville
Coddle Creek Tributary 8	The confluence with Coddle Creek	Approximately 0.5 mile upstream of confluence with Coddle Creek	Iredell County, Town of Mooresville
Cold Water Creek	Just upstream of Moose Road (SR 1308)	Approximately 0.5 mile upstream of Moose Road (SR 1308)	City of Kannapolis, Rowan County
Cold Water Creek Tributary 1	The confluence with Cold Water Creek	Approximately 0.3 mile upstream of Interstate 85	Rowan County
Cornelius Creek	Approximately 1,700 feet upstream of Cornelius Road	Approximately 500 feet upstream of Rankinhill Road	Iredell County
Crane Creek Tributary 1	The confluence with Church Creek	Approximately 417 feet downstream of U.S. Highway 52	Rowan County
Crane Creek Tributary 2	The confluence with Crane Creek	Approximately 220 feet upstream of Cemetery Drive	Town of Faith

Sources	Riverine Sources		Affected Communities
	From	To	
Dishmon Creek	The confluence with Rocky Creek (into South Yadkin River)	Approximately 1.1 miles upstream of the confluence with Rocky Creek (into South Yadkin River)	Iredell County
Dutch Buffalo Creek Tributary 1	The confluence with Dutch Buffalo Creek	Approximately 0.7 mile upstream of Pless Road (SR 2432)	Rowan County
Dutchman Creek	The confluence with Kinder Creek	Approximately 0.8 mile upstream of Tomlin Road (SR 1843)	Iredell County
Dutchman Creek Tributary 6	The confluence with Dutchman Creek	Approximately 120 feet downstream of Sandy Springs Road (SR 2105)	Iredell County
East Fork Creek	The confluence with Coddle Creek	Approximately 6.0 miles upstream of the confluence with Coddle Creek	Iredell County, Rowan County
Fifth Creek	The confluence with South Yadkin River	Approximately 570 feet upstream of Whites Farm Road (SR 1911N)	Iredell County
Fisher Branch	The confluence with Second Creek	Approximately 50 feet downstream of Fisher Road (SR 2320)	Rowan County, Town of Rockwell
Flat Creek	The confluence with Yadkin River	Approximately 1.3 miles upstream of River Road (SR 2152)	Rowan County
Flat Rock Branch	The confluence with Grants Creek	Approximately 800 feet downstream of Flat Rock Road (SR 1210)	Rowan County, Town of Landis
Fourth Creek	The confluence with South Yadkin River	The Iredell/Rowan County boundary	Iredell County, Rowan County
Fourth Creek Tributary 4	The confluence with Fourth Creek	Approximately 0.5 mile upstream of the confluence with Fourth Creek	Rowan County
Fourth Creek Tributary 5	The confluence with Fourth Creek	Approximately 360 feet upstream of Baker Mill Road (SR 1957)	Rowan County
Fourth Creek Tributary 6	The confluence with Fourth Creek	Approximately 0.5 mile upstream of the confluence with Fourth Creek	Iredell County

Sources	Riverine Sources		Affected Communities
	From	To	
Fourth Creek Tributary 7	The confluence with Fourth Creek	Approximately 0.5 mile upstream of the confluence with Fourth Creek	Iredell County
Fourth Creek Tributary 8	The confluence with Fourth Creek	Approximately 1.0 mile upstream of the confluence with Fourth Creek	Iredell County
Goble Creek	The confluence with Buffalo Shoals Creek	Approximately 1.5 miles upstream of I-40	Iredell County
Grants Creek Tributary 2	The confluence with Grants Creek	Approximately 870 feet downstream of the Par Drive	City of Salisbury
Grants Creek Tributary 3	The confluence with Grants Creek	Approximately 0.4 mile upstream of the confluence with Grants Creek	City of Salisbury
Grants Creek Tributary 4	The confluence with Grants Creek	Approximately 0.6 mile upstream of the confluence with Grants Creek	City of Salisbury, Rowan County
Greasy Creek	The confluence with Third Creek	Approximately 1.8 miles upstream of the confluence with Third Creek	Iredell County
Harve Creek	The confluence with South Yadkin River	Approximately 0.5 mile upstream of the confluence with South Yadkin River	Iredell County
Hunting Creek	The confluence with South Yadkin River	Approximately 1.4 miles upstream of Balls Mill Road (SR 2474)	Iredell County
I-L Creek	The confluence with Third Creek	Approximately 1,600 feet upstream of Patterson Street	City of Statesville, Iredell County, Town of Troutman
Irish Buffalo Creek Tributary 4	The confluence with Irish Buffalo Creek	Approximately 0.9 mile upstream of the confluence with Irish Buffalo Creek	City of Kannapolis, Rowan County, Town of Landis
Irish Buffalo Creek Tributary 5	The confluence with Irish Buffalo Creek	Approximately 0.8 mile upstream of the confluence with Irish Buffalo Creek	City of Kannapolis, Town of Landis
Jump and Run Branch	The confluence with Grants Creek	Approximately 385 feet upstream of Willow Road	City of Salisbury

Sources	Riverine Sources		Affected Communities
	From	To	
Kerr Creek	The confluence with Sloans Creek	Approximately 1.4 miles upstream of Corriher Springs Road (SR 1554)	Rowan County
Kinder Creek	The confluence with South Yadkin River	Approximately 1.1 miles upstream of Old Mocksville Road (SR 2158)	Iredell County
Kinder Creek Tributary 1	The confluence with Kinder Creek	Approximately 0.5 mile upstream of Vaughn Mill Road (SR 2145)	Iredell County
Kinder Creek Tributary 1A	The confluence with Kinder Creek Tributary 1	Approximately 1,900 feet upstream of the confluence with Kinder Creek Tributary 1	Iredell County
Little Creek (North)	The confluence with South Yadkin River	Approximately 0.8 mile upstream of Stroud Mill Road (SR 2146)	Iredell County
Little Creek (South)	The confluence with Third Creek	Approximately 470 feet upstream of Iredell County/Rowan County boundary	Iredell County, Rowan County
Little Rocky Creek	The confluence with Patterson Creek	Approximately 100 feet downstream of Hams Grove Road (SR 2017)	Iredell County
Little Rocky Creek Tributary 1	The confluence with Little Rocky Creek	Approximately 0.7 mile upstream of the confluence with Little Rocky Creek	Iredell County
Long Branch	The confluence with North Little Hunting Creek	Approximately 1.1 miles upstream of the Yadkin/Iredell County boundary	Iredell County
Mill Creek	The confluence with Coddle Creek	Approximately 385 feet upstream of Smith Road (SR 1361)	City of Kannapolis, Rowan County
North Little Hunting Creek	The confluence with Hunting Creek	Approximately 1,410 feet upstream of Somers Road (SR 2400)	Iredell County
North Second Creek	The confluence with South Yadkin River	The confluence with Sloan Creek and Back Creek	Rowan County
Norwood Creek	The confluence with Lake Norman (Hicks Creek)	Approximately 1.9 miles upstream of East Monbo Road	Iredell County

Sources	Riverine Sources		Affected Communities
	From	To	
Olin Creek	The confluence with Patterson Creek	Approximately 600 feet upstream of Eupeptic Springs Road (SR 1858)	Iredell County
Park Creek	The confluence with Coddle Creek	Approximately 0.5 mile upstream of Smith Road (SR 1360)	Rowan County
Pasture Bottom Creek	The confluence with Brushy Creek	Approximately 200 feet downstream of Zeb Road (SR 1800)	Iredell County
Patterson Creek	The confluence with Rocky Creek (into South Yadkin River)	Approximately 1,900 feet upstream of the confluence of Patterson Creek Tributary 2	Iredell County
Patterson Creek Tributary 1	The confluence with Patterson Creek	Approximately 0.5 mile upstream of Raider Road (SR 1953)	Iredell County
Patterson Creek Tributary 2	The confluence with Patterson Creek	Approximately 0.7 mile upstream of the confluence with Patterson Creek	Iredell County
Peeler Branch	The confluence with Second Creek Tributary 1	Approximately 500 feet upstream of Sides Road	Rowan County, Town of Rockwell
Powder Spring	The confluence with Lake Norman (Norwood Creek)	Approximately 1,000 feet downstream of Talley Street	Iredell County
Powder Spring Branch	The confluence with Lake Norman (Norwood Creek)	Approximately 1,100 feet upstream of Pilgrim Circle	Iredell County, Town of Troutman
Reeder Creek	The confluence with Catawba River	Approximately 0.9 mile upstream of Eufola Road	Iredell County
Reeder Creek Tributary 1	The confluence with Reeder Creek	Approximately 0.7 mile upstream of confluence with Reeder Creek	Iredell County
Reeds Creek Tributary 2	Approximately 650 feet downstream of East Plaza Drive	Approximately 0.5 mile upstream of East Plaza Drive	Town of Mooresville
Reeds Creek Tributary 3	The confluence with Reeds Creek Tributary 2	Approximately 0.4 mile upstream of the confluence with Reeds Creek Tributary 2	Town of Mooresville
Riles Creek	The confluence with Yadkin River	Approximately 1.3 miles upstream of Willie Road	Rowan County
Rocky Branch Tributary 1	The confluence with Rocky Branch	Approximately 0.5 mile upstream of Pickett Avenue	City of Salisbury, Town of Spencer

Sources	Riverine Sources		Affected Communities
	From	To	
Rocky Creek	Approximately 0.4 mile upstream of Perth Road	Approximately 1.1 miles upstream of Perth Road	Iredell County, Town of Troutman
Rocky Creek	The Iredell/Alexander County boundary	Approximately 1.0 mile upstream of the confluence of Rocky Creek Tributary 1	Iredell County
Rocky River Tributary 12	The confluence with Rocky River	Approximately 1.1 miles upstream of the Iredell/Mecklenburg County boundary	Iredell County
Second Creek	The confluence with Yadkin River	Approximately 0.6 mile upstream of the confluence of Second Creek Tributary 3	Rowan County, Town of Rockwell
Second Creek Tributary 1	The confluence with Second Creek	Approximately 200 feet upstream of the confluence of Peeler Branch	Rowan County
Second Creek Tributary 2	The confluence with Second Creek	Approximately 440 feet upstream of Miller Street	Town of Rockwell
Second Creek Tributary 3	The confluence with Second Creek	Approximately 0.5 mile upstream of Winding Brook Lane	Rowan County
Shinns Creek	The confluence with Weathers Creek	Approximately 2.8 miles upstream of Weathers Creek Road (SR 2379 N)	Iredell County, Town of Troutman
Sills Creek	The confluence with Back Creek	Approximately 1,100 feet upstream of Iredell County/Rowan County boundary	Iredell County, Rowan County
Sills Creek Tributary 1	The confluence with Sills Creek	Approximately 0.6 mile upstream of the confluence with Sills Creek	Rowan County
Sloans Creek	The confluence with North Second Creek	Approximately 0.4 mile upstream of Brown Road (SR 1211)	Rowan County
Snow Creek	The confluence with South Yadkin River	Approximately 260 feet upstream of Mountain View Road (SR 1614E)	Iredell County
South Fork Withrow Creek	The confluence with Withrow Creek	Approximately 0.5 mile upstream of Withrow Creek Road (SR 2379 S)	Iredell County

Sources	Riverine Sources		Affected Communities
	From	To	
South Yadkin River	The confluence with Yadkin River	Approximately 510 feet downstream of Vashti Road (SR 1403)	Iredell County, Rowan County
South Yadkin River Tributary 6	The confluence with South Yadkin River	Approximately 0.5 mile upstream of the confluence with South Yadkin River	Iredell County
South Yadkin River Tributary 7	The confluence with South Yadkin River	Approximately 1,940 feet upstream of the confluence with South Yadkin River	Iredell County
South Yadkin River Tributary 8	The confluence with South Yadkin River	Approximately 0.7 mile upstream of the confluence with South Yadkin River	Iredell County
Third Creek	Approximately 1,130 feet downstream of Interstate 40	Approximately 0.5 mile upstream of Lentz Road	City of Statesville, Iredell County
Third Creek	The confluence with Fourth Creek	Approximately 1.0 mile upstream of Bethesda Road (SR 2359)	Iredell County, Rowan County, Town of Cleveland
Third Creek Tributary 1	The confluence with Third Creek	Approximately 1,900 feet upstream of Knox Farm Road (SR 2363)	Iredell County
Third Creek Tributary 2	The confluence with Third Creek	Approximately 0.8 mile upstream of confluence with Third Creek	Iredell County
Third Creek Tributary 3	The confluence with Third Creek	Approximately 0.7 mile upstream of Cornflower Road	Iredell County
Third Creek Tributary 3A	The confluence with Third Creek Tributary 3	Approximately 0.6 mile upstream of confluence with Third Creek Tributary 3	Iredell County
Third Creek Tributary 3B	The confluence with Third Creek Tributary 3	Approximately 0.7 mile upstream of confluence with Third Creek Tributary 3	Iredell County
Third Creek Tributary 4	The confluence with Third Creek	Approximately 1,800 feet upstream of East Lackey Farm Road	Iredell County
Tributary 2	The confluence with Third Creek	Approximately 0.4 mile upstream of Johnson Drive	City of Statesville

Sources	Riverine Sources		Affected Communities
	From	To	
Tributary 2A	The confluence with Third Creek	Approximately 0.8 mile upstream of Newton Drive	City of Statesville
Tributary 4	The confluence with Third Creek	Approximately 400 feet upstream of Winston Avenue	City of Statesville
Tributary 5	The confluence with Third Creek	Approximately 0.8 mile upstream of confluence with Third Creek	City of Statesville
Tributary 6	The confluence with Third Creek	Approximately 0.6 mile upstream of confluence of Tributary 6B	City of Statesville
Tributary 6A	The confluence with Tributary 6	Approximately 900 feet upstream of I-77	City of Statesville
Tributary 6A1	The confluence with Tributary 6A	Approximately 0.4 mile upstream of confluence with Tributary 6A	City of Statesville
Tributary 6A2	The confluence with Tributary 6A	Approximately 1,200 feet upstream of confluence with Tributary 6A	City of Statesville
Tributary 6B	The confluence with Tributary 6	Approximately 0.4 mile upstream of confluence with Tributary 6	City of Statesville
Tributary 6B1	The confluence with Tributary 6B	Approximately 900 feet upstream of confluence with Tributary 6B	City of Statesville
Tuckers Creek	The confluence with Patterson Creek	Approximately 1.7 miles upstream of the confluence with Patterson Creek	Iredell County
Unnamed Stream 2	The confluence with Fourth Creek	Approximately 0.5 mile downstream of Rary Road (SR 1978)	Rowan County
Weathers Creek	The confluence with Withrow Creek and South Fork Withrow Creek	Approximately 1.4 miles upstream of Westmoreland Road (SR 2390)	Iredell County, Town of Troutman
Weathers Creek Tributary 1	The confluence with Weathers Creek	Approximately 0.7 mile upstream of the confluence with Weathers Creek	Iredell County
West Branch Rocky River Tributary 1	The confluence with West Branch Rocky River	Approximately 0.7 mile of Midway Lake Road (SR 1137)	Iredell County, Town of Mooresville

Sources	Riverine Sources		Affected Communities
	From	To	
West Branch Rocky River Tributary 2	The confluence with West Branch Rocky River	Approximately 0.7 mile upstream of Timber Road	Town of Mooresville
Westmoreland Creek	The confluence with Weathers Creek	Approximately 0.5 mile upstream of the confluence with Weathers Creek	Iredell County
Withrow Creek	The confluence with North Second Creek	The confluence of South Fork Withrow Branch and Weathers Creek	Iredell County, Rowan County
Woodleaf Branch (East)	Lincolnton Road	Approximately 100 feet upstream of Fourth Street	City of Salisbury
Woodleaf Branch (West)	The confluence with Withrow Creek	Approximately 670 feet upstream of Iredell County/Rowan County boundary	Iredell County, Rowan County
Yadkin River	The confluence of Pee Dee River and Uwharrie River	Approximately 1,600 feet downstream of Railroad	City of Salisbury, Rowan County, Town of Spencer

5.16.2 Location and Spatial Extent

There are areas in the Iredell Rowan Region that are susceptible to flood events. Special flood hazard areas in the Iredell Rowan Region were mapped using Geographic Information System (GIS) and FEMA Digital Flood Insurance Rate Maps (DFIRM).[16] This includes Zone AE (1-percent annual chance floodplain with elevation) and Zone X500 (0.2-percent annual chance floodplain). According to GIS analysis, of the 1,122 square miles that make up the Iredell Rowan Region, there are 97 square miles of land in zone AE (1-percent annual chance floodplain/100-year floodplain) and 2 square miles of land in zone X500 (0.2-percent annual chance floodplain/500-year floodplain). The county totals are presented below in **Table 5-211**. The below figures show the boundaries of the floodway, 1-percent-annual-chance and 0.2-percent-annual-chance floods, based on effective DFIRM data. These are the three mapped flood hazard areas used as the basis for this analysis.

[16] The county-level DFIRM data used for the Iredell Rowan Region were updated in 2009 for each of the counties.

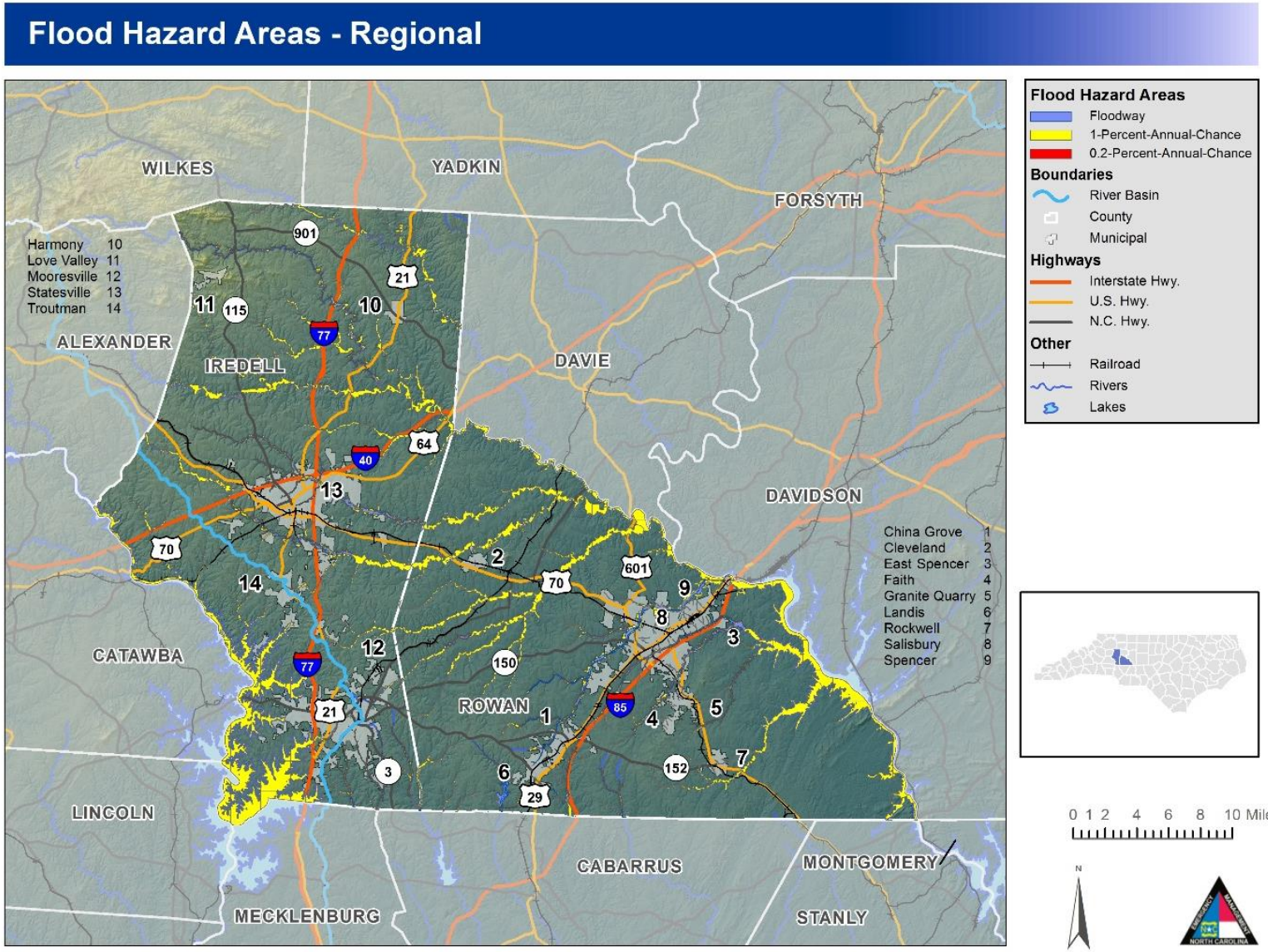


Figure 5-61: Flood Hazard Areas – Regional

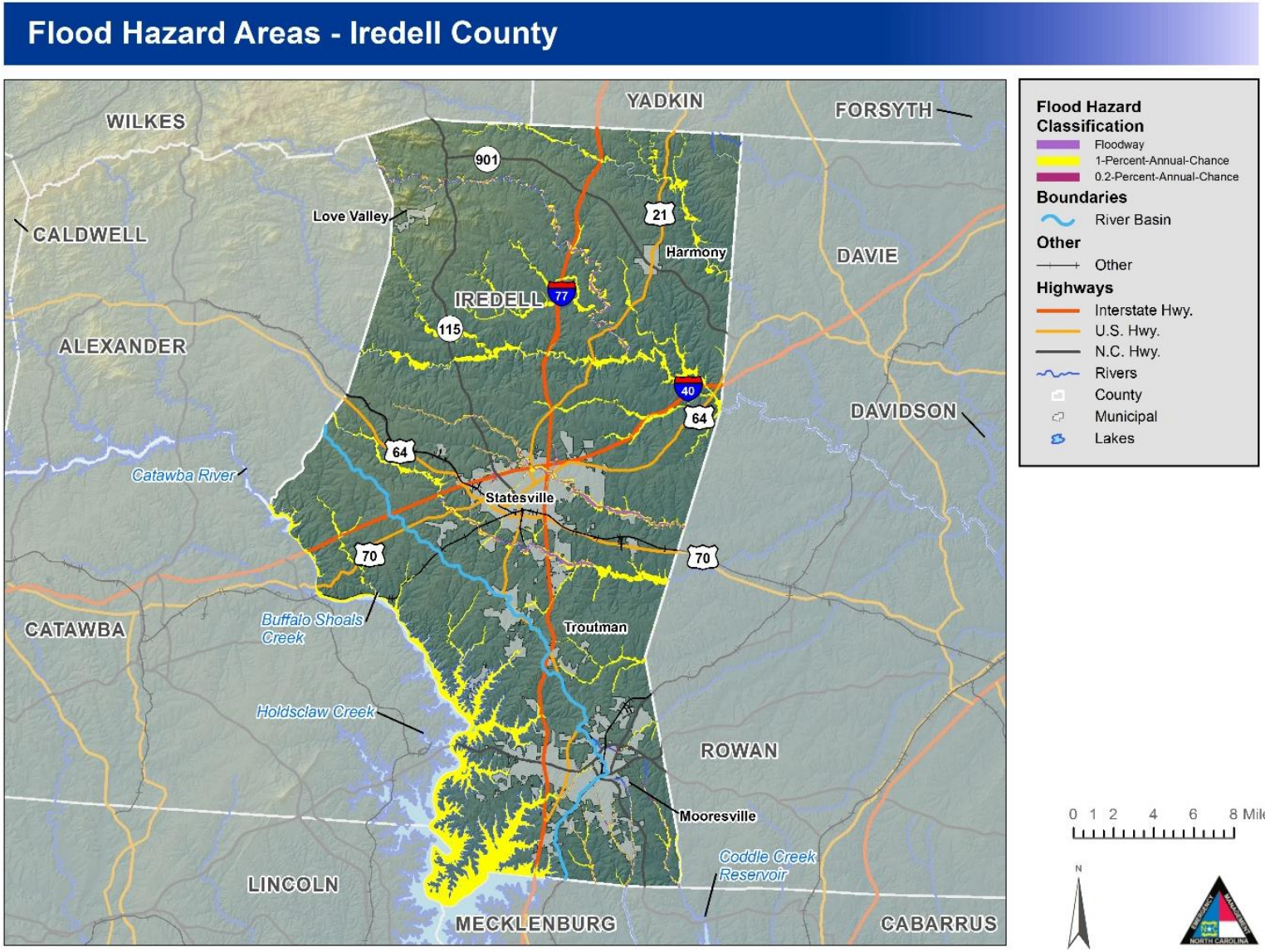


Figure 5-62: Flood Hazard Areas – Iredell County

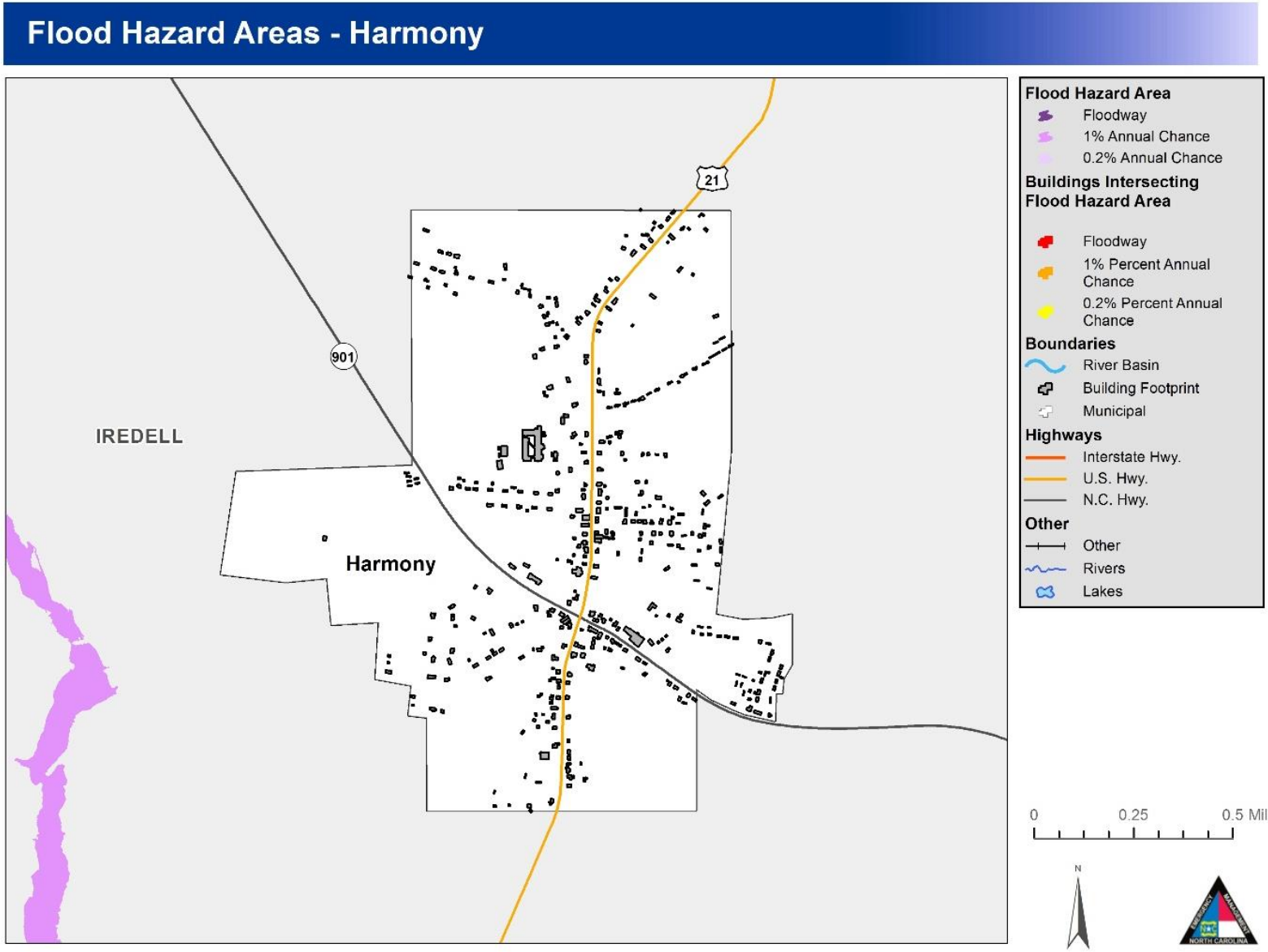


Figure 5-63: Flood Hazard Areas – Harmony

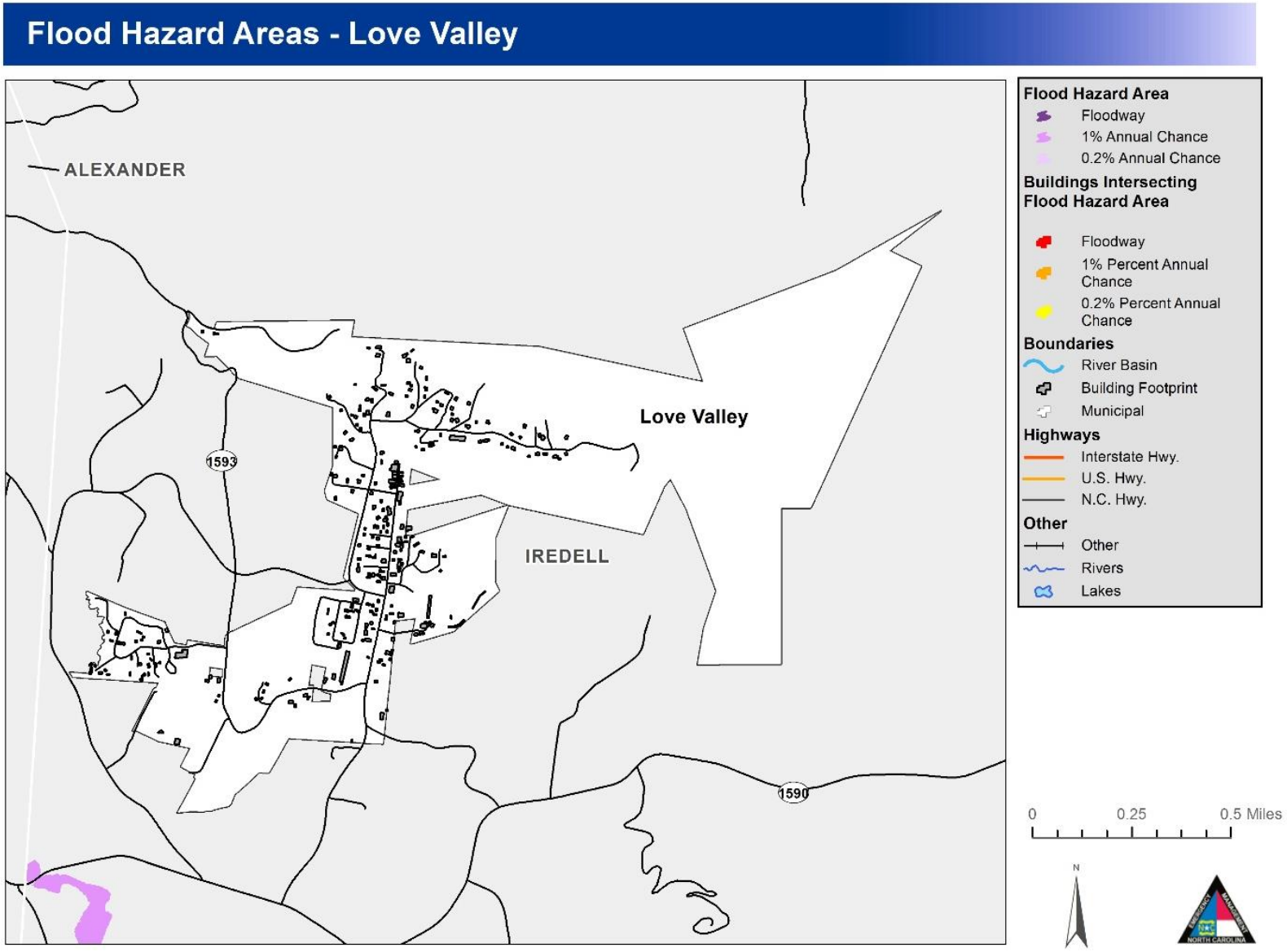


Figure 5-64: Flood Hazard Areas – Love Valley

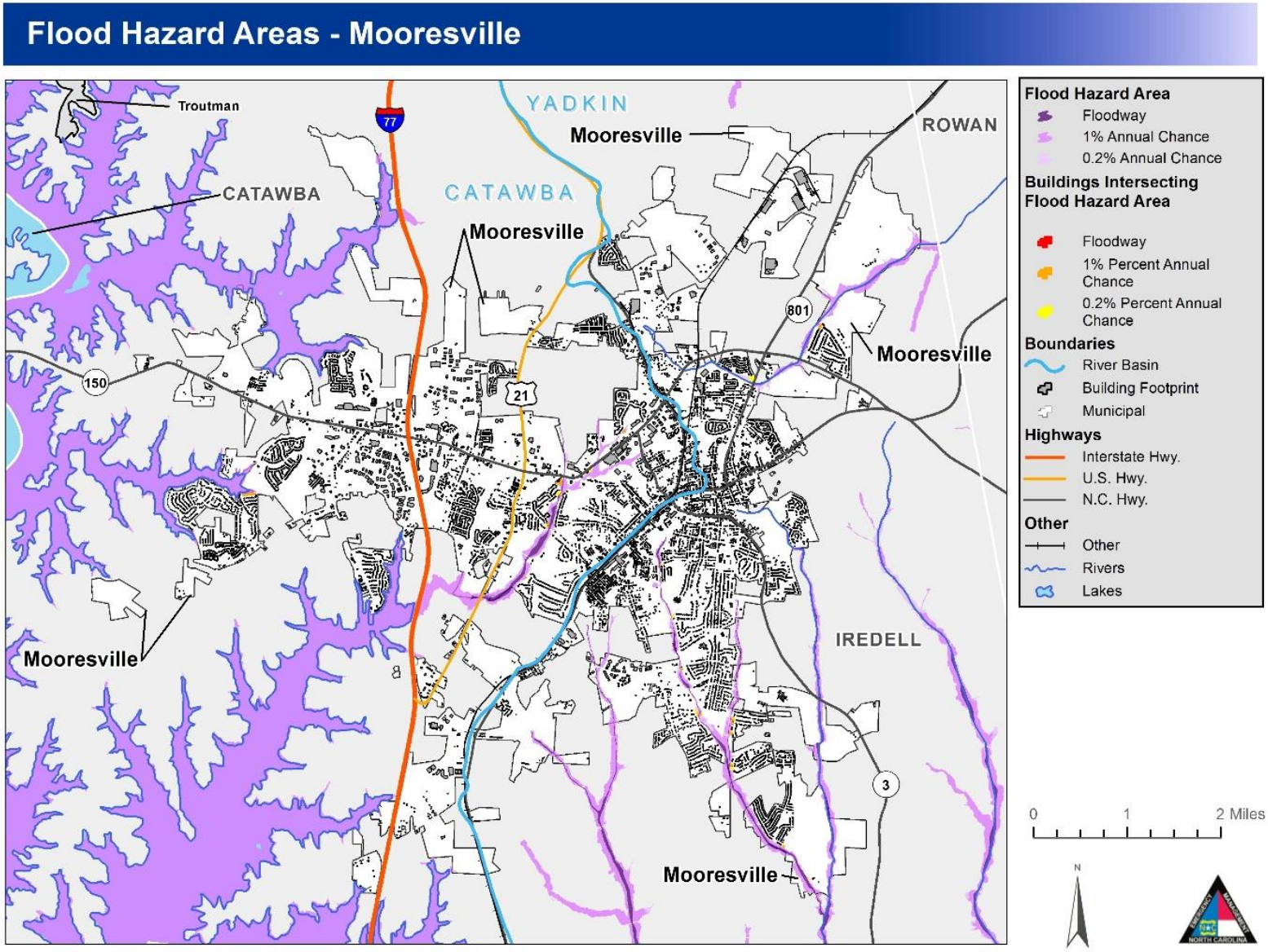


Figure 5-65: Flood Hazard Areas – Mooresville

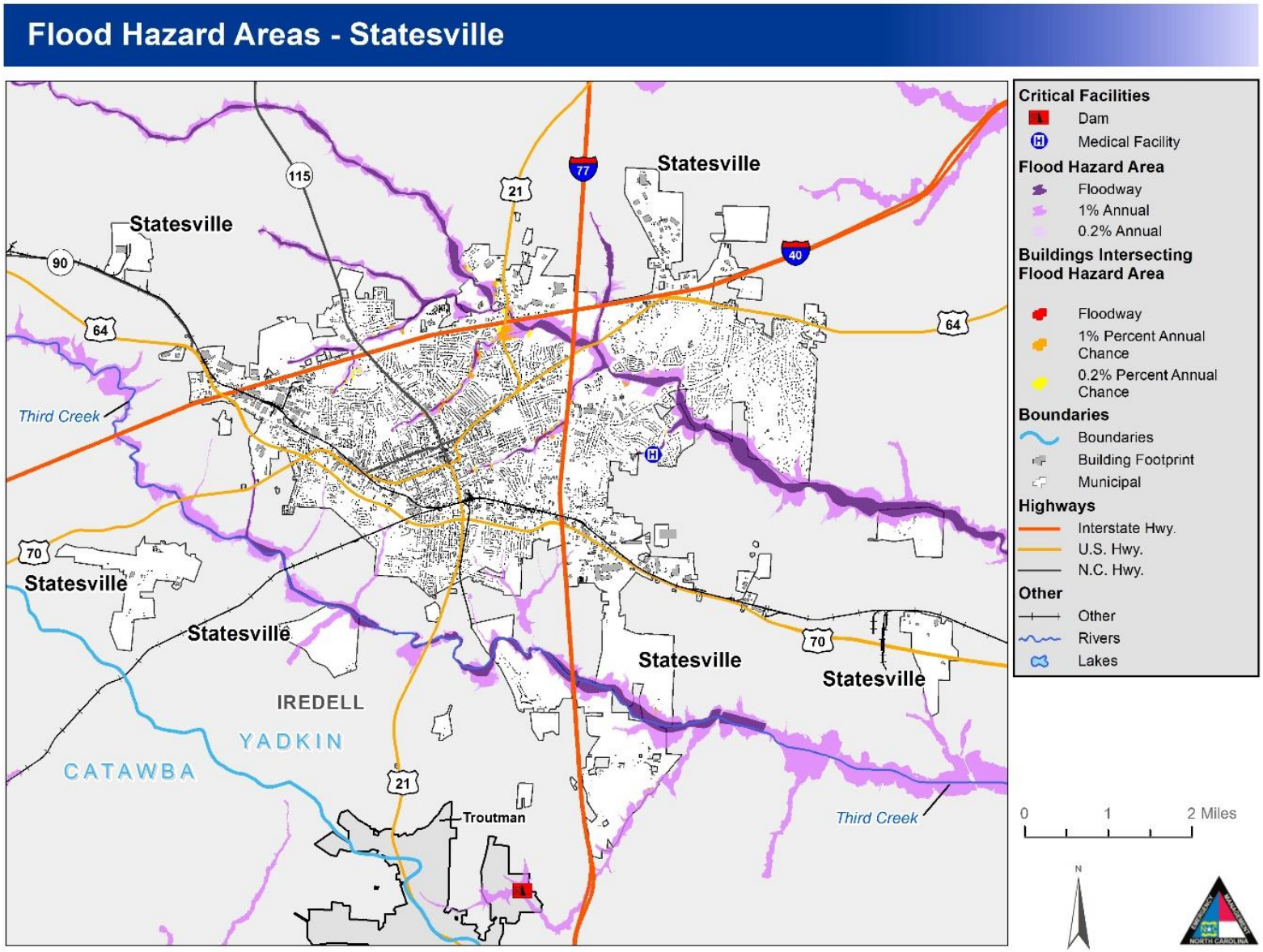


Figure 5-66: Flood Hazard Areas – Statesville

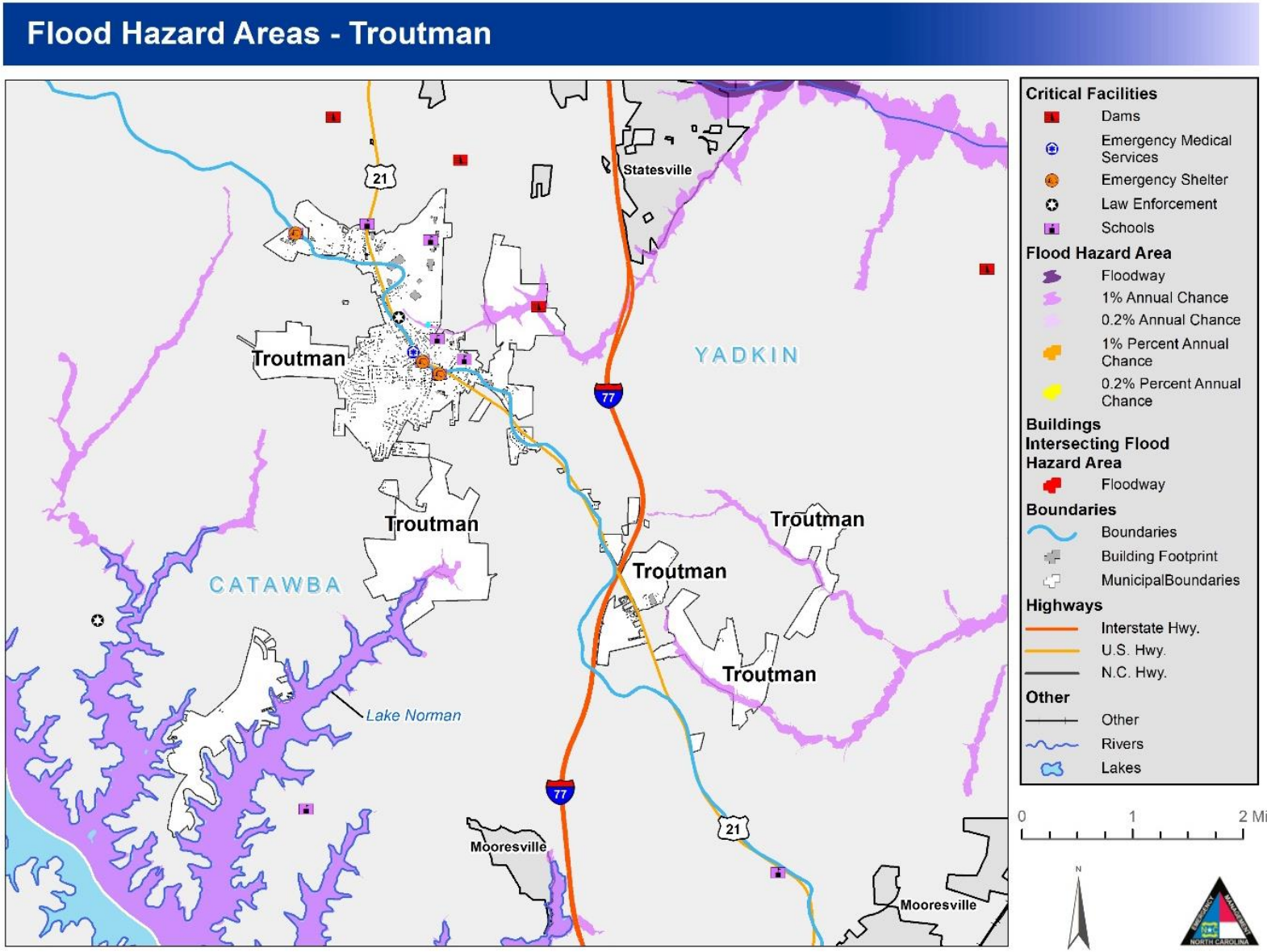


Figure 5-67: Flood Hazard Areas – Troutman

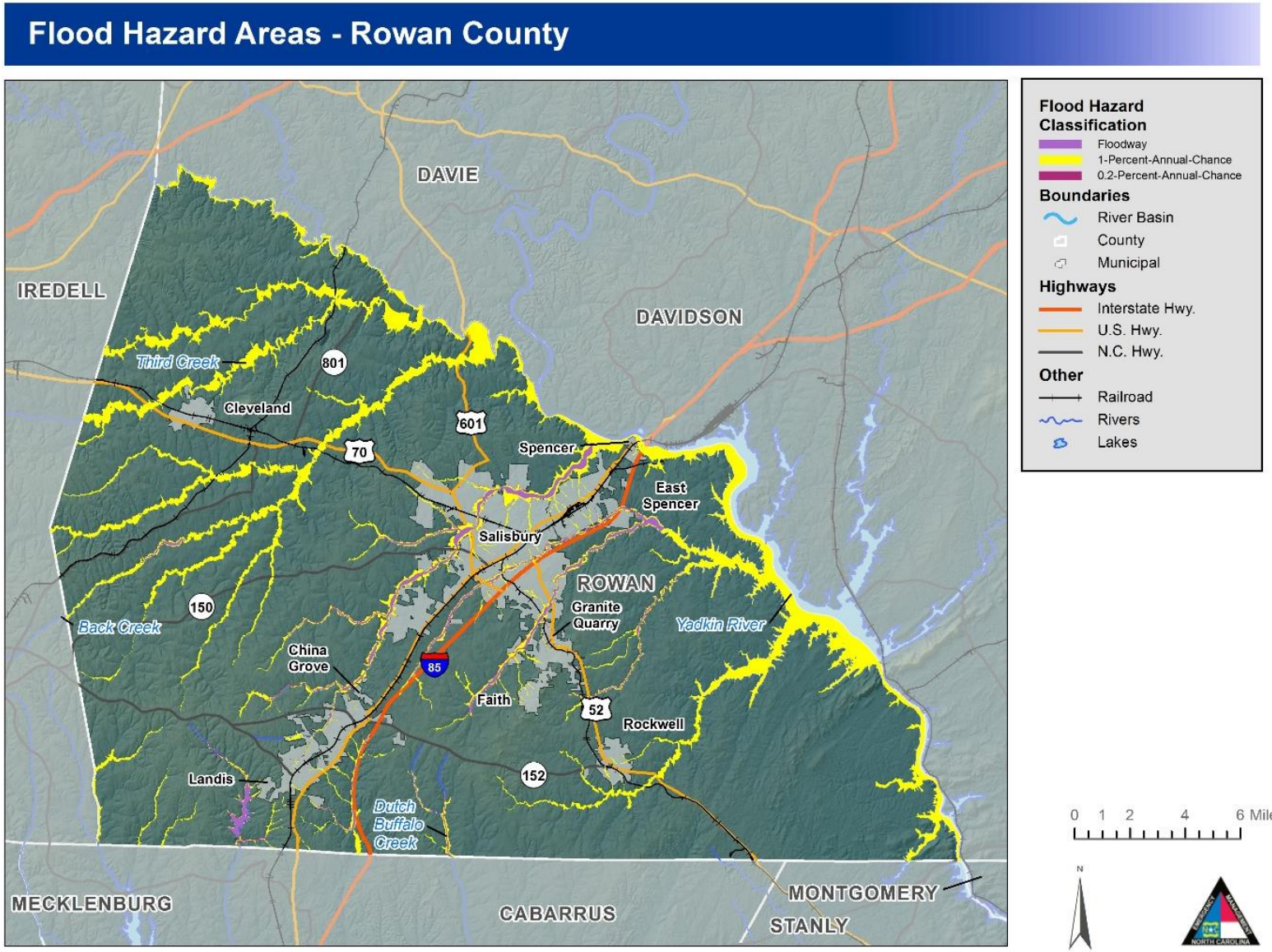


Figure 5-68: Flood Hazard Areas – Rowan County

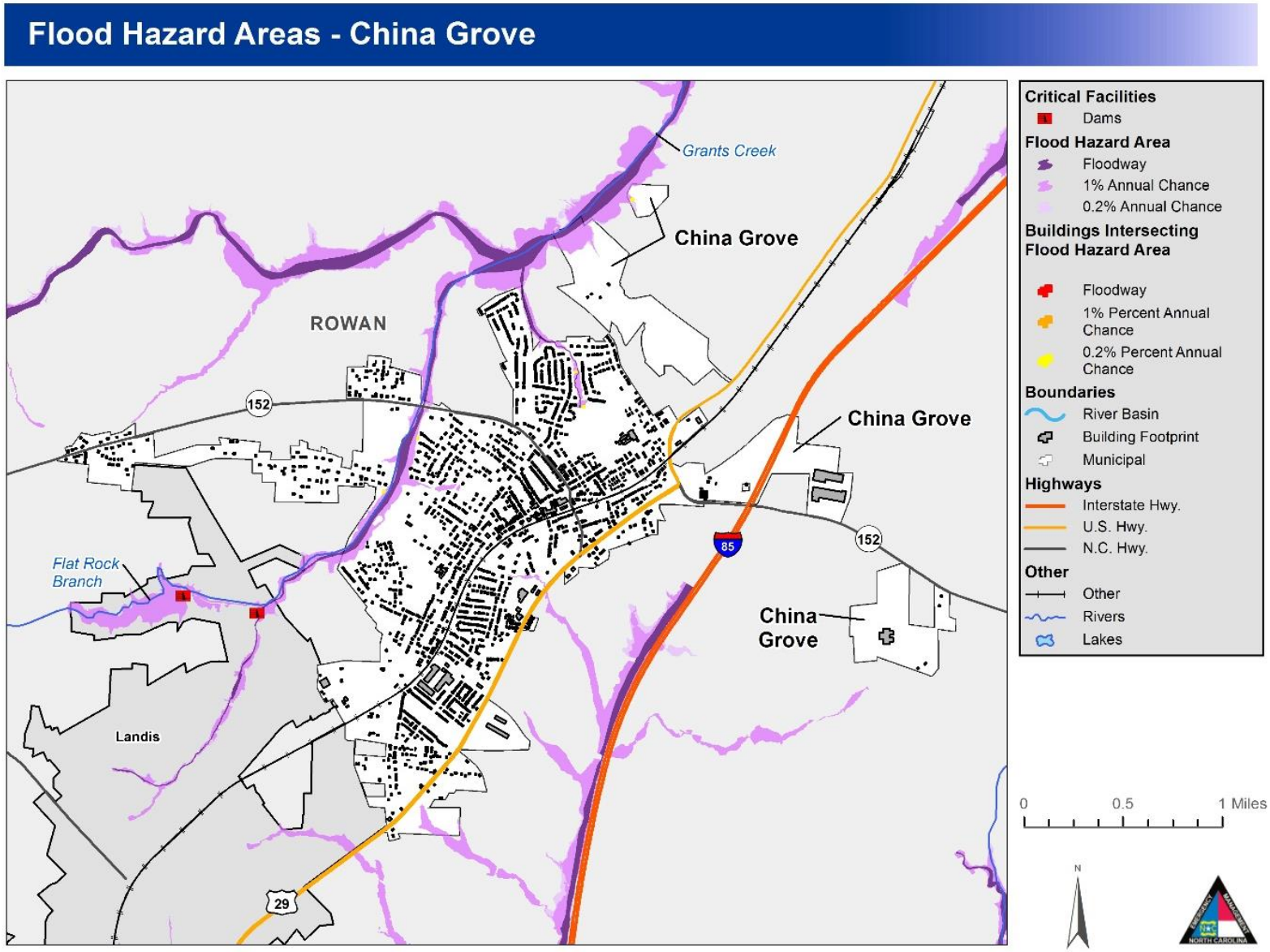


Figure 5-69: Flood Hazard Areas – China Grove

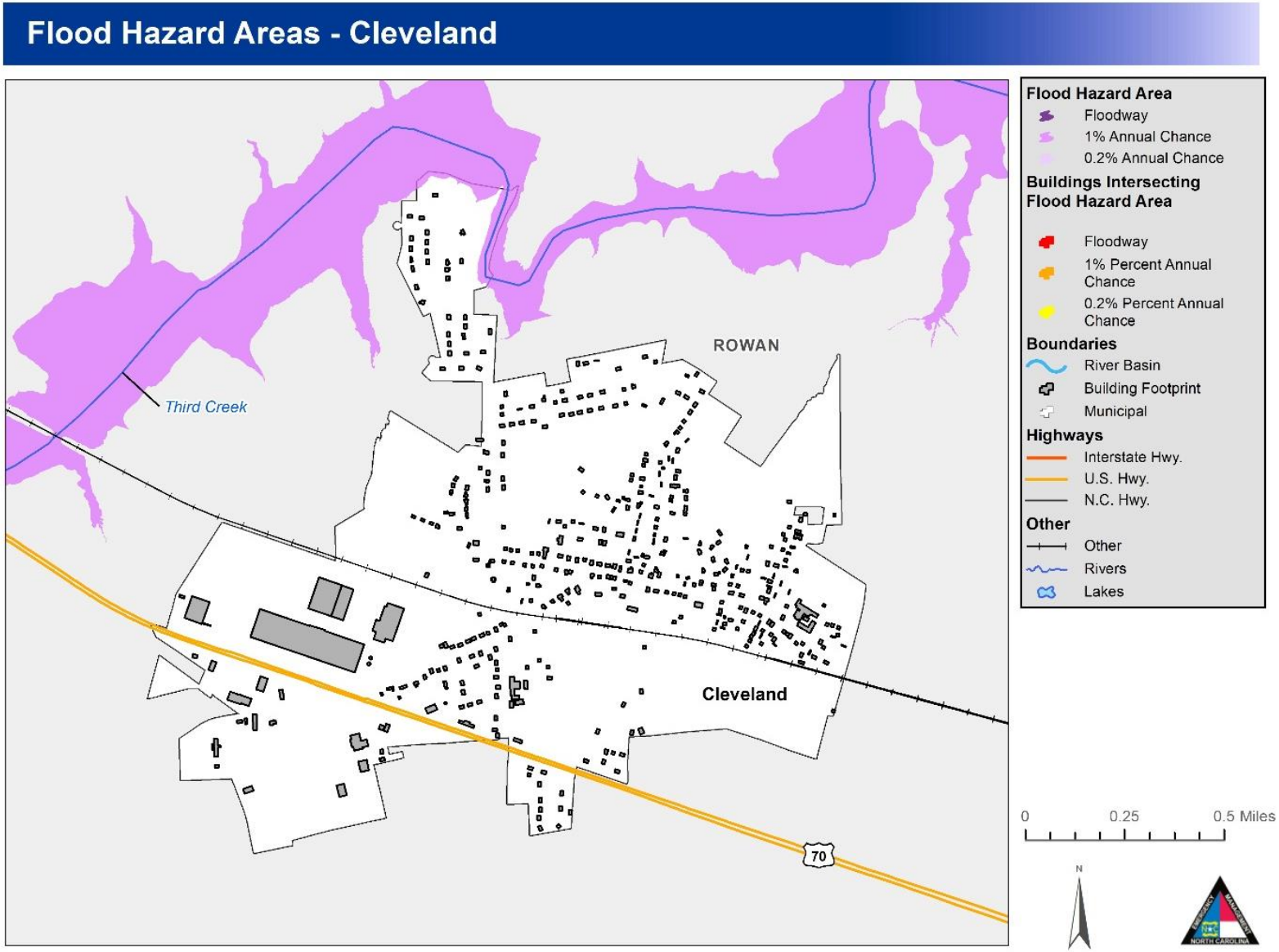


Figure 5-70: Flood Hazard Areas – Cleveland

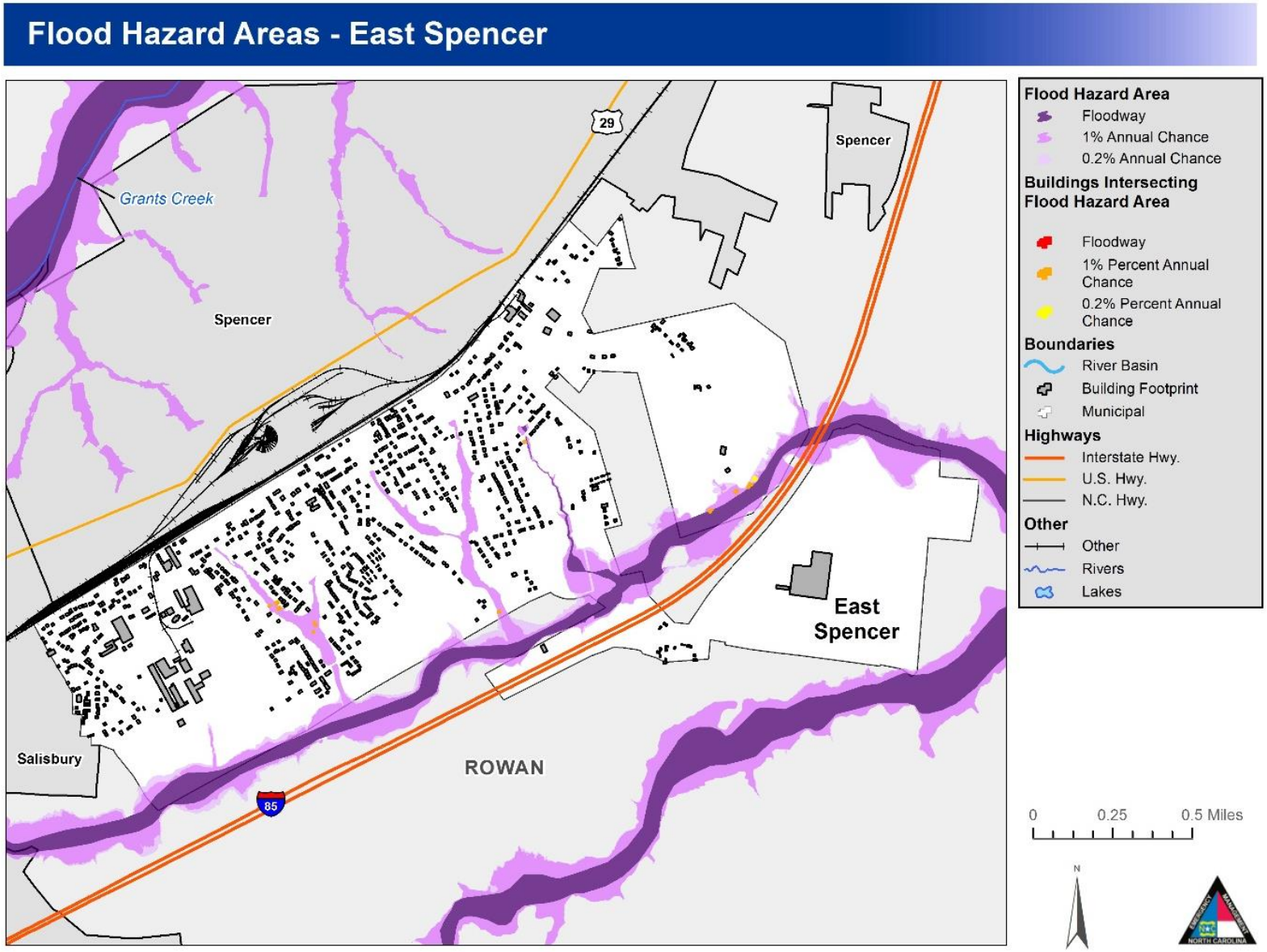


Figure 5-71: Flood Hazard Areas – East Spencer

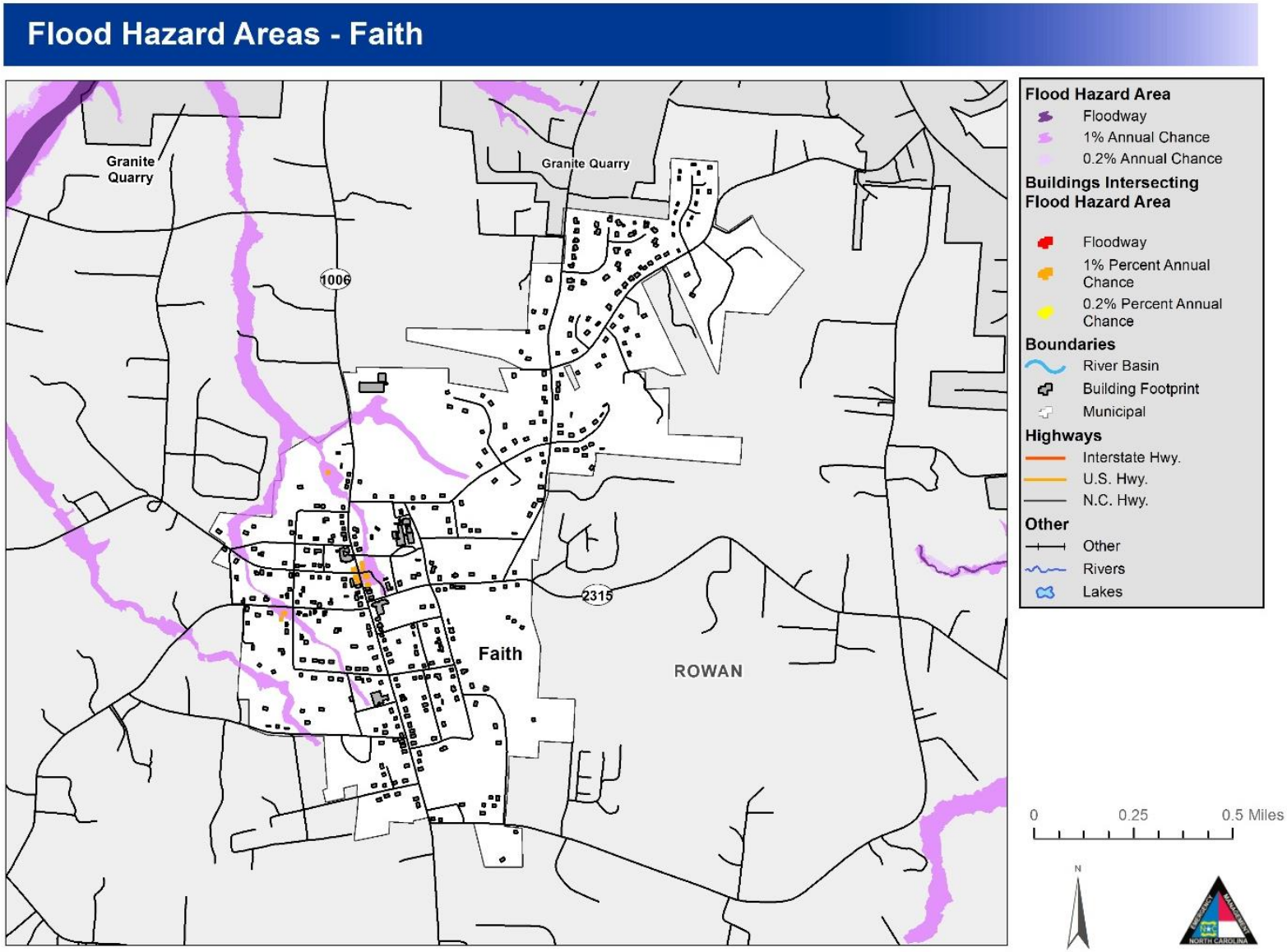


Figure 5-72: Flood Hazard Areas – Faith

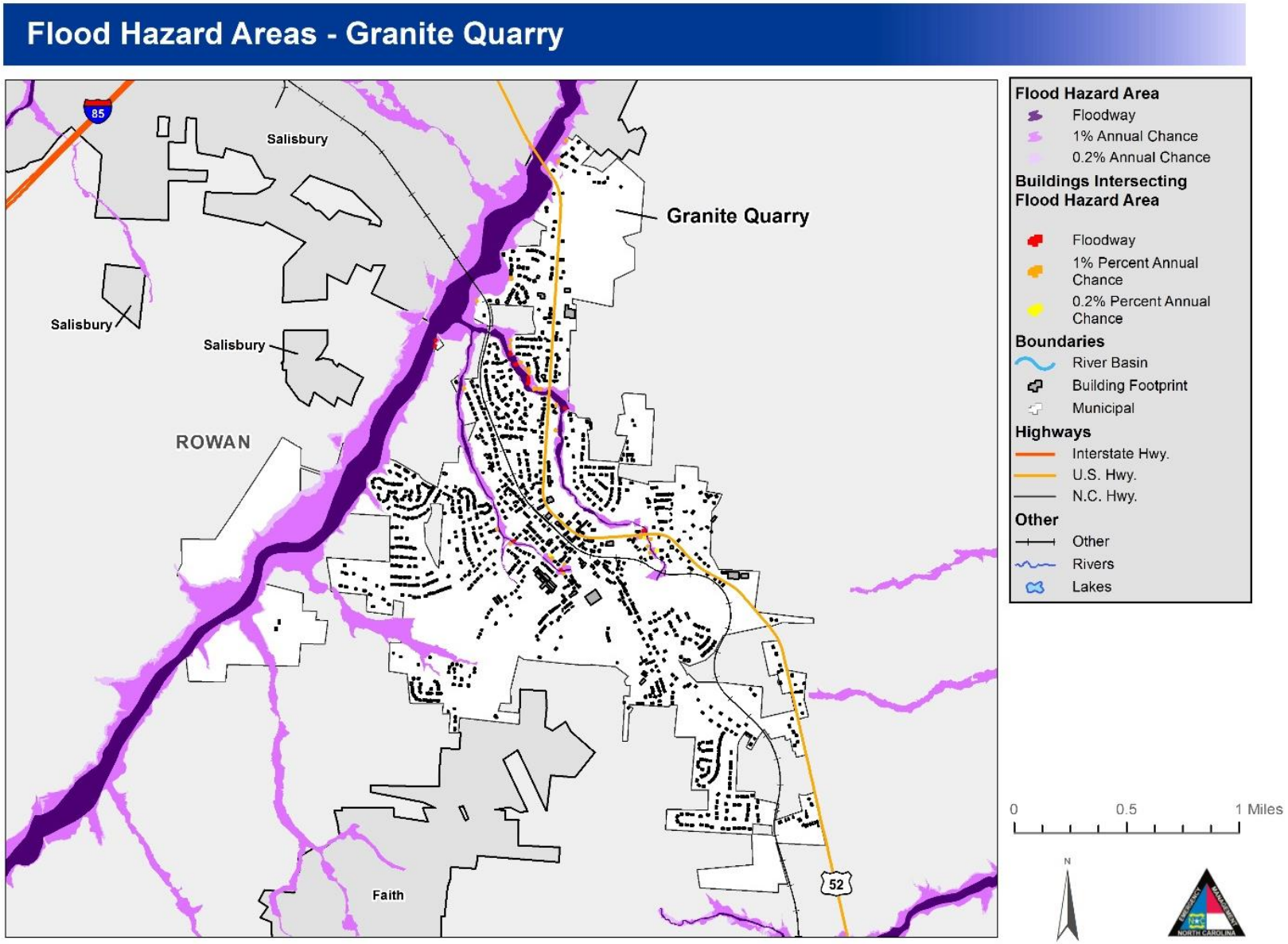


Figure 5-73: Flood Hazard Areas – Granite Quarry

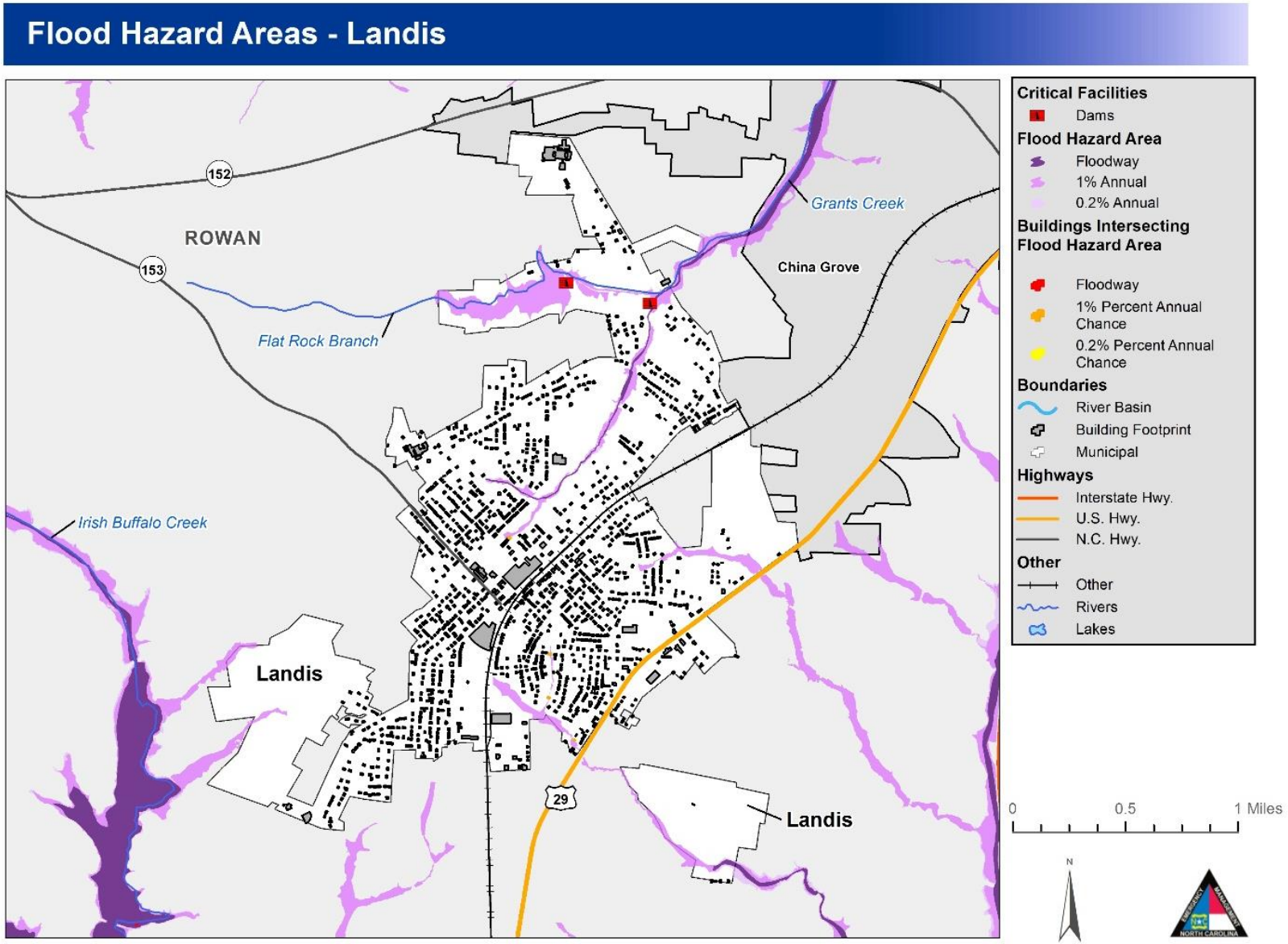


Figure 5-74: Flood Hazard Areas – Landis

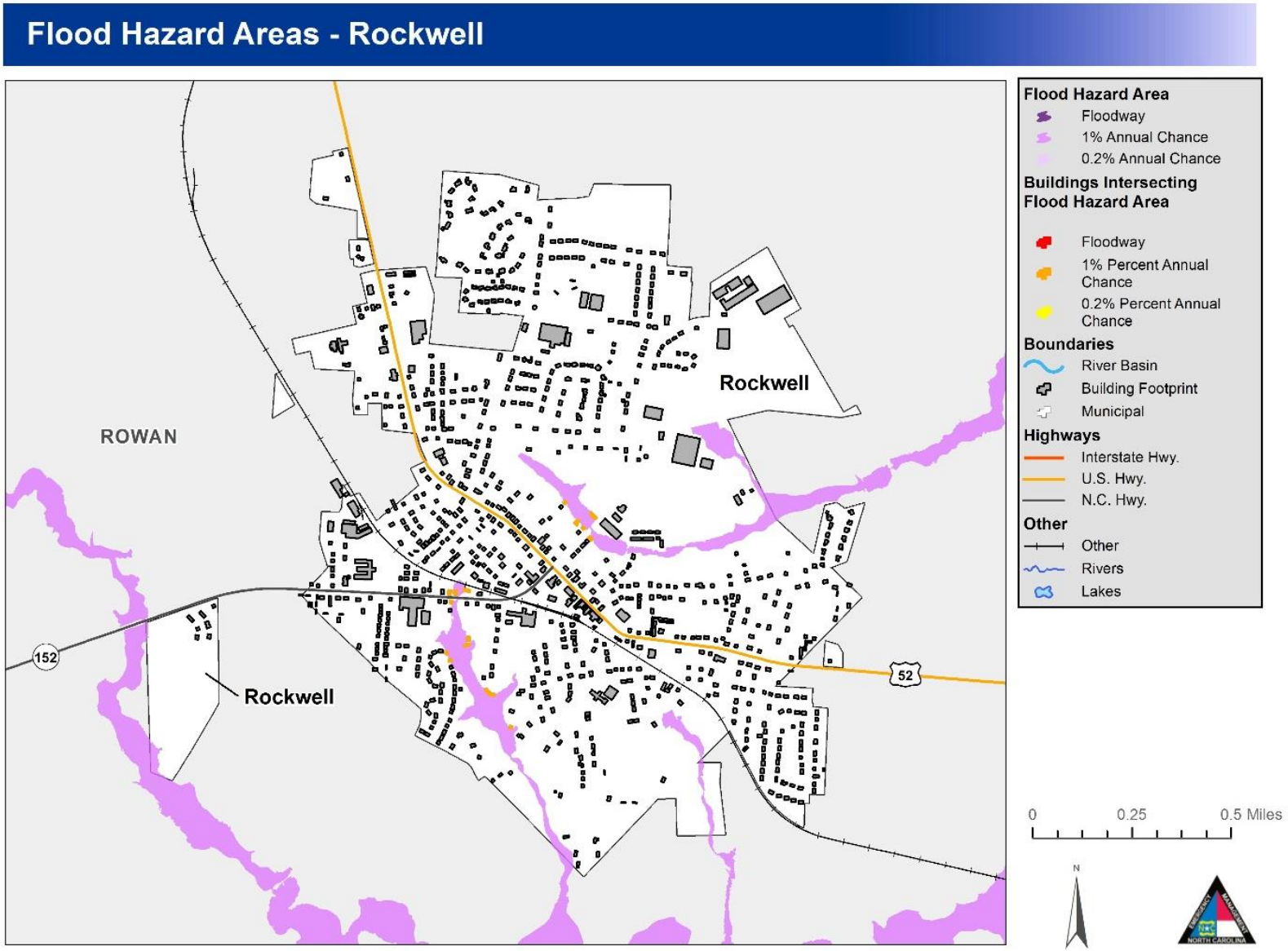


Figure 5-75: Flood Hazard Areas – Rockwell

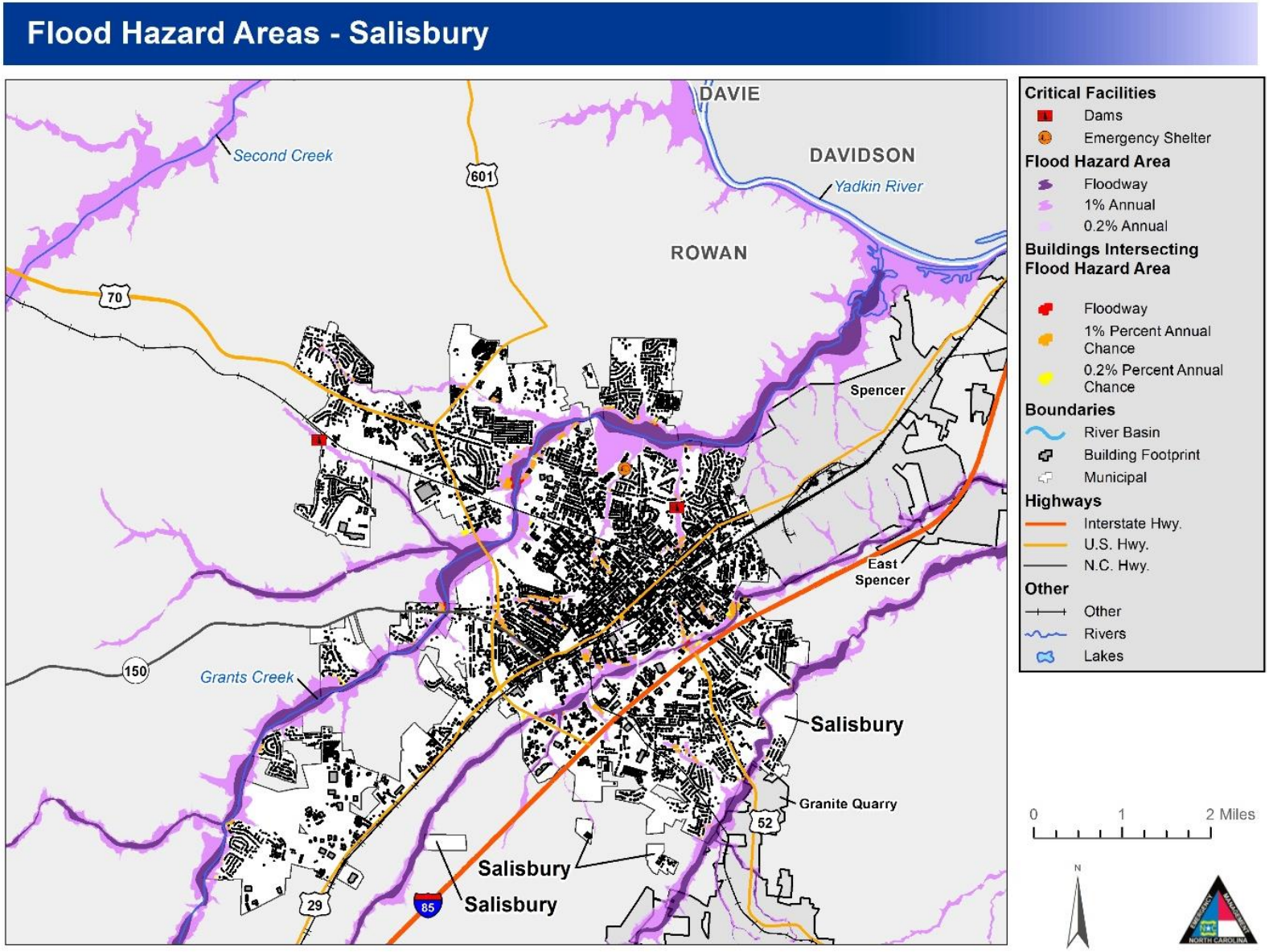


Figure 5-76: Flood Hazard Areas – Salisbury

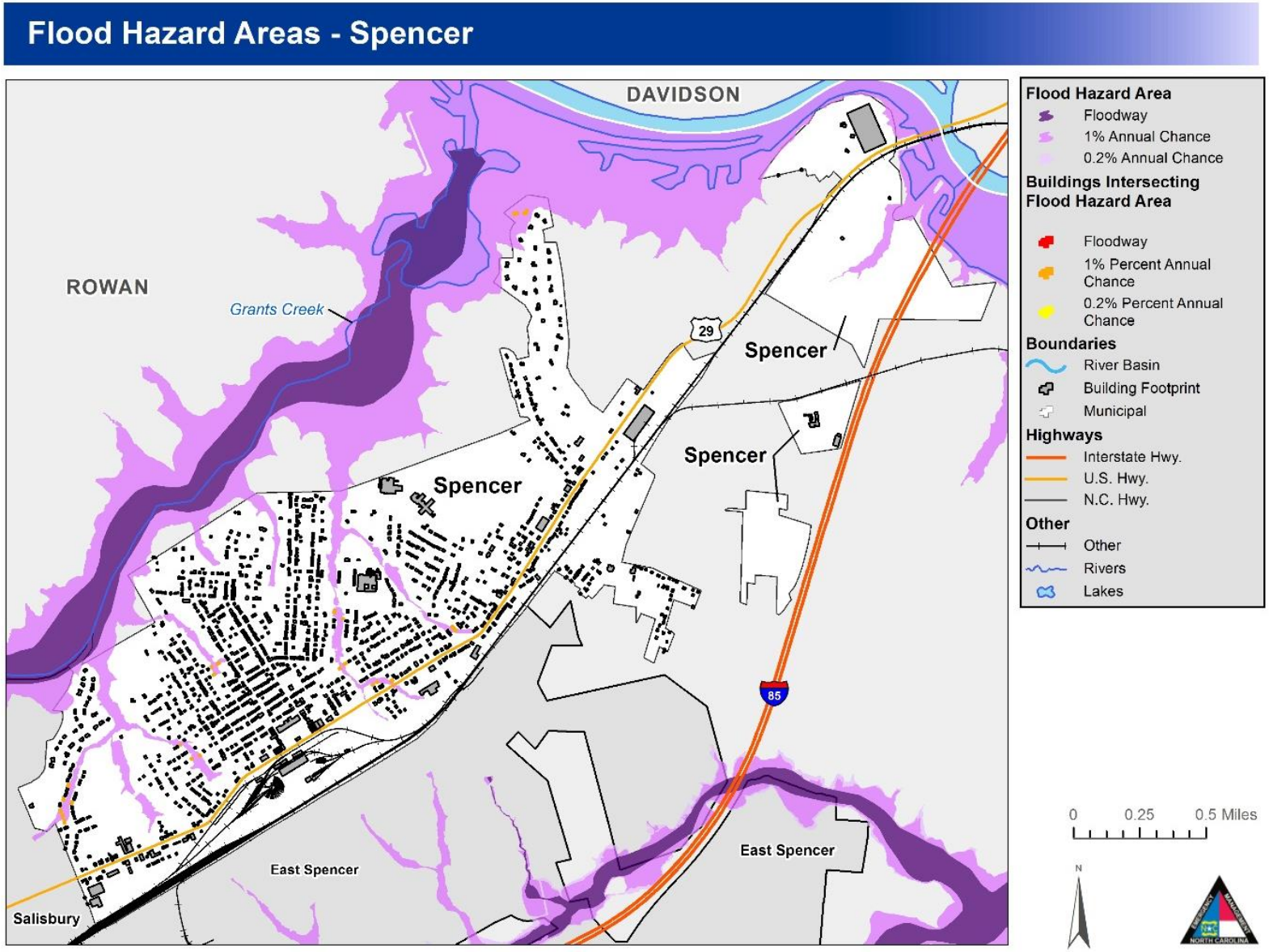
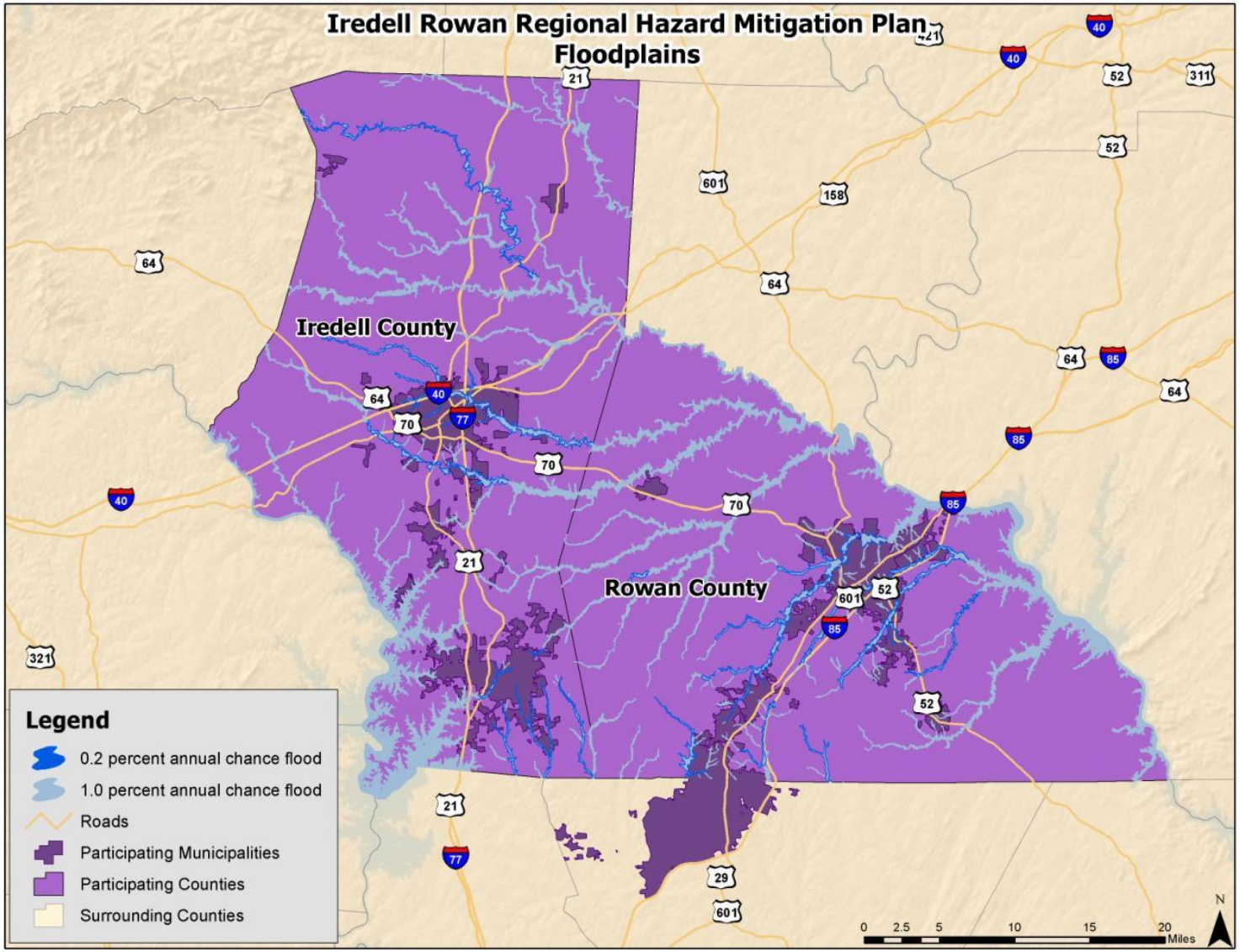


Figure 5-77: Flood Hazard Areas – Spencer

Table 5-211: Summary of Floodplain Areas in the Iredell Rowan Region

Location	100-year area (square miles)	500-year area (square miles)
Iredell County	49.99	1.09
Rowan County	46.99	0.88
IREDELL ROWAN REGION TOTAL	**96.98**	**1.97**

These flood zone values account for 8.8 percent of the total land area in the Iredell Rowan Region. It is important to note that while FEMA digital flood data is recognized as best available data for planning purposes, it does not always reflect the most accurate and up-to-date flood risk. Flooding and flood-related losses often do occur outside of delineated special flood hazard areas. **Figure 5-78** illustrates the location and extent of currently mapped special flood hazard areas for the Iredell Rowan Region based on best available FEMA DFIRM data.



Source: Federal Emergency Management Agency

Figure 5-78: Special Flood Hazard Areas in the Iredell Rowan Region

5.16.3 Extent

The following table provide peak river stage data according to USGS which shows the highest recorded peak river stage for all jurisdictions.

Table 5-212: USGS Peak River Stage Data

Community	Flood Extent (Peak streamflow or Highest BFE) & NRI Flood Risk Index	Source (National Risk Index is a source for all)	Anecdotal recollections of first responders and public works engineers
Iredell			
Iredell County	1,113.2 ft; Relatively Low 10.93 ft	FIRM Panel 3710480300K	Less than 1ft of backwater flooding street and local roadways
Harmony	795.17 ft; Very Low 9.62 ft	USGS 02118500 HUNTING CREEK NEAR HARMONY, NC & Iredell County Effective FIS Report	Less than a half foot of backwater flooding street and local roadways
Love Valley	N/A; Very Low 7.04 ft	No available flood data	Less than a half foot of backwater flooding street and local roadways
Mooresville	832.1 ft; Relatively Low 8.82 ft	FIRM Panel 3710466700J	Less than 1ft of backwater flooding street and local roadways
Statesville	754.22 ft; Relatively Moderate 13.44 ft	USGS 02117410 MCCLELLAND CREEK NEAR STATESVILLE, NC & Iredell County Effective FIS Report	Between 2-4 feet of backwater flooding street and local roadways
Troutman	908.7 ft; Relatively Low 5.47 ft	FIRM Panel 3710473100J	Less than 1ft of backwater flooding street and local roadways
Rowan			
Rowan County	865.1 ft; Relatively Moderate 15.27 ft	FIRM Panel 3710560600J	Between 2-4 feet of backwater flooding street and local roadways
China Grove	767.7 ft; Relatively Moderate 13.34 ft	FIRM Panel 3710563600J	Between 2-4 feet of backwater flooding street and local roadways
Cleveland	706.9 ft; Relatively Moderate 14.48 ft	USGS 02120500 THIRD CREEK AT CLEVELAND, NC	Between 2-4 feet of backwater flooding street and local roadways
East Spencer	713.6 ft; Relatively Low 10.79 ft	FIRM Panel 3710563600J	Less than 1ft of backwater flooding street and local roadways
Faith	866.1 ft; Relatively Moderate 13.61 ft	FIRM Panel 3710566700J	Between 2-4 feet of backwater flooding street and local roadways

Community	Flood Extent (Peak streamflow or Highest BFE) & NRI Flood Risk Index	Source (National Risk Index is a source for all)	Anecdotal recollections of first responders and public works engineers
Granite Quarry	830.8 ft; Relatively Moderate 13.61 ft	FIRM Panel 3710567800J	Between 2-4 feet of backwater flooding street and local roadways
Landis	835.3 ft; Relatively Moderate 15.00 ft	FIRM Panel 3710561500K	Between 2-4 feet of backwater flooding street and local roadways
Rockwell	764.3 ft; Relatively Low 10.87 ft	FIRM Panel 3710568500J	Less than 1ft of backwater flooding street and local roadways
Salisbury	746.6 ft; Relatively High 20.82 ft	FIRM Panel 3710576000J	Greater than 4 feet of backwater flooding street and local roadways
Spencer	711 ft; Relatively Moderate 13.09 ft	FIRM Panel 3710577000J	Between 2-4 feet of backwater flooding street and local roadways

5.16.4 Historical Occurrences

The following historical occurrences ranging from 2005 to 2019 have been identified based on the National Climatic Data Center (NCDC) Storm Events database **Table 5-213**. 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 5-213: Historical Occurrences of River Flooding (2005 to 2019)

Location	Date	Type	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
Iredell								
City of Statesville	07/07/05	Flash Flood	0	0	0	$0	0	$0
City of Statesville	08/03/16	Flash Flood	0	0	$300,000	$267,528	$0	$0
City of Statesville	08/03/16	Flood	0	0	$1,000	$892	$0	$0
Iredell County (Unincorporated Area)	05/26/09	Flash Flood	0	0	$10,000	$6,961	$0	$0
Iredell County (Unincorporated Area)	05/26/09	Flood	0	0	$0	$0	$0	$0

Location	Date	Type	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
Iredell County (Unincorporated Area)	01/24/10	Flash Flood	0	0	$0	$0	$0	$0
Iredell County (Unincorporated Area)	01/25/10	Flood	0	0	$0	$0	$0	$0
Iredell County (Unincorporated Area)	07/27/13	Flash Flood	0	0	$0	$0	$0	$0
Iredell County (Unincorporated Area)	08/02/18	Flash Flood	0	0	$30,000	$28,648	$0	$0
Iredell County (Unincorporated Area)	10/11/18	Flash Flood	0	0	$5,000	$4,806	$0	$0
Iredell County (Unincorporated Area)	06/09/19	Flood	0	0	$50,000	$49,164	$0	$0
Town of Mooresville	07/03/05	Flash Flood	0	0	0	$0	0	$0
Subtotal Iredell	**12 Events**		**0**	**0**	**$396,000**	**$358,000**	**$0**	**$0**
Rowan								
City of Salisbury	07/04/05	Flash Flood	0	0	$20,000	$12,178	0	$0
City of Salisbury	01/25/10	Flash Flood	0	0	$20,000	$14,247	$0	$0
Rowan County (Unincorporated Area)	06/09/05	Flash Flood	0	0	0	$0	0	$0
Rowan County (Unincorporated Area)	08/27/08	Flash Flood	0	0	$0	$0	$0	$0
Rowan County (Unincorporated Area)	08/27/08	Flash Flood	0	0	$1,000,000	$678,613	$0	$0
Rowan County (Unincorporated Area)	08/27/08	Flood	0	0	$0	$0	$0	$0
Rowan County (Unincorporated Area)	08/27/08	Flood	0	0	$0	$0	$0	$0
Rowan County (Unincorporated Area)	08/19/10	Flash Flood	0	0	$0	$0	$0	$0

Location	Date	Type	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
Rowan County (Unincorporated Area)	08/19/10	Flood	0	0	$0	$0	$0	$0
Rowan County (Unincorporated Area)	10/03/15	Flash Flood	0	0	$1,000	$866	$0	$0
Rowan County (Unincorporated Area)	07/03/17	Flash Flood	0	0	$1,000	$920	$0	$0
Town of Rockwell	09/16/18	Flash Flood	0	0	$5,000	$4,796	$0	$0
Town of Rockwell	09/16/18	Flood	0	0	$500	$480	$0	$0
Subtotal Rowan	**13 Events**		**0**	**0**	**$1,047,500**	**$712,101**	**$0**	**$0**
TOTAL PLAN	**25 Events**		**0**	**0**	**$1,443,500**	**$1,070,101**	**$0**	**$0**

Source: National Climatic Data Center (NCDC) Storm Events Database and or potential user entered data.

According to NCDC 25 recorded instances of River Flooding conditions have affected the planning area since 2005 causing an estimated $1,443,500 in losses to property, $0 in losses to agricultural crops, 0 death(s), and 0 injury(ies).

Table 5-214 provides a summary of this historical information by participating jurisdiction. It is important to note that many of the events attributed to the county are countywide or cover large portions of the county. The individual counts by jurisdiction are for those events that are only attributed to that one jurisdiction.

Table 5-214: Summary of Historical River Flooding Occurrences by Participating Jurisdiction

Jurisdiction	Number of Occurrences	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
Iredell							
City of Statesville	3	0	0	$301,000	$183,285	$0	$0
Iredell County (Unincorporated Area)	8	0	0	$95,000	$66,130	$0	$0

Jurisdiction	Number of Occurrences	Deaths	Injuries	Reported Property Damage	Reported Property Damage (PV)	Reported Crop Damage	Reported Crop Damage (PV)
Town of Mooresville	1	0	0	0	$0	0	$0
Subtotal Iredell	**12**	**0**	**0**	**$396,000**	**$249,415**	**$0**	**$0**
Rowan							
City of Salisbury	2	0	0	$40,000	$24,357	$0	$0
Rowan County (Unincorporated Area)	9	0	0	$1,002,000	$608,670	$0	$0
Town of Rockwell	2	0	0	$5,500	$5,276	$0	$0
Subtotal Rowan	**13**	**0**	**0**	**$1,047,500**	**$638,303**	**$0**	**$0**
TOTAL PLAN	**25**	**0**	**0**	**$1,443,500**	**$887,718**	**$0**	**$0**

Source: National Climatic Data Center (NCDC) Storm Events Database and or potential user entered data.

5.16.5 Historical Summary of Insured Flood Losses

According to FEMA flood insurance policy records , there have been 69 flood losses reported in the Iredell Rowan Region through the National Flood Insurance Program (NFIP) since 1978, totaling more than $1.3 million in claims payments. A summary of these figures for each jurisdiction is provided in **Table 5-215**. It should be emphasized that these numbers include only those losses to structures that were insured through the NFIP policies, and for losses in which claims were sought and received. It is likely that many additional instances of flood loss in the Iredell Rowan Region were either uninsured, denied claims payment, or not reported.

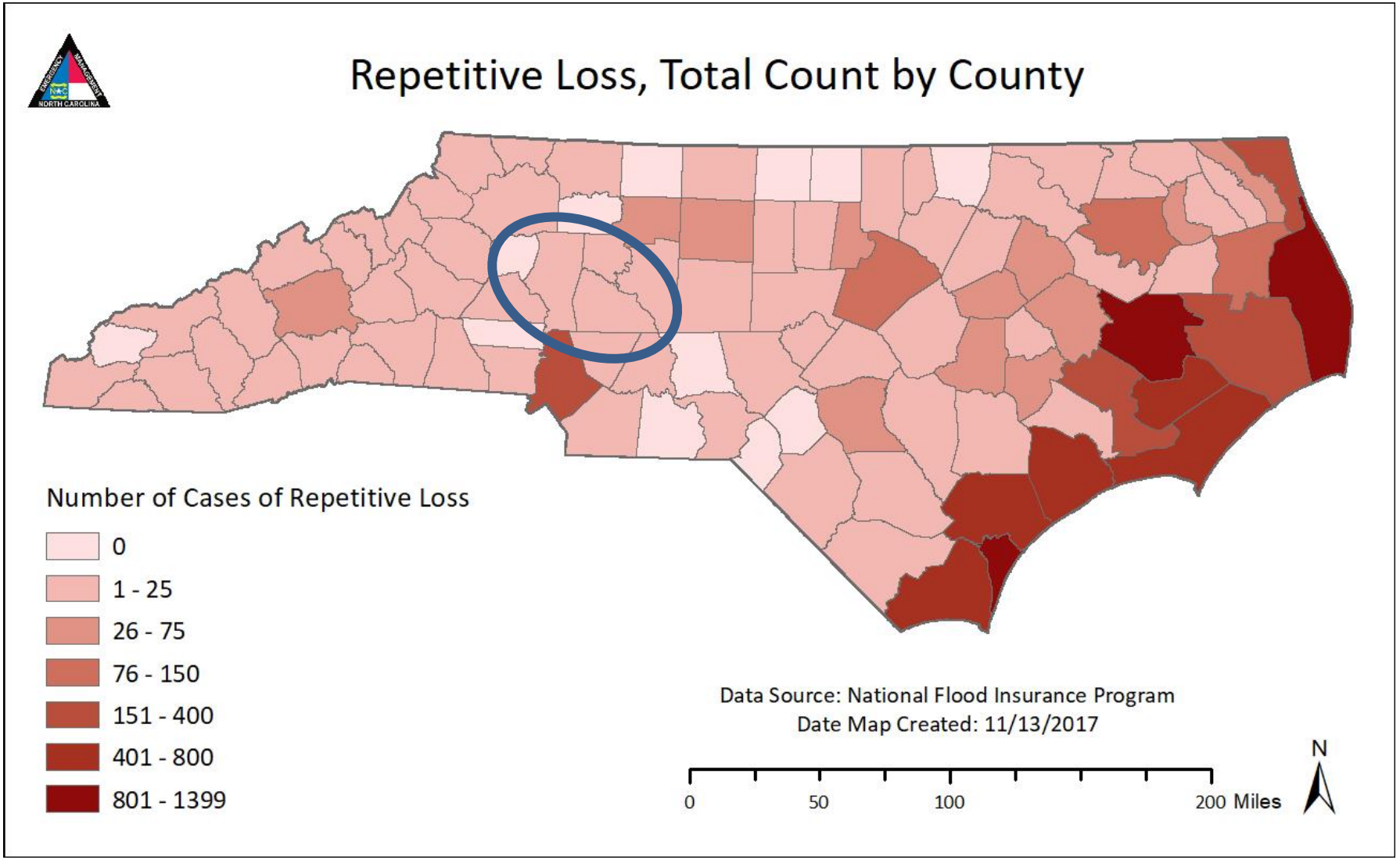
Table 5-215: Community Data for NFIP

County	CID	Community	Policies in Force	Insurance in Force	Total Losses	Total Payments
Iredell						
Iredell	370313	Iredell County	84	$25,364,200.00	12	$ 71,478.00
Iredell	370314	Mooresville	29	$7,353,700.00		$ -
Iredell	370135	Statesville	35	$9,368,900.00	19	$ 880,368.00
Iredell	370626	Troutman	1	$1,000,000.00		$ -
Iredell	370654	Love Valley	0	$0.00	0	$ -
Iredell	370681	Harmony	0	0	0	$ -
Rowan						
Rowan	370352	Faith	1	$108,000.00		$ -
Rowan	370212	Granite Quarry	17	$3,770,800.00	5	$ 63,935.00
Rowan	370213	Landis	1	$67,900.00		$ -
Rowan	370214	Rockwell	7	$1,471,300.00	1	$ 700.00
Rowan	370351	Rowan County	79	$20,509,500.00	11	$ 184,795.00
Rowan	370215	Salisbury	102	$27,463,200.00	20	$ 130,091.00
Rowan	370210	China Grove	0	$0.00	0	$ -
Rowan	370097	Cleveland	0	$0.00	0	$ -
Rowan	370211	East Spencer	0	$0.00	0	$ -
Rowan	370216	Spencer	4	$690,400.00	1	$ -
TOTAL:						**$ 1,331,367.00**

Source: North Carolina State Hazard Mitigation Plan

5.16.6 Repetitive Loss Properties

FEMA defines a repetitive loss property as any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling 10-year period, since 1978. A repetitive loss property may or may not be currently insured by the NFIP. Currently there are over 140,000 repetitive loss properties nationwide. The map below depicts a Summary of North Carolina Repetitive Loss Properties by County.



Source: North Carolina State Hazard Mitigation Plan

Figure 5-79: Repetitive Loss, Total County by County

According to FEMA records compiled as of September 30, 2017, there are 130,282 flood insurance policies in force in the state of North Carolina, with more than $32 billion in coverage and almost $ 108 million of annual premiums in force. There have been 83,390 claims under the NFIP totaling over $1.2 billion. 27,461 of those claims were closed without payment.

Currently (as of August 2019), there are five non-mitigated repetitive loss properties located in the Iredell Rowan Region. All five of the properties are single family residential buildings. Without mitigation these properties will likely continue to experience flood losses. **Table 5-216** presents a summary of these figures for the Iredell Rowan Region.

Table 5-216: Summary of Repetitive Loss Properties in the Iredell Rowan Region

Location	Residential	Commercial
Iredell County	**1**	**0**
Harmony*	--	--
Love Valley*	--	--
Mooresville	0	0
Statesville	0	0
Troutman	0	0
Unincorporated Area	1	0
Rowan County	**4**	**0**
China Grove	0	0
Cleveland	0	0
East Spencer	0	0
Faith	0	0
Granite Quarry	1	0
Landis	0	0
Rockwell	0	0
Salisbury	3	0
Spencer	0	0
Unincorporated Area	0	0
IREDELL ROWAN REGION TOTAL	**5**	**0**

County	Residential Rep Loss	Commercial Rep Loss	Total Rep Loss	RL Property Increase from 2012-2017	# of Validated SRL Properties
Iredell	1	0	1	0	0
Rowan	4	0	4	0	0

Source: North Carolina State Hazard Mitigation Plan

5.16.7 Probability of Future Occurrences

Based on the analyses performed in IRISK, the probability of future River Flooding is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Less Than 1% Of Buildings Are In 100-Year Floodplain
- Between 1% And 10% Of Buildings Are In 100-Year Floodplain
- More Than 10% Of Buildings Are In 100-Year Floodplain

Jurisdiction	IRISK Probability of Future Occurrence
City of Salisbury	Medium
City of Statesville	Low
Iredell County (Unincorporated Area)	Low
Rowan County (Unincorporated Area)	Medium
Town of China Grove	Low
Town of Cleveland	Low
Town of East Spencer	Medium
Town of Faith	Low
Town of Granite Quarry	Medium
Town of Harmony	Low
Town of Landis	Low
Town of Love Valley	Low

Jurisdiction	IRISK Probability of Future Occurrence
Town of Mooresville	Low
Town of Rockwell	Low
Town of Spencer	Medium
Town of Troutman	Low

Flood events will remain a threat in the Iredell Rowan Region, and the probability of future occurrences will remain likely (between 10 and 100 percent annual probability). The probability of future flood events based on magnitude and according to best available data is illustrated in the figures above**,** which indicates those areas susceptible to the 1-percent annual chance flood (100-year floodplain) and the 0.2-percent annual chance flood (500-year floodplain).

Flooding Hazard Vulnerability and Impact

The Region is vulnerable to the flood hazard. In order to quantify potential future flood hazard vulnerability, a similar detailed GIS analysis of the study area as completed for current flood vulnerability was performed using best available GIS data including the future Community 100-year Floodplain to identify the number and value of existing structures that may be located in future flood hazards areas as expanded due to anticipated "build-out" conditions (i.e., fully developed according to zoning and future land use projections). In order to quantify potentially at-risk properties, all buildings of at least 600 square feet (eliminating those that are likely accessory structures versus habitable buildings) that intersected with delineated future floodplain areas were identified. The exposure analysis does not include any estimates for new structures that will be constructed and located in the floodplain, as it is assumed that new construction will be protected against the 100-year flood according to local development regulations that include reference to future Community 100-year Floodplain maps.

During floods (especially flash floods), roads, bridges, farms, houses and automobiles can be adversely impacted. Additionally, the local government must deploy firemen, police and other emergency response personnel and equipment to help the affected area. It may take years for the affected communities to be re-built and business to return to normal. Certain health hazards are common to flood events. While such problems are often not reported, three general types of health hazards accompany floods. The first comes from the water itself. Floodwaters carry anything that was on the ground that the upstream runoff picked up, including dirt, oil, animal waste, and lawn, farm and industrial chemicals. Pastures and areas where farm animals are kept, or their wastes are stored can contribute polluted waters to the receiving streams.

Floodwaters also saturate the ground, which leads to infiltration into sanitary sewer lines. When wastewater treatment plants are flooded, there is nowhere for the sewage to flow. Infiltration and lack of treatment can lead to overloaded sewer lines that can back up into low-lying

areas and homes. Even when it is diluted by flood waters, raw sewage can be a breeding ground for bacteria such as E.coli and other disease-causing agents.

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

Another health hazard occurs when heating ducts in a forced air system are not properly cleaned after inundation. When the furnace or air conditioner is turned on, the sediments left in the ducts are circulated throughout the building and breathed in by the occupants. If the City water system loses pressure, a boil order may be issued to protect people and animals from contaminated water.

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

The following tables provide counts and values by jurisdiction relevant to River Flooding hazard vulnerability in the Iredell-Rowan Regional HMP Area.

Table 5-217: Population Impacted by the 10 Year River Flooding

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	0	0%	3,740	0	0%	1,825	0	0%
Iredell County (Unincorporated Area)	87,091	0	0%	11,168	0	0%	5,449	0	0%
Town of Harmony	525	0	0%	67	0	0%	33	0	0%
Town of Love Valley	100	0	0%	13	0	0%	6	0	0%
Town of Mooresville	38,203	0	0%	4,899	0	0%	2,390	0	0%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Troutman	4,068	0	0%	522	0	0%	254	0	0%
Subtotal Iredell	**159,434**	**0**	**0%**	**20445**	**0**	**0%**	**9975**	**0**	**0%**
Rowan									
City of Salisbury	35,981	0	0%	5,193	0	0%	2,349	0	0%
Rowan County (Unincorporated Area)	63,003	0	0%	9,092	0	0%	4,113	0	0%
Town of China Grove	5,344	0	0%	771	0	0%	349	0	0%
Town of Cleveland	1,219	0	0%	176	0	0%	80	0	0%
Town of East Spencer	1,726	0	0%	249	0	0%	113	0	0%
Town of Faith	3,288	0	0%	475	0	0%	215	0	0%
Town of Granite Quarry	4,957	0	0%	715	0	0%	324	0	0%
Town of Landis	3,124	0	0%	451	0	0%	204	0	0%
Town of Rockwell	4,767	0	0%	688	0	0%	311	0	0%
Town of Spencer	3,840	0	0%	554	0	0%	251	0	0%
Subtotal Rowan	**138,538**	**61**	**0%**	**19993**	**7**	**0%**	**9046**	**4**	**0%**
TOTAL PLAN	**297,972**	**61**	**0%**	**40438**	**7**	**0%**	**19021**	**4**	**0%**

Source: GIS Analysis

Table 5-218: Population Impacted by the 25 Year River Flooding

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	0	0%	3,740	0	0%	1,825	0	0%
Iredell County (Unincorporated Area)	87,091	0	0%	11,168	0	0%	5,449	0	0%
Town of Harmony	525	0	0%	67	0	0%	33	0	0%
Town of Love Valley	100	0	0%	13	0	0%	6	0	0%
Town of Mooresville	38,203	0	0%	4,899	0	0%	2,390	0	0%
Town of Troutman	4,068	0	0%	522	0	0%	254	0	0%
Subtotal Iredell	**159,434**	**0**	**0%**	**20445**	**0**	**0%**	**9975**	**0**	**0%**
Rowan									
City of Salisbury	35,981	0	0%	5,193	0	0%	2,349	0	0%
Rowan County (Unincorporated Area)	63,003	0	0%	9,092	0	0%	4,113	0	0%
Town of China Grove	5,344	0	0%	771	0	0%	349	0	0%
Town of Cleveland	1,219	0	0%	176	0	0%	80	0	0%
Town of East Spencer	1,726	0	0%	249	0	0%	113	0	0%
Town of Faith	3,288	0	0%	475	0	0%	215	0	0%
Town of Granite Quarry	4,957	0	0%	715	0	0%	324	0	0%
Town of Landis	3,124	0	0%	451	0	0%	204	0	0%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Rockwell	4,767	0	0%	688	0	0%	311	0	0%
Town of Spencer	3,840	0	0%	554	0	0%	251	0	0%
Subtotal Rowan	**138,538**	**125**	**0.1%**	**19993**	**15**	**0.1%**	**9046**	**9**	**0.1%**
TOTAL PLAN	**297,972**	**125**	**0%**	**40438**	**15**	**0%**	**19021**	**9**	**0%**

Source: GIS Analysis

Table 5-219: Population Impacted by the 50 Year River Flooding

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	0	0%	3,740	0	0%	1,825	0	0%
Iredell County (Unincorporated Area)	87,091	0	0%	11,168	0	0%	5,449	0	0%
Town of Harmony	525	0	0%	67	0	0%	33	0	0%
Town of Love Valley	100	0	0%	13	0	0%	6	0	0%
Town of Mooresville	38,203	0	0%	4,899	0	0%	2,390	0	0%
Town of Troutman	4,068	0	0%	522	0	0%	254	0	0%
Subtotal Iredell	**159,434**	**0**	**0%**	**20445**	**0**	**0%**	**9975**	**0**	**0%**
Rowan									

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
City of Salisbury	35,981	0	0%	5,193	0	0%	2,349	0	0%
Rowan County (Unincorporated Area)	63,003	0	0%	9,092	0	0%	4,113	0	0%
Town of China Grove	5,344	0	0%	771	0	0%	349	0	0%
Town of Cleveland	1,219	0	0%	176	0	0%	80	0	0%
Town of East Spencer	1,726	0	0%	249	0	0%	113	0	0%
Town of Faith	3,288	0	0%	475	0	0%	215	0	0%
Town of Granite Quarry	4,957	0	0%	715	0	0%	324	0	0%
Town of Landis	3,124	0	0%	451	0	0%	204	0	0%
Town of Rockwell	4,767	0	0%	688	0	0%	311	0	0%
Town of Spencer	3,840	0	0%	554	0	0%	251	0	0%
Subtotal Rowan	**138,538**	**160**	**0.1%**	**19993**	**19**	**0.1%**	**9046**	**11**	**0.1%**
TOTAL PLAN	**297,972**	**160**	**0.1%**	**40438**	**19**	**0%**	**19021**	**11**	**0.1%**

Source: GIS Analysis

Table 5-220: Population Impacted by the 100 Year River Flooding

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
City of Statesville	29,163	77	0.3%	3,740	10	0.3%	1,825	5	0.3%
Iredell County (Unincorporated Area)	87,091	221	0.3%	11,168	28	0.3%	5,449	14	0.3%
Town of Harmony	525	0	0%	67	0	0%	33	0	0%
Town of Love Valley	100	0	0%	13	0	0%	6	0	0%
Town of Mooresville	38,203	3	0%	4,899	0	0%	2,390	0	0%
Town of Troutman	4,068	4	0.1%	522	0	0%	254	0	0%
Subtotal Iredell	**159,434**	**305**	**0.2%**	**20445**	**38**	**0.2%**	**9975**	**19**	**0.2%**
Rowan									
City of Salisbury	35,981	746	2.1%	5,193	108	2.1%	2,349	49	2.1%
Rowan County (Unincorporated Area)	63,003	536	0.9%	9,092	77	0.8%	4,113	35	0.9%
Town of China Grove	5,344	2	0%	771	0	0%	349	0	0%
Town of Cleveland	1,219	3	0.2%	176	0	0%	80	0	0%
Town of East Spencer	1,726	13	0.8%	249	2	0.8%	113	1	0.9%
Town of Faith	3,288	7	0.2%	475	1	0.2%	215	0	0%
Town of Granite Quarry	4,957	71	1.4%	715	10	1.4%	324	5	1.5%
Town of Landis	3,124	0	0%	451	0	0%	204	0	0%
Town of Rockwell	4,767	15	0.3%	688	2	0.3%	311	1	0.3%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of Spencer	3,840	54	1.4%	554	8	1.4%	251	4	1.6%
Subtotal Rowan	**138,538**	**1,742**	**1.3%**	**19993**	**244**	**1.2%**	**9046**	**116**	**1.3%**
TOTAL PLAN	**297,972**	**2,047**	**0.7%**	**40438**	**282**	**0.7%**	**19021**	**135**	**0.7%**

Source: GIS Analysis

Table 5-221: Population Impacted by the Floodway

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	0	0%	3,740	0	0%	1,825	0	0%
Iredell County (Unincorporated Area)	87,091	0	0%	11,168	0	0%	5,449	0	0%
Town of Harmony	525	0	0%	67	0	0%	33	0	0%
Town of Love Valley	100	0	0%	13	0	0%	6	0	0%
Town of Mooresville	38,203	0	0%	4,899	0	0%	2,390	0	0%
Town of Troutman	4,068	0	0%	522	0	0%	254	0	0%
Subtotal Iredell	**159,434**	**0**	**0%**	**20445**	**0**	**0%**	**9975**	**0**	**0%**
Rowan									
City of Salisbury	35,981	0	0%	5,193	0	0%	2,349	0	0%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Rowan County (Unincorporated Area)	63,003	0	0%	9,092	0	0%	4,113	0	0%
Town of China Grove	5,344	0	0%	771	0	0%	349	0	0%
Town of Cleveland	1,219	0	0%	176	0	0%	80	0	0%
Town of East Spencer	1,726	0	0%	249	0	0%	113	0	0%
Town of Faith	3,288	0	0%	475	0	0%	215	0	0%
Town of Granite Quarry	4,957	0	0%	715	0	0%	324	0	0%
Town of Landis	3,124	0	0%	451	0	0%	204	0	0%
Town of Rockwell	4,767	0	0%	688	0	0%	311	0	0%
Town of Spencer	3,840	0	0%	554	0	0%	251	0	0%
Subtotal Rowan	**138,538**	**0**	**0%**	**19993**	**0**	**0%**	**9046**	**0**	**0%**
TOTAL PLAN	**297,972**	**0**	**0%**	**40438**	**0**	**0%**	**19021**	**0**	**0%**

Source: GIS Analysis

Table 5-222: Population Impacted by the 500 Year River Flooding

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	0	0%	3,740	0	0%	1,825	0	0%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell County (Unincorporated Area)	87,091	0	0%	11,168	0	0%	5,449	0	0%
Town of Harmony	525	0	0%	67	0	0%	33	0	0%
Town of Love Valley	100	0	0%	13	0	0%	6	0	0%
Town of Mooresville	38,203	0	0%	4,899	0	0%	2,390	0	0%
Town of Troutman	4,068	0	0%	522	0	0%	254	0	0%
Subtotal Iredell	**159,434**	**18**	**0%**	**20445**	**2**	**0%**	**9975**	**1**	**0%**
Rowan									
City of Salisbury	35,981	0	0%	5,193	0	0%	2,349	0	0%
Rowan County (Unincorporated Area)	63,003	0	0%	9,092	0	0%	4,113	0	0%
Town of China Grove	5,344	0	0%	771	0	0%	349	0	0%
Town of Cleveland	1,219	0	0%	176	0	0%	80	0	0%
Town of East Spencer	1,726	0	0%	249	0	0%	113	0	0%
Town of Faith	3,288	0	0%	475	0	0%	215	0	0%
Town of Granite Quarry	4,957	0	0%	715	0	0%	324	0	0%
Town of Landis	3,124	0	0%	451	0	0%	204	0	0%
Town of Rockwell	4,767	0	0%	688	0	0%	311	0	0%
Town of Spencer	3,840	0	0%	554	0	0%	251	0	0%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Subtotal Rowan	**138,538**	**330**	**0.2%**	**19993**	**40**	**0.2%**	**9046**	**23**	**0.3%**
TOTAL PLAN	**297,972**	**348**	**0.1%**	**40438**	**42**	**0.1%**	**19021**	**24**	**0.1%**

Source: GIS Analysis

Table 5-223: Buildings Impacted by the 10 Year River Flooding

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Iredell County (Unincorporated Area)	55,474	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Harmony	444	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Love Valley	258	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Mooresville	14,440	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Troutman	2,439	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Iredell	**87,309**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
Rowan															
City of Salisbury	13,960	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Rowan County (Unincorporated Area)	38,881	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of China Grove	2,546	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Cleveland	812	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of East Spencer	1,015	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Faith	1,590	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Granite Quarry	2,350	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Landis	1,544	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Rockwell	2,402	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Spencer	2,010	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Rowan	**67,110**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
TOTAL PLAN	**154,419**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**

Source: GIS Analysis

Table 5-224: Buildings Impacted by the 25 Year River Flooding

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell County (Unincorporated Area)	55,474	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Harmony	444	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Love Valley	258	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Mooresville	14,440	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Troutman	2,439	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Iredell	**87,309**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
Rowan															
City of Salisbury	13,960	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Rowan County (Unincorporated Area)	38,881	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of China Grove	2,546	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Cleveland	812	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of East Spencer	1,015	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Faith	1,590	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Granite Quarry	2,350	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Landis	1,544	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Rockwell	2,402	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Spencer	2,010	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Rowan	**67,110**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
TOTAL PLAN	**154,419**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**

Source: GIS Analysis

Table 5-225: Buildings Impacted by the 50 Year River Flooding

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Iredell County (Unincorporated Area)	55,474	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Harmony	444	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Love Valley	258	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Mooresville	14,440	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Troutman	2,439	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Iredell	**87,309**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
Rowan															
City of Salisbury	13,960	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Rowan County (Unincorporated Area)	38,881	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of China Grove	2,546	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Cleveland	812	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of East Spencer	1,015	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Faith	1,590	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Granite Quarry	2,350	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Landis	1,544	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Rockwell	2,402	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Spencer	2,010	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Rowan	**67,110**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
TOTAL PLAN	**154,419**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**

Source: GIS Analysis

Table 5-226: Buildings Impacted by the 100 Year River Flooding

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
City of Statesville	14,254	29	0.2%	28	0.2%	$387,716	18	0.1%	$2,064,387	1	0%	$4,244	47	0.3%	$2,456,347
Iredell County (Unincorporated Area)	55,474	76	0.1%	136	0.2%	$586,441	8	0%	$117,768	1	0%	$25,816	145	0.3%	$730,025
Town of Harmony	444	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Love Valley	258	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Mooresville	14,440	0	0%	1	0%	$2,640	0	0%	$0	0	0%	$0	1	0%	$2,640
Town of Troutman	2,439	2	0.1%	2	0.1%	$11,650	0	0%	$0	0	0%	$0	2	0.1%	$11,650
Subtotal Iredell	**87,309**	**107**	**0.1%**	**167**	**0.2%**	**$988,447**	**26**	**0%**	**$2,182,155**	**2**	**0%**	**$30,060**	**195**	**0.2%**	**$3,200,662**
Rowan															
City of Salisbury	13,960	234	1.7%	252	1.8%	$2,838,304	23	0.2%	$291,362	3	0%	$126,236	278	2%	$3,255,902
Rowan County (Unincorporated Area)	38,881	30	0.1%	308	0.8%	$1,199,972	4	0%	$166,791	2	0%	$50,586	314	0.8%	$1,417,350
Town of China Grove	2,546	1	0%	1	0%	$10,687	0	0%	$0	0	0%	$0	1	0%	$10,687
Town of Cleveland	812	2	0.2%	2	0.2%	$27,201	0	0%	$0	0	0%	$0	2	0.2%	$27,201
Town of East Spencer	1,015	7	0.7%	7	0.7%	$89,414	0	0%	$0	0	0%	$0	7	0.7%	$89,414
Town of Faith	1,590	4	0.3%	3	0.2%	$2,369	3	0.2%	$1,364	0	0%	$0	6	0.4%	$3,732
Town of Granite Quarry	2,350	32	1.4%	31	1.3%	$167,213	3	0.1%	$4,363	0	0%	$0	34	1.4%	$171,576
Town of Landis	1,544	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Rockwell	2,402	6	0.2%	7	0.3%	$229,097	0	0%	$0	0	0%	$0	7	0.3%	$229,097
Town of Spencer	2,010	27	1.3%	26	1.3%	$510,161	1	0%	$36,615	0	0%	$0	27	1.3%	$546,776
Subtotal Rowan	**67,110**	**343**	**0.5%**	**637**	**0.9%**	**$5,074,418**	**34**	**0.1%**	**$500,495**	**5**	**0%**	**$176,822**	**676**	**1%**	**$5,751,735**
TOTAL PLAN	**154,419**	**450**	**0.3%**	**804**	**0.5%**	**$6,062,865**	**60**	**0%**	**$2,682,650**	**7**	**0%**	**$206,882**	**871**	**0.6%**	**$8,952,397**

Source: GIS Analysis

Table 5-227: Buildings Impacted by the Floodway

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Iredell County (Unincorporated Area)	55,474	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Harmony	444	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Love Valley	258	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Mooresville	14,440	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Troutman	2,439	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Iredell	**87,309**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
Rowan															

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
City of Salisbury	13,960	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Rowan County (Unincorporated Area)	38,881	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of China Grove	2,546	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Cleveland	812	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of East Spencer	1,015	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Faith	1,590	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Granite Quarry	2,350	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Landis	1,544	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Rockwell	2,402	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Spencer	2,010	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Rowan	**67,110**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
TOTAL PLAN	**154,419**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**

Source: GIS Analysis

Table 5-228: Buildings Impacted by the 500 Year River Flooding

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Iredell County (Unincorporated Area)	55,474	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Harmony	444	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Love Valley	258	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Mooresville	14,440	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Troutman	2,439	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Iredell	**87,309**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
Rowan															
City of Salisbury	13,960	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Rowan County (Unincorporated Area)	38,881	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of China Grove	2,546	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Cleveland	812	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of East Spencer	1,015	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Faith	1,590	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Granite Quarry	2,350	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Landis	1,544	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Rockwell	2,402	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Town of Spencer	2,010	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0
Subtotal Rowan	**67,110**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**
TOTAL PLAN	**154,419**	**0**	**0%**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**	**0**	**0%**	**$0**

Source: GIS Analysis

The following tables provide counts and estimated damages for CIKR buildings by jurisdiction in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event. Totals across all sectors are shown at the bottom of each table.

Table 5-229: Critical Facilities Exposed to the River Flooding - City of Statesville

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	100 Year	16	$2,021,053
Energy	100 Year	2	$1,424,094
Food and Agriculture	100 Year	1	$40,624
Government Facilities	100 Year	1	$4,244
Healthcare and Public Health	100 Year	1	$2,710
All Categories	**100 Year**	**21**	**$3,492,725**

Source: GIS Analysis

Table 5-230: Critical Facilities Exposed to the River Flooding - Iredell County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	100 Year	3	$72,832
Energy	100 Year	1	$150,000,000
Food and Agriculture	100 Year	5	$44,936
Government Facilities	100 Year	1	$25,816
Water	100 Year	3	$59,852
All Categories	**100 Year**	**13**	**$150,203,436**

Source: GIS Analysis

Table 5-231: Critical Facilities Exposed to the River Flooding - City of Salisbury

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	100 Year	1	$43,179
Commercial Facilities	100 Year	10	$183,478
Critical Manufacturing	100 Year	1	$588
Energy	100 Year	1	$4,093,027

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	100 Year	3	$126,236
Healthcare and Public Health	100 Year	11	$64,118
All Categories	**100 Year**	**27**	**$4,510,626**

Source: GIS Analysis

Table 5-232: Critical Facilities Exposed to the River Flooding - Rowan County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	100 Year	2	$17,000
Government Facilities	100 Year	2	$50,586
Transportation Systems	100 Year	2	$149,791
Water	100 Year	3	$20,000
All Categories	**100 Year**	**9**	**$237,377**

Source: GIS Analysis

Table 5-233: Critical Facilities Exposed to the River Flooding - Town of Faith

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	100 Year	3	$1,364
All Categories	**100 Year**	**3**	**$1,364**

Source: GIS Analysis

Table 5-234: Critical Facilities Exposed to the River Flooding - Town of Granite Quarry

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	100 Year	3	$4,363
All Categories	**100 Year**	**3**	**$4,363**

Source: GIS Analysis

Table 5-235: Critical Facilities Exposed to the River Flooding - Town of Spencer

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	100 Year	1	$36,615
All Categories	**100 Year**	**1**	**$36,615**

Source: GIS Analysis

The following table provides counts and estimated damages for CIKR buildings across all jurisdictions, by sector, in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event.

Table 5-236: Critical Facilities Exposed to the River Flooding (by Sector)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	10 Year	8	$466,849
Banking and Finance	25 Year	11	$730,813
Banking and Finance	50 Year	16	$1,040,284
Banking and Finance	100 Year	72	$5,410,459
Banking and Finance	Floodway	1	$48,447
Banking and Finance	500 Year	30	$3,081,405
Chemical	10 Year	1	$150,000,000
Chemical	25 Year	1	$150,000,000
Chemical	50 Year	1	$150,000,000
Chemical	100 Year	2	$150,028,735
Chemical	500 Year	1	$150,000,000
Commercial Facilities	10 Year	947	$36,678,173
Commercial Facilities	25 Year	1,480	$69,673,685
Commercial Facilities	50 Year	1,949	$114,883,928
Commercial Facilities	100 Year	6,917	$498,000,627
Commercial Facilities	Floodway	104	$10,071,809
Commercial Facilities	500 Year	3,243	$416,890,492

Sector	Event	Number of Buildings At Risk	Estimated Damages
Communications	10 Year	1	$112,410
Communications	25 Year	1	$189,388
Communications	50 Year	1	$213,059
Communications	100 Year	8	$332,798
Communications	500 Year	1	$282,992
Critical Manufacturing	10 Year	82	$9,439,854
Critical Manufacturing	25 Year	144	$25,187,891
Critical Manufacturing	50 Year	217	$38,328,676
Critical Manufacturing	100 Year	881	$87,753,021
Critical Manufacturing	Floodway	14	$1,799,923
Critical Manufacturing	500 Year	477	$146,781,060
Defense Industrial Base	25 Year	1	$61,849
Defense Industrial Base	50 Year	1	$481,045
Defense Industrial Base	100 Year	4	$623,176
Defense Industrial Base	500 Year	1	$749,056
Emergency Services	10 Year	1	$6,209
Emergency Services	25 Year	1	$6,209
Emergency Services	50 Year	1	$6,209
Emergency Services	100 Year	46	$1,841,760
Emergency Services	500 Year	5	$152,553
Energy	10 Year	4	$468,167
Energy	25 Year	5	$858,650
Energy	50 Year	11	$1,231,065
Energy	100 Year	65	$331,413,258
Energy	Floodway	1	$3,365

Sector	Event	Number of Buildings At Risk	Estimated Damages
Energy	500 Year	34	$139,514,469
Food and Agriculture	10 Year	87	$645,352
Food and Agriculture	25 Year	147	$1,264,598
Food and Agriculture	50 Year	238	$2,212,544
Food and Agriculture	100 Year	1,353	$10,208,563
Food and Agriculture	Floodway	45	$153,467
Food and Agriculture	500 Year	740	$9,755,837
Government Facilities	10 Year	52	$4,094,316
Government Facilities	25 Year	92	$5,827,186
Government Facilities	50 Year	124	$9,195,856
Government Facilities	100 Year	513	$37,721,921
Government Facilities	Floodway	4	$93,407
Government Facilities	500 Year	274	$26,196,289
Healthcare and Public Health	10 Year	20	$2,157,074
Healthcare and Public Health	25 Year	32	$3,334,838
Healthcare and Public Health	50 Year	36	$4,273,809
Healthcare and Public Health	100 Year	163	$14,620,171
Healthcare and Public Health	Floodway	2	$153,103
Healthcare and Public Health	500 Year	68	$8,151,275
Nuclear Reactors, Materials and Waste	100 Year	1	$60,907
Transportation Systems	10 Year	54	$3,904,921
Transportation Systems	25 Year	73	$6,214,886
Transportation Systems	50 Year	97	$8,360,438
Transportation Systems	100 Year	500	$52,052,118

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	Floodway	4	$90,781
Transportation Systems	500 Year	208	$38,448,173
Water	10 Year	7	$19,639,915
Water	25 Year	14	$29,372,918
Water	50 Year	20	$37,257,334
Water	100 Year	92	$841,873,887
Water	500 Year	54	$839,409,562
All Categories	**10 Year**	**1,264**	**$227,613,240**
All Categories	**25 Year**	**2,002**	**$292,722,911**
All Categories	**50 Year**	**2,712**	**$367,484,247**
All Categories	**100 Year**	**10,617**	**$2,031,941,401**
All Categories	**Floodway**	**175**	**$12,414,302**
All Categories	**500 Year**	**5,136**	**$1,779,413,163**

Source: GIS Analysis

The following tables provide counts and estimated damages for High Potential Loss Properties by jurisdiction in the plan. Because there is a large number of categories and events, the table is sorted by category and then by event. Totals across all categories are shown at the bottom of each table.

Table 5-237: High Potential Loss Properties Exposed to the River Flooding - City of Statesville

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	100 Year	2	$1,219,336
Utilities	100 Year	2	$1,424,094
All Categories	**100 Year**	**4**	**$2,643,430**

Source: GIS Analysis

Table 5-238: High Potential Loss Properties Exposed to the River Flooding - Iredell County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Utilities	100 Year	1	$150,000,000
All Categories	**100 Year**	**1**	**$150,000,000**

Source: GIS Analysis

Table 5-239: High Potential Loss Properties Exposed to the River Flooding - City of Salisbury

Category	Event	Number of Buildings At Risk	Estimated Damages
Utilities	100 Year	1	$4,093,027
All Categories	**100 Year**	**1**	**$4,093,027**

Source: GIS Analysis

Table 5-240: High Potential Loss Properties Exposed to the River Flooding - Rowan County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	100 Year	2	$50,586
All Categories	**100 Year**	**2**	**$50,586**

Source: GIS Analysis

Table 5-241 provides a summary count by jurisdiction of Repetitive Loss (RL) properties identified by FEMA through the NFIP.

Table 5-241: Numbers of Repetitive Loss (RL) Properties by Jurisdiction

Jurisdiction	Total Number of Residential Properties	Total Number of Losses
Iredell		
City of Statesville	0	0
Iredell County (Unincorporated Area)	1	$18,348.42
Town of Harmony	0	0
Town of Love Valley	0	0
Town of Mooresville	0	0
Town of Troutman	0	0

Jurisdiction	Total Number of Residential Properties	Total Number of Losses
Subtotal Iredell	**1**	$18,348.42
Rowan		
City of Salisbury	3	$65,468.46
Rowan County (Unincorporated Area)	0	0
Town of China Grove	0	0
Town of Cleveland	0	0
Town of East Spencer	0	0
Town of Faith	0	0
Town of Granite Quarry	1	$25,290.35
Town of Landis	0	0
Town of Rockwell	0	0
Town of Spencer	0	0
Subtotal Rowan	**4**	**$90,758.81**
PLAN TOTAL	**5**	**$109,107.23**

Source: North Carolina Emergency Management and or potential user entered data.

Other Hazards

5.17 HAZARDOUS MATERIALS INCIDENTS

5.17.1 Background

Hazardous materials can be found in many forms and quantities that can potentially cause death; serious injury; long-lasting health effects; and damage to buildings, homes, and other property in varying degrees. Such materials are routinely used and stored in many homes and businesses and are also shipped daily on the nation's highways, railroads, waterways, and pipelines. This subsection on the hazardous material hazard is intended to provide a general overview of the hazard, and the threshold for identifying fixed and mobile sources of hazardous materials is limited to general information on rail, highway, and FEMA-identified fixed HAZMAT sites determined to be of greatest significance as appropriate for the purposes of this plan.

Hazardous material (HAZMAT) incidents can apply to fixed facilities as well as mobile, transportation-related accidents in the air, by rail, on the nation's highways, and on the water. Approximately 6,774 HAZMAT events occur each year, 5,517 of which are highway incidents, 991 are railroad incidents, and

266 are due to other causes.[17] In essence, HAZMAT incidents consist of solid, liquid, and/or gaseous contaminants that are released from fixed or mobile containers, whether by accident or by design as with an intentional terrorist attack. A HAZMAT incident can last hours to days, while some chemicals can be corrosive or otherwise damaging over longer periods of time. In addition to the primary release, explosions and/or fires can result from a release, and contaminants can be extended beyond the initial area by persons, vehicles, water, wind, and possibly wildlife as well.

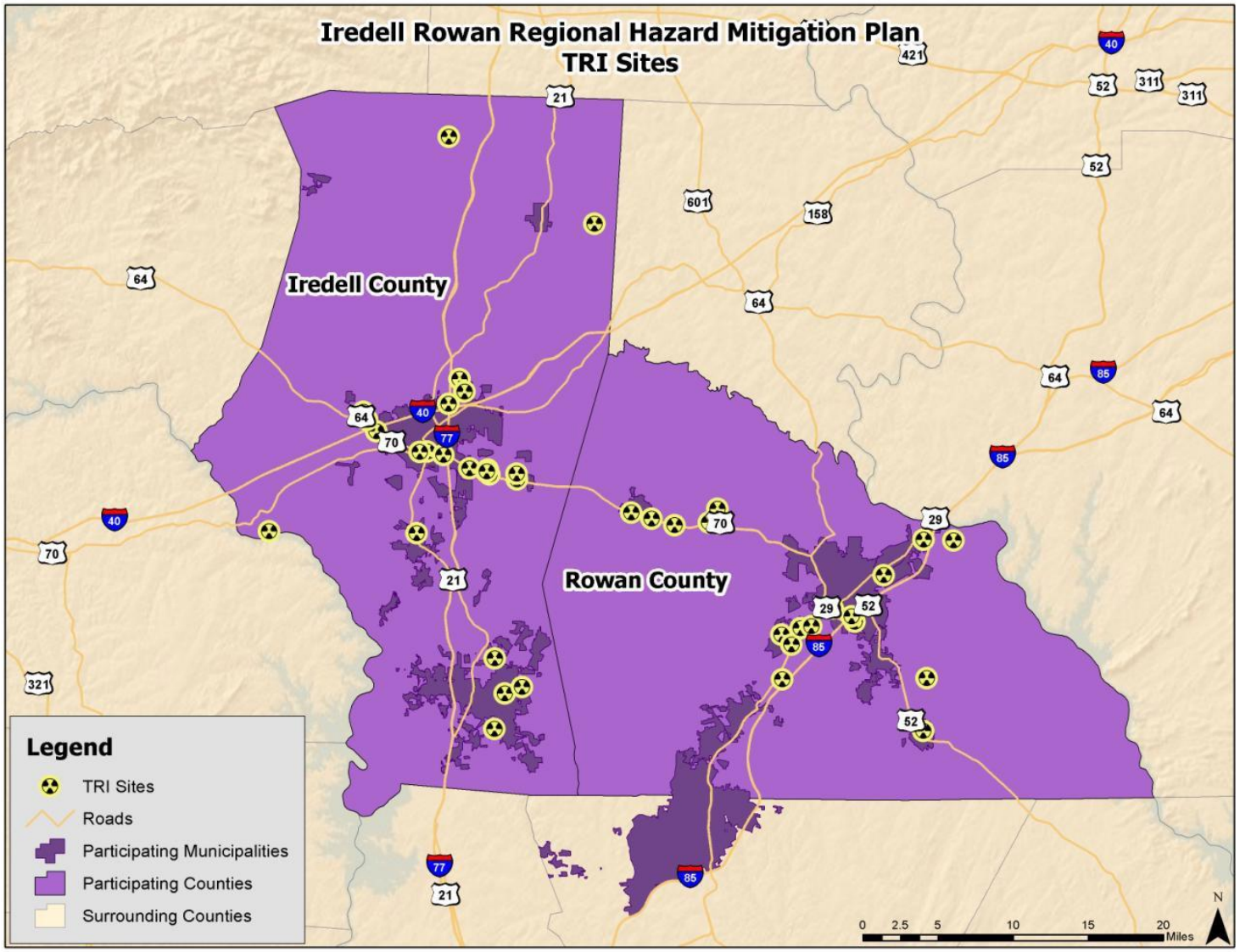
HAZMAT incidents can also occur as a result of or in tandem with natural hazard events, such as floods, hurricanes, tornadoes, and earthquakes, which in addition to causing incidents can also hinder response efforts. In the case of Hurricane Floyd in September 1999, communities along the Eastern United States were faced with flooded junkyards, disturbed cemeteries, deceased livestock, floating propane tanks, uncontrolled fertilizer spills, and a variety of other environmental pollutants that caused widespread toxological concern.

Hazardous material incidents can include the spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of a hazardous material, but exclude: (1) any release which results in exposure to poisons solely within the workplace with respect to claims which such persons may assert against the employer of such persons; (2) emissions from the engine exhaust of a motor vehicle, rolling stock, aircraft, vessel or pipeline pumping station engine; (3) release of source, byproduct, or special nuclear material from a nuclear incident; and (4) the normal application of fertilizer.

5.17.2 Location and Spatial Extent

As a result of the 1986 Emergency Planning and Community Right to Know Act (EPCRA), the Environmental Protection Agency provides public information on hazardous materials. One facet of this program is to collect information from industrial facilities on the releases and transfers of certain toxic agents. This information is then reported in the Toxic Release Inventory (TRI). TRI sites indicate where such activity is occurring. The Iredell Rowan Region has 43 TRI sites. These sites are shown in **Figure 5-80**.

[17] FEMA, 1997.



Source: U.S. Environmental Protection Agency

Figure 5-80: Toxic Release Inventory (TRI) Sites in the Iredell Rowan Region

In addition to "fixed" hazardous materials locations, hazardous materials may also impact the region via roadways and rail. Many roads in the region are narrow and winding, making hazardous material transport in the area especially treacherous. All roads that permit hazardous material transport are considered potentially at risk to an incident.

5.17.3 Historical Occurrences

The U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration (PHMSA) lists historical occurrences throughout the nation. A "serious incident" is a hazardous materials incident that involves:

- a fatality or major injury caused by the release of a hazardous material,
- the evacuation of 25 or more persons as a result of release of a hazardous material or exposure to fire,
- a release or exposure to fire which results in the closure of a major transportation artery,
- the alteration of an aircraft flight plan or operation,
- the release of radioactive materials from Type B packaging,
- the release of over 11.9 galls or 88.2 pounds of a severe marine pollutant, or
- the release of a bulk quantity (over 199 gallons or 882 pounds) of a hazardous material.

However, prior to 2002, a hazardous material "serious incident" was defined as follows:

- a fatality or major injury due to a hazardous material,
- closure of a major transportation artery or facility or evacuation of six or more person due to
- the presence of hazardous material, or
- a vehicle accident or derailment resulting in the release of a hazardous material.

Table 5-242 summarizes the HAZMAT incidents reported in the Iredell Rowan Region. Detailed information on these events is presented in the jurisdiction-specific annexes.

Table 5-242: Summary of Hazmat Incidents in the Iredell Rowan Region

Location	Number of Occurrences	Deaths / Injuries	Property Damage
Iredell County	**3**	**0/0**	**$0**
Harmony	0	0/0	$0
Love Valley	0	0/0	$0
Mooresville	1	0/0	$0
Statesville	1	0/0	$0
Troutman	0	0/0	$0
Unincorporated Area	1	0/0	$0
Rowan County	**5**	**0/0**	**$0**
China Grove	0	0/0	$0
Cleveland	1	0/0	$0
East Spencer	0	0/0	$0
Faith	0	0/0	$0
Granite Quarry	0	0/0	$0
Landis	0	0/0	$0
Rockwell	0	0/0	$0

Location	Number of Occurrences	Deaths / Injuries	Property Damage
Salisbury	4	0/0	$0
Spencer	0	0/0	$0
Unincorporated Area	0	0/0	$0
IREDELL ROWAN REGION TOTAL	**8**	**0/0**	**$0**

Source: U.S. Department of Transportation Pipeline and Hazardous Materials Safety Administration

5.17.4 Probability of Future Occurrence

Given the location of 43 toxic release inventory sites in the Iredell Rowan Region and prior roadway incidents, it is possible that a hazardous material incident may occur in the region (between 1 and 10 percent annual probability). However, county and municipal officials are mindful of this possibility and take precautions to prevent such an event from occurring. Furthermore, there are detailed plans in place to respond to an occurrence.

5.18 WILDFIRE

5.18.1 Background

A wildfire is any outdoor fire (i.e. grassland, forest, brush land) that is not under control, supervised, or prescribed.[18] Wildfires are part of the natural management of forest ecosystems, but may also be caused by human factors.

Nationally, over 80 percent of forest fires are started by negligent human behavior such as smoking in wooded areas or improperly extinguishing campfires. The second most common cause for wildfire is lightning. In North Carolina, a majority of fires are caused by debris burning.

There are three classes of wildland fires: surface fire, ground fire, and crown fire. A surface fire is the most common of these three classes and burns along the floor of a forest, moving slowly and killing or damaging trees. A ground fire (muck fire) is usually started by lightning or human carelessness and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Wildfires are usually signaled by dense smoke that fills the area for miles around.

Wildfire probability depends on local weather conditions, outdoor activities such as camping, debris burning, and construction, and the degree of public cooperation with fire prevention measures. Drought conditions and other natural hazards (such as tornadoes, hurricanes, etc.) increase the probability of wildfires by producing fuel in both urban and rural settings.

Many individual homes and cabins, subdivisions, resorts, recreational areas, organizational camps, businesses, and industries are located within high wildfire hazard areas. Furthermore, the increasing demand for outdoor recreation places more people in wildlands during holidays, weekends, and vacation periods. Unfortunately, wildland residents and visitors are rarely educated or prepared for wildfire events that can sweep through the brush and timber and destroy property within minutes.

Wildfires can result in severe economic losses as well. Businesses that depend on timber, such as paper mills and lumber companies, experience losses that are often passed along to consumers through higher prices and sometimes jobs are lost. The high cost of responding to and recovering from wildfires can

[18] Prescription burning, or "controlled burn," undertaken by land management agencies is the process of igniting fires under selected conditions, in accordance with strict parameters.

deplete state resources and increase insurance rates. The economic impact of wildfires can also be felt in the tourism industry if roads and tourist attractions are closed due to health and safety concerns.

State and local governments can impose fire safety regulations on home sites and developments to help curb wildfire. Land treatment measures such as fire access roads, water storage, helipads, safety zones, buffers, firebreaks, fuel breaks, and fuel management can be designed as part of an overall fire defense system to aid in fire control. Fuel management, prescribed burning, and cooperative land management planning can also be encouraged to reduce fire hazards.

5.18.2 Location and Spatial Extent

The entire region is at risk to a wildfire occurrence. However, several factors such as drought conditions or high levels of fuel on the forest floor may make a wildfire more likely. Conversely, areas of high development limit wildfire risk. It is also important to note, 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 stop its spread to the built environment, thus endangering structures and population. The urban, more developed areas in the Iredell Rowan Region, including Statesville, Mooresville, and Salisbury, and the surrounding areas are prime examples of this. The Fire Occurrence Areas in the figure below give an indication of historic locations impacted.

In an effort to identify specific potential wildfire hazard areas within the planning area, a GIS-based data layer called 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 (SWRA), a multi-year project to assess and quantify wildfire risk for the 13 Southern states. The WFSI is a value between 0 and 1. It was developed consistent 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 in four weather percentile categories into a single measure of wildland fire susceptibility. Due to some necessary assumptions, mainly fuel hom fuel homogeneity, it is not the true probability. But since all areas of the planning area have this value determined consistently, it allows for comparison and ordination of areas as to the likelihood of an acre burning.

The below figures illustrate the level of wildfire potential for the planning area based on the WFSI data provided by NCDFR. Areas with a WFSI value of 0.01–0.05 were considered to be at moderate risk (yellow) to the wildfire hazard. Areas with a WFSI value greater than 0.05 were considered to be at high (red) risk to the wildfire hazard. Areas with a WFSI value less than 0.01 were considered to not be at low (green) or no risk to the wildfire hazard.

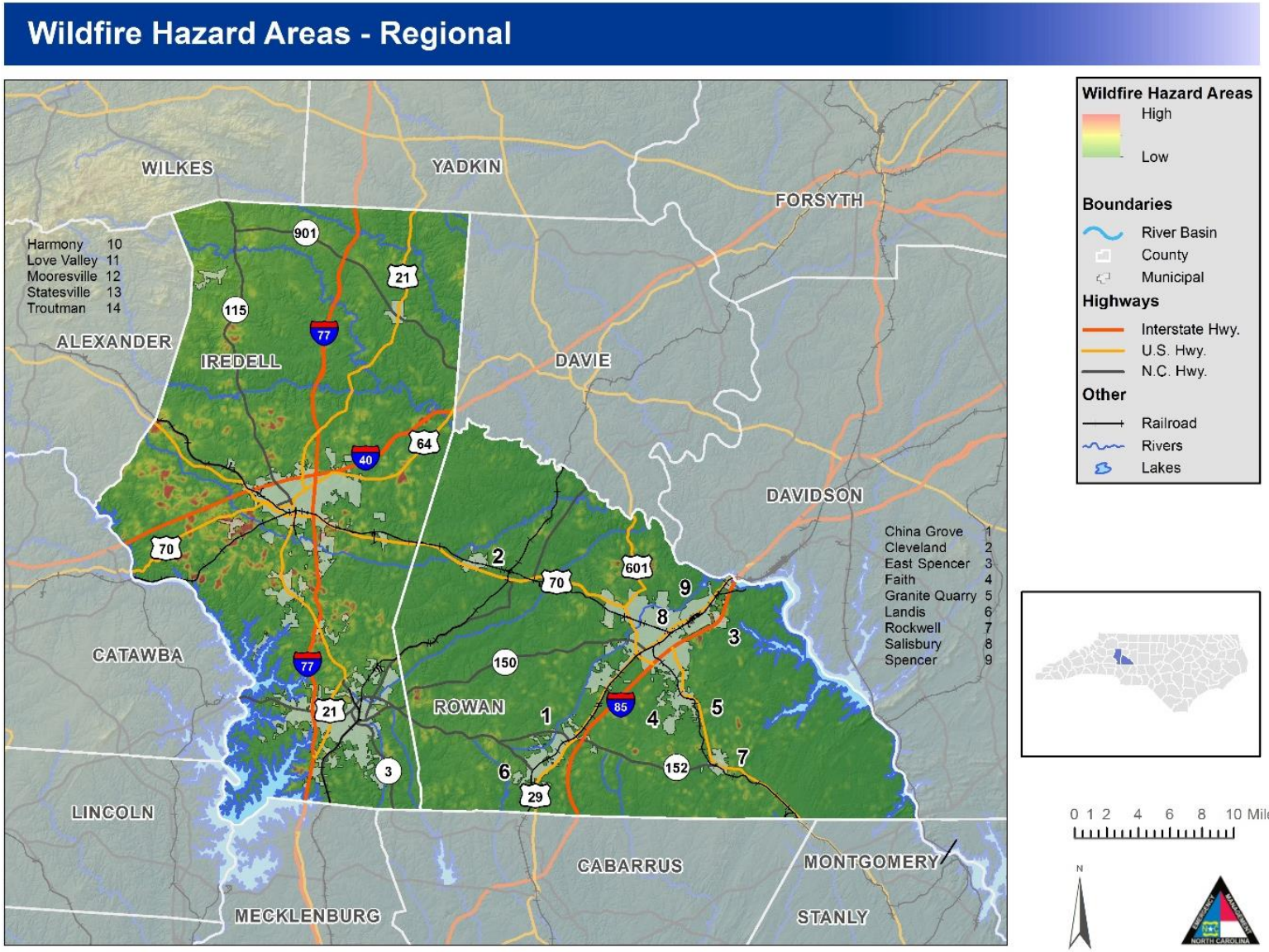


Figure 5-81: Wildfire Hazard Areas – Regional

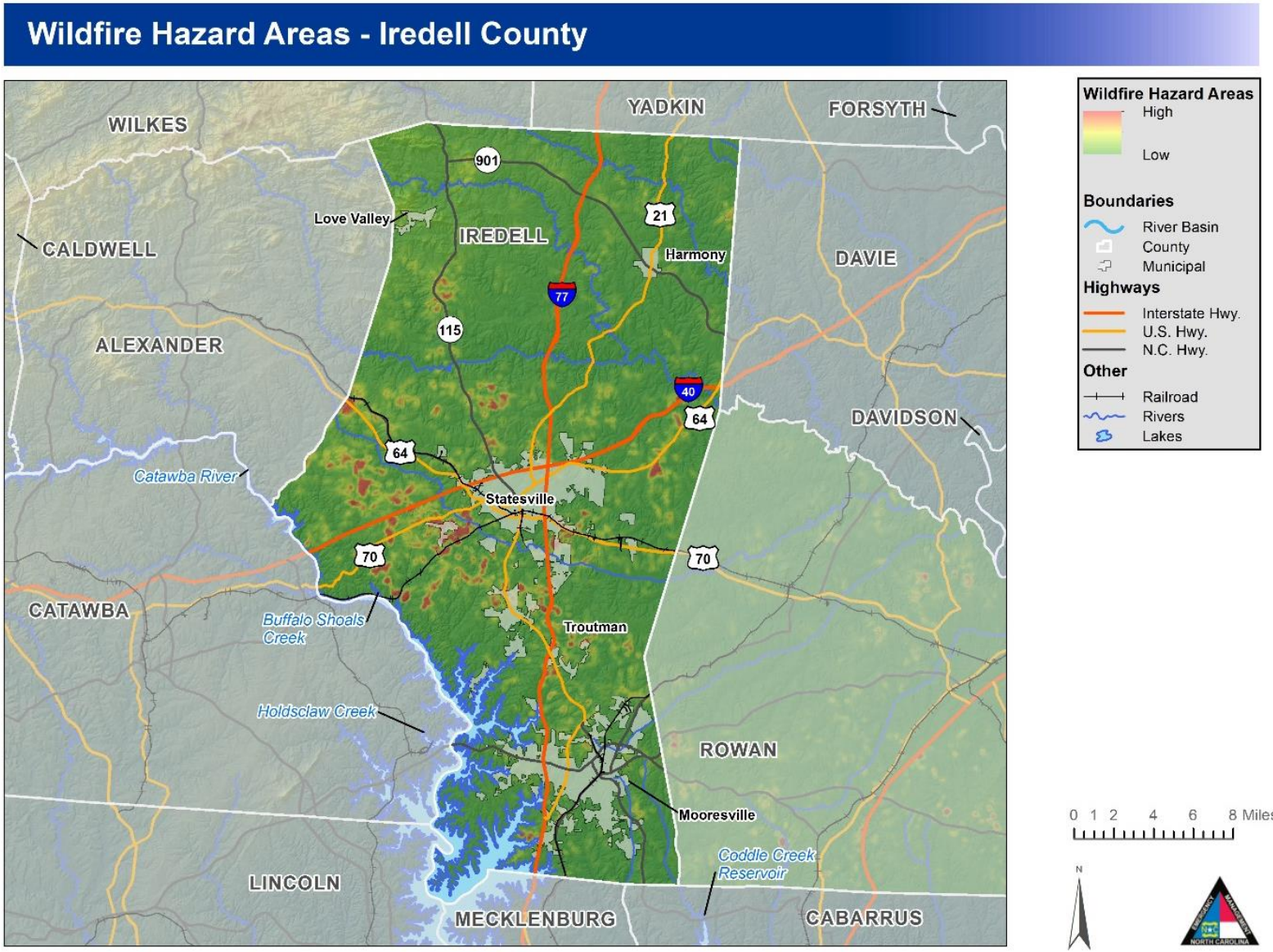


Figure 5-82: Wildfire Hazard Areas – Iredell County

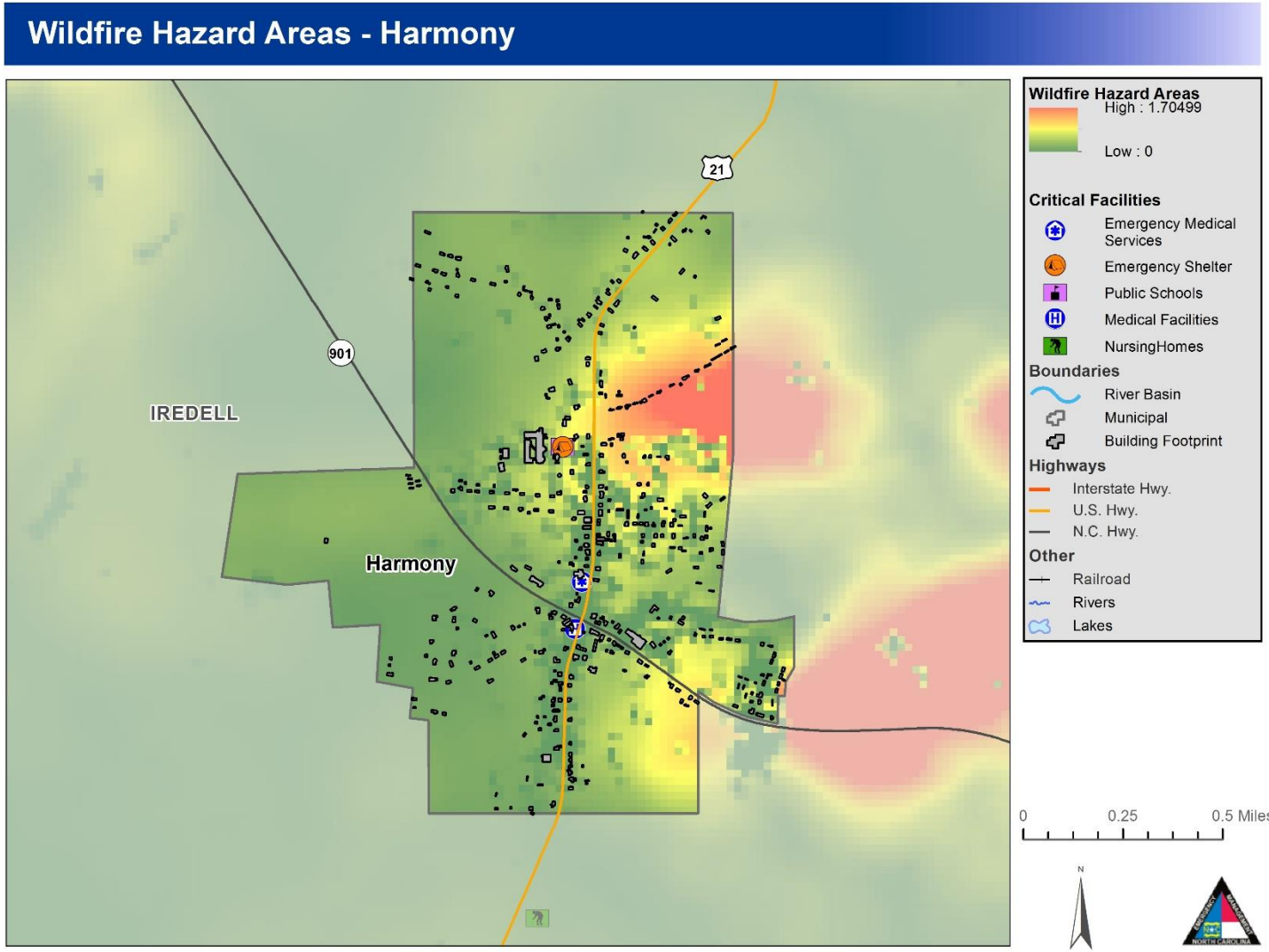


Figure 5-83: Wildfire Hazard Areas

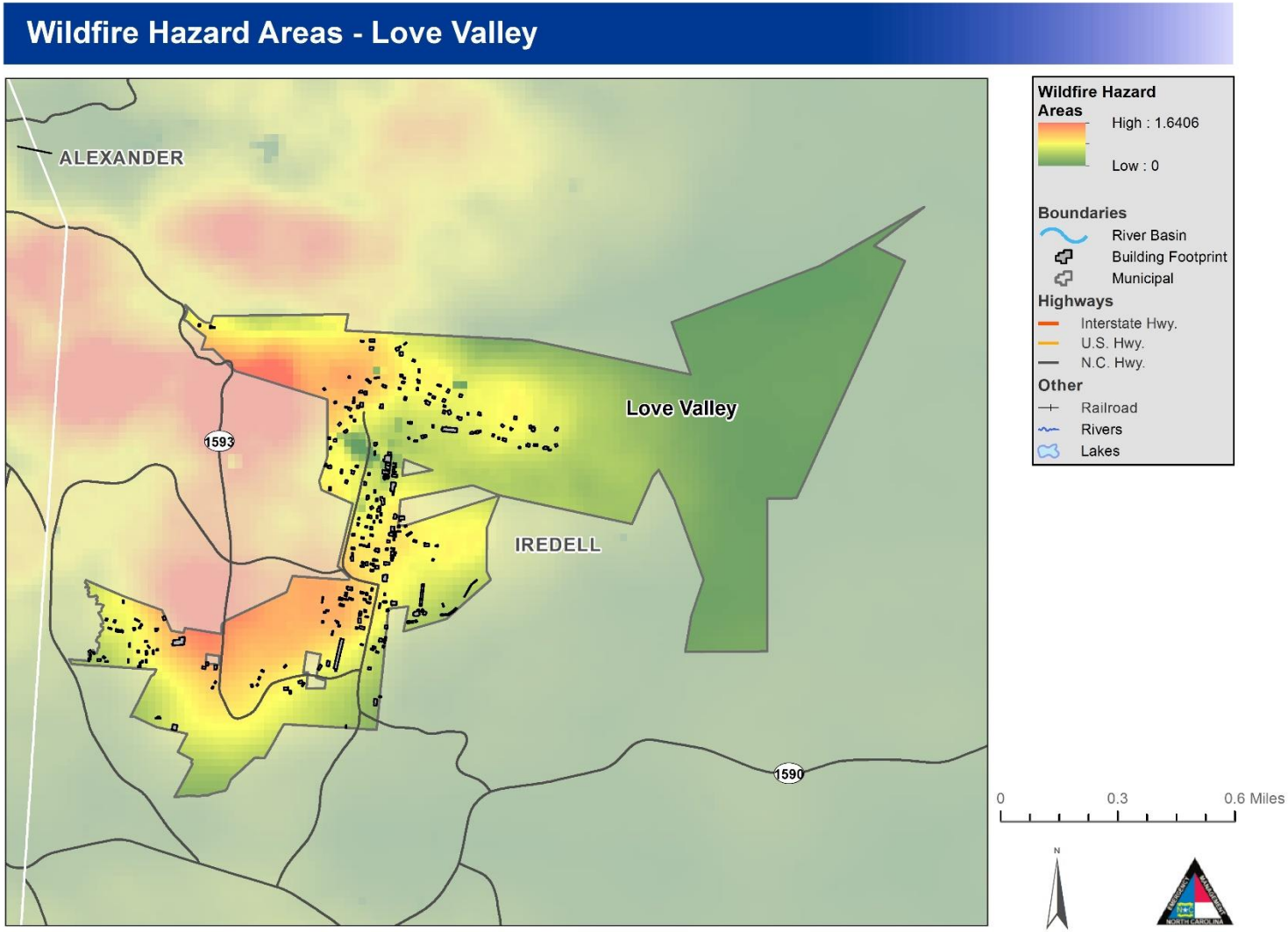


Figure 5-84: Wildfire Hazard Areas

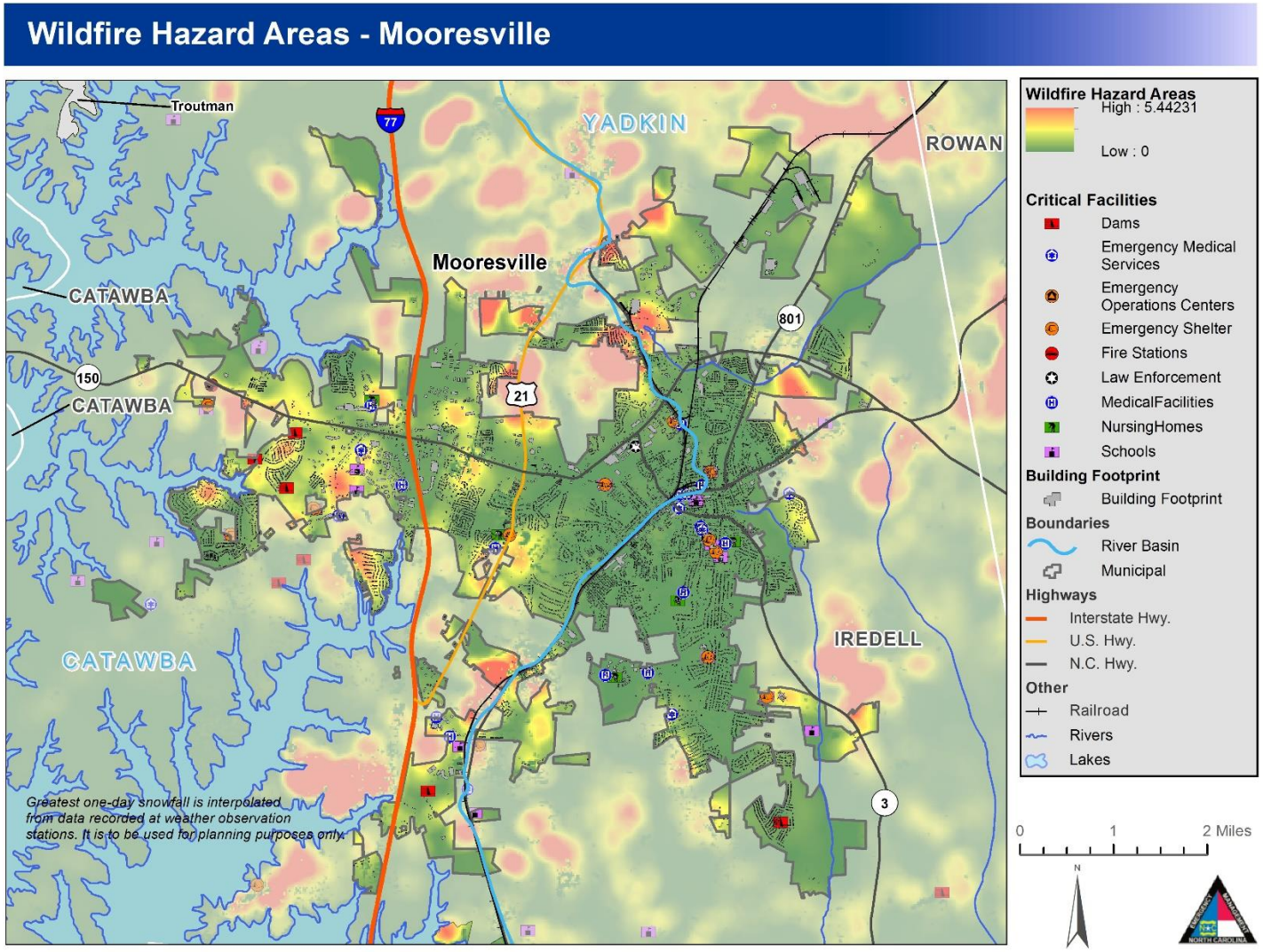


Figure 5-85: Wildfire Hazard Areas

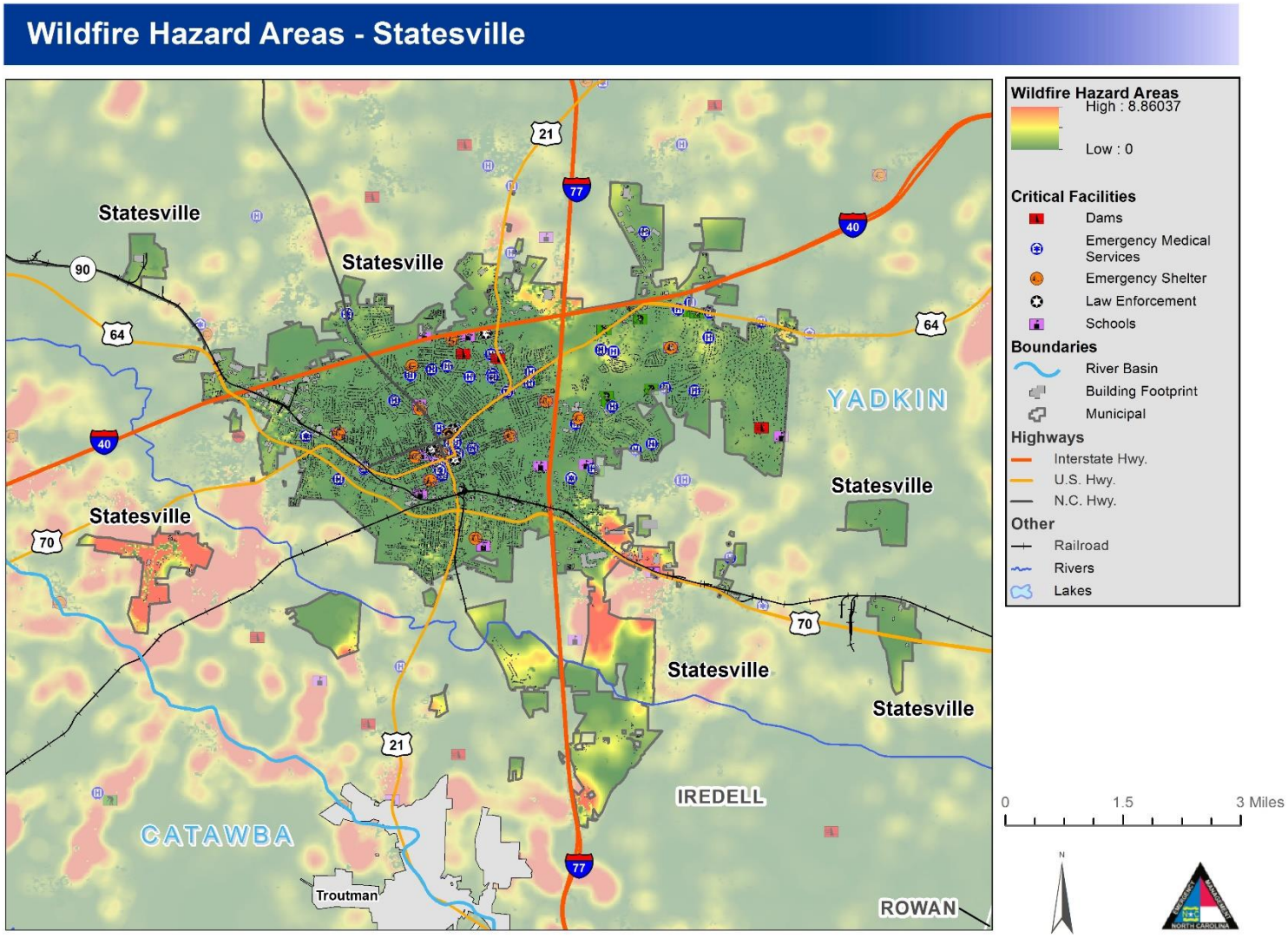


Figure 5-86: Wildfire Hazard Areas

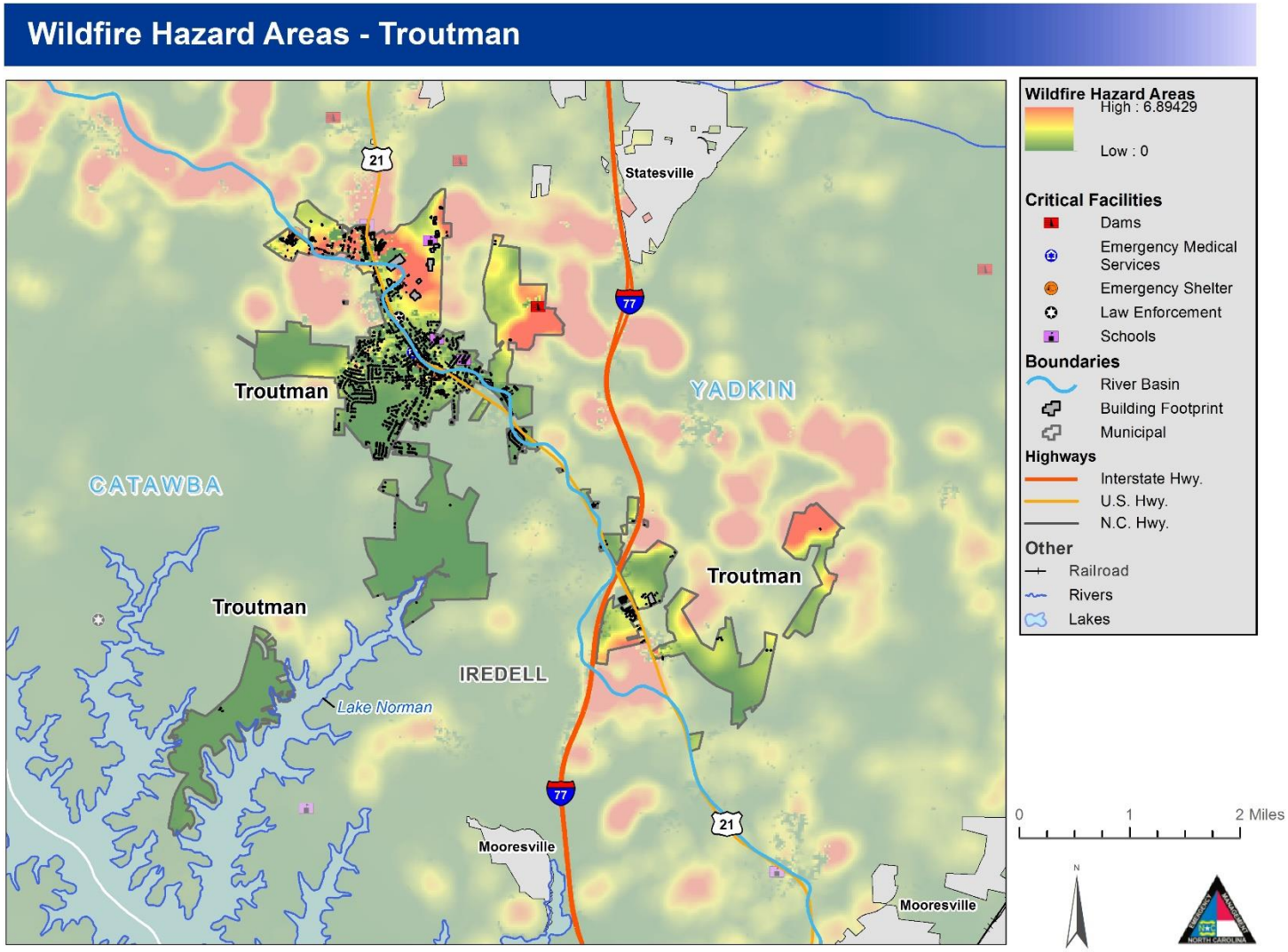


Figure 5-87: Wildfire Hazard Areas

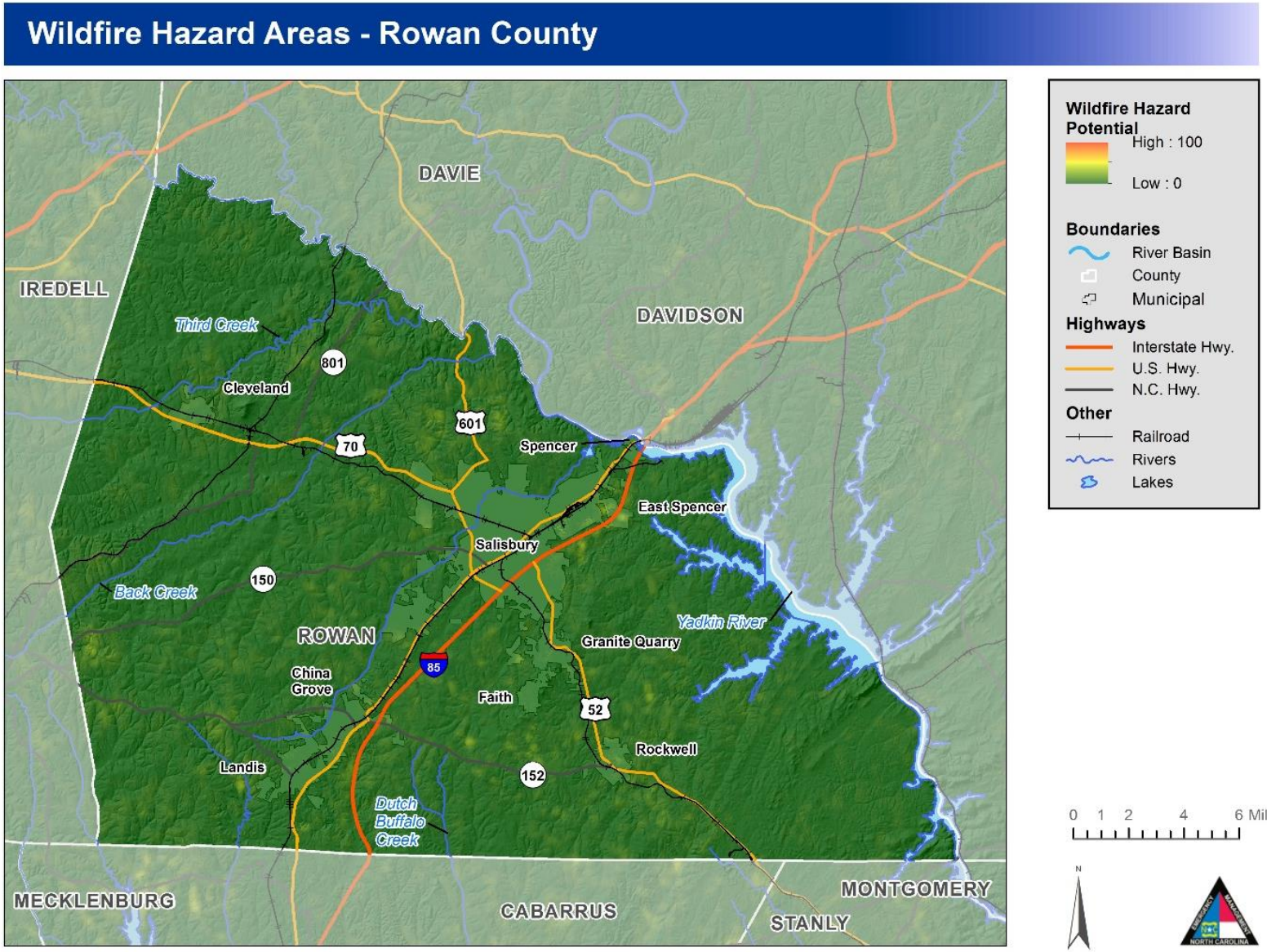


Figure 5-88: Wildfire Hazard Areas – Rowan County

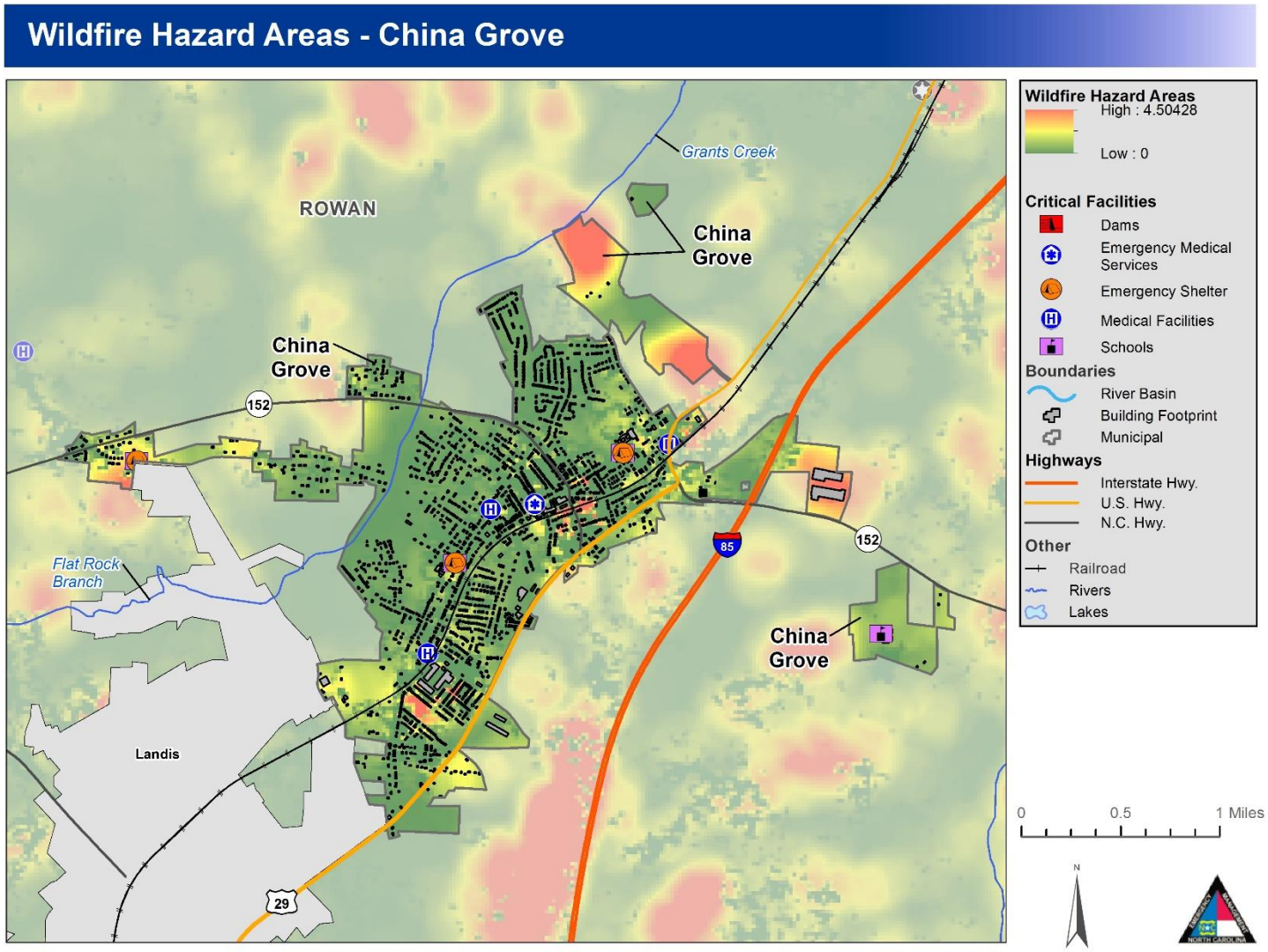


Figure 5-89: Wildfire Hazard Areas

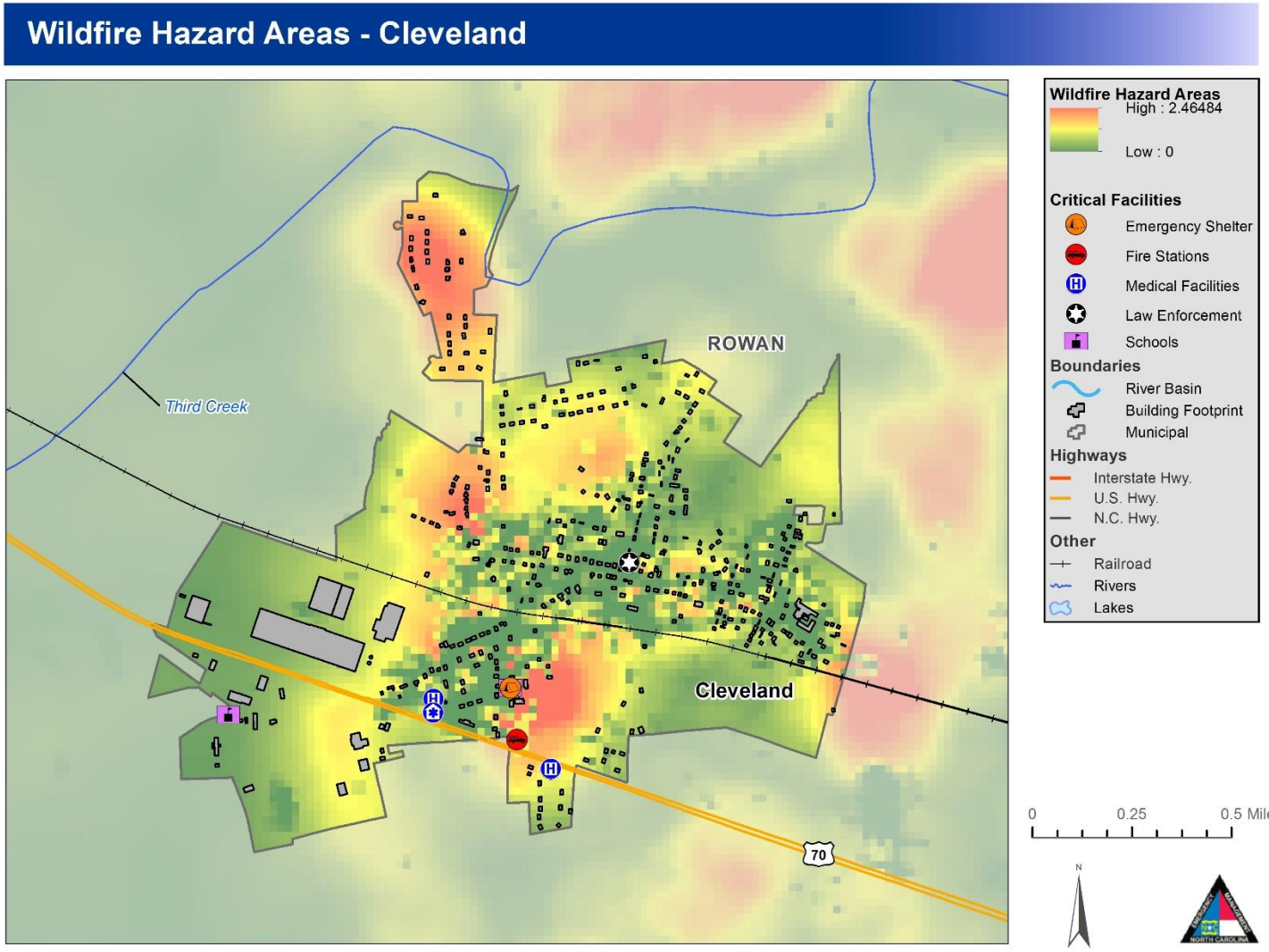


Figure 5-90: Wildfire Hazard Areas

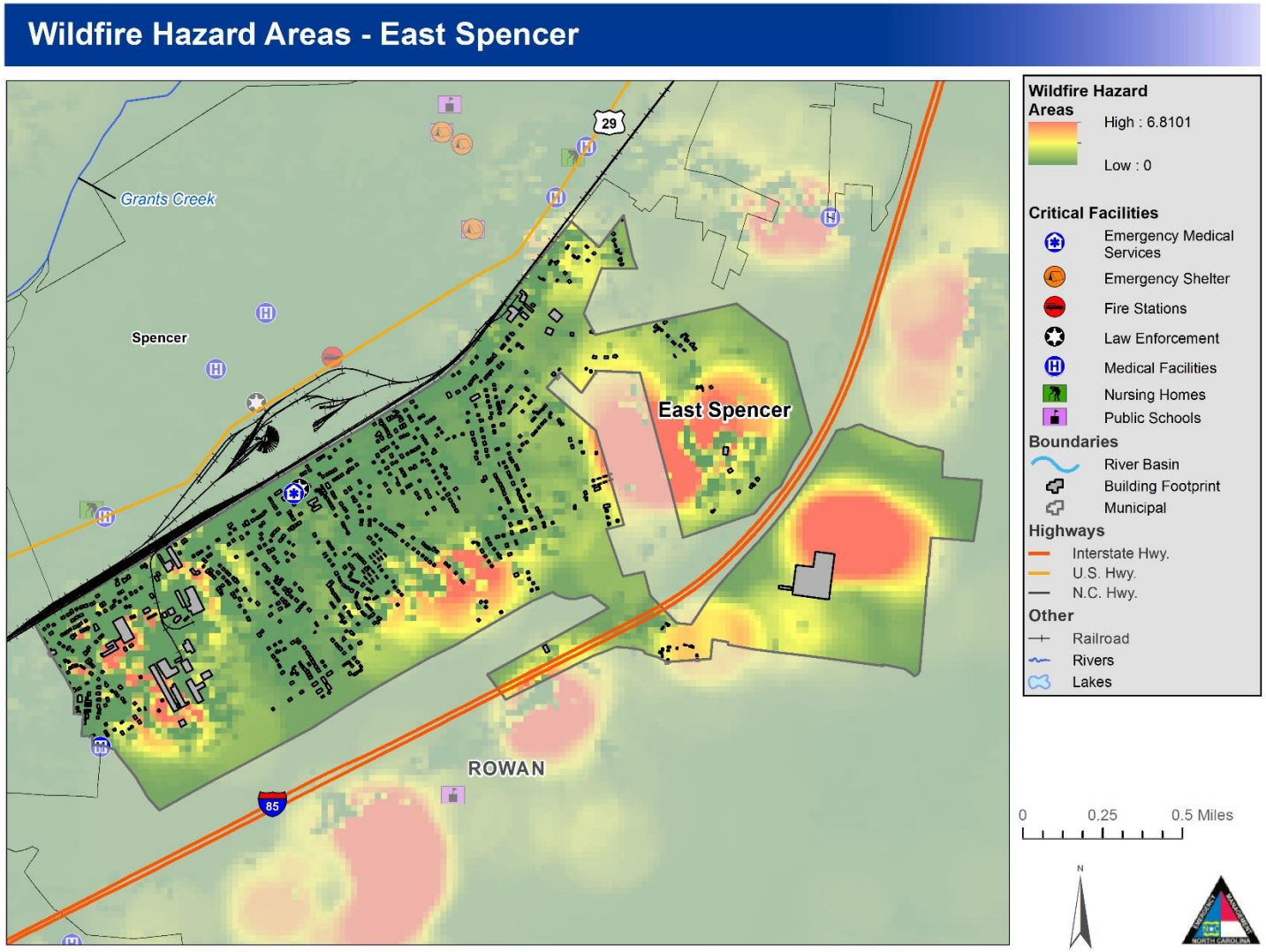


Figure 5-91: Wildfire Hazard Areas

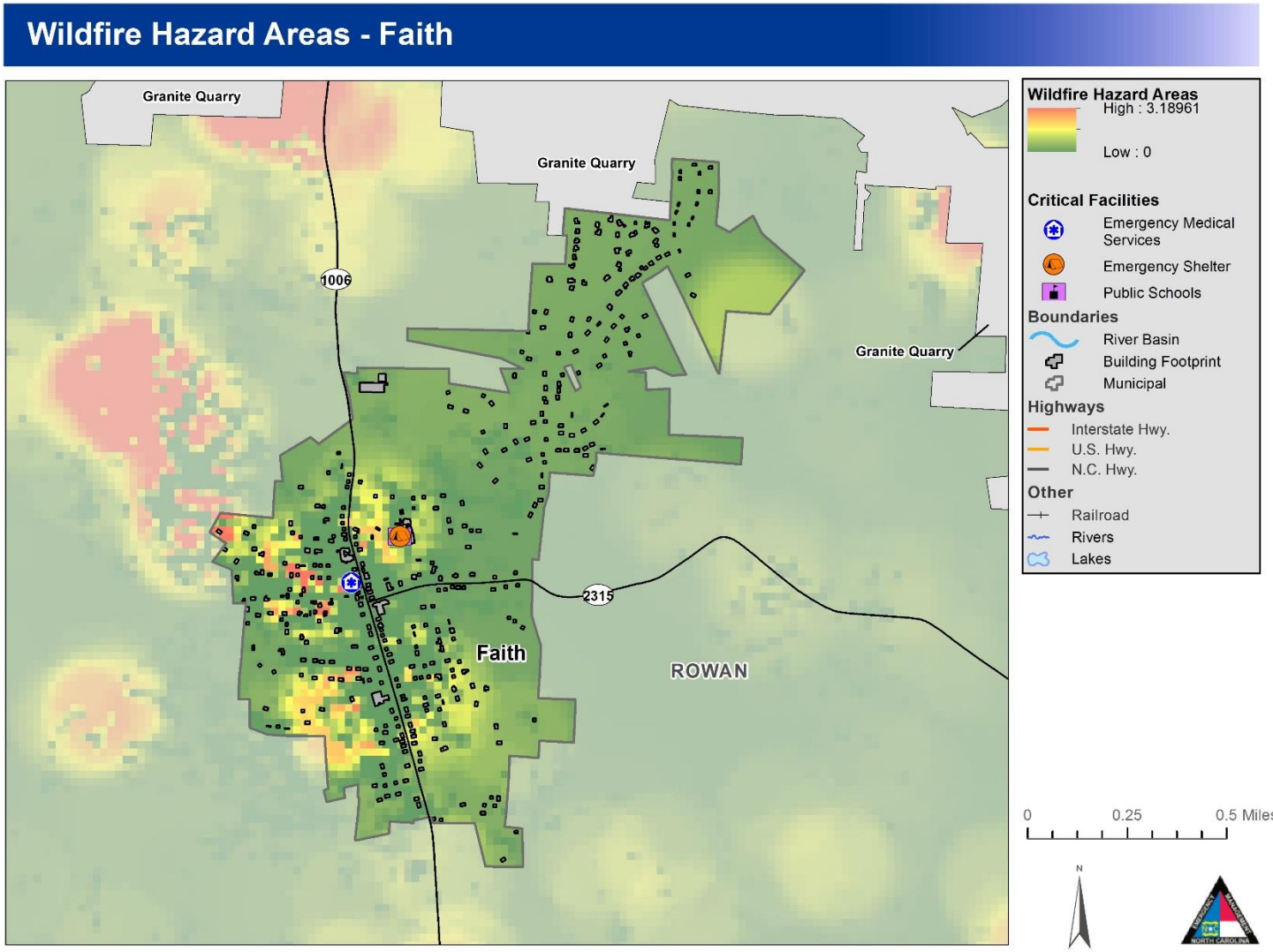


Figure 5-92: Wildfire Hazard Areas

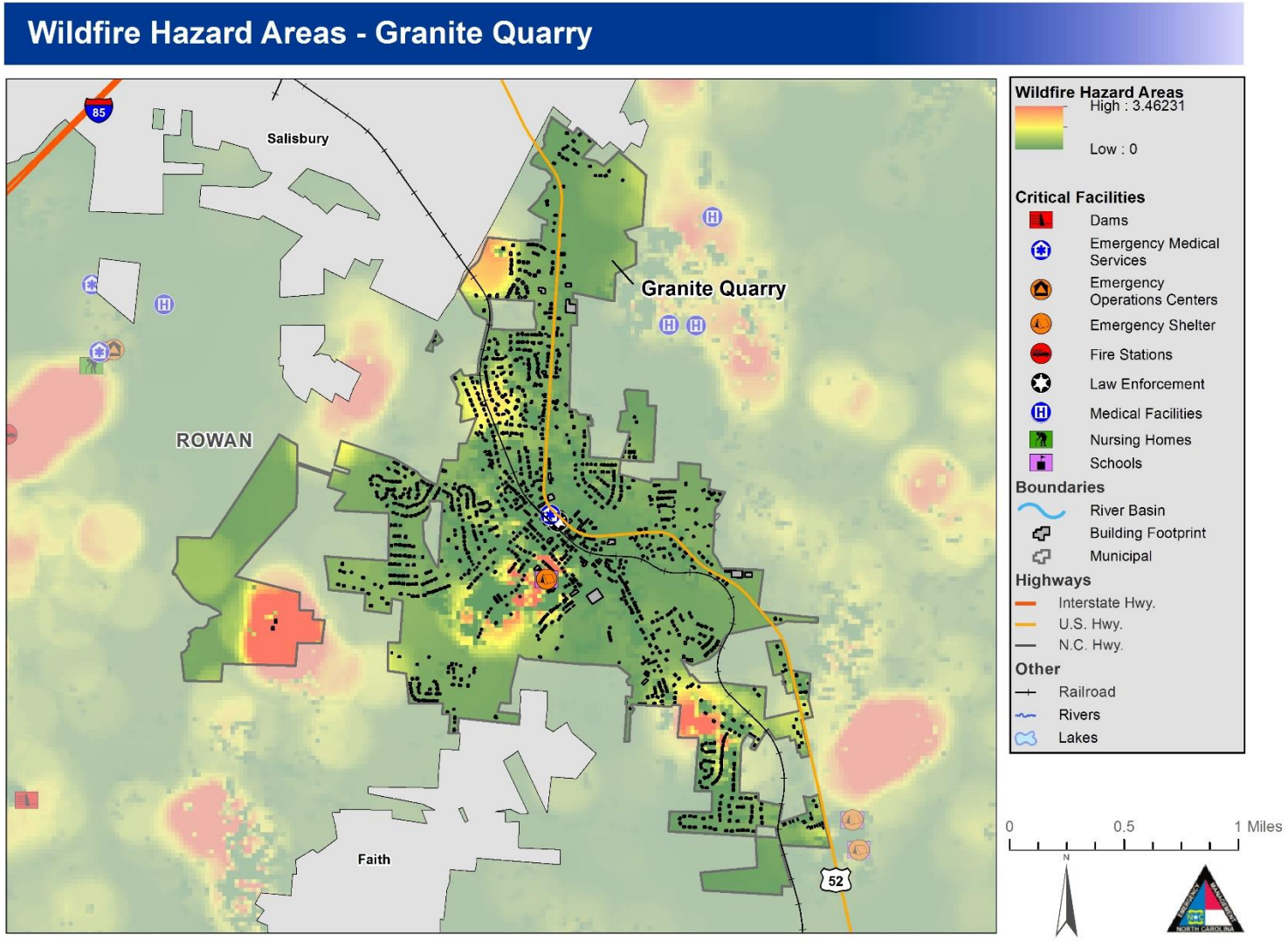


Figure 5-93: Wildfire Hazard Areas

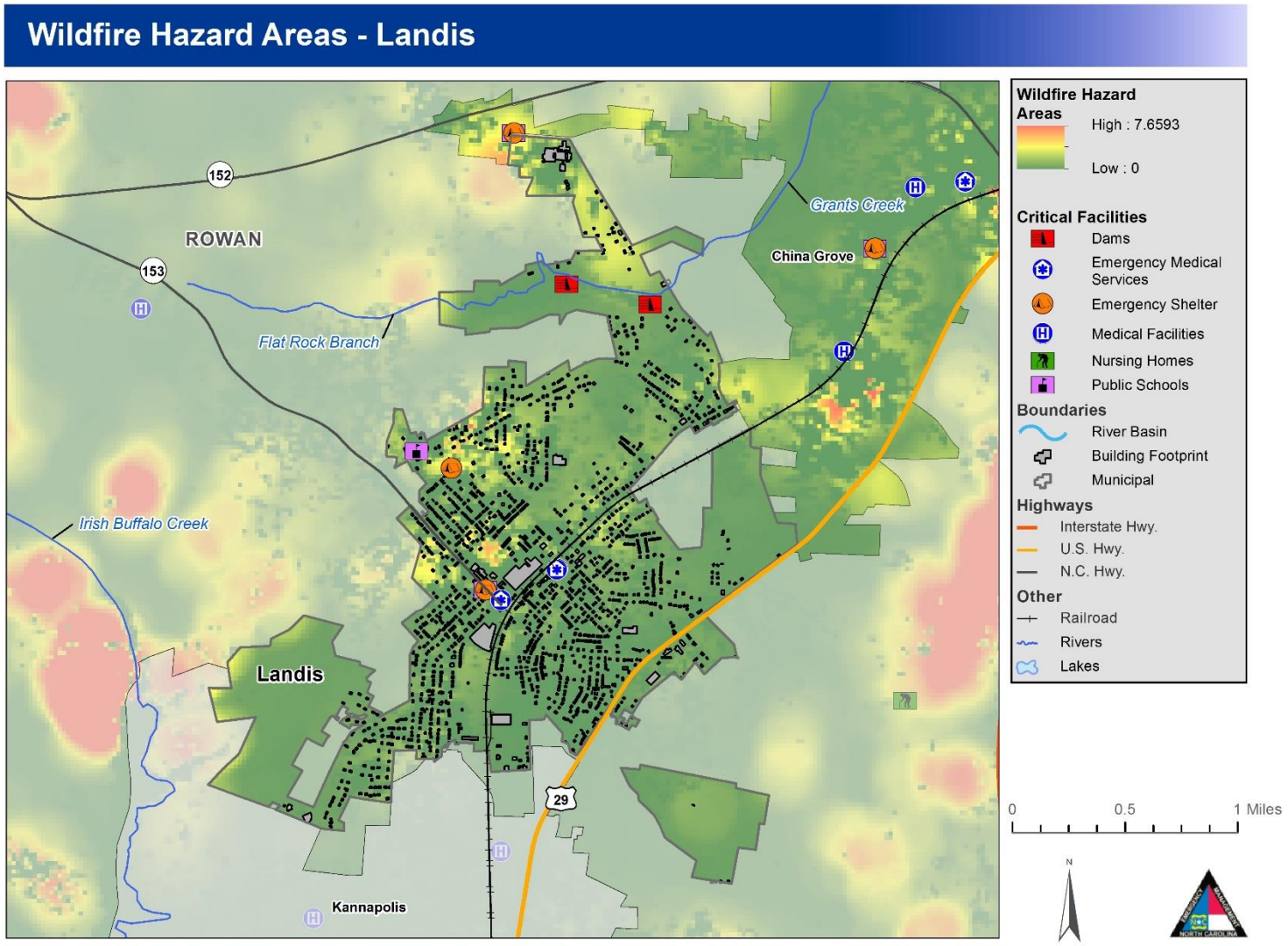


Figure 5-94: Wildfire Hazard Areas

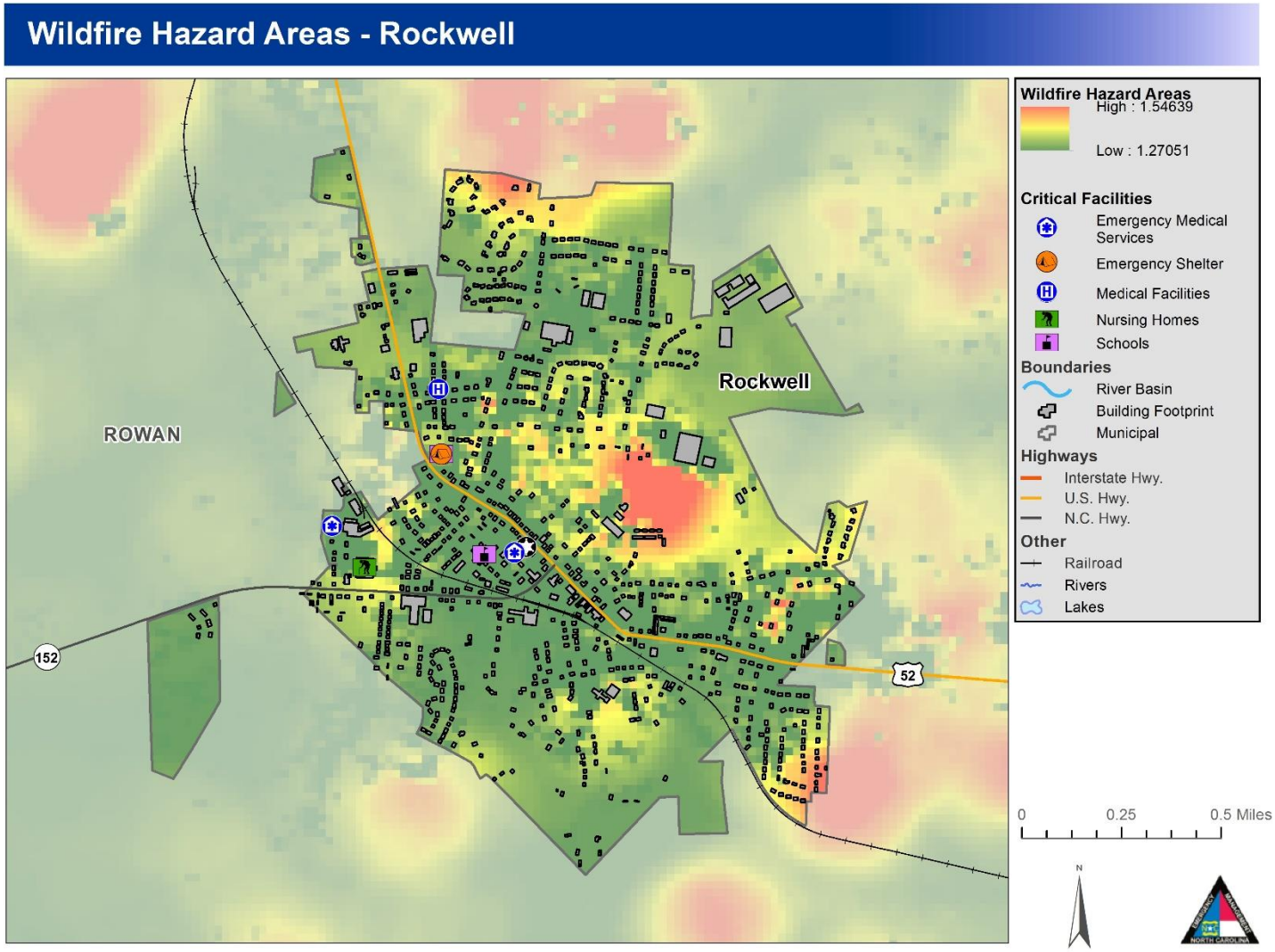


Figure 5-95: Wildfire Hazard Areas

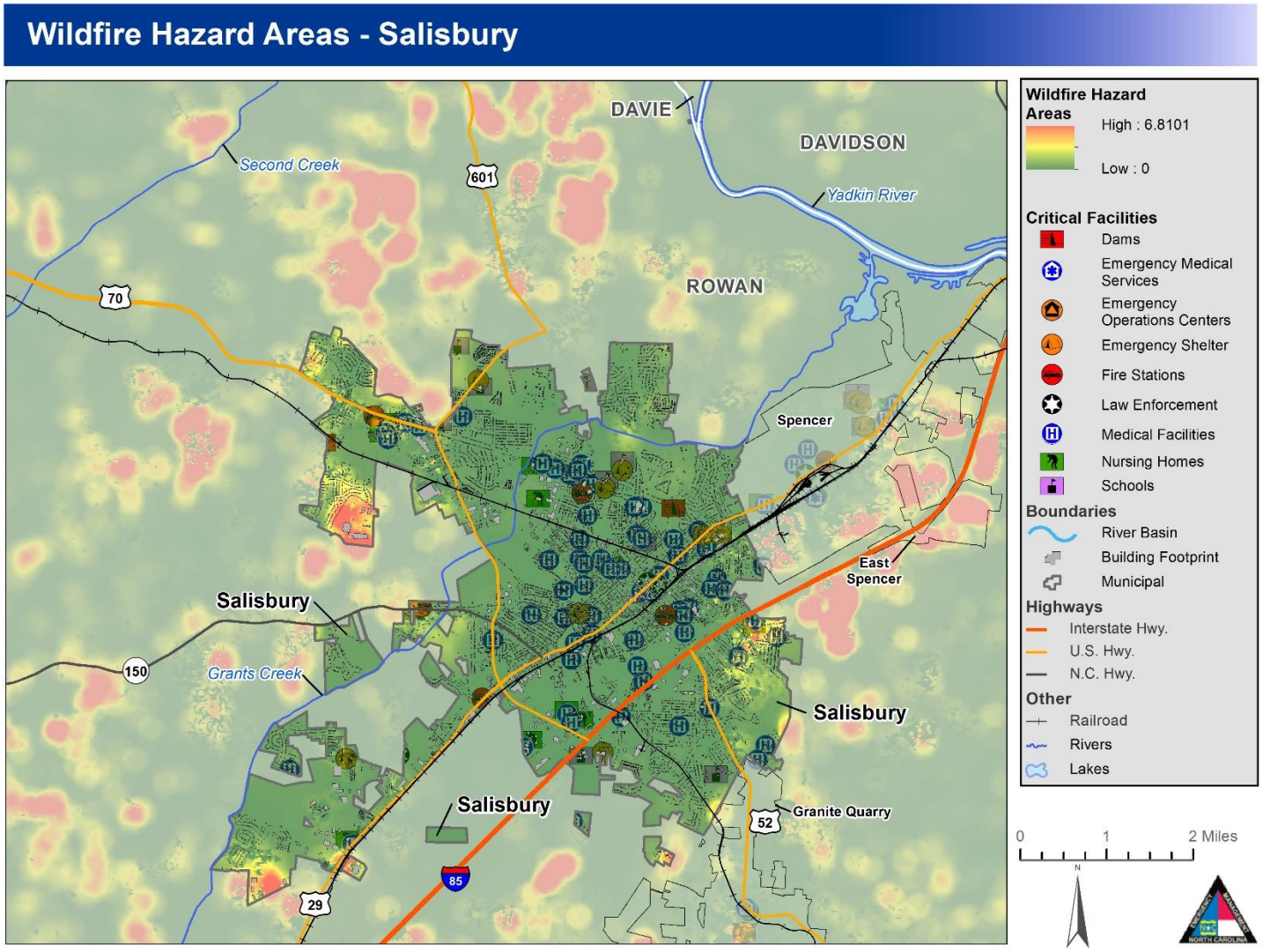


Figure 5-96: Wildfire Hazard Areas

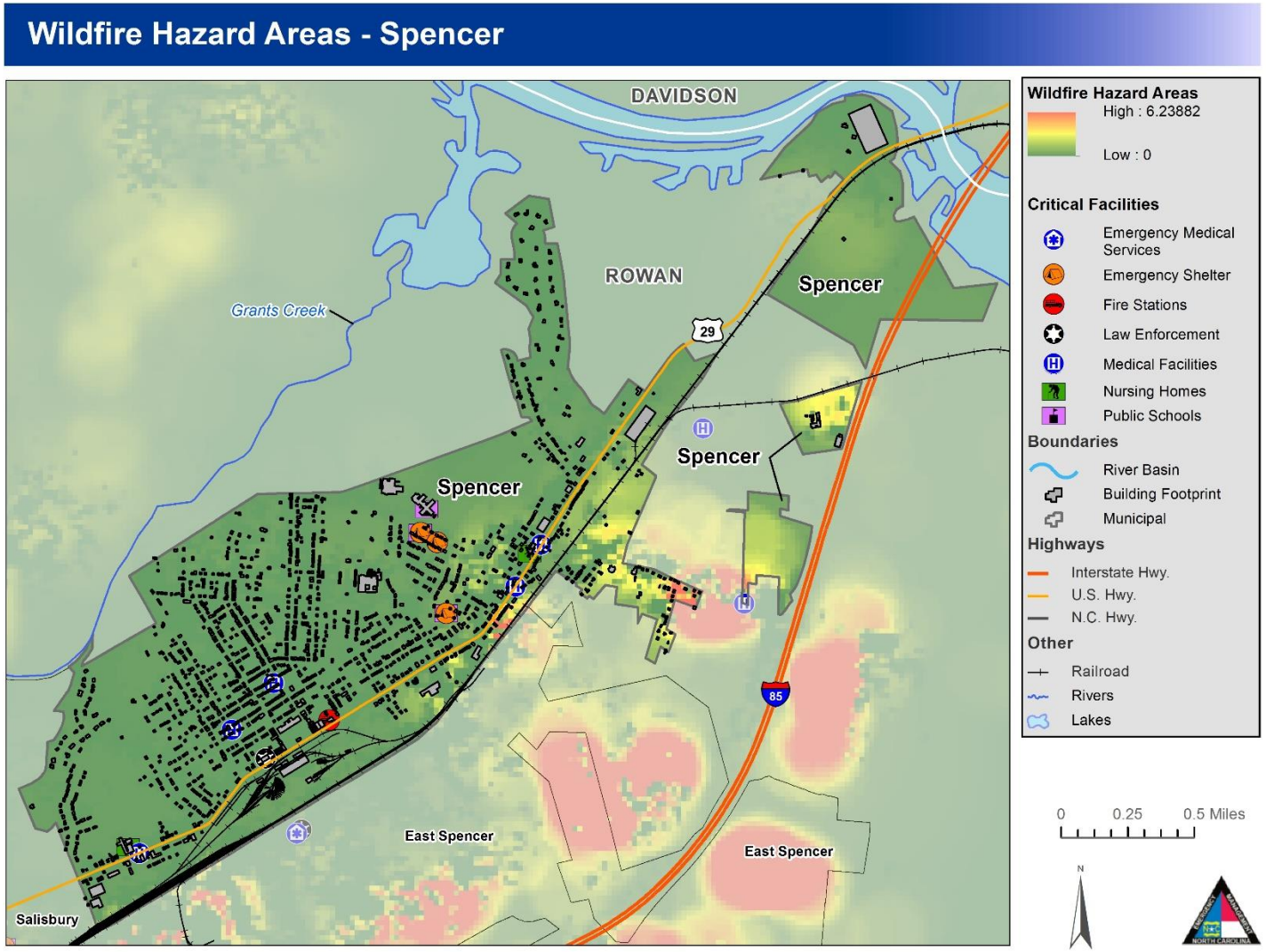


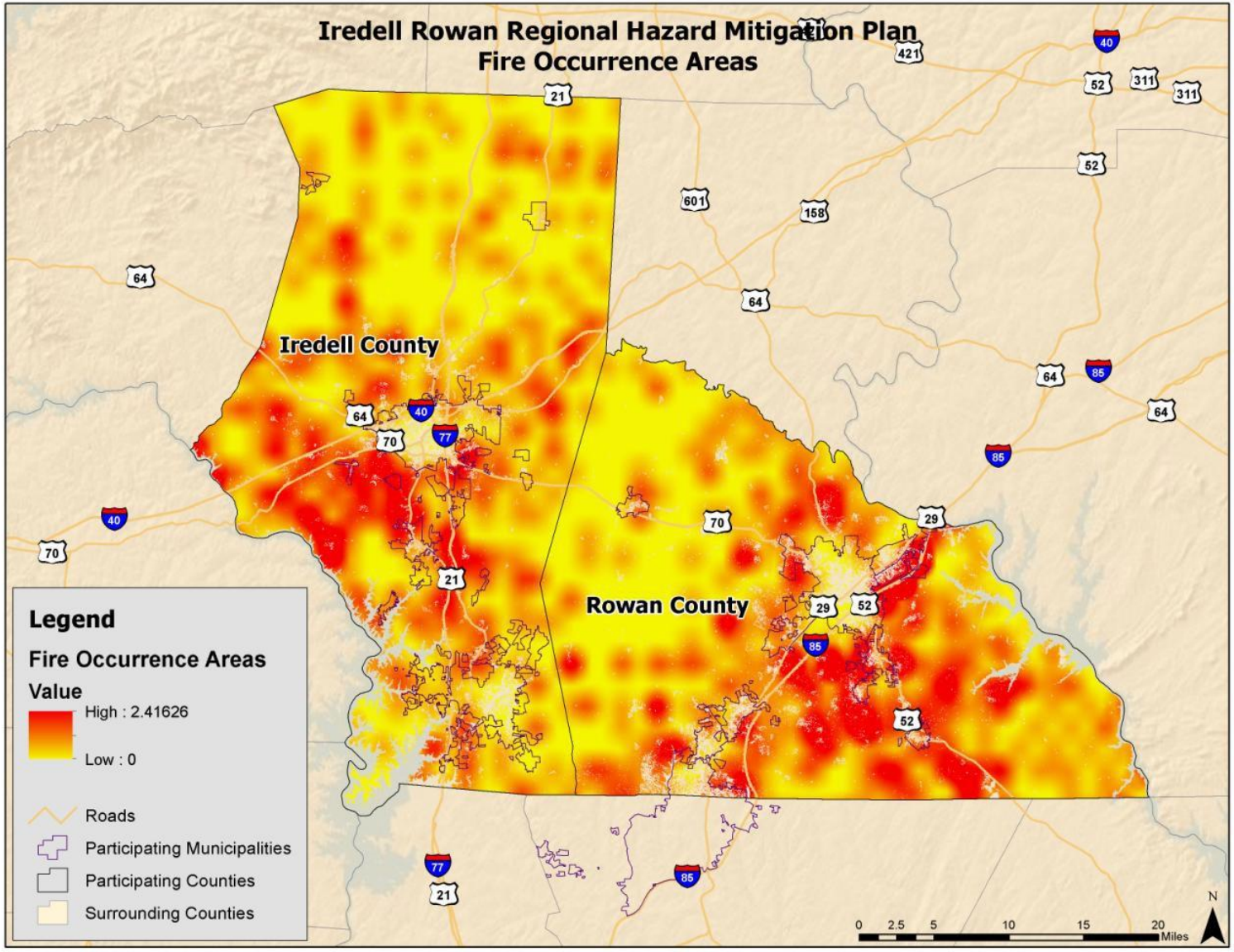
Figure 5-97: Wildfire Hazard Areas

5.18.3 Extent

The average size of wildfires in the Region is typically small. Wildfire data was provided by the North Carolina Division of Forest Resources through Community Wildfire Protection Plans (Included in Appendix H) and is reported annually by county. For more information on extent for each jurisdiction see Table 5-242: WUI Risk Index Assessment in the vulnerability section below.

5.18.4 Historical Occurrences

Figure 5-98 shows the Fire Occurrence Areas (FOA) in the Iredell Rowan Region based on data from the Southern Wildfire Risk Assessment. This data is based on historical fire ignitions and is reported as the number of fires that occur per 1,000 acres each year.



Source: Southern Wildfire Risk Assessment

Figure 5-98: Historic Wildfire Events in the Iredell Rowan Region

Based on data from the North Carolina Division of Forest Resources from 2003 to 2019, the Iredell Rowan Region experiences an average of 121 wildfires annually which burn a combined 108 acres, on average. The data indicates that most of these fires are small, averaging less than one acre per fire. No significant fires in the Region. **Table 5-243** provides a summary table for wildfire occurrences in the Iredell Rowan Region.

Table 5-243: Summary Table of Annual Wildfire Occurrences (2003-2019) *

	Iredell County	Rowan County	Iredell Rowan Region
Average Number of Fires per year	63.3	57.3	120.6
Average Number of Acres Burned per year	57.6	50.5	108.1
Average Number of Acres Burned per fire	0.91	0.88	0.90

*These values reflect averages over a 10-year period.
Source: North Carolina Division of Forest Resources

5.18.5 Probability of Future Occurrences

Based on the analyses performed in IRISK, the probability of future Wildfire is shown in the table below, by jurisdiction.

Definitions for Descriptors Used for Probability of Future Hazard Occurrences

- Less Than 1% Annual Probability
- Between 1% And 10% Annual Probability
- More Than 10% Annual Probability

Jurisdiction	IRISK Probability of Future Occurrence
City of Salisbury	**Low**
City of Statesville	**Low**
Iredell County (Unincorporated Area)	**Low**
Rowan County (Unincorporated Area)	**Low**
Town of China Grove	**Low**
Town of Cleveland	**Low**
Town of East Spencer	**Low**
Town of Faith	**Low**
Town of Granite Quarry	**Low**
Town of Harmony	**Low**
Town of Landis	**Low**

Jurisdiction	IRISK Probability of Future Occurrence
Town of Love Valley	Low
Town of Mooresville	Low
Town of Rockwell	Low
Town of Spencer	Low
Town of Troutman	Low

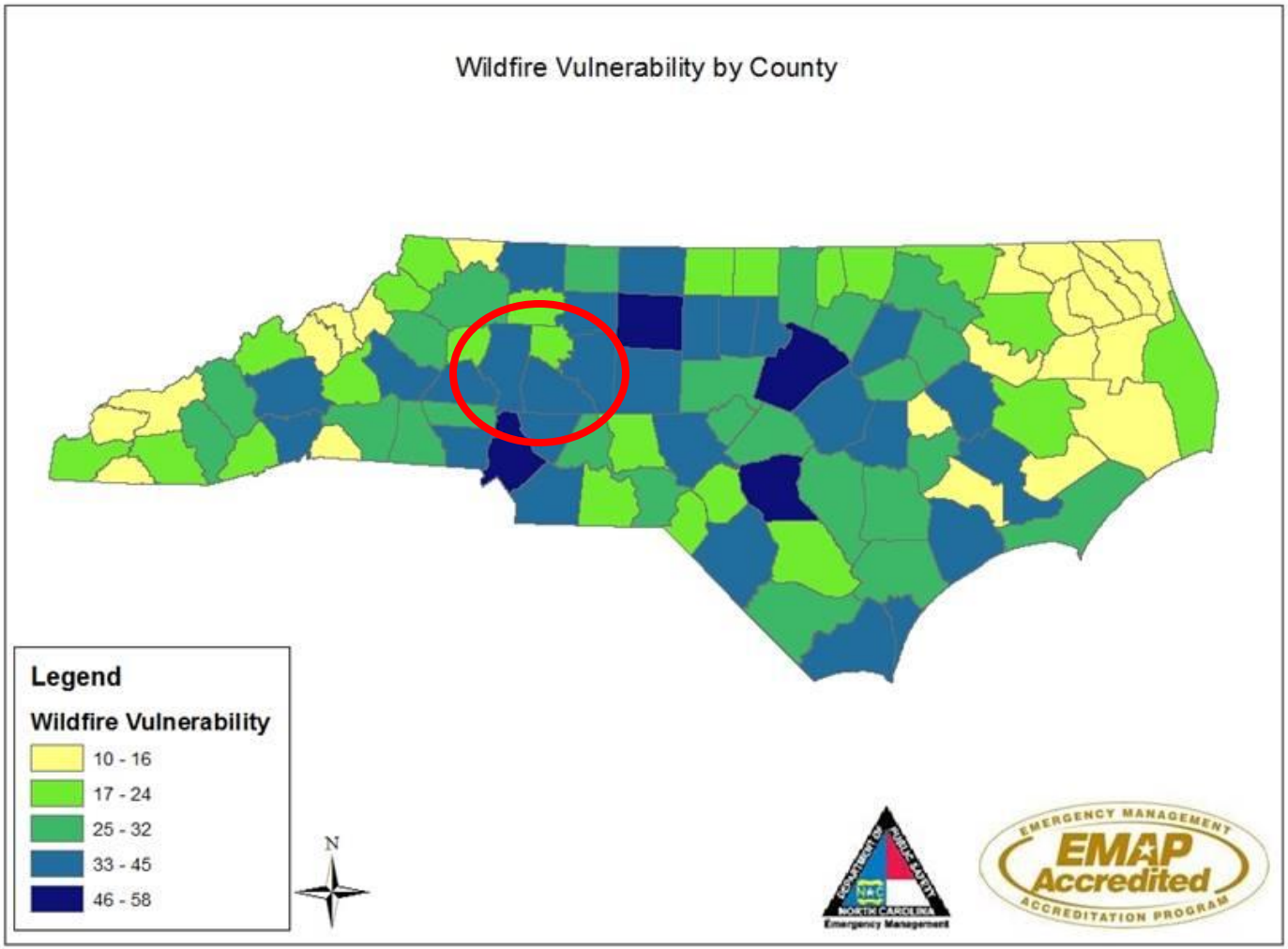
Wildfire Hazard Vulnerability and Impact

Wildfires can cause significant damage to property and threatens the lives of people who are unable to evacuate wildfire-prone areas. Many individual homes and cabins, subdivisions, resorts, recreational areas, organizational camps, businesses, and industries are located within high wildfire hazard areas. Further, the increasing demand for outdoor recreation places more people in wildlands during holidays, weekends, and vacation periods. Unfortunately, wildland residents and visitors are rarely educated or prepared for wildfire events that can sweep through the brush and timber and destroy property within minutes.

Wildfires can result in severe economic losses. Businesses that depend on timber, such as paper mills and lumber companies, experience losses that are often passed along to consumers through higher prices, and sometimes jobs are lost. The high cost of responding to and recovering from wildfires can deplete state resources and increase insurance rates. The economic impact of wildfires can also be felt in the tourism industry if roads and tourist attractions are closed due to health and safety concerns, such as reduced air quality by means of wildfire smoke and ash.

No damage assessments from previous fires were available.

The areas of the state with the largest wildfire hazard occurrence are also within the most exposed regions. Many areas in the eastern and western part of the state have high risk for wildfire since there are large forested areas in these regions. However, some counties in the central part of the state also have higher risk. Still, a county's exposure score plays a major role and counties with high exposure and high wildfire risk score highest. **Figure 5-99** shows wildfire hazard vulnerability scores by county for the state of North Carolina.



Source: North Carolina State Hazard Mitigation Plan

Figure 5-99: Wildfire Vulnerability

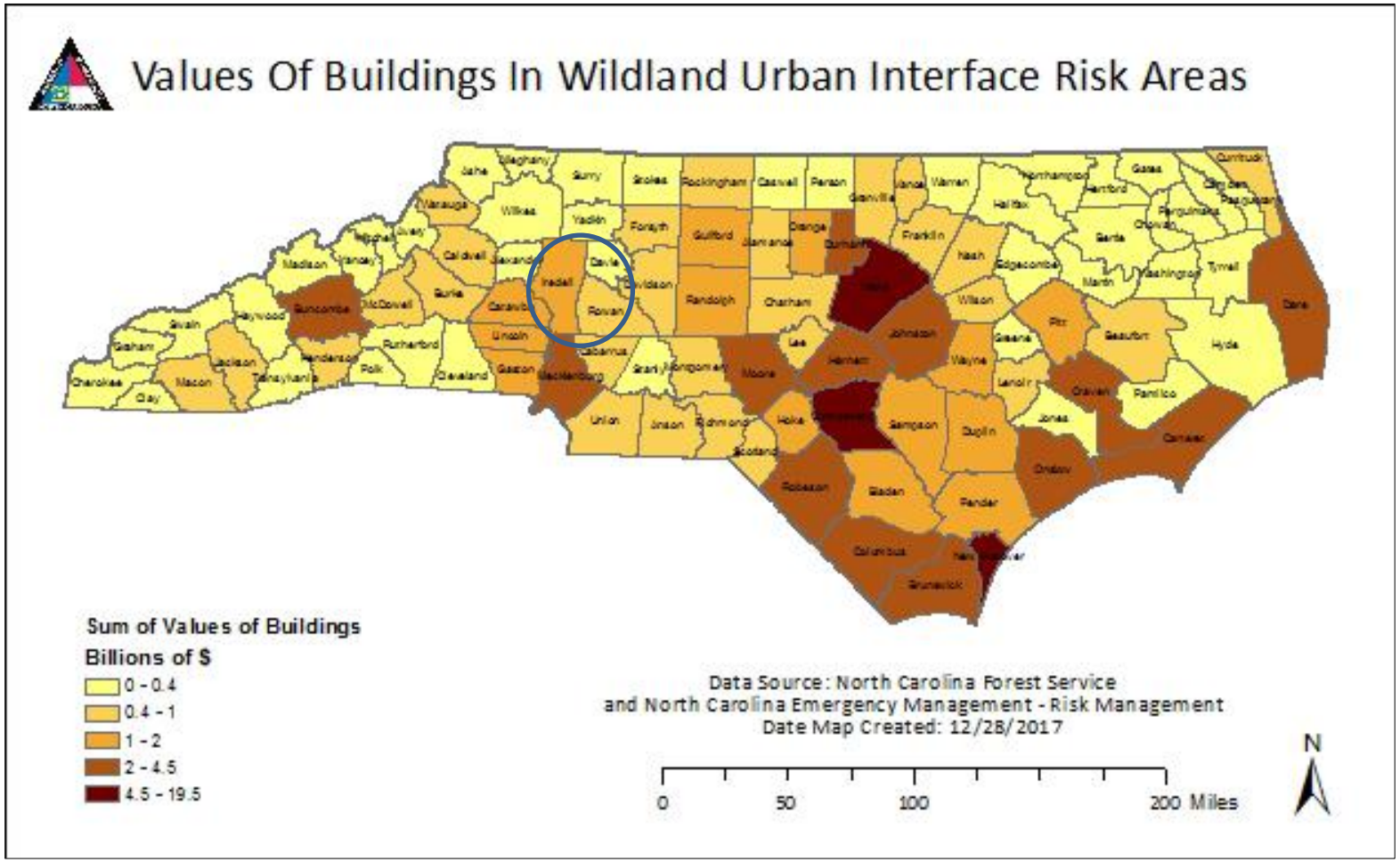
A vulnerability score was determined for each of the hazard categories on a county by county basis by adding a county's score for a particular hazard risk category to its total exposure score as depicted in the table below. Each county was assigned a quantitative hazard risk score for each hazard category based on a 1-5 scale. This score was determined by using natural (Jenks) breaks in the overall data for the state. Therefore, the exposure score for each county is relative to each of the other counties in the state. Similarly, the exposure of each county was determined for each hazard by utilizing natural breaks and assigning a score based on a 1-10 scale. The scores for each exposure category were added together to give us a total exposure score. This total exposure score was then added to each respective risk score to produce a score for vulnerability based on each of the hazard risk categories.

The Wildland Urban Interface (WUI) Risk Index Layer is a rating of the potential impact of a wildfire on people and their homes. The key input, WUI, reflects housing density (houses per acre) consistent with Federal Register National standards. The location of people living in the Wildland Urban Interface and rural areas is key information for defining potential wildfire impacts to people and homes. The WUI Risk Index for Iredell Rowan is displayed in the table below, respectively. The WUI Risk Rating is derived using a Response Function modeling approach which involves assigning a net change in the value to a resource or asset based on susceptibility to fire at different intensity levels, such as flame length. The range of values is from -1 to -9, with -1 representing the least negative impact and -9 representing the most negative impact. For example, areas with high housing density and high flame lengths are rated -9 while areas with low housing density and low flame lengths are rated -1. To calculate the WUI Risk Rating, the WUI housing density data was combined with Flame Length data and response functions were defined to represent potential impacts. The response functions were defined by a team of experts based on values defined by the SWRA Update Project technical team. By combining flame length with the WUI housing density data, you can determine where the greatest potential impact to homes and people is likely to occur.

Table 5-244: WUI Risk Index Assessment

Community	WUI Risk Index Assessment (-9 Major to -1 Minor)	Vulnerability (Wildfire Risk Low to High)
Iredell County	Minor to Major Impact; -2 to -8	Low to High
Harmony	Minor to Major Impact; -2 to -7	Low to High
Love Valley	Minor to Major Impact; -2 to -7	Low to Moderate
Mooresville	Minor to Major Impact; -2 to -8	Low to High
Statesville	Minor to Major Impact; -2 to -8	Minimal Risk to Moderate
Troutman	Minor to Major Impact; -2 to -8	Minimal Risk to Moderate
Rowan County	Minor to Major Impact; -1 to -8	Minimal Risk to High
China Grove	Minor to Major Impact; -1 to -8	Minimal Risk to High
Cleveland	Minor to Major Impact; -1 to -8	Minimal Risk to Moderate
East Spencer	Minor to Major Impact; -1 to -8	Minimal Risk to Moderate
Faith	Minor to Major Impact; -2 to -8	Low to Moderate
Granite Quarry	Minor to Major Impact; -1 to -9	Minimal Risk to Moderate
Landis	Minor to Major Impact; -1 to -8	Minimal Risk to Moderate
Rockwell	Minor to Major Impact; -1 to -9	Low to Moderate
Salisbury	Minor to Major Impact; -1 to -8	Minimal Risk to Moderate
Spencer	Minor to Major Impact; -1 to -8	Minimal Risk to Moderate

Map below depicts Value of Buildings in High WUI Risk Areas.



Source: North Carolina Hazard Mitigation Plan

Figure 5-100: Values of Buildings in Wildland Urban Interface Risk Areas

County	Number of Buildings in High WUI Zones (7-9)	Value of Buildings in High WUI Zones (7-9)
Iredell	9642	$1,690,638,393
Rowan	6660	$572,070,885

The following tables provide counts and values by jurisdiction relevant to Wildfire hazard vulnerability in the Iredell-Rowan Regional HMP Area.

Table 5-245: Population Impacted by the Wildfire Hazard Wildfire

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Iredell									
City of Statesville	29,163	2,398	8.2%	3,740	308	8.2%	1,825	150	8.2%
Iredell County (Unincorporated Area)	87,091	18,498	21.2%	11,168	2,372	21.2%	5,449	1,157	21.2%
Town of Harmony	525	0	0%	67	0	0%	33	0	0%
Town of Love Valley	100	7	7%	13	1	7.7%	6	0	0%
Town of Mooresville	38,203	2,938	7.7%	4,899	377	7.7%	2,390	184	7.7%
Town of Troutman	4,068	956	23.5%	522	123	23.6%	254	60	23.6%
Subtotal Iredell	**159,434**	**25,198**	**15.8%**	**20445**	**3217**	**15.7%**	**9975**	**1581**	**15.8%**
Rowan									
City of Salisbury	35,981	746	2.1%	5,193	108	2.1%	2,349	49	2.1%
Rowan County (Unincorporated Area)	63,003	5,753	9.1%	9,092	830	9.1%	4,113	376	9.1%
Town of China Grove	5,344	355	6.6%	771	51	6.6%	349	23	6.6%
Town of Cleveland	1,219	120	9.8%	176	17	9.7%	80	8	10%

Jurisdiction	Total Population	Population At Risk		All Elderly Population	Elderly Population At Risk		All Children Population	Children At Risk	
		Number	Percent		Number	Percent		Number	Percent
Town of East Spencer	1,726	308	17.8%	249	44	17.7%	113	20	17.7%
Town of Faith	3,288	250	7.6%	475	36	7.6%	215	16	7.4%
Town of Granite Quarry	4,957	98	2%	715	14	2%	324	6	1.9%
Town of Landis	3,124	25	0.8%	451	4	0.9%	204	2	1%
Town of Rockwell	4,767	766	16.1%	688	111	16.1%	311	50	16.1%
Town of Spencer	3,840	102	2.7%	554	15	2.7%	251	7	2.8%
Subtotal Rowan	**138,538**	**10,079**	**7.3%**	**19993**	**1418**	**7.1%**	**9046**	**668**	**7.4%**
TOTAL PLAN	**297,972**	**35,277**	**11.8%**	**40438**	**4635**	**11.5%**	**19021**	**2249**	**11.8%**

Source: GIS Analysis

Table 5-246: Buildings Impacted by the Wildfire Hazard Wildfire

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Iredell															
City of Statesville	14,254	801	5.6%	995	7%	$121,143,857	134	0.9%	$234,802,168	29	0.2%	$19,118,818	1,158	8.1%	$375,064,844
Iredell County (Unincorporated Area)	55,474	6,478	11.7%	11,386	20.5%	$1,357,085,739	250	0.5%	$130,921,629	166	0.3%	$112,754,999	11,802	21.3%	$1,600,762,367
Town of Harmony	444	0	0%	0	0%	$0	0	0%	$0	0	0%	$0	0	0%	$0

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
Town of Love Valley	258	19	7.4%	17	6.6%	$613,358	1	0.4%	$165,010	1	0.4%	$246,419	19	7.4%	$1,024,787
Town of Mooresville	14,440	315	2.2%	979	6.8%	$145,260,788	92	0.6%	$132,728,478	28	0.2%	$54,888,881	1,099	7.6%	$332,878,146
Town of Troutman	2,439	594	24.4%	503	20.6%	$65,773,975	81	3.3%	$109,229,663	17	0.7%	$21,488,065	601	24.6%	$196,491,703
Subtotal Iredell	**87,309**	**8,207**	**9.4%**	**13,880**	**15.9%**	**$1,689,877,717**	**558**	**0.6%**	**$607,846,948**	**241**	**0.3%**	**$208,497,182**	**14,679**	**16.8%**	**$2,506,221,847**
Rowan															
City of Salisbury	13,960	113	0.8%	251	1.8%	$51,158,692	24	0.2%	$76,338,789	10	0.1%	$23,049,574	285	2%	$150,547,054
Rowan County (Unincorporated Area)	38,881	1,316	3.4%	3,297	8.5%	$439,749,134	259	0.7%	$333,507,631	58	0.1%	$107,767,246	3,614	9.3%	$881,024,010
Town of China Grove	2,546	162	6.4%	152	6%	$54,956,137	11	0.4%	$22,741,544	1	0%	$2,026,066	164	6.4%	$79,723,747
Town of Cleveland	812	76	9.4%	72	8.9%	$13,512,498	0	0%	$0	4	0.5%	$6,269,900	76	9.4%	$19,782,397
Town of East Spencer	1,015	192	18.9%	169	16.7%	$34,587,845	9	0.9%	$262,292,758	18	1.8%	$69,852,131	196	19.3%	$366,732,733
Town of Faith	1,590	36	2.3%	114	7.2%	$15,927,165	7	0.4%	$2,437,202	0	0%	$0	121	7.6%	$18,364,367
Town of Granite Quarry	2,350	30	1.3%	43	1.8%	$6,412,347	4	0.2%	$1,739,922	1	0%	$5,820,436	48	2%	$13,972,706
Town of Landis	1,544	11	0.7%	11	0.7%	$2,041,249	0	0%	$0	1	0.1%	$1,318,439	12	0.8%	$3,359,688
Town of Rockwell	2,402	232	9.7%	353	14.7%	$65,417,755	37	1.5%	$31,275,991	10	0.4%	$16,013,842	400	16.7%	$112,707,588
Town of Spencer	2,010	46	2.3%	49	2.4%	$5,726,214	1	0%	$217,998	1	0%	$569,243	51	2.5%	$6,513,455
Subtotal Rowan	**67,110**	**2,214**	**3.3%**	**4,511**	**6.7%**	**$689,489,036**	**352**	**0.5%**	**$730,551,835**	**104**	**0.2%**	**$232,686,877**	**4,967**	**7.4%**	**$1,652,727,745**

Jurisdiction	All Buildings	Number of Pre-FIRM Buildings At Risk		Residential Buildings At Risk			Commercial Buildings At Risk			Public Buildings At Risk			Total Buildings at Risk		
	Num	Num	% of Total	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages	Num	% of Total	Estimated Damages
TOTAL PLAN	**154,419**	**10,421**	**6.7%**	**18,391**	**11.9%**	**$2,379,366,753**	**910**	**0.6%**	**$1,338,398,783**	**345**	**0.2%**	**$441,184,059**	**19,646**	**12.7%**	**$4,158,949,592**

Source: GIS Analysis

The following tables provide counts and estimated damages for CIKR buildings by jurisdiction in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event. Totals across all sectors are shown at the bottom of each table.

Table 5-247: Critical Facilities Exposed to the Wildfire - City of Statesville

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	Wildfire Hazard	1	$558,290
Commercial Facilities	Wildfire Hazard	81	$77,717,566
Critical Manufacturing	Wildfire Hazard	49	$132,182,556
Government Facilities	Wildfire Hazard	6	$7,659,152
Healthcare and Public Health	Wildfire Hazard	6	$5,407,169
Transportation Systems	Wildfire Hazard	20	$30,396,255
All Categories	**Wildfire Hazard**	**163**	**$253,920,988**

Source: GIS Analysis

Table 5-248: Critical Facilities Exposed to the Wildfire - Iredell County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	Wildfire Hazard	1	$408,686
Commercial Facilities	Wildfire Hazard	256	$107,946,902
Critical Manufacturing	Wildfire Hazard	71	$58,031,806
Food and Agriculture	Wildfire Hazard	5	$1,187,390
Government Facilities	Wildfire Hazard	58	$61,543,644
Healthcare and Public Health	Wildfire Hazard	11	$6,330,008
Transportation Systems	Wildfire Hazard	14	$8,228,193
All Categories	**Wildfire Hazard**	**416**	**$243,676,629**

Source: GIS Analysis

Table 5-249: Critical Facilities Exposed to the Wildfire - Town of Love Valley

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	Wildfire Hazard	1	$246,419
Food and Agriculture	Wildfire Hazard	1	$165,010
All Categories	**Wildfire Hazard**	**2**	**$411,429**

Source: GIS Analysis

Table 5-250: Critical Facilities Exposed to the Wildfire - Town of Mooresville

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	Wildfire Hazard	1	$1,007,780
Commercial Facilities	Wildfire Hazard	49	$27,923,503
Critical Manufacturing	Wildfire Hazard	27	$36,204,445
Food and Agriculture	Wildfire Hazard	1	$206,166
Government Facilities	Wildfire Hazard	11	$42,865,865
Healthcare and Public Health	Wildfire Hazard	13	$65,377,845
Transportation Systems	Wildfire Hazard	18	$14,031,754
All Categories	**Wildfire Hazard**	**120**	**$187,617,358**

Source: GIS Analysis

Table 5-251: Critical Facilities Exposed to the Wildfire - Town of Troutman

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	Wildfire Hazard	40	$42,922,336
Critical Manufacturing	Wildfire Hazard	37	$66,557,938
Government Facilities	Wildfire Hazard	15	$19,188,651
Healthcare and Public Health	Wildfire Hazard	2	$778,605
Transportation Systems	Wildfire Hazard	4	$1,270,198
All Categories	**Wildfire Hazard**	**98**	**$130,717,728**

Source: GIS Analysis

Table 5-252: Critical Facilities Exposed to the Wildfire - City of Salisbury

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	Wildfire Hazard	18	$58,775,525
Critical Manufacturing	Wildfire Hazard	12	$33,973,001
Government Facilities	Wildfire Hazard	1	$1,387,091
Transportation Systems	Wildfire Hazard	2	$3,806,786
All Categories	**Wildfire Hazard**	**33**	**$97,942,403**

Source: GIS Analysis

Table 5-253: Critical Facilities Exposed to the Wildfire - Rowan County (Unincorporated Area)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	Wildfire Hazard	2	$1,610,078
Commercial Facilities	Wildfire Hazard	153	$236,960,171
Critical Manufacturing	Wildfire Hazard	59	$46,059,932
Energy	Wildfire Hazard	2	$14,643,921
Food and Agriculture	Wildfire Hazard	34	$1,671,055
Government Facilities	Wildfire Hazard	14	$35,815,406
Healthcare and Public Health	Wildfire Hazard	2	$2,662,277
Transportation Systems	Wildfire Hazard	45	$102,668,166
All Categories	**Wildfire Hazard**	**311**	**$442,091,006**

Source: GIS Analysis

Table 5-254: Critical Facilities Exposed to the Wildfire - Town of China Grove

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	Wildfire Hazard	6	$4,822,896
Critical Manufacturing	Wildfire Hazard	4	$18,854,094
Food and Agriculture	Wildfire Hazard	1	$335,745
Transportation Systems	Wildfire Hazard	1	$754,874

Sector	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**Wildfire Hazard**	**12**	**$24,767,609**

Source: GIS Analysis

Table 5-255: Critical Facilities Exposed to the Wildfire - Town of Cleveland

Sector	Event	Number of Buildings At Risk	Estimated Damages
Government Facilities	Wildfire Hazard	4	$6,269,900
All Categories	**Wildfire Hazard**	**4**	**$6,269,900**

Source: GIS Analysis

Table 5-256: Critical Facilities Exposed to the Wildfire - Town of East Spencer

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	Wildfire Hazard	18	$263,123,978
Critical Manufacturing	Wildfire Hazard	6	$37,214,968
Government Facilities	Wildfire Hazard	3	$31,805,942
All Categories	**Wildfire Hazard**	**27**	**$332,144,888**

Source: GIS Analysis

Table 5-257: Critical Facilities Exposed to the Wildfire - Town of Faith

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	Wildfire Hazard	4	$1,396,530
Critical Manufacturing	Wildfire Hazard	3	$1,040,672
All Categories	**Wildfire Hazard**	**7**	**$2,437,202**

Source: GIS Analysis

Table 5-258: Critical Facilities Exposed to the Wildfire - Town of Granite Quarry

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	Wildfire Hazard	1	$240,758
Critical Manufacturing	Wildfire Hazard	2	$957,807
Government Facilities	Wildfire Hazard	1	$5,820,436

Sector	Event	Number of Buildings At Risk	Estimated Damages
Transportation Systems	Wildfire Hazard	1	$541,357
All Categories	**Wildfire Hazard**	**5**	**$7,560,358**

Source: GIS Analysis

Table 5-259: Critical Facilities Exposed to the Wildfire - Town of Landis

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	Wildfire Hazard	1	$1,318,439
All Categories	**Wildfire Hazard**	**1**	**$1,318,439**

Source: GIS Analysis

Table 5-260: Critical Facilities Exposed to the Wildfire - Town of Rockwell

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	Wildfire Hazard	20	$25,332,288
Critical Manufacturing	Wildfire Hazard	14	$8,940,486
Government Facilities	Wildfire Hazard	5	$5,522,886
Transportation Systems	Wildfire Hazard	5	$3,231,338
All Categories	**Wildfire Hazard**	**44**	**$43,026,998**

Source: GIS Analysis

Table 5-261: Critical Facilities Exposed to the Wildfire - Town of Spencer

Sector	Event	Number of Buildings At Risk	Estimated Damages
Commercial Facilities	Wildfire Hazard	1	$569,243
Critical Manufacturing	Wildfire Hazard	1	$217,998
All Categories	**Wildfire Hazard**	**2**	**$787,241**

Source: GIS Analysis

The following table provides counts and estimated damages for CIKR buildings across all jurisdictions, by sector, in the plan. Because there is a large number of sectors and events, the table is sorted by sector and then by event.

Table 5-262: Critical Facilities Exposed to the Wildfire (by Sector)

Sector	Event	Number of Buildings At Risk	Estimated Damages
Banking and Finance	Wildfire Hazard	1,130	$1,283,646,718
Chemical	Wildfire Hazard	42	$358,071,323
Commercial Facilities	Wildfire Hazard	52,860	$49,580,125,705
Communications	Wildfire Hazard	70	$137,471,754
Critical Manufacturing	Wildfire Hazard	14,976	$20,000,638,403
Defense Industrial Base	Wildfire Hazard	28	$356,062,780
Emergency Services	Wildfire Hazard	603	$818,058,390
Energy	Wildfire Hazard	474	$15,266,535,387
Food and Agriculture	Wildfire Hazard	51,470	$5,459,175,923
Government Facilities	Wildfire Hazard	10,228	$19,582,738,271
Healthcare and Public Health	Wildfire Hazard	3,140	$5,763,475,284
Information Technology	Wildfire Hazard	1	$530,450
National Monuments and Icons	Wildfire Hazard	1	$471,030
Nuclear Reactors, Materials and Waste	Wildfire Hazard	19	$22,260,225
Other	Wildfire Hazard	10	$30,408,115
Postal and Shipping	Wildfire Hazard	35	$18,896,556
Transportation Systems	Wildfire Hazard	8,603	$10,290,930,939
Water	Wildfire Hazard	445	$8,381,233,375
All Categories	**Wildfire Hazard**	**144,135**	**$137,350,730,628**

Source: GIS Analysis

The following tables provide counts and estimated damages for High Potential Loss Properties by jurisdiction in the plan. Because there is a large number of categories and events, the table is sorted by category and then by event. Totals across all categories are shown at the bottom of each table.

Table 5-263: High Potential Loss Properties Exposed to the Wildfire - City of Statesville

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	Wildfire Hazard	12	$62,393,932
Government	Wildfire Hazard	3	$6,510,928
Industrial	Wildfire Hazard	11	$103,011,968
Religious	Wildfire Hazard	2	$3,946,019
Residential	Wildfire Hazard	2	$3,018,597
All Categories	**Wildfire Hazard**	**30**	**$178,881,444**

Source: GIS Analysis

Table 5-264: High Potential Loss Properties Exposed to the Wildfire - Iredell County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	Wildfire Hazard	5	$9,347,005
Government	Wildfire Hazard	8	$40,644,316
Industrial	Wildfire Hazard	4	$20,395,228
Religious	Wildfire Hazard	4	$5,964,064
Residential	Wildfire Hazard	33	$54,645,632
All Categories	**Wildfire Hazard**	**54**	**$130,996,245**

Source: GIS Analysis

Table 5-265: High Potential Loss Properties Exposed to the Wildfire - Town of Mooresville

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	Wildfire Hazard	13	$74,526,425
Government	Wildfire Hazard	3	$40,601,961
Industrial	Wildfire Hazard	2	$28,130,353
Religious	Wildfire Hazard	4	$6,348,472
Residential	Wildfire Hazard	1	$4,627,797
All Categories	**Wildfire Hazard**	**23**	**$154,235,008**

Source: GIS Analysis

Table 5-266: High Potential Loss Properties Exposed to the Wildfire - Town of Troutman

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	Wildfire Hazard	8	$32,016,696
Government	Wildfire Hazard	2	$13,079,065
Industrial	Wildfire Hazard	4	$44,172,292
Residential	Wildfire Hazard	1	$2,516,590
All Categories	**Wildfire Hazard**	**15**	**$91,784,643**

Source: GIS Analysis

Table 5-267: High Potential Loss Properties Exposed to the Wildfire - City of Salisbury

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	Wildfire Hazard	3	$32,231,378
Industrial	Wildfire Hazard	4	$23,071,690
Religious	Wildfire Hazard	1	$5,282,838
Residential	Wildfire Hazard	1	$10,717,149
All Categories	**Wildfire Hazard**	**9**	**$71,303,055**

Source: GIS Analysis

Table 5-268: High Potential Loss Properties Exposed to the Wildfire - Rowan County (Unincorporated Area)

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	Wildfire Hazard	7	$67,122,914
Industrial	Wildfire Hazard	1	$1,887,184
Religious	Wildfire Hazard	3	$13,367,118
Utilities	Wildfire Hazard	1	$12,572,129
All Categories	**Wildfire Hazard**	**12**	**$94,949,345**

Source: GIS Analysis

Table 5-269: High Potential Loss Properties Exposed to the Wildfire - Town of China Grove

Category	Event	Number of Buildings At Risk	Estimated Damages
Industrial	Wildfire Hazard	2	$18,050,923
All Categories	**Wildfire Hazard**	**2**	**$18,050,923**

Source: GIS Analysis

Table 5-270: High Potential Loss Properties Exposed to the Wildfire - Town of Cleveland

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	Wildfire Hazard	1	$3,818,669
All Categories	**Wildfire Hazard**	**1**	**$3,818,669**

Source: GIS Analysis

Table 5-271: High Potential Loss Properties Exposed to the Wildfire - Town of East Spencer

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	Wildfire Hazard	1	$224,329,435
Government	Wildfire Hazard	2	$31,193,409
Industrial	Wildfire Hazard	1	$13,467,234
Residential	Wildfire Hazard	1	$2,492,371
All Categories	**Wildfire Hazard**	**5**	**$271,482,449**

Source: GIS Analysis

Table 5-272: High Potential Loss Properties Exposed to the Wildfire - Town of Granite Quarry

Category	Event	Number of Buildings At Risk	Estimated Damages
Government	Wildfire Hazard	1	$5,820,436
All Categories	**Wildfire Hazard**	**1**	**$5,820,436**

Source: GIS Analysis

Table 5-273: High Potential Loss Properties Exposed to the Wildfire - Town of Rockwell

Category	Event	Number of Buildings At Risk	Estimated Damages
Commercial	Wildfire Hazard	1	$1,422,695
Government	Wildfire Hazard	1	$4,716,672

Category	Event	Number of Buildings At Risk	Estimated Damages
All Categories	**Wildfire Hazard**	**2**	**$6,139,367**

Source: GIS Analysis

5.19 CONCLUSIONS ON HAZARD RISK

The hazard profiles presented in this section were developed using best available data and result in what may be considered principally a qualitative assessment as recommended by FEMA in its "How-to" guidance document titled *Understanding Your Risks: Identifying Hazards and Estimating Losses* (FEMA Publication 386-2). It relies heavily on historical and anecdotal data, stakeholder input, and professional and experienced judgment regarding observed and/or anticipated hazard impacts. It also carefully considers the findings in other relevant plans, studies, and technical reports.

5.19.1 Priority Risk Index

In order to draw some meaningful planning conclusions on hazard risk for the Iredell Rowan Region, the results of the hazard profiling process were used to generate countywide hazard classifications according to a "Priority Risk Index" (PRI). The purpose of the PRI is to categorize and prioritize all potential hazards for the Iredell Rowan Region as high, moderate, or low risk. Combined with the asset inventory and quantitative vulnerability assessment provided in the next section, the summary hazard classifications generated through the use of the PRI allows for the prioritization of those high hazard risks for mitigation planning purposes, and more specifically, the identification of hazard mitigation opportunities for the jurisdictions in the Iredell Rowan Region to consider as part of their proposed mitigation strategy.

The prioritization and categorization of identified hazards for the Iredell Rowan Region is based principally on the PRI, a tool used to measure the degree of risk for identified hazards in a particular planning area. The PRI is used to assist the Iredell Rowan Regional Hazard Mitigation Planning Team in gaining consensus on the determination of those hazards that pose the most significant threat to the Iredell Rowan counties based on a variety of factors. The PRI is not scientifically based, but is rather meant to be utilized as an objective planning tool for classifying and prioritizing hazard risks in the Iredell Rowan Region based on standardized criteria.

The application of the PRI results in numerical values that allow identified hazards to be ranked against one another (the higher the PRI value, the greater the hazard risk). PRI values are obtained by assigning varying degrees of risk to five categories for each hazard (probability, impact, spatial extent, warning time, and duration). Each degree of risk has been assigned a value (1 to 4) and an agreed upon weighting factor[19][28], as summarized in **Table 5-274**. To calculate the PRI value for a given hazard, the assigned risk value for each category is multiplied by the weighting factor. The sum of all five categories equals the final PRI value, as demonstrated in the example equation below:

PRI VALUE = [(PROBABILITY x .30) + (IMPACT x .30) + (SPATIAL EXTENT x .20) + (WARNING TIME x .10) + (DURATION x .10)]

According to the weighting scheme and point system applied, the highest possible value for any hazard is 4.0. When the scheme is applied for the Iredell Rowan Region, the highest PRI value is 3.1

[19] The Regional Hazard Mitigation Planning Team, based upon any unique concerns or factors for the planning area, may adjust the PRI weighting scheme during future plan updates.

(thunderstorm / high wind hazard). Prior to being finalized, PRI values for each identified hazard were reviewed and accepted by the members of the Regional Hazard Mitigation Planning Team.

Table 5-274: Priority Risk Index for the Iredell Rowan Region

PRI Category	Degree of Risk			Assigned Weighting Factor
	Level	Criteria	Index Value	
Probability	Unlikely	Less than 1% annual probability	1	30%
	Possible	Between 1 and 10% annual probability	2	
	Likely	Between 10 and 100% annual probability	3	
	Highly Likely	100% annual probability	4	
Impact	Minor	Very few injuries, if any. Only minor property damage and minimal disruption on quality of life. Temporary shutdown of critical facilities.	1	30%
	Limited	Minor injuries only. More than 10% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for more than one day.	2	
	Critical	Multiple deaths/injuries possible. More than 25% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for more than one week.	3	
	Catastrophic	High number of deaths/injuries possible. More than 50% of property in affected area damaged or destroyed. Complete shutdown of critical facilities for 30 days or more.	4	
Spatial Extent	Negligible	Less than 1% of area affected	1	20%
	Small	Between 1 and 10% of area affected	2	
	Moderate	Between 10 and 50% of area affected	3	
	Large	Between 50 and 100% of area affected	4	
Warning Time	More than 24 hours	Self-explanatory	1	10%
	12 to 24 hours	Self-explanatory	2	
	6 to 12 hours	Self-explanatory	3	
	Less than 6 hours	Self-explanatory	4	
Duration	Less than 6 hours	Self-explanatory	1	10%
	Less than 24 hours	Self-explanatory	2	
	Less than one week	Self-explanatory	3	
	More than one week	Self-explanatory	4	

5.19.2 Priority Risk Index Results

Table 5-275 summarizes the degree of risk assigned to each category for all initially identified hazards based on the application of the PRI. Assigned risk levels were based on the detailed hazard profiles developed for this section, as well as input from the Regional Hazard Mitigation Planning Team. The results were then used in calculating PRI values and making final determinations for the risk assessment.

Table 5-275: Summary of PRI Results for the Iredell Rowan Region

Hazard	Category/Degree of Risk					
	Probability	Impact	Spatial Extent	Warning Time	Duration	PRI Score
Atmospheric Hazards						
Drought	Likely	Minor	Large	More than 24 hours	More than 1 week	**2.5**
Extreme Heat	Possible	Minor	Large	More than 24 hours	Less than 1 week	**2.1**
Hailstorm	Highly Likely	Minor	Moderate	Less than 6 hours	Less than 6 hours	**2.6**
Hurricane and Tropical Storm	Likely	Limited	Large	More than 24 hours	Less than 24 hours	**2.6**
Lightning	Highly Likely	Minor	Negligible	Less than 6 hours	Less than 6 hours	**2.2**
Thunderstorm / High Wind	Highly Likely	Critical	Moderate	6 to 12 hours	Less than 6 hours	**3.1**
Tornado	Likely	Critical	Small	Less than 6 hours	Less than 6 hours	**2.7**
Winter Storm and Freeze	Highly Likely	Critical	Large	More than 24 hours	Less than 1 week	**3.0**
Geologic Hazards						
Earthquake	Possible	Minor	Moderate	Less than 6 hours	Less than 6 hours	**2.0**
Landslide	Possible	Limited	Small	Less than 6 hours	Less than 6 hours	**2.1**
Hydrologic Hazards						
Dam and Levee Failure	Unlikely	Critical	Moderate	Less than 6 hours	Less than 6 hours	**2.3**
Erosion	Possible	Minor	Small	More than 24 hours	More than 1 week	**1.8**
Flood	Likely	Limited	Small	6 to 12 hours	Less than 1 week	**2.5**
Other Hazards						
Hazardous Materials Incident	Likely	Limited	Small	Less than 6 hours	Less than 24 hours	**2.5**
Wildfire	Likely	Minor	Small	Less than 6 hours	More than 1 week	**2.4**

5.20 FINAL DETERMINATIONS

No changes in development impacted the jurisdictions' overall vulnerability has occurred since the last plan was approved.

The conclusions drawn from the hazard profiling process for the Iredell Rowan Region, including the PRI results and input from the Regional Hazard Mitigation Planning Team, resulted in the classification of risk for each identified hazard according to three categories: High Risk, Moderate Risk, and Low Risk (**Table 5-276**). 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 all of the Iredell Rowan Region. It should be noted that although some hazards are classified below as posing low risk, their

occurrence of varying or unprecedented magnitudes is still possible in some cases and their assigned classification will continue to be evaluated during future plan updates.

Table 5-276: Conclusions on Hazard Risk for the Iredell Rowan Region

HIGH RISK	Thunderstorm Wind / High Wind Winter Storm and Freeze Tornado Hailstorm Hurricane and Tropical Storm
MODERATE RISK	Drought Flood Hazardous Material Incident Dam and Levee Failure Wildfire
LOW RISK	Lightning Extreme Heat Landslide Earthquake Erosion

SECTION 6: CAPABILITY ASSESSMENT

This section of the Plan discusses the capability of the communities in the Iredell Rowan Region to implement hazard mitigation activities. It consists of the following four subsections:

- 6.1 What is a Capability ?
- 6.2 Conducting the Capability Assessment
- 6.3 Capability Assessment Findings
- 6.4 Conclusions on Local Capability

6.1 What is a Capability Assessment?

The purpose of conducting a capability assessment is to determine the ability of a local jurisdiction to implement a comprehensive mitigation strategy and to identify potential opportunities for establishing or enhancing specific mitigation policies, programs, or projects.[1] As in any planning process, it is important to try to establish which goals, objectives, and/or actions are feasible based on an understanding of the organizational capacity of those agencies or departments tasked with their implementation. A capability assessment helps to determine which mitigation actions are practical, and likely to be implemented over time, given a local government's planning and regulatory framework, level of administrative and technical support, amount of fiscal resources, and current political climate.

A capability assessment has two primary components: 1) an inventory of a local jurisdiction's relevant plans, ordinances, or programs already in place and 2) an analysis of its capacity to carry them out. Careful examination of local capabilities will detect any existing gaps, shortfalls, or weaknesses with ongoing government activities that could hinder proposed mitigation activities and possibly exacerbate community hazard vulnerability. 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 assessment completed for the Iredell Rowan Region serves 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 Hazard Mitigation Plan. It not only helps establish the goals and objectives for the region to pursue under this Plan, but it also ensures that those goals and objectives are realistically achievable under given local conditions.

6.2 Conducting the Capability Assessment

In order to facilitate the inventory and analysis of local government capabilities within the Iredell Rowan counties, a detailed Capability Assessment Survey was completed for each of the participating jurisdictions based on the information found in existing hazard mitigation plans and on local government websites. The survey questionnaire compiled information on a variety of "capability indicators" such as existing local plans, policies, programs, or ordinances that contribute to and/or hinder the region's ability to implement hazard mitigation actions. Other indicators included information related to the

[1] While the Final Rule for implementing the Disaster Mitigation Act of 2000 does not require a local capability assessment to be completed for local hazard mitigation plans, it is a critical step in developing a mitigation strategy that meets the needs of the region while considering their own unique abilities. The Rule does state that a community's mitigation strategy should be "based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools" (44 CFR, Part 201.6(c)(3)).

communities' fiscal, administrative, and technical capabilities, such as access to local budgetary and personnel resources for mitigation purposes. The current political climate, an important consideration for any local planning or decision-making process, was also evaluated with respect to hazard mitigation.

At a minimum, survey results provide an extensive inventory of existing local plans, ordinances, programs, and resources that are in place or under development in addition to their overall effect on hazard loss reduction. However, the survey instrument can also serve to 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.

The information collected in the survey questionnaire was incorporated into a database for further analysis. A general scoring methodology was then applied to quantify each jurisdiction's overall capability. According to the scoring system, each capability indicator was assigned a point value based on its relevance to hazard mitigation.

Using this scoring methodology, a total score and an overall capability rating of "high," "moderate," or "limited" could be determined according to the total number of points received. These classifications are designed to provide nothing more than a general assessment of local government capability. The results of this capability assessment provide critical information for developing an effective and meaningful mitigation strategy.

6.3 Capability Assessment Findings

The findings of the capability assessment are summarized in this Plan to provide insight into the relevant capacity of the jurisdictions in the Iredell Rowan Region to implement hazard mitigation activities. All information is based upon the review of existing hazard mitigation plans and local government websites through the Capability Assessment Survey and input provided by local government officials during meetings of the Iredell Rowan Regional Hazard Mitigation Planning Team.

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 in a responsible manner while maintaining the general welfare of the community. It includes emergency response and mitigation planning, comprehensive land use planning, and transportation planning; the enforcement of zoning or subdivision ordinances and building codes that regulate how land is developed and structures are built; as well as protecting environmental, historic, and cultural resources in the community. Although some conflicts can arise, these planning initiatives generally present significant opportunities to integrate hazard mitigation principles and practices into the local decision-making process.

This assessment is designed to provide a general overview of the key planning and regulatory tools and programs that are in place or under development for the jurisdictions in the Iredell Rowan Region along with their potential effect on loss reduction. This information will help identify opportunities to address existing gaps, weaknesses, or conflicts with other initiatives in addition to integrating the implementation of this Plan with existing planning mechanisms where appropriate.

Table 6.1 provides a summary of the relevant local plans, ordinances, and programs already in place or under development for the jurisdictions in the Iredell Rowan Region. Listed below are existing plans, studies, reports and technical information reviewed for plan development and update. Relevant information such as, hazard analysis, NFIP data, building codes, ordinances and communication procedures, existing data, and shared objectives were incorporated into the mitigation plan via coordination with relevant agencies, prioritizing hazards, prioritizing mitigation actions.

An arrow (➳) indicates that the given item is currently in place and being implemented. Each of these local existing plans, studies, reports, ordinances, and programs should be considered available mechanisms for incorporating the requirements of the Iredell Rowan Regional Hazard Mitigation Plan.

Table 6.1: Relevant Plans, Ordinances, and Programs

Planning / Regulatory Tool	IREDELL COUNTY	Harmony	Love Valley	Mooresville	Statesville	Troutman	ROWAN COUNTY	China Grove	Cleveland	East Spencer	Faith	Granite Quarry	Landis	Rockwell	Salisbury	Spencer
Hazard Mitigation Plan	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳
Comprehensive Land Use Plan	➳	➳		➳	➳	➳	➳	➳				➳		➳	➳	➳
Floodplain Management Plan																
Open Space Management Plan (Parks & Rec/Greenway Plan)	➳	➳	➳	➳	➳	➳	➳						➳			
Stormwater Management Plan/Ordinance	➳				➳	➳		➳				➳	➳		➳	
Natural Resource Protection Plan																➳
Flood Response Plan																
Emergency Operations Plan	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳
Continuity of Operations Plan	➳	➳	➳	➳	➳	➳	➳									
Evacuation Plan							➳	➳	➳	➳	➳	➳	➳	➳	➳	➳
Disaster Recovery Plan							➳	➳	➳	➳	➳	➳	➳	➳	➳	➳
Capital Improvements Plan	➳			➳	➳	➳	➳	➳	➳	➳					➳	
Economic Development Plan	➳			➳			➳									
Historic Preservation Plan															➳	
Flood Damage Prevention Ordinance	➳			➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳
Zoning Ordinance	➳	➳		➳	➳	➳	➳	➳	➳	➳		➳	➳	➳	➳	➳
Subdivision Ordinance	➳			➳	➳	➳	➳	➳		➳		➳	➳	➳	➳	➳
Unified Development Ordinance	➳				➳	➳		➳				➳			➳	➳
Post-Disaster Redevelopment Ordinance																
Building Code	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳
Fire Code	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳
National Flood Insurance Program (NFIP)	➳			➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳
NFIP Community Rating System																

A more detailed discussion on the region's planning and regulatory capability follows.

6.3.2 Emergency Management

Hazard mitigation is widely recognized as one of the four primary phases of emergency management. The three other phases include preparedness, response, and recovery. Each phase is interconnected with hazard mitigation, as **Figure 6.1** suggests. Opportunities to reduce potential losses through mitigation practices are most often implemented before disaster strikes, such as the elevation of flood prone structures or the continuous enforcement of policies that prevent and regulate development that is vulnerable to hazards due to its location, design, or other characteristics. Mitigation opportunities will also be presented during immediate preparedness or response activities, such as installing storm shutters in advance of a hurricane, and certainly during the long-term recovery and redevelopment process following a hazard event.

Figure 6-1: The Four Phases of Emergency Management

Planning for each phase is a critical part of a comprehensive emergency management program and a key to the successful implementation of hazard mitigation actions. As a result, the Capability Assessment Survey asked several questions across a range of emergency management plans in order to assess the Iredell Rowan Region's willingness to plan and their level of technical planning proficiency.

Hazard Mitigation Plan: A hazard mitigation plan represents a community's blueprint for how it intends to reduce the impact of natural and human-caused hazards on people and the built environment. The essential elements of a hazard mitigation plan include a risk assessment, capability assessment, and mitigation strategy.

- Each of the two counties and all the municipalities in this multi-jurisdictional plan have previously adopted hazard mitigation plans. Each participating jurisdiction was included in their respective county's plan.

Disaster Recovery Plan: A disaster recovery plan serves to guide the physical, social, environmental, and economic recovery and reconstruction process following a disaster. In many instances, hazard mitigation principles and practices are incorporated into local disaster recovery plans with the intent of capitalizing on opportunities to break the cycle of repetitive disaster losses. Disaster recovery plans can also lead to the preparation of disaster redevelopment policies and ordinances to be enacted following a hazard event.

- Rowan County has a disaster recovery plan in place. It is an individual annex to the Emergency Operations plan which also covers the municipalities. Iredell County and its municipalities should

consider developing a plan to guide the recovery and reconstruction process following a disaster.

Emergency Operations Plan: An emergency operations plan outlines responsibility and the means by which resources are deployed during and following an emergency or disaster.

- Iredell County and Rowan County each maintain emergency operations plans through their Emergency Management and Emergency Services Departments, respectively. These plans have been formally adopted by each of the municipalities located within their respective counties.

Continuity of Operations Plan: A continuity of operations plan establishes a chain of command, line of succession, and plans for backup or alternate emergency facilities in case of an extreme emergency or disaster event.

- Iredell County and all its municipalities have adopted a continuity of operations plan that is maintained by the county.
- Rowan County has adopted a continuity of operations plan, but none of its municipalities have adopted the plan, nor have they formally adopted a continuity of operations plan of their own.

6.3.3 General Planning

The implementation of hazard mitigation activities often involves agencies and individuals beyond the emergency management profession. Stakeholders may include local planners, public works officials, economic development specialists, and others. In many instances, concurrent local planning efforts will help to achieve or complement hazard mitigation goals, even though they are not designed as such. Therefore, the Capability Assessment Survey also asked questions regarding general planning capabilities and the degree to which hazard mitigation is integrated into other on-going planning efforts in the Iredell Rowan Region.

Comprehensive Land Use Plan: A comprehensive land use plan establishes the overall vision for what a community wants to be and serves as a guide for future governmental decision making. Typically, a comprehensive plan contains sections on demographic conditions, land use, transportation elements, and community facilities. Given the broad nature of the plan and its regulatory standing in many communities, the integration of hazard mitigation measures into the comprehensive plan can enhance the likelihood of achieving risk reduction goals, objectives, and actions. The communities below will, when appropriate, include policies regarding the reduction of vulnerability of future development in high hazard areas by reviewing development regulations.

Iredell County has adopted a comprehensive plan called the 2030 Horizon Plan.

- The Town of Harmony put a town land use plan in place in 2006.
- The Town of Mooresville has a comprehensive land use plan in place.
- The City of Statesville has developed a land development plan.
- The Town of Troutman adopted an area land use plan.
- Rowan County has developed and adopted two land use plans, the West Rowan Land Use Plan and the East Rowan Land Use Plan.
- The Town of China Grove has adopted a comprehensive plan.
- The Town of Granite Quarry has developed a comprehensive plan.
- The Town of Rockwell adopted a land use plan.
- The City of Salisbury's Planning Department developed a comprehensive plan called Vision 2020.
- The Town of Spencer has adopted a land use plan through 2025.

Capital Improvements Plan: A capital improvements plan guides the scheduling of spending on public improvements. A capital improvements plan can serve as an important mechanism for guiding future development away from identified hazard areas. Limiting public spending in hazardous areas is one of the most effective long-term mitigation actions available to local governments. The communities below have determined that the goals and actions of the hazard mitigation plan will be considered in the next 5-year capital improvements planning processes, which may be updated annually.

- Iredell County Finance is responsible for development of the county's 5-year capital improvements plan.
- The Town of Mooresville has a capital improvements program committee that guides their program.
- The City of Statesville's Finance Department develops and implements their capital improvements program.
- The Town of Troutman develops a capital improvements program.
- Rowan County's Finance Department is responsible for the county's capital improvements program.
- The Town of China Grove has a capital improvements program that is overseen by the town manager.
- The Town of Cleveland has a capital improvements plan for its wastewater system.
- The Town of East Spencer has a Sewer Collection Capital Improvements Plan.
- The City of Salisbury's Finance Department oversees its capital improvements program.

Historic Preservation Plan: A historic preservation plan is intended to preserve historic structures or districts within a community. An often-overlooked aspect of the historic preservation plan is the assessment of buildings and sites located in areas subject to natural hazards and the identification of ways to reduce future damages. This may involve retrofitting or relocation techniques that account for the need to protect buildings that do not meet current building standards or are within a historic district that cannot easily be relocated out of harm's way. Where possible, the community below should implement identified mitigation actions related to the retrofitting or relocations historic structures.

- The City of Salisbury is the only participating jurisdiction that has a historic preservation plan.

Zoning Ordinance: Zoning represents the primary means by which land use is controlled by local governments. As part of a community's police power, zoning is used to protect the public health, safety, and welfare of those in a given jurisdiction that maintains zoning authority. A zoning ordinance is the mechanism through which zoning is typically implemented. Since zoning regulations enable municipal governments to limit the type and density of development, a zoning ordinance can serve as a powerful tool when applied in identified hazard areas. The communities below will, when appropriate, include mitigation policies regarding the limiting the extension of public infrastructure in high hazard areas.

- Iredell County has a land development code that outlines zoning in chapters 2 and 4.
- The Town of Harmony and the Town of Mooresville have both developed zoning ordinances that are enforced by their respective planning departments.
- The City of Statesville and the Town of Troutman both have Unified Development Ordinances that include zoning regulations and are administered by their planning departments.
- Rowan County Code, Chapter 21 outlines the Planning and Development Department's role in zoning.
- China Grove and Granite Quarry address zoning districts and development requirements in their respective Unified Development Ordinances.

- The Towns of Cleveland, East Spencer, Landis, and Rockwell all have zoning ordinances in place that are administered by each of their planning and/or zoning departments.
- The City of Salisbury's Land Development Ordinance outlines zoning districts in Chapter 2.
- The Town of Spencer's Land Management Department explains its land usage policies with regards to zoning in Title XV, Chapter 155.

Subdivision Ordinance: A subdivision ordinance is intended to regulate the development of residential, commercial, industrial, or other uses, including associated public infrastructure, as land is subdivided into buildable lots for sale or future development. Subdivision design that accounts for natural hazards can dramatically reduce the exposure of future development.

- Iredell County has adopted a subdivision ordinance as part of its Land Development Code. Many of its incorporated municipalities have also adopted subdivision ordinances including the Town of Mooresville, the City of Statesville, and the Town of Troutman.
- Rowan County has adopted a subdivision ordinance as part of its county code. The Town of Cleveland and the Town of Faith are the only two municipalities in the county without some form of subdivision regulations. Many of the jurisdictions with subdivision regulations have incorporated these rules into their Unified Development Ordinance or Land Development Code.

Building Codes, Permitting, and Inspections: Building codes regulate construction standards. In many communities, permits and inspections are required for new construction. Decisions regarding the adoption of building codes (that account for hazard risk), the type of permitting process required both before and after a disaster, and the enforcement of inspection protocols all affect the level of hazard risk faced by a community.

- North Carolina has a state compulsory building code, which applies throughout the state; however, jurisdictions may adopt codes if approved as providing adequate minimum standards. The building code is enforced throughout Iredell County (including within the municipalities) by the county Building Standards Division. The building code is enforced throughout Rowan County by the county Building Code Enforcement Department.

The adoption and enforcement of building codes by local jurisdictions is routinely assessed through the Building Code Effectiveness Grading Schedule (BCEGS) program developed by the Insurance Services Office, Inc. (ISO).[2] In North Carolina, the North Carolina Department of Insurance assesses the building codes in effect in a particular community and how the community enforces its building codes *with special emphasis on mitigation of losses from natural hazards*. The results of BCEGS assessments are routinely provided to ISO's member private insurance companies, which in turn may offer ratings credits for new buildings constructed in communities with strong BCEGS classifications. The 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.

In conducting the assessment, ISO collects information related to personnel qualification and continuing education as well as the number of inspections performed per day. This type of information combined with local building codes is used to determine a grade for that jurisdiction. The grades range from 1 to 10 with a BCEGS grade of 1 representing exemplary commitment to building code enforcement and a grade of 10 indicating less than minimum recognized protection.

[2] Participation in BCEGS is voluntary and may be declined by local governments if they do not wish to have their local building codes evaluated.

6.3.4 Floodplain Management

Flooding represents the greatest natural hazard facing the nation. At the same time, the tools available to reduce the impacts associated with flooding are among the most developed when compared to other hazard-specific mitigation techniques. In addition to approaches that cut across hazards such as education, outreach, and the training of local officials, the *National Flood Insurance Program* (NFIP) contains specific regulatory measures that enable government officials to determine where and how growth occurs relative to flood hazards. Participation in the NFIP is voluntary for local governments; however, program participation is strongly encouraged by FEMA as a first step for implementing and sustaining an effective hazard mitigation program. It is therefore used as part of this assessment as a key indicator for measuring local capability.

For a county or municipality to participate in the NFIP, they must adopt a local flood damage prevention ordinance that requires jurisdictions to follow established minimum building standards in the floodplain. These standards require that all new buildings and substantial improvements to existing buildings 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 an important source of information to educate residents, government officials, and the private sector about the likelihood of flooding in their community.

Table 6.2 provides NFIP policy and claim information for each participating jurisdiction in the Iredell Rowan Region.

Table 6.2: NFIP Policy and Claim Information

Jurisdiction	Date Joined NFIP	Current Effective Map Date	NFIP Policies in Force	Insurance in Force	Written Premium in Force	Closed Claims	Total Payments to Date
Iredell County†	5/26/1978	3/18/2008	88	$26,556,200	$40,472	7	$71,478
Harmony*	3/18/2008	3/18/2008	0	$0	$0	0	$0
Love Valley*	3/18/2008	3/18/2008	0	$0	$0	0	$0
Mooresville	4/25/1975	3/18/2008	31	$7,613,700	$10,911	0	$0
Statesville	8/1/1975	3/18/2008	34	$9,270,200	$29,521	14	$880,386
Troutman	3/18/2008	3/18/2008	1	$1,000,000	$1,400	0	$0
Rowan County†	7/28/1978	6/16/2009	83	$21,439,100	$46,934	8	$184,795
China Grove	1/9/1974	6/16/2009	1	$175,000	$300	0	$0
Cleveland	6/16/2009	6/16/2009	0	$0	$0	0	$0
East Spencer	7/3/1978	6/16/2009	0	$0	$0	0	$0
Faith	10/17/1975	6/16/2009	1	$108,000	$569	0	$0
Granite Quarry	3/8/1974	6/16/2009	13	$2,794,300	$9,308	5	$63,935
Landis	6/7/1974	6/16/2009	1	$67,900	$685	0	$0
Rockwell	3/8/1974	6/16/2009	7	$1,471,300	$3,033	1	$700
Salisbury	2/22/1974	6/16/2009	101	$26,689,300	$110,397	12	$130,091

Jurisdiction	Date Joined NFIP	Current Effective Map Date	NFIP Policies in Force	Insurance in Force	Written Premium in Force	Closed Claims	Total Payments to Date
Spencer	3/1/1974	6/16/2009	4	$690,400	$2,837	0	$0

† Includes unincorporated areas of county only
* Community does not participate in the NFIP
Source: NFIP Community Status information as of 12/30/19; NFIP claims and policy information as of 12/30/19

All jurisdictions listed above that are participants in the NFIP will continue to comply with all required provisions of the program and will work to adequately comply in the future utilizing several strategies. For example, the jurisdictions will coordinate with NCEM and FEMA to develop maps and regulations related to special flood hazard areas within their jurisdictional boundaries and, through a consistent monitoring process, will design and improve their floodplain management program in a way that reduces the risk of flooding to people and property.

The Towns of Harmony and Love Valley do not participate in the NFIP because neither jurisdiction currently has any of its land area located within the floodplain.

Community Rating System: An additional indicator of floodplain management capability is the active participation of local jurisdictions in the Community Rating System (CRS). The CRS is an incentive-based program that encourages counties and municipalities to undertake defined flood mitigation activities that go beyond the minimum requirements of the NFIP by adding extra local measures to provide protection from flooding. All the 18 creditable CRS mitigation activities are assigned a range of point values. As points are accumulated and reach identified thresholds, communities can apply for an improved CRS class rating. Class ratings, which range from 10 to 1, are tied to flood insurance premium reductions as shown in **Table 6.3**. As class rating improves (the lower the number the better), the percent reduction in flood insurance premiums for NFIP policyholders in that community increases.

Table 6.3: 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 been greatly simplified over the past several years based on community comments. Changes were made with the intent to make the CRS more user-friendly and make extensive technical assistance available for communities who request it.

- None of the jurisdictions currently participate in the CRS. Participation in the CRS program should be considered as a mitigation action by the counties and municipalities. The program would be most beneficial to the City of Salisbury, Iredell County, and Rowan County.

Flood Damage Prevention Ordinance: A flood damage prevention ordinance establishes minimum building standards in the floodplain with the intent to minimize public and private losses due to flood conditions.

- All communities participating in the NFIP are required to adopt a local flood damage prevention ordinance. All counties and municipalities participating in this hazard mitigation plan (except for the Town of Harmony and the Town of Love Valley) also participate in the NFIP and they have adopted flood damage prevention regulations.

Floodplain Management Plan: A floodplain management plan (or a flood mitigation plan) provides a framework for action regarding corrective and preventative measures to reduce flood-related impacts.

- None of the counties or municipalities participating in this plan has adopted a Floodplain Management Plan.

Open Space Management Plan*:* An open space management plan is designed to preserve, protect, and restore largely undeveloped lands in their natural state and to expand or connect areas in the public domain such as parks, greenways, and other outdoor recreation areas. In many instances, open space management practices are consistent with the goals of reducing hazard losses, such as the preservation of wetlands or other flood-prone areas in their natural state in perpetuity.

- Iredell County has a Comprehensive Recreation Master Plan which serves as an Open Space Management Plan. It has also been working actively to develop sections of the Carolina Thread Trail, which aims to weave communities together through an interconnected trail and greenway system that is funded by several resources. All the municipalities in Iredell County are involved in the trail system development.
- Rowan County has developed a Parks and Recreation 15 Year Master Plan and the Town of Landis also has a Recreation Master Plan in place.

Stormwater Management Plan: A stormwater management plan is designed to address flooding associated with stormwater runoff. The stormwater management plan is typically focused on design and construction measures that are intended to reduce the impact of more frequently occurring minor urban flooding.

- Iredell County has provisions for stormwater management built into its Land Development Code under the Utilities Standards section. Similarly, Mooresville, Statesville, and Troutman include stormwater regulations in either their zoning ordinance or unified development ordinance.
- Rowan County does not have a stormwater management plan; however, several of its incorporated municipalities have stormwater regulations in place. The Towns of China Grove and Granite Quarry include stormwater management regulations in their respective Unified Development Ordinance, the City of Salisbury integrates stormwater management into its Land Development Code, and the Town of Landis has its own Stormwater Quality Management and Discharge Control Ordinance.

6.3.5 Administrative and Technical Capability

The ability of a local government to develop and implement mitigation projects, policies, and programs is directly tied to its ability to direct staff time and resources for that purpose. Administrative capability can be evaluated by determining how mitigation-related activities are assigned to local departments and if there are adequate personnel resources to complete these activities. The degree of intergovernmental coordination among departments will also affect administrative capability for the implementation and success of proposed mitigation activities.

Technical capability can generally be evaluated by assessing the level of knowledge and technical expertise of local government employees, such as personnel skilled in using Geographic Information Systems (GIS) to analyze and assess community hazard vulnerability. The Capability Assessment Survey was used to capture information on administrative and technical capability through the identification of available staff and personnel resources.

Table 6.4 provides a summary of the capability assessment results for the Iredell Rowan Region regarding relevant staff and personnel resources. An arrow (➳) indicates the presence of a staff member(s) in that jurisdiction with the specified knowledge or skill.

Table 6.4: Relevant Staff / Personnel Resources

Staff / Personnel Resource	IREDELL COUNTY	Harmony	Love Valley	Mooresville	Statesville	Troutman	ROWAN COUNTY	China Grove	Cleveland	East Spencer	Faith	Granite Quarry	Landis	Rockwell	Salisbury	Spencer
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																

Credit for having a floodplain manager was given to those jurisdictions that have a flood damage prevention ordinance, and therefore an appointed floodplain administrator, regardless of whether the appointee was dedicated solely to floodplain management. Credit was given for having a scientist familiar with the hazards of the community if a jurisdiction has a Cooperative Extension Service or Soil and Water Conservation Department. Credit was also given for having staff with education or expertise to assess the community's vulnerability to hazards if a staff member from the jurisdiction was a participant on the existing hazard mitigation plan's planning committee.

6.3.6 Fiscal Capability

The ability of a local government to act is often closely associated with the amount of money available to implement policies and projects. This may take the form of outside grant funding awards or locally-based revenue and financing. The costs associated with mitigation policy and project implementation vary widely. In some cases, policies are tied primarily to staff time or administrative costs associated with the creation and monitoring of a given program. In other cases, direct expenses are linked to an actual project, such as the acquisition of flood-prone homes, which can require a substantial commitment from local, state, and federal funding sources.

The Capability Assessment Survey was used to capture information on the region's fiscal capability through the identification of locally available financial resources.

Table 6.5 provides a summary of the results for the Iredell Rowan Region regarding relevant fiscal resources. An arrow (➳) 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.

Table 6-5: Relevant Fiscal Resources

Fiscal Tool / Resource	IREDELL COUNTY	Harmony	Love Valley	Mooresville	Statesville	Troutman	ROWAN COUNTY	China Grove	Cleveland	East Spencer	Faith	Granite Quarry	Landis	Rockwell	Salisbury	Spencer
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	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳

Fiscal Tool / Resource	IREDELL COUNTY	Harmony	Love Valley	Mooresville	Statesville	Troutman	ROWAN COUNTY	China Grove	Cleveland	East Spencer	Faith	Granite Quarry	Landis	Rockwell	Salisbury	Spencer
Other: HMGP, DPIG, FMAP, PA, SBA, etc.	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳	➳

6.3.7 Political Capability

One of the most difficult capabilities to evaluate involves the political will of a jurisdiction to enact meaningful policies and projects designed to reduce the impact of future hazard events. Hazard mitigation may not be a local priority or may conflict with or be an impediment to other goals of the community, such as growth and economic development. Therefore, the local political climate must be considered in designing mitigation strategies as it could be the most difficult hurdle to overcome in accomplishing their adoption and implementation.

The Capability Assessment Survey was used to capture information on political capability of the Iredell Rowan Region. Previous hazard mitigation plan was reviewed for general examples of local political capability, such as guiding development away from identified hazard areas, restricting public investments or capital improvements within hazard areas, or enforcing local development standards that go beyond minimum state or federal requirements (i.e., building codes, floodplain management, etc.).

- The previous hazard mitigation plan identified existing ordinances that address natural hazards or are related to hazard mitigation such as emergency management, flood damage prevention, watershed protection, zoning, and subdivision.
- Iredell County feels it has strong measures in place to help mitigate hazards. Many of these measures are found in local ordinances, especially regarding flood mitigation. The county's participation in the NFIP (along with several municipalities) indicates at least some support for mitigation activities.
- Rowan County currently participates in the NFIP and has adopted the required Flood Damage Prevention Ordinance as well as a Sedimentation and Erosion Control Ordinance. However, many of the actions laid out in the plan have tested the limits of fiscal and political willingness to implement the activities.

6.4 Conclusions on Local Capability

The overall capability to implement hazard mitigation actions varies among the participating jurisdictions. For planning and regulatory capability, most of the jurisdictions are in the moderate range. There is more variation in the administrative and technical capability among the jurisdictions with larger jurisdictions generally having greater staff and technical resources. Almost all of jurisdictions are in the limited range for fiscal capability.

Table 6.6 shows the results of the capability assessment using the designed scoring methodology. The capability score is based solely on the information found in existing hazard mitigation plans and readily available on the jurisdictions' government websites. The scoring methods ranking is presented as follows:

- Limited: 0-29
- Moderate: 30-59
- High: 60-100

According to the assessment, the average local capability score for all jurisdictions is 30, which falls into the moderate capability ranking.

Table 6-6: Capability Assessment Results

Jurisdiction	Overall Capability Score	Overall Capability Rating
IREDELL COUNTY	43	High
Harmony	19	Limited
Love Valley	13	Limited
Mooresville	33	Moderate
Statesville	34	Moderate
Troutman	34	Moderate
ROWAN COUNTY	44	High
China Grove	31	Moderate
Cleveland	23	Moderate
East Spencer	26	Moderate
Faith	20	Moderate
Granite Quarry	30	Moderate
Landis	28	Moderate
Rockwell	25	Moderate
Salisbury	37	Moderate
Spencer	30	Moderate

As previously discussed, one of the reasons for conducting a Capability Assessment is to examine local capabilities to detect any existing gaps or weaknesses within ongoing government activities that could hinder proposed mitigation activities and possibly exacerbate community hazard vulnerability. These gaps or weaknesses have been identified for each jurisdiction in the tables found throughout this section. The participating jurisdictions used the Capability Assessment as part of the basis for the Mitigation Actions that are identified in Section 8; therefore, each jurisdiction addresses their ability to expand on and improve their existing capabilities through the identification of their Mitigation Actions.

6.4.1 Linking the Capability Assessment with the Risk Assessment and the Mitigation Strategy

The conclusions of the Risk Assessment and Capability Assessment serve as the foundation for the development of a meaningful hazard mitigation strategy. During the process of identifying specific mitigation actions to pursue, the Regional Hazard Mitigation Planning Team considered not only each jurisdiction's level of hazard risk, but also their existing capability to minimize or eliminate that risk.

SECTION 7: MITIGATION STRATEGY

This section of the Plan provides the blueprint for the participating jurisdictions in the Iredell Rowan Region to follow in order to become less vulnerable to its identified hazards. It is based on general consensus of the Regional Hazard Mitigation Planning Team and the findings and conclusions of the *Capability Assessment* and *Risk Assessment*. It consists of the following five subsections:

- 7.1 Introduction
- 7.2 Mitigation Goals
- 7.3 Identification and Analysis of Mitigation Techniques
- 7.4 Selection of Mitigation Techniques for the Iredell Rowan Region
- 7.5 Plan Update Requirement

7.1 Introduction

The intent of the Mitigation Strategy is to provide the participating jurisdictions with the goals that will serve as guiding principles for future mitigation policy and project administration, along with an analysis of mitigation techniques available 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 and identifies extensive mitigation measures intended to not only 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 that can be used to assist in project implementation.

The first step in designing the Mitigation Strategy includes the identification of 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 the regulation of land in known hazard areas through a local ordinance) and hazard mitigation projects that seek to address specifically targeted hazard risks (such as the acquisition and relocation of a repetitive loss structure).

The second step involves the identification, consideration, and analysis of available mitigation measures to help 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, as data and technology improve, as mitigation funding becomes available, and as 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 Iredell Rowan 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 and functional plan for action and is considered to be the most essential outcome of the mitigation planning process.

The MAP includes a prioritized listing of proposed hazard mitigation actions (policies and projects) for the Iredell and Rowan counties and the 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 those departments or individuals responsible for implementing mitigation actions with a clear roadmap that also serves as an important tool for monitoring success or progress over time. The cohesive collection of actions listed in the MAP can also serve as an easily understood menu of mitigation policies and projects for those 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 region, officials considered the overall hazard risk and capability to mitigate the effects of hazards as recorded through the risk and capability assessment process, in addition to meeting the adopted mitigation goals and unique needs of the community.

7.1.1 Mitigation Action Prioritization

The Regional Hazard Mitigation Planning Team members were tasked with establishing a priority for each action. Priorities have not changed since the plan was previously approved. The plan reflects current conditions, including financial, legal and political realities as well as post-disaster conditions. Various discussions and planning level assessments of whether the costs were reasonable compared to the probable benefits of actions were discussed based on experience and judgement of the planning team. Benefits include losses avoided, such as the number and value of structures and infrastructure protected by the action and the population protected from injury and loss of life. Qualitative benefits, such as quality of life and natural and beneficial functions of ecosystems were also considered. 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
- General cost/benefit review
- Funding availability
- Continued compliance with the NFIP

The point of contact for each county helped coordinate the prioritization process by reviewing each action and working with the lead agency/department responsible to determine a priority for each action using the six factors listed above.

Using these criteria, actions were classified as high, moderate, or low priority by the participating jurisdiction officials. Only a general cost/benefit review was considered by the Regional Hazard Mitigation Planning Committee through the process of selecting and prioritizing mitigation actions. Mitigation actions with “high” priority were determined to be the most cost effective and most compatible with the participating jurisdictions’ unique needs. Actions with a “moderate” priority were determined to be cost-effective and compatible with jurisdictional needs but may be more challenging to complete administratively or fiscally than “high” priority actions. Actions with a “low” priority were determined to be important community needs, but the community likely identified several potential challenges in terms of implementation (e.g. lack of funding, technical obstacles). A more detailed cost/benefit analysis will be applied to particular projects prior to the application for or obligation of funding, as appropriate.

7.2 Mitigation Goals

44 CFR Requirement
44 CFR Part 201.6(c)(3)(i): The mitigation strategy shall include a description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazards.

The primary goal of all local governments is to promote the public health, safety, and welfare of its citizens. In keeping with this standard, Iredell and Rowan counties and the participating municipalities have developed goal statements for local hazard mitigation planning in the region. In developing these goals, the previous hazard mitigation plan was reviewed to determine areas of consistency with the hazards identified in the plan

The proposed goals were presented, reviewed, voted on, and accepted by the Planning Team at their first and second meetings. Each goal, purposefully broad in nature, serves to establish parameters that were used in developing more mitigation actions. The Iredell Rowan 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: Iredell Rowan Regional Mitigation Goals

	Goal
Goal #1	Provide for and implement real time monitoring of mitigation activities.
Goal #2	Develop and institute systems and procedures for information collection, interpretation, and dissemination.
Goal #3	Develop uniform guidelines and training for responders, managers, and other professionals/decisions-makers.
Goal #4	Develop effective public education and awareness programs.
Goal #5	Implement loss reduction measures and mitigation actions.
Goal #6	Coordinate hazard mitigation activities with emergency preparedness, response, and recovery guidelines and efforts.
Goal #7	Reduce the number of deaths, injuries, and economic losses caused by natural and human-caused hazards
Goal #8	Develop an understanding of the risks posed by natural and human caused hazards and evaluate those risks through the delineation of susceptible areas and estimation of potential losses.

7.3 Identification and Analysis of Mitigation Techniques

44 CFR Requirement
44 CFR Part 201.6(c)(3)(ii): The mitigation strategy shall include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effect of each hazard, with particular emphasis on new and existing buildings and infrastructure.

In formulating the Mitigation Strategy for the Iredell Rowan Region, a wide range of activities were considered in order to help achieve the established mitigation goals, in addition to addressing any specific hazard concerns. These activities were discussed during the Regional Hazard Mitigation Planning

Team meetings. In general, all activities considered by the Planning Team can be classified under one of the following six broad categories of mitigation techniques: Prevention, Property Protection, Natural Resource Protection, Structural Projects, Emergency Services, and Public Awareness and Education. These are discussed in detail below.

7.3.1 Prevention

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. They are particularly effective in reducing a community's future vulnerability, especially in areas where development has not occurred, or capital improvements have not been substantial. Examples of preventative activities include:

- 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 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. Examples include:

- Acquisition
- Relocation
- Building elevation
- Critical facilities protection
- 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 environmental 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 commonly are actions taken immediately prior to, during, or in response to a hazard event. Examples include:

- Warning systems
- 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 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. Examples of measures to educate and inform the public include:

- Outreach projects
- Speaker series / demonstration events
- Hazard map information
- Real estate disclosure
- Library materials
- School children educational programs
- Hazard expositions

7.4 Selection of Mitigation Techniques for the Iredell Rowan Region

In order to determine the most appropriate mitigation techniques for the communities in the Iredell Rowan Region, the Regional Hazard Mitigation Planning Team members thoroughly reviewed and considered the findings of the *Capability Assessment* and *Risk Assessment* to determine 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 FEMA requirements for plan updates, the Mitigation Actions identified in the previous plan were evaluated to determine their current implementation status. The status of hazard mitigation actions from the previous plan have been identified as being completed, deleted, in progress or to be

continued. For actions that have not been completed, the actions describe that it will be included as part of the updated action plan. Updates on the implementation status of each action are provided. The mitigation actions provided in Section 8: *Mitigation Action Plan* include the mitigation actions from the previous plans as well as any new mitigation actions proposed through the current planning process.

SECTION 8: MITIGATION ACTION PLAN

This section includes the listing of the mitigation actions proposed by the participating jurisdictions in the Iredell Rowan Region. It consists of the following two subsections:

- 8.1 Overview
- 8.2 Mitigation Action Plans

44 CFR Requirement
44 CFR Part 201.6(c)(3)(iii): The mitigation strategy shall include an action plan describing how the actions identified in paragraph (c)(2)(ii) of this section will be prioritized, implemented, and administered by the local jurisdiction.

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 on a regular basis according to 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 Iredell Rowan Region. Each action is listed in the MAP in conjunction with background information such as hazard(s) addressed, relative priority, and estimated cost. 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 a lead agency or department responsible for carrying the action out as well as a timeframe for its completion. These implementation mechanisms ensure that the Regional Hazard Mitigation 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 (page 7-2).

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 which the action addresses.
- Relative Priority—High, moderate, or low priority as assigned by the jurisdiction.
- Lead Agency/Department—Department responsible for undertaking the action.
- Estimated Cost—Anticipated cost of the action. (Low- > $10k, Moderate- $10k-$50k, High- <$50k)
- Potential Funding Sources—Local, State, or Federal sources such as grant funds or general operating budgets are noted here, where applicable.
- Implementation Schedule—Date by which the action the action should be.
- Implementation Status—Indication of completion, progress, deferment, or no change since the previous plan. If the action is new, that will be noted here.

8.2 Mitigation Action Plans

The mitigation actions proposed by each of the participating jurisdictions are listed in 16 individual MAPs on the following pages. **Table 8.1** shows the location of each jurisdiction's MAP within this section as well as the number of mitigation actions proposed by each jurisdiction.

Table 8-1: Individual Map Locations

Location	Page	Number of Mitigation Actions
IREDELL COUNTY	8:03	5
Harmony	8:05	5
Love Valley	8:07	5
Mooresville	8:09	5
Statesville	8:11	5
Troutman	8:13	5
ROWAN COUNTY	8:15	5
China Grove	8:18	7
Cleveland	8:21	6
East Spencer	8:24	5
Faith	8:27	4
Granite Quarry	8:30	4
Landis	8:32	5
Rockwell	8:35	5
Salisbury	8:38	5
Spencer	8:41	6

Table 8-2: Iredell County Mitigation Action Plan

Iredell County Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Implementation of Loss Reduction Measures: To establish, where feasible, joint city and county mitigation funding sources and establish joint searches for opportunities to implement hazard mitigation goals, objectives, or recommendations.	All	Moderate	Local Budget	Low	County/Municipal Executives	2025
2020 Action Status	**In Progress: As of 2020, the county has worked with the municipalities over the past several years to establish a consistent funding source for mitigation. Although it has not been able to establish an annually recurring source, it has been able to jointly allocate funding at times when project opportunities have become available. For example, during the update of this plan, the county and municipalities joined together with the State to update the Regional Hazard Mitigation Plan. The 25% match required for HMGP-4285 (Hurricane Matthew 7% planning funds), to update all local mitigation plans during the 2019-2024 cycle, is being paid by the State of NC. This satisfies the 25% local match requirement. The jurisdictions will work to achieve a more sustainable approach in the coming years.**						
Emergency Services							
ES-1	Real-time Monitoring: Consolidate documents into a single, seamless, integrated plan that incorporates all phases of a comprehensive emergency management program.	All	High	Local Budget	Low	OEM	2025
2020 STATUS	**In Progress: As of 2020, the county has worked to integrate all phases of emergency management together into a single plan. While it has succeeded in integrating many phases, there is still some work to be carried out to complete this action. For example, the county would like to further incorporate its mitigation plan into its Horizon Plan.**						
ES-2	Information Collection, Interpretation, and Dissemination: Utilize technology to accomplish an automated system to coordinate plans information, development information, road expansion information and other demographics.	All	High	Local Budget	High	OEM/Management Information Systems	2025

Iredell County Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
2020 STATUS	**To Be Continued: As of 2020, the county has utilized technology to develop an automated system that coordinates information on plans, development, roadways, and other information. However, as information continues to change, the county will need to update the system, so this task will remain in the plan.**						
ES-3	Guidelines and Training: Establish, where feasible, joint city and county guidelines for hazard mitigation implementation and to use all available information in the decision-making process that is likely to effect within a five (5) year period, based on growth projections. This includes planning and zoning authority that is currently exercised by either the municipality or the county.	All	High	Local Budget	Low	OEM/Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have worked together to develop guidelines for hazard mitigation that integrate comprehensively with planning and zoning at the local level. These guidelines account for growth projections, so as new data is developed, this will need to be re- evaluated going forward.**						
Public Education and Awareness							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	OEM = Iredell County Office of Emergency Management
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-3: Town of Harmony Mitigation Action Plan

Town of Harmony Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Implementation of Loss Reduction Measures: To establish, where feasible, joint city and county mitigation funding sources and establish joint searches for opportunities to implement hazard mitigation goals, objectives, or recommendations.	All	Moderate	Local Budget	Low	County/ Municipal Executives	2025
2020 STATUS	**In Progress: As of 2020, the county has worked with the municipalities over the past several years to establish a consistent funding source for mitigation. Although it has not been able to establish an annually recurring source, it has been able to jointly allocate funding at times when project opportunities have become available. For example, during the update of this plan, the county and municipalities joined together with the State to update the Regional Hazard Mitigation Plan. The 25% match required for HMGP-4285 (Hurricane Matthew 7% planning funds), to update all local mitigation plans during the 2019-2024 cycle, is being paid by the State of NC. This satisfies the 25% local match requirement. The jurisdictions will work to achieve a more sustainable approach in the coming years.**						
Emergency Services							
ES-1	Real-time Monitoring: Consolidate documents into a single, seamless, integrated plan that incorporates all phases of a comprehensive emergency management program.	All	High	Local Budget	Low	OEM	2025
2020 STATUS	**In Progress: As of 2020, the county has worked to integrate all phases of emergency management together into a single plan. While it has succeeded in integrating many phases, there is still some work to be carried out to complete this action. For example, the county would like to further incorporate its mitigation plan into its Horizon Plan.**						
ES-2	Information Collection, Interpretation, and Dissemination: Utilize technology to accomplish an automated system to coordinate plans information, development information, road expansion information and other demographics.	All	High	Local Budget	High	OEM/ Management Information Systems	2025

Town of Harmony Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
2020 STATUS	**To Be Continued: As of 2020, the county has utilized technology to develop an automated system that coordinates information on plans, development, roadways, and other information. However, as information continues to change, the county will need to update the system, so this task will remain in the plan.**						
ES-3	Guidelines and Training: Establish, where feasible, joint city and county guidelines for hazard mitigation implementation and to use all available information in the decision-making process that is likely to effect within a five (5) year period, based on growth projections. This includes planning and zoning authority that is currently exercised by either the municipality or the county.	All	High	Local Budget	Low	OEM/Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have worked together to develop guidelines for hazard mitigation that integrate comprehensively with planning and zoning at the local level. These guidelines account for growth projections, so as new data is developed, this will need to be re- evaluated going forward.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	OEM = Iredell County Office of Emergency Management
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-4: Town of Love Valley Mitigation Action Plan

Town of Love Valley Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Implementation of Loss Reduction Measures: To establish, where feasible, joint city and county mitigation funding sources and establish joint searches for opportunities to implement hazard mitigation goals, objectives, or recommendations.	All	Moderate	Local Budget	Low	County/ Municipal Executives	2025
2020 STATUS	**In Progress: As of 2020, the county has worked with the municipalities over the past several years to establish a consistent funding source for mitigation. Although it has not been able to establish an annually recurring source, it has been able to jointly allocate funding at times when project opportunities have become available. For example, during the update of this plan, the county and municipalities joined together with the State to update the Regional Hazard Mitigation Plan. The 25% match required for HMGP-4285 (Hurricane Matthew 7% planning funds), to update all local mitigation plans during the 2019-2024 cycle, is being paid by the State of NC. This satisfies the 25% local match requirement. The jurisdictions will work to achieve a more sustainable approach in the coming years.**						
Emergency Services							
ES-1	Real-time Monitoring: Consolidate documents into a single, seamless, integrated plan that incorporates all phases of a comprehensive emergency management program.	All	High	Local Budget	Low	OEM	2025
2020 STATUS	**In Progress: As of 2020, the county has worked to integrate all phases of emergency management together into a single plan. While it has succeeded in integrating many phases, there is still some work to be carried out to complete this action. For example, the county would like to further incorporate its mitigation plan into its Horizon Plan.**						
ES-2	Information Collection, Interpretation, and Dissemination: Utilize technology to accomplish an automated system to coordinate plans information, development information, road expansion information and other demographics.	All	High	Local Budget	High	OEM/ Management Information Systems	2025

Town of Love Valley Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
2020 STATUS	**To Be Continued: As of 2020, the county has utilized technology to develop an automated system that coordinates information on plans, development, roadways, and other information. However, as information continues to change, the county will need to update the system, so this task will remain in the plan.**						
ES-3	Guidelines and Training: Establish, where feasible, joint city and county guidelines for hazard mitigation implementation and to use all available information in the decision-making process that is likely to effect within a five (5) year period, based on growth projections. This includes planning and zoning authority that is currently exercised by either the municipality or the county.	All	High	Local Budget	Low	OEM/Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have worked together to develop guidelines for hazard mitigation that integrate comprehensively with planning and zoning at the local level. These guidelines account for growth projections, so as new data is developed, this will need to be re- evaluated going forward.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	OEM = Iredell County Office of Emergency Management
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-5: City of Mooresville Mitigation Action Plan

City of Mooresville Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Implementation of Loss Reduction Measures: To establish, where feasible, joint city and county mitigation funding sources and establish joint searches for opportunities to implement hazard mitigation goals, objectives, or recommendations.	All	Moderate	Local Budget	Low	County/ Municipal Executives	2025
2020 STATUS	**In Progress: As of 2020, the county has worked with the municipalities over the past several years to establish a consistent funding source for mitigation. Although it has not been able to establish an annually recurring source, it has been able to jointly allocate funding at times when project opportunities have become available. For example, during the update of this plan, the county and municipalities joined together with the State to update the Regional Hazard Mitigation Plan. The 25% match required for HMGP-4285 (Hurricane Matthew 7% planning funds), to update all local mitigation plans during the 2019-2024 cycle, is being paid by the State of NC. This satisfies the 25% local match requirement. The jurisdictions will work to achieve a more sustainable approach in the coming years.**						
Emergency Services							
ES-1	Real-time Monitoring: Consolidate documents into a single, seamless, integrated plan that incorporates all phases of a comprehensive emergency management program.	All	High	Local Budget	Low	OEM	2025
2020 STATUS	**In Progress: As of 2020, the county has worked to integrate all phases of emergency management together into a single plan. While it has succeeded in integrating many phases, there is still some work to be carried out to complete this action. For example, the county would like to further incorporate its mitigation plan into its Horizon Plan.**						
ES-2	Information Collection, Interpretation, and Dissemination: Utilize technology to accomplish an automated system to coordinate plans information, development information, road expansion information and other demographics.	All	High	Local Budget	High	OEM/ Management Information Systems	2025
2020 STATUS	**To Be Continued: As of 2020, the county has utilized technology to develop an automated system that coordinates information on plans, development, roadways, and other information. However, as information continues to change, the county will need to update the system, so this task will remain in the plan.**						

City of Mooresville Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
ES-3	Guidelines and Training: Establish, where feasible, joint city and county guidelines for hazard mitigation implementation and to use all available information in the decision-making process that is likely to effect within a five (5) year period, based on growth projections. This includes planning and zoning authority that is currently exercised by either the municipality or the county.	All	High	Local Budget	Low	OEM/Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have worked together to develop guidelines for hazard mitigation that integrate comprehensively with planning and zoning at the local level. These guidelines account for growth projections, so as new data is developed, this will need to be re- evaluated going forward.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	OEM = Iredell County Office of Emergency Management
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-6: City of Statesville Mitigation Action Plan

City of Statesville Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Implementation of Loss Reduction Measures: To establish, where feasible, joint city and county mitigation funding sources and establish joint searches for opportunities to implement hazard mitigation goals, objectives, or recommendations.	All	Moderate	Local Budget	Low	County/ Municipal Executives	2025
2020 STATUS	**In Progress: As of 2020, the county has worked with the municipalities over the past several years to establish a consistent funding source for mitigation. Although it has not been able to establish an annually recurring source, it has been able to jointly allocate funding at times when project opportunities have become available. For example, during the update of this plan, the county and municipalities joined together with the State to update the Regional Hazard Mitigation Plan. The 25% match required for HMGP-4285 (Hurricane Matthew 7% planning funds), to update all local mitigation plans during the 2019-2024 cycle, is being paid by the State of NC. This satisfies the 25% local match requirement. The jurisdictions will work to achieve a more sustainable approach in the coming years.**						
Emergency Services							
ES-1	Real-time Monitoring: Consolidate documents into a single, seamless, integrated plan that incorporates all phases of a comprehensive emergency management program.	All	High	Local Budget	Low	OEM	2025
2020 STATUS	**In Progress: As of 2020, the county has worked to integrate all phases of emergency management together into a single plan. While it has succeeded in integrating many phases, there is still some work to be carried out to complete this action. For example, the county would like to further incorporate its mitigation plan into its Horizon Plan.**						
ES-2	Information Collection, Interpretation, and Dissemination: Utilize technology to accomplish an automated system to coordinate plans information, development information, road expansion information and other demographics.	All	High	Local Budget	High	OEM/ Management Information Systems	2025

City of Statesville Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
2020 STATUS	**To Be Continued: As of 2020, the county has utilized technology to develop an automated system that coordinates information on plans, development, roadways, and other information. However, as information continues to change, the county will need to update the system, so this task will remain in the plan.**						
ES-3	Guidelines and Training: Establish, where feasible, joint city and county guidelines for hazard mitigation implementation and to use all available information in the decision-making process that is likely to effect within a five (5) year period, based on growth projections. This includes planning and zoning authority that is currently exercised by either the municipality or the county.	All	High	Local Budget	Low	OEM/ Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have worked together to develop guidelines for hazard mitigation that integrate comprehensively with planning and zoning at the local level. These guidelines account for growth projections, so as new data is developed, this will need to be re- evaluated going forward.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	OEM = Iredell County Office of Emergency Management
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-7: Town of Troutman Mitigation Action Plan

Town of Troutman Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Implementation of Loss Reduction Measures: To establish, where feasible, joint city and county mitigation funding sources and establish joint searches for opportunities to implement hazard mitigation goals, objectives, or recommendations.	All	Moderate	Local Budget	Low	County/ Municipal Executives	2025
2020 STATUS	**In Progress: As of 2020, the county has worked with the municipalities over the past several years to establish a consistent funding source for mitigation. Although it has not been able to establish an annually recurring source, it has been able to jointly allocate funding at times when project opportunities have become available. For example, during the update of this plan, the county and municipalities joined together with the State to update the Regional Hazard Mitigation Plan. The 25% match required for HMGP-4285 (Hurricane Matthew 7% planning funds), to update all local mitigation plans during the 2019-2024 cycle, is being paid by the State of NC. This satisfies the 25% local match requirement. The jurisdictions will work to achieve a more sustainable approach in the coming years.**						
Emergency Services							
ES-1	Real-time Monitoring: Consolidate documents into a single, seamless, integrated plan that incorporates all phases of a comprehensive emergency management program.	All	High	Local Budget	Low	OEM	2025
2020 STATUS	**In Progress: As of 2020, the county has worked to integrate all phases of emergency management together into a single plan. While it has succeeded in integrating many phases, there is still some work to be carried out to complete this action. For example, the county would like to further incorporate its mitigation plan into its Horizon Plan.**						
ES-2	Information Collection, Interpretation, and Dissemination: Utilize technology to accomplish an automated system to coordinate plans information, development information, road expansion information and other demographics.	All	High	Local Budget	High	OEM/ Management Information Systems	2025
2020 STATUS	**To Be Continued: As of 2020, the county has utilized technology to develop an automated system that coordinates information on plans, development, roadways, and other information. However, as information continues to change, the county will need to update the system, so this task will remain in the plan.**						

Town of Troutman Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
ES-3	Guidelines and Training: Establish, where feasible, joint city and county guidelines for hazard mitigation implementation and to use all available information in the decision-making process that is likely to effect within a five (5) year period, based on growth projections. This includes planning and zoning authority that is currently exercised by either the municipality or the county.	All	High	Local Budget	Low	OEM/Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have worked together to develop guidelines for hazard mitigation that integrate comprehensively with planning and zoning at the local level. These guidelines account for growth projections, so as new data is developed, this will need to be re- evaluated going forward.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	OEM = Iredell County Office of Emergency Management
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-8: Rowan County Mitigation Action Plan

Rowan County Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Integration of a cooperative hazard mitigation program into new development, commercial districts, infrastructure and land use planning.	All	High	Local Budget	Low	County Risk Management/ LEPC/Hazard Mitigation Task Force/Elected Officials/ Executives	2025
2020 STATUS	**In Progress: As of 2020, implementation and discussion with local entities and governments related planning to various mitigation strategies. For example, mitigation planning and strategies were discussed at LEPC meetings when these were held and floodplain mapping was utilized in infrastructure planning. However, additional integration should take place going forward.**						
Property Protection							
PP-1	To establish, where feasible, the retrofit, relocation or purchase of habitable structures in the 100-year (1%) floodplain. To plan for the retrofit, relocation or purchase of habitable structures at the rate of 5% per annum until the project is complete. This project should not begin until new floodplain maps are generated by the state and accurate analysis of the new maps is made to determine impact upon local populations.	FL	Moderate	State and Federal Grants/Hazard Mitigation Grant Funding/Local Budget	Moderate	NCEM/EMD/ County Risk Management/ LEPC/ Hazard Mitigation Task Force/Elected Officials/ Executives/ Engineers	2025
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						
PP-2	To establish, where feasible, additional structural and fixture integrity by 25% for protection from all hazards. At a minimum, all critical facilities should be surveyed by earthquake planners and structural engineers	All	Moderate	Local Budget or Hazard Mitigation Grant Funding	Moderate	County Risk Management/ County Building Inspections and Codes	2025

Rowan County Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
	employed by the Division of Emergency Management that are trained, equipped and knowledgeable to prepare reports and recommendations to local officials.					Enforcement/ Elected Officials and Executives	
2020 STATUS	**To Be Continued: Update of critical facilities database. Plan to develop a formalized process to review which facilities are considered critical facilities. Expect to develop process in next mitigation period**						
PP-3	Seek assistance from NC DOT and other agencies to improve drainage on tributaries and low-lying flood prone areas that cross roadways.	FL	Moderate	Local & State Budget Funds or Hazard Mitigation Grant Funding	High	NCDOT/County Risk Management/ Elected Officials and Executives	2025
2020 STATUS	**In Progress: Some work by NCDOT accomplished across county to identify and improve stream flow in vicinity of roadway bridges as part of bridge replacement projects, but significant work remains to be done over the next several years.**						
Emergency Services							
ES-1	To establish, where feasible, additional emergency response forces, by at least 10%, that are trained, equipped and prepared to respond to a variety of emergency and disaster situations.	All	High	Local Government Jurisdiction Funding	$250,000 annually	EMD/Fire Depts./Rescue Squads	2025
2020 STATUS	**To Be Continued: Over the last 5-year mitigation period, Local FD's and Rescue have added peak time paid staffing to volunteer workforce. The plan is to continue this trend in order to combat lack of volunteers.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025

Rowan County Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-9: Town of China Grove Mitigation Action Plan

Town of China Grove Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Integration of a cooperative hazard mitigation program into new development, commercial districts, infrastructure and land use planning.	All	High	Local Budget	Low	Town Manager	2025
2020 STATUS	**In Progress: This action was unfunded over the past 5 years. However, county officials attempted to implement and discuss with local entities and governments to identify various mitigation strategies. This action will be pursued going forward.**						
P-2	Trim trees from rights-of-way and remove dead, dying and or overhanging limbs over power lines.	All	High	Local Budget	Low	NCDOT/ Duke Energy/ Energy United/ Town Manager's Office/ Elected Officials	2025
2020 STATUS	**To Be Continued: City Streets have carried out this program over the past several years and will continue to do so going forward.**						
Property Protection							
PP-1	To establish, where feasible, the retrofit, relocation or purchase of habitable structures in the 100-year (1%) floodplain. To plan for the retrofit, relocation or purchase of habitable structures at the rate of 5% per annum until the project is complete. This project should not begin until new floodplain maps are generated by the state and accurate analysis of the new maps is made to determine impact upon local populations.	FL	High	State and Federal Grants/Hazard Mitigation Grant Funding/Local Budget	Moderate	NCEM/EMD /County Risk Management/ LEPC/ Hazard Mitigation Task Force/ Elected Officials/ Executives/ Engineers	2025

Town of China Grove Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						
PP-2	To establish, where feasible, additional structural and fixture integrity by 25% for protection from all hazards. At a minimum, all critical facilities should be surveyed by earthquake planners and structural engineers employed by the Division of Emergency Management that are trained, equipped and knowledgeable to prepare reports and recommendations to local officials.	All	Moderate	Local Budget	Moderate	County Risk Management/ County Building Inspections and Codes Enforcement/ Elected Officials and Executives	2025
2020 STATUS	**To Be Continued: Update of critical facilities database. Plan to develop a formalized process to review which facilities are considered critical facilities. Expect to develop process in next mitigation period**						
PP-3	Seek assistance from NC DOT and other agencies to improve drainage on tributaries and low-lying flood prone areas that cross roadways.	FL	Moderate	State/ Local Grants	High	NCDOT/ County Risk Management /Elected Officials and Executives	2025
2020 STATUS	**In Progress: Some work by NCDOT accomplished across county to identify and improve stream flow in vicinity of roadway bridges as part of bridge replacement projects, but significant work remains to be done over the next several years.**						
PP-4	Upgrade, modify curbing and gutters along Main Street to handle additional water flow from resurfacing.	FL	Moderate	State Grants	$8,800.00	NCDOT/Town Manager's Office/ Elected Officials	2025
2020 STATUS	**Deferred: Unfunded as of 2020; This project is still something the town would like to achieve, but it has not had adequate funding to do so over the past several years. Therefore, it is being deferred until the next update cycle.**						

Town of China Grove Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Emergency Services							
ES-1	To establish, where feasible, additional emergency response forces, by at least 10%, that are trained, equipped and prepared to respond to a variety of emergency and disaster situations.	All	High	Local Budget	High	China Grove Police and Fire	2025
2020 STATUS	**To Be Continued: Over the last 5-year mitigation period, Local FD's and Rescue have added peak time paid staffing to volunteer workforce. The plan is to continue this trend in order to combat lack of volunteers.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	OEM = Iredell County Office of Emergency Management
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-10: Town of Cleveland Mitigation Action Plan

Town of Cleveland Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Integration of a cooperative hazard mitigation program into new development, commercial districts, infrastructure and land use planning.	All	High	Local Budget	Low	Town Clerk	2025
2020 STATUS	**In Progress: As of 2020, implementation and discussion with local entities and governments related planning to various mitigation strategies. For example, mitigation planning and strategies were discussed at LEPC meetings when these were held, and floodplain mapping was utilized in infrastructure planning. However, additional integration should take place going forward.**						
Property Protection							
PP-1	To establish, where feasible, the retrofit, relocation or purchase of habitable structures in the 100-year (1%) floodplain. To plan for the retrofit, relocation or purchase of habitable structures at the rate of 5% per annum until the project is complete. This project should not begin until new floodplain maps are generated by the state and accurate analysis of the new maps is made to determine impact upon local populations.	FL	Moderate	State and Federal Grants/Hazard Mitigation Grant Funding/Local Budget	Moderate	NCEM/EMD County Risk Management /LEPC/ Hazard Mitigation Task Force/ Elected Officials/ Executives/ Engineers	2025
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						

Town of Cleveland Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
PP-2	To establish, where feasible, additional structural and fixture integrity by 25% for protection from all hazards. At a minimum, all critical facilities should be surveyed by earthquake planners and structural engineers employed by the Division of Emergency Management that are trained, equipped and knowledgeable to prepare reports and recommendations to local officials.	All	Moderate	Local Budget and/or Hazard Mitigation Grant Funding	Moderate	County Risk Management /County Building Inspections and Codes Enforcement/ Elected Officials and Executives	2025
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						
PP-3	Seek assistance from NC DOT and other agencies to improve drainage on tributaries and low-lying flood prone areas that cross roadways.	FL	Moderate	Local & State Budget and/or Hazard Mitigation Grant Funding	High	NCDOT/ County Risk Management /Elected Officials and Executives	2025
2020 STATUS	**In Progress: Some work by NCDOT accomplished across county to identify and improve stream flow in vicinity of roadway bridges as part of bridge replacement projects, but significant work remains to be done over the next several years.**						
Emergency Services							
ES-1	To establish, where feasible, additional emergency response forces, by at least 10%, that are trained, equipped and prepared to respond to a variety of emergency and disaster situations.	All	High	Local /Jurisdiction Funding	$250,000 annually	EMD/Fire Depts./Rescue Squads	2025
2020 STATUS	**To Be Continued: Over the last 5-year mitigation period, Local FD's and Rescue have added peak time paid staffing to volunteer workforce. The plan is to continue this trend in order to combat lack of volunteers.**						
Structural Projects							

Town of Cleveland Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
SP-1	Upgrade, modify wastewater facility to mitigate potential waste water loss from flooding.	FL	Moderate	Local/State Grants	>$250,000	NCDNR/ Elected Officials and Executives/ Town Board of Commissioners	2025
2020 STATUS	**In Progress: The town has been in active pursuit of funding to upgrade infrastructure projects, especially when they involve critical facilities such as wastewater. The town will continue to pursue funding from state and local sources to complete this project and other similar projects**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-11: Town of East Spencer Mitigation Action Plan

Town of East Spencer Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Integration of a cooperative hazard mitigation program into new development, commercial districts, infrastructure and land use planning.	All	High	Local Budget	Low	Town Clerk	2025
2020 STATUS	**In Progress: As of 2020, implementation and discussion with local entities and governments related planning to various mitigation strategies. For example, mitigation planning and strategies were discussed at LEPC meetings when these were held and floodplain mapping was utilized in infrastructure planning. However, additional integration should take place going forward.**						
P-2	Trim trees from rights-of-way and remove dead, dying and or overhanging limbs over power lines, some power poles close to streets that present concerns for safety.	All	High	Local	Low	NCDOT/ Town Fire Depart/ Duke Energy/ Energy United/ Elected Officials	
2020 STATUS	**To Be Continued: City Streets have carried out this program over the past several years and will continue to do so going forward.**						
Property Protection							
PP-1	To establish, where feasible, the retrofit, relocation or purchase of habitable structures in the 100-year (1%) floodplain. To plan for the retrofit, relocation or purchase of habitable structures at the rate of 5% per annum until the project is complete. This project should not begin until new floodplain maps are generated by the state and accurate analysis of the new maps is made to determine impact upon local populations.	FL	Moderate	State and Federal Grants/Hazard Mitigation Grant Funding/Local Budget	Moderate	NCEM/EMD /County Risk Management /LEPC/ Hazard Mitigation Task Force/ Elected Officials/ Executives/ Engineers	2025

Town of East Spencer Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						
PP-2	To establish, where feasible, additional structural and fixture integrity by 25% for protection from all hazards. At a minimum, all critical facilities should be surveyed by earthquake planners and structural engineers employed by the Division of Emergency Management that are trained, equipped and knowledgeable to prepare reports and recommendations to local officials.	All	Moderate	Local Government and/or Hazard Mitigation Grant Funding	Moderate	County Risk Management /County Building Inspections and Codes Enforcement/ Elected Officials and Executives	2025
2020 STATUS	**To Be Continued: Update of critical facilities database. Plan to develop a formalized process to review which facilities are considered critical facilities. Expect to develop process in next mitigation period**						
Emergency Services							
ES-1	To establish, where feasible, additional emergency response forces, by at least 10%, that are trained, equipped and prepared to respond to a variety of emergency and disaster situations.	All	High	Local Government Jurisdiction Funding	$250,000 annually	East Spencer Fire Dept.	2025
2020 STATUS	**To Be Continued: Over the last 5- year mitigation period, Local FD's and Rescue have added peak time paid staffing to volunteer workforce. The plan is to continue this trend in order to combat lack of volunteers.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-12: Town of Faith Mitigation Action Plan

Town of Faith Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Integration of a cooperative hazard mitigation program into new development, commercial districts, infrastructure and land use planning.	All	High	Local Budget	Low	Town Alderman	2025
2020 STATUS	**In Progress: As of 2020, implementation and discussion with local entities and governments related planning to various mitigation strategies. For example, mitigation planning and strategies were discussed at LEPC meetings when these were held, and floodplain mapping was utilized in infrastructure planning. However, additional integration should take place going forward.**						
Property Protection							
PP-1	To establish, where feasible, the retrofit, relocation or purchase of habitable structures in the 100-year (1%) floodplain. To plan for the retrofit, relocation or purchase of habitable structures at the rate of 5% per annum until the project is complete. This project should not begin until new floodplain maps are generated by the state and accurate analysis of the new maps is made to determine impact upon local populations.	FL	Moderate	State and Federal Grants/Hazard Mitigation Grant Funding/Local Budget	Moderate	NCEM/EMD /County Risk Management /LEPC/ Hazard Mitigation Task Force/ Elected Officials/ Executives/ Engineers	2025
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						

Town of Faith Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
PP-2	To establish, where feasible, additional structural and fixture integrity by 25% for protection from all hazards. At a minimum, all critical facilities should be surveyed by earthquake planners and structural engineers employed by the Division of Emergency Management that are trained, equipped and knowledgeable to prepare reports and recommendations to local officials.	All	Moderate	Local Budget and/ or Hazard Mitigation Grant Funding	Moderate	County Risk Management /County Building Inspections and Codes Enforcement/ Elected Officials and Executives	2025
2020 STATUS	**To Be Continued: Update of critical facilities database. Plan to develop a formalized process to review which facilities are considered critical facilities. Expect to develop process in next mitigation period**						
Emergency Services							
ES-1	To establish, where feasible, additional emergency response forces, by at least 10%, that are trained, equipped and prepared to respond to a variety of emergency and disaster situations.	All	High	Local Government Jurisdiction Funding	$250,000 annually	Faith Fire Dept.	2025
2020 STATUS	**To Be Continued: Over the last 5-year mitigation period, Local FD's and Rescue have added peak time paid staffing to volunteer workforce. The plan is to continue this trend in order to combat lack of volunteers.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-13: Town of Granite Quarry Mitigation Action Plan

Town of Granite Quarry Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Integration of a cooperative hazard mitigation program into new development, commercial districts, infrastructure and land use planning.	All	High	Local Budget	Low	Town Clerk	2025
2020 STATUS	**In Progress: As of 2020, implementation and discussion with local entities and governments related planning to various mitigation strategies. For example, mitigation planning and strategies were discussed at LEPC meetings when these were held, and floodplain mapping was utilized in infrastructure planning. However, additional integration should take place going forward.**						
Property Protection							
PP-1	To establish, where feasible, the retrofit, relocation or purchase of habitable structures in the 100-year (1%) floodplain. To plan for the retrofit, relocation or purchase of habitable structures at the rate of 5% per annum until the project is complete. This project should not begin until new floodplain maps are generated by the state and accurate analysis of the new maps is made to determine impact upon local populations.	FL	Moderate	State and Federal Grants/Hazard Mitigation Grant Funding/Local Budget	Moderate	NCEM/EMD /County Risk Management /LEPC/ Hazard Mitigation Task Force/ Elected Officials/ Executives/ Engineers	2025
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						
PP-2	To establish, where feasible, additional structural and fixture integrity by 25% for protection from all hazards. At a minimum, all critical facilities should be surveyed by earthquake planners and structural engineers employed by the Division of Emergency Management that are trained, equipped and knowledgeable to prepare reports and recommendations to local officials.	All	Moderate	Local and/or Hazard Mitigation Grant Funding	Moderate	County Risk Management /County Building Inspections and Codes Enforcement/ Elected Officials and Executives	2025

Town of Granite Quarry Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
2020 STATUS	**To Be Continued: Update of critical facilities database. Plan to develop a formalized process to review which facilities are considered critical facilities. Expect to develop process in next mitigation period**						
Emergency Services							
ES-1	To establish, where feasible, additional emergency response forces, by at least 10%, that are trained, equipped and prepared to respond to a variety of emergency and disaster situations.	All	High	Local Government Jurisdiction Funding	$250,000 annually	Granite Quarry Police and Fire	2025
2020 STATUS	**To Be Continued: Over the last 5-year mitigation period, Local FD's and Rescue have added peak time paid staffing to volunteer workforce. The plan is to continue this trend in order to combat lack of volunteers.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-14: Town of Landis Mitigation Action Plan

Town of Landis Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Integration of a cooperative hazard mitigation program into new development, commercial districts, infrastructure and land use planning.	All	High	Local Budget	Low	Town Manager	2025
2020 STATUS	**In Progress: As of 2020, implementation and discussion with local entities and governments related planning to various mitigation strategies. For example, mitigation planning and strategies were discussed at LEPC meetings when these were held, and floodplain mapping was utilized in infrastructure planning. However, additional integration should take place going forward.**						
Property Protection							
PP-1	To establish, where feasible, the retrofit, relocation or purchase of habitable structures in the 100-year (1%) floodplain. To plan for the retrofit, relocation or purchase of habitable structures at the rate of 5% per annum until the project is complete. This project should not begin until new floodplain maps are generated by the state and accurate analysis of the new maps is made to determine impact upon local populations.	FL	Moderate	State and Federal Grants/Hazard Mitigation Grant Funding/Local Budget	Moderate	NCEM/EMD /County Risk Management /LEPC/ Hazard Mitigation Task Force/ Elected Officials /Executives/ Engineers	2025
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						
PP-2	To establish, where feasible, additional structural and fixture integrity by 25% for protection from all hazards. At a minimum, all critical facilities should be surveyed by earthquake planners and structural engineers employed by the Division of Emergency Management that are trained, equipped and knowledgeable to prepare reports and recommendations to local officials.	All	Moderate	Local and/or Hazard Mitigation Grant Funding	Moderate	County Risk Management /County Building Inspections and Codes Enforcement/ Elected Officials and Executives	2025

Town of Landis Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
2020 STATUS	**/To Be Continued: Update of critical facilities database. Plan to develop a formalized process to review which facilities are considered critical facilities. Expect to develop process in next mitigation period**						
PP-3	Seek assistance from NC DOT and other agencies to improve drainage on tributaries and low-lying flood prone areas that cross roadways.	FL	Moderate	Local & State Budget and/ or Hazard Mitigation Grant Funding	High	NCDOT/ County Risk Management /Elected Officials and Executives	2025
2020 STATUS	**In Progress: Some work by NCDOT accomplished across county to identify and improve stream flow in vicinity of roadway bridges as part of bridge replacement projects, but significant work remains to be done over the next several years.**						
Emergency Services							
ES-1	To establish, where feasible, additional emergency response forces, by at least 10%, that are trained, equipped and prepared to respond to a variety of emergency and disaster situations.	All	High	Local Jurisdiction Funding	$250,000 annually	Landis Police and Fire	2025
2020 STATUS	**To Be Continued: Over the last 5-year mitigation period, Local FD's and Rescue have added peak time paid staffing to volunteer workforce. The plan is to continue this trend in order to combat lack of volunteers.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-15: Town of Rockwell Mitigation Action Plan

Town of Rockwell Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Integration of a cooperative hazard mitigation program into new development, commercial districts, infrastructure and land use planning.	All	High	Local Budget	Low	Town Clerk	2025
2020 STATUS	**In Progress: As of 2020, implementation and discussion with local entities and governments related planning to various mitigation strategies. For example, mitigation planning and strategies were discussed at LEPC meetings when these were held, and floodplain mapping was utilized in infrastructure planning. However, additional integration should take place going forward.**						
Property Protection							
PP-1	To establish, where feasible, the retrofit, relocation or purchase of habitable structures in the 100-year (1%) floodplain. To plan for the retrofit, relocation or purchase of habitable structures at the rate of 5% per annum until the project is complete. This project should not begin until new floodplain maps are generated by the state and accurate analysis of the new maps is made to determine impact upon local populations.	FL	Moderate	State and Federal Grants/Hazard Mitigation Grant Funding/Local Budget	Moderate	NCEM/EMD /County Risk Management /LEPC/ Hazard Mitigation Task Force/ Elected Officials/ Executives/ Engineers	2025
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						
PP-2	To establish, where feasible, additional structural and fixture integrity by 25% for protection from all hazards. At a minimum, all critical facilities should be surveyed by earthquake planners and structural engineers employed by the Division of Emergency Management that are trained, equipped and knowledgeable to prepare reports and recommendations to local officials.	All	Moderate	Local Budget and/or Hazard Mitigation Grant Funding	Moderate	County Risk Management /County Building Inspections and Codes Enforcement/ Elected Officials and Executives	2025

Town of Rockwell Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
2020 STATUS	**To Be Continued: Update of critical facilities database. Plan to develop a formalized process to review which facilities are considered critical facilities. Expect to develop process in next mitigation period**						
PP-3	Repair or retrofit storm drains along Market Street to provide storm water runoff. Specific portions of Market Street often have low lying flood issues during and immediately after heavy rains. This problem is attributed to a faulty design and inappropriate capacity of the storm drains that were installed by a private contractor.	FL	Moderate	Local & State Budget and/or Hazard Mitigation Grant Funding	High	NCDOT/ County Risk Management /Elected Officials and Executives	2025
2020 STATUS	**In Progress: Some work by NCDOT accomplished across county to identify and improve stream flow in vicinity of roadway bridges as part of bridge replacement projects, but significant work remains to be done over the next several years.**						
Emergency Services							
ES-1	To establish, where feasible, additional emergency response forces, by at least 10%, that are trained, equipped and prepared to respond to a variety of emergency and disaster situations.	All	High	Local Jurisdiction Funding	$250,000 annually	Local Fire	2025
2020 STATUS	**To Be Continued: Over the last 5-year mitigation period, Local FD's and Rescue have added peak time paid staffing to volunteer workforce. The plan is to continue this trend in order to combat lack of volunteers.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-16: City of Salisbury Mitigation Action Plan

City of Salisbury Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Integration of a cooperative hazard mitigation program into new development, commercial districts, infrastructure and land use planning.	All	High	Local Budget	Low	Salisbury Risk Management	2025
2020 STATUS	**In Progress: As of 2020, implementation and discussion with local entities and governments related planning to various mitigation strategies. For example, mitigation planning and strategies were discussed at LEPC meetings when these were held, and floodplain mapping was utilized in infrastructure planning. However, additional integration should take place going forward.**						
Property Protection							
PP-1	To establish, where feasible, the retrofit, relocation or purchase of habitable structures in the 100-year (1%) floodplain. To plan for the retrofit, relocation or purchase of habitable structures at the rate of 5% per annum until the project is complete. This project should not begin until new floodplain maps are generated by the state and accurate analysis of the new maps is made to determine impact upon local populations.	FL	Moderate	State and Federal Grants/Hazard Mitigation Grant Funding/Local Budget	Moderate	NCEM/EMD /County Risk Management /LEPC/ Hazard Mitigation Task Force/ Elected Officials/ Executives/ Engineers	2025
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						
PP-2	To establish, where feasible, additional structural and fixture integrity by 25% for protection from all hazards. At a minimum, all critical facilities should be surveyed by earthquake planners and structural engineers employed by the Division of	All	Moderate	Local and/or Hazard Mitigation Grant Funding	Moderate	County Risk Management /County Building Inspections and Codes Enforcement/ Elected Officials and Executives	2025

City of Salisbury Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
	Emergency Management that are trained, equipped and knowledgeable to prepare reports and recommendations to local officials.						
2020 STATUS	**To Be Continued: Update of critical facilities database. Plan to develop a formalized process to review which facilities are considered critical facilities. Expect to develop process in next mitigation period**						
PP-3	Seek assistance from NC DOT and other agencies to improve drainage on tributaries and low-lying flood prone areas that cross roadways.	FL	Moderate	Local & State Budget and/or Hazard Mitigation Grant Funding	High	NCDOT County Risk Management /Elected Officials and Executives	2025
2020 STATUS	**In Progress: Some work by NCDOT accomplished across county to identify and improve stream flow in vicinity of roadway bridges as part of bridge replacement projects, but significant work remains to be done over the next several years.**						
Emergency Services							
ES-1	To establish, where feasible, additional emergency response forces, by at least 10%, that are trained, equipped and prepared to respond to a variety of emergency and disaster situations.	All	High	Local Jurisdiction Funding	$250,000 annually	Salisbury Police and Fire	2025
2020 STATUS	**To Be Continued: Over the last 5-year mitigation period, Local FD's and Rescue have added peak time paid staffing to volunteer workforce. The plan is to continue this trend in order to combat lack of volunteers.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025

City of Salisbury Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
	education public for hazard mitigation implementation.						
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

Table 8-17: Town of Spencer Mitigation Action Plan

Town of Spencer Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Prevention							
P-1	Integration of a cooperative hazard mitigation program into new development, commercial districts, infrastructure and land use planning.	All	High	Local Budget	Low	Town Manager	2025
2020 STATUS	**In Progress: As of 2020, implementation and discussion with local entities and governments related planning to various mitigation strategies. For example, mitigation planning and strategies were discussed at LEPC meetings when these were held, and floodplain mapping was utilized in infrastructure planning. However, additional integration should take place going forward.**						
Property Protection							
PP-1	To establish, where feasible, the retrofit, relocation or purchase of habitable structures in the 100-year (1%) floodplain. To plan for the retrofit, relocation or purchase of habitable structures at the rate of 5% per annum until the project is complete. This project should not begin until new floodplain maps are generated by the state and accurate analysis of the new maps is made to determine impact upon local populations.	FL	Moderate	State and Federal Grants/Hazard Mitigation Grant Funding/Local Budget	Moderate	NCEM/EMD /County Risk Management /LEPC/ Hazard Mitigation Task Force/ Elected Officials/ Executives/ Engineers	2025
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						
PP-2	To establish, where feasible, additional structural and fixture integrity by 25% for protection from all hazards. At a minimum, all critical facilities should be surveyed by earthquake planners and structural engineers employed by the Division of Emergency Management that are trained,	All	Moderate	Local Budget and/or Hazard Mitigation Grant Funding	Moderate	County Risk Management /County Building Inspections and Codes Enforcement/ Elected Officials and Executives	2025

Town of Spencer Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
	equipped and knowledgeable to prepare reports and recommendations to local officials.						
2020 STATUS	**In Progress: Up through 2020, the county has attempted to identify applicable properties and carry out mitigation through planning & development when possible. This action is not complete due to lack of funding and will need to be continued in the next cycle.**						
PP-3	Seek assistance from NC DOT and other agencies to improve drainage on tributaries and low-lying flood prone areas that cross roadways.	FL	Moderate	Local & State Budget and/or Hazard Mitigation Grant Funding	High	NCDOT/ County Risk Management /Elected Officials and Executives	2025
2020 STATUS	**In Progress: Some work by NCDOT accomplished across county to identify and improve stream flow in vicinity of roadway bridges as part of bridge replacement projects, but significant work remains to be done over the next several years.**						
Emergency Services							
ES-1	To establish, where feasible, additional emergency response forces, by at least 10%, that are trained, equipped and prepared to respond to a variety of emergency and disaster situations.	All	High	Local Jurisdiction Funding	$250,000 annually	Spencer Police and Fire	2025
2020 STATUS	**To Be Continued: Over the last 5-year mitigation period, Local FD's and Rescue have added peak time paid staffing to volunteer workforce. The plan is to continue this trend in order to combat lack of volunteers.**						

Town of Spencer Existing Mitigation Actions							
Action #	**Description**	**Hazard(s) Addressed**	**Relative Priority**	**Funding Sources**	**Estimated Cost**	**Responsible Party**	**Target Completion Date**
Structural Projects							
SP-1	Retrofit or elevate the bridges on 3rd and 7th Streets and dredge or otherwise clear the channel of Grants creek tributaries near 17th Street to provide better storm water runoff. Bridges on 3rd and 7th are often covered by storm water during or immediately after heavy rains and portions of 17th Street are subject to low flooding during and immediately after prolonged heavy rains.	FL	Moderate	Local/State Budget	>$250,000	NCDNR/ NCDOT/ Town Manager/ Elected Officials	2025
2020 STATUS	**Deferred: The town has been in active pursuit of funding to upgrade infrastructure projects, especially when they involve critical facilities such as bridges. The town will continue to pursue funding from state and local sources to complete this project and other similar projects.**						
Public Education and Awareness Activities							
PEA-1	Public Education and Awareness: To establish, where feasible, joint city and county public education materials and public education public for hazard mitigation implementation.	All	High	Local/State Grants	Low	Hazard Mitigation Task Force	2025
2020 STATUS	**To Be Continued: As of 2020, the county and municipalities have reached out to the public via several channels including in- person, print media, and the Internet. All jurisdictions will continue to work to educate the public in new ways over the next several years.**						

FL = Flood	T = Tornado	EQ = Earthquake	HM = HAZMAT
DR = Drought	WF= Wildfire	LS = Landslide	D = Dams/Levees
ES = Expansive Soils	S/I = Snow/Ice	L = Lightning	
HU = Hurricane	ET = Extreme Temperatures	ER = Erosion	

SECTION 9: PLAN MAINTENANCE

This section discusses how the Iredell Rowan Regional Mitigation Strategy and Mitigation Action Plan will be implemented and how the Regional Hazard Mitigation Plan will be evaluated and enhanced over time. This section also discusses how the public will continue to be involved in a sustained hazard mitigation planning process. It consists of the following four subsections:

- 9.1 Monitoring, Evaluating and Updating the Previous Plan
- 9.2 Implementation and Integration
- 9.3 Monitoring, Evaluation, and Enhancement
- 9.4 Continued Public Involvement

44 CFR Requirement
44 CFR Part201.6(c)(4)(i): The plan shall include a plan maintenance process that includes a section describing the method and schedule of monitoring, evaluating and updating the mitigation plan within a five-year cycle. **44 CFR Part 201.6(c)(4)(ii):** The plan maintenance process shall include a discussion on how the community will continue public participation in the plan maintenance process.

9.1 Monitoring, Evaluating and Updating the Previous Plan

Since the previous plan was adopted, each jurisdiction has worked to ensure that Plan was integrated into local activities and that the Plan was appropriately implemented. Each of the jurisdictions outlined a process in the previous mitigation plan for monitoring, evaluating and updating the plan throughout the interim period between plan updates.

Each jurisdiction was ultimately successful in implementing the monitoring, evaluation and updating processes that were outlined in previous plan as jurisdictions held annual meetings to discuss the mitigation plan and the priorities that were outlined and tracked in it. The specific process is outlined below with an explanation of how the monitoring, evaluating and updating process was and will be carried out as well as any changes that were identified by the jurisdictions that would be useful to implement during the next update.

9.2 Implementation and Integration

Each agency, department, or other partner participating under the Iredell Rowan Regional Hazard Mitigation Plan is responsible for implementing specific mitigation actions as prescribed in the Mitigation Action Plan. Every proposed action listed in the Mitigation Action Plan is assigned to a specific "lead" agency or department in order to assign responsibility and accountability and increase the likelihood of subsequent implementation.

In addition to the assignment of a local lead department or agency, an implementation time period or a specific implementation date has been assigned in order to assess whether actions are being implemented in a timely fashion. The jurisdictions in the region will seek outside funding sources to implement mitigation projects in both the pre-disaster and post-disaster environments. When applicable, potential funding sources have been identified for proposed actions listed in the Mitigation Action Plan.

The participating jurisdictions will integrate this Hazard Mitigation Plan into relevant city and county government decision-making processes or mechanisms, where feasible. This includes integrating the requirements of the Hazard Mitigation Plan into other local planning documents, processes, or mechanisms, such as comprehensive or capital improvement plans, when appropriate. The members of the Regional Hazard Mitigation Planning Team will remain charged with ensuring that the goals and mitigation actions of new and updated local planning documents for their agencies or departments are consistent, or do not conflict with, the goals and actions of the Hazard Mitigation Plan, and will not contribute to increased hazard vulnerability in the region.

Since the previous plan was adopted, each County and participating jurisdiction have worked to integrate the hazard mitigation plan into other planning mechanisms where applicable/feasible. Examples of how this integration has occurred have been documented in the Implementation Status discussion provided for each of the mitigation actions found in Section 9. Specific examples of how integration has occurred include:

- Integrating the mitigation plan into reviews and updates of floodplain management ordinances;
- Integrating the mitigation plan into reviews and updates of County emergency operations plans;
- Integrating the mitigation plan into review and updates of building codes; and
- Integrating the mitigation plan into the capital improvements plan through identification of mitigation actions that require local funding

Opportunities to further integrate the requirements of this Plan into other local planning mechanisms shall continue to be identified through future meetings of the Regional Hazard Mitigation Planning Team, individual county meetings, staff meetings and the annual review process described herein. Although it is recognized that there are many possible benefits to integrating components of this Plan into other local planning mechanisms, the development and maintenance of this stand-alone Regional Hazard Mitigation Plan is deemed by the Regional Hazard Mitigation Planning Team to be the most effective and appropriate method to implement local hazard mitigation actions at this time.

9.3 Monitoring, Evaluation, and Enhancement

Periodic revisions and updates of the Regional Hazard Mitigation Plan are required to ensure that the goals of the Plan are kept current, considering potential changes in hazard vulnerability and mitigation priorities. In addition, revisions may be necessary to ensure that the Plan is in full compliance with applicable federal and state regulations. Periodic monitoring, evaluation and update of the Plan will also ensure that specific mitigation actions are being reviewed and carried out according to the Mitigation Action Plan.

When determined necessary, the Regional Hazard Mitigation Planning Team shall meet in March of every year to monitor, evaluate and update the progress attained and to revise, where needed, the activities set forth in the Plan. The Regional Hazard Mitigation Planning Team will track the implementation of the Plan through an informal mitigation action progress report as well as assess the effectiveness of the Plan at achieving its stated purpose and goals through evaluating what percentage of actions were implemented between the 5-year update cycle. The findings and recommendations of the Regional Hazard Mitigation Planning Team shall be documented in the form of a report that can be shared with interested City and County Council members. The Regional Hazard Mitigation Planning Team will also meet following any disaster events warranting a reexamination of the mitigation actions being implemented or proposed for future implementation. This will ensure that the Plan is continuously updated to reflect changing conditions and needs within the Region, becoming part of the regular administrative function of the offices or positions to which, it is assigned. The Iredell County Deputy Emergency Management Coordinator and Rowan County Emergency Services Director will be

responsible for reconvening the Regional Hazard Mitigation Planning Team for these monitoring and evaluation reviews.

9.3.1 Five Year Plan Review

The Plan will be thoroughly reviewed by the Regional Hazard Mitigation Planning Team 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 development in identified hazard areas, an increased exposure to hazards, an increase or decrease in capability to address hazards, and changes to federal or state legislation are examples of factors that may affect the necessary content of the Plan.

The plan review provides county and municipal officials with an opportunity to evaluate those actions that have been successful and to explore the possibility of documenting potential losses avoided due to the implementation of specific mitigation measures. The plan review also provides the opportunity to address mitigation actions that may not have been successfully implemented as assigned. The Iredell County Deputy Emergency Management Coordinator and Rowan County Emergency Services Director will be responsible for reconvening the Regional Hazard Mitigation Planning Team 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?

Following the five-year review, any revisions deemed necessary will be summarized and implemented according to the reporting procedures and plan amendment process outlined herein. Upon completion of the review and update/amendment process, the Iredell Rowan Region Hazard Mitigation Plan will be submitted to the State Hazard Mitigation Officer at the North Carolina Division of Emergency Management (NCDEM) for final review and approval in coordination with the Federal Emergency Management Agency (FEMA).

Because the plan update process can take several months to complete, and because Federal funding may be needed to update the plan, it is recommended that the five-year review process begin at the beginning of the third year after the plan was last approved. This will allow the participants in the Iredell Rowan Regional Hazard Mitigation Plan to organize in order to seek Federal funding if necessary and complete required plan update documentation before the plan expires at the end of the fifth year.

9.3.2 Disaster Declaration

Following a disaster declaration, the Iredell Rowan Regional Hazard Mitigation Plan will be revised as necessary to reflect lessons learned, or to address specific issues and circumstances arising from the event. It will be the responsibility of the Iredell County Deputy Emergency Management Coordinator and Rowan County Emergency Services Director to reconvene the Regional Hazard Mitigation Planning Team and ensure the appropriate stakeholders are invited to participate in the plan revision and update process following declared disaster events.

9.3.3 Reporting Procedures

The results of the five-year review will be summarized by the Regional Hazard Mitigation Planning Team in a report that will include an evaluation of the effectiveness of the Plan and any required or recommended changes or amendments. The report will also include an evaluation of implementation progress for each of the proposed mitigation actions, identifying reasons for delays or obstacles to their completion along with recommended strategies to overcome them.

9.3.4 Plan Amendment Process

Upon the initiation of the amendment process, representatives from Iredell and Rowan counties will forward information on the proposed change(s) to all interested parties including, but not limited to, all directly affected County/municipal departments, residents, and businesses. Information will also be forwarded to the North Carolina Division of Emergency Management. This information will be disseminated in order to seek input on the proposed amendment(s) for no less than a 45-day review and comment period.

At the end of the 45-day review and comment period, the proposed amendment(s) and all comments will be forwarded to the Regional Hazard Mitigation Planning Team for final consideration. The Planning Team will review the proposed amendment along with the comments received from other parties, and if acceptable, the committee will submit a recommendation for the approval and adoption of changes to the Plan.

In determining whether to recommend approval or denial of a Plan amendment request, the following factors will be considered by the Regional Hazard Mitigation Planning Team:

- There are errors, inaccuracies, or omissions made in the identification of issues or needs in the Plan.
- New issues or needs have been identified which are not adequately addressed in the Plan.
- There has been a change in information, data, or assumptions from those on which the Plan is based.

Upon receiving the recommendation from the Regional Hazard Mitigation Planning Team, and prior to adoption of the Plan, the participating jurisdictions will hold a public hearing, if deemed necessary. The governing bodies of each participating jurisdiction will review the recommendation from the Regional Hazard Mitigation Planning Team (including the factors listed above) and any oral or written comments received at the public hearing. Following that review, the governing bodies will take one of the following actions:

- Adopt the proposed amendments as presented;
- Adopt the proposed amendments with modifications;
- Refer the amendments request back to the Regional Hazard Mitigation Planning Team for further revision; or
- Defer the amendment request back to the Regional Hazard Mitigation Planning Team for further consideration and/or additional hearings.

9.4 Continued Public Involvement

44 CFR Requirement
44 CFR Part 201.6(c)(4)(iii): The plan maintenance process shall include a discussion on how the community will continue public participation in the plan maintenance process.

Public participation is an integral component to the mitigation planning process and will continue to be essential as this Plan evolves over time. As described above, significant changes or amendments to the Plan shall require a public hearing prior to any adoption procedures.

Other efforts to involve the public in the maintenance, evaluation, and revision process will be made as necessary. These efforts may include:

- Advertising meetings of the Regional Hazard Mitigation Planning Team in local newspapers, public bulletin boards, government websites, social media sites and County and municipal office buildings;
- Designating willing and voluntary citizens and private sector representatives as official members of the Regional Hazard Mitigation Planning Team;
- Utilizing local media to update the public on any maintenance and/or periodic review activities taking place;
- Utilizing the interactive websites and social media sites of participating jurisdictions to advertise any maintenance, updated surveys and/or periodic review activities taking place; and
- Keeping copies of the Plan in public libraries and other government facilities.