

Franklin County, North Carolina Hazard Mitigation Plan

Kerr-Tar
Regional Council
Of Governments

PLANNING DEPARTMENT
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Section I: Introduction

Section I: Introduction

This section of the Franklin County Hazard Mitigation Plan (HMP) provides an overview to and introduction of the HMP and its constituent elements, as follows:

- A. Snapshot of Franklin County
- B. What is Hazard Mitigation and why is it Important to Franklin County?
- C. Planning Process and Plan Format
- D. Authority for HMP Adoption and Relevant Legislation

A. Snapshot of Franklin County

I. Location, General Information and History

Franklin County is located in the Piedmont region of North Carolina. The County was created in 1779 when Bute County was divided to form both Franklin and Warren Counties. The county covers 494 square miles and it was named for Benjamin Franklin. Louisburg is the county seat.



Franklin County is 32 miles from the Raleigh Durham International Airport and 35 miles from North Carolina's Research Triangle Park. Three world class research universities are located within an hour's drive. They are Duke University, the University of North Carolina at Chapel Hill, and North Carolina State University.

The County seat is home to Louisburg College, which was founded in 1787 making it the oldest junior college in the United States. Vance-Granville Community College offers technical, vocational, college-transfer, and continuing education programs.

The local economy is based in agriculture, lumber, and textiles. Local industry includes wood products, enzymes, telecommunications, software development,

and plastics recycling (*source: Franklin County Planning and Inspections Department*).

II. Climate

In Franklin County, summers are hot and generally humid. Winters are moderately cold but short in duration because the mountains to the west protect the area against many cold waves. Precipitation is evenly distributed throughout the year and is adequate for all crops.

In winter, the average temperature is 39 degrees F and the average daily minimum temperature is 25 degrees. The lowest temperature on record, which occurred on January 21, 1985, is -10 degrees. In summer, the average temperature is 75 degrees and the average daily maximum temperature is 88 degrees. The highest recorded temperature, which occurred on July 29, 1952, is 106 degrees.

The total average annual precipitation is about 46 inches. Of this, 25 inches, or about 53 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 13 inches. The heaviest 1-day rainfall during the period of record was 5.27 inches on August 18, 1955. Thunderstorms occur on about 44 days each year.

The average seasonal snowfall is about 4 inches. The greatest snow depth at any one time during the period of record was 9 inches. On the average, 2 days of the year have at least 1 inch of snow on the ground. The heaviest 1-day snowfall on record was more than 9 inches.

The average relative humidity in mid-afternoon is about 54 percent. Humidity is higher at night, and the average at dawn is about 85 percent. The sun shines 61 percent of the time during daylight hours in summer and 55 percent in winter. The prevailing wind is from the southwest. Average wind speed is highest, 9 miles per hour, in spring (*source: Franklin County Comprehensive Land Use Plan, 1999*).

III. Topography/Geology

Franklin County is located on the northern edge of the North Carolina piedmont plateau. It is bordered by Wake, Granville, Warren, Vance, and Nash counties. Franklin County consists of 316,224 acres, or roughly 494 square miles. This acreage includes 314,600 acres of land and 762 acres of water. Franklin County has the smoothest surface relief of all the counties which make up the piedmont

plateau. The surface relief ranges from level and gently rolling in the broad interstream areas to strongly rolling bordering stream courses. Elevation in the county ranges from 143 feet along the Tar River near the Nash County line to 562 feet above sea level near the community of Pocomoke, which is located in the western part of the county. The Tar River runs across the county from the northwestern border to the southeastern border, forming the main drainage basin. The Tar River and the following streams, Little Shocco, Sandy, Red Bud, Cypress, Cedar, Tooles, Middle, Crooked, and Moccasin Creeks, drain the county. The forest growth consists chiefly of loblolly pine, oaks, maples, sweetgum, poplars, hickories, and a few birches.

Geologic formations are classified according to the manner and the time period in which they were formed. The three major classes of rock—sedimentary, igneous, and metamorphic—are each found in Franklin County (*source: Franklin County Comprehensive Land Use Plan, 1999*).

B. What is Hazard Mitigation and Why is it Important to Franklin County?

I. What is Hazard Mitigation?

Hazard mitigation is the practice of reducing risks to people and property from natural disasters. Hazard mitigation involves recognizing and adapting to natural forces, and is defined by the Federal Emergency Management Agency (FEMA) as any sustained action taken to reduce long-term risk to human life and property from natural hazards. A fundamental premise of hazard mitigation is that current dollars invested in mitigation will significantly reduce the demand for future expenditures by reducing the extent of emergency recovering, repair, and reconstruction following a disaster.

II. Why is Hazard Mitigation Important to Franklin County?

Hazard mitigation offers the following benefits to Franklin County, and the HMP is being completed to attain the following goals:

- 1) Saving lives and reducing injuries;
- 2) Preventing or reducing property damage;
- 3) Reducing economic losses;
- 4) Minimizing social dislocation and stress;
- 5) Minimizing agricultural losses;

- 6) Maintaining critical facilities in functional order;
- 7) Protecting infrastructure from damage;
- 8) Protecting mental health;
- 9) Limiting legal liability of government and public officials;
- 10) Providing options for political leaders regarding hazard reduction;
- 11) Fulfilling Federal and State requirements for receipt of future disaster recovery and hazard mitigation assistance;
- 12) Improve inter-jurisdictional cooperation and coordination, especially regarding the reduction of natural hazard impacts.

Hazard Mitigation planning is intended to construct a framework for the prevention and reaction to disasters if and when they may occur. The framework created by this plan will help to instill an ongoing effort to lessen the impact that disasters have on citizens and property within Franklin County.

The above-listed items are but only a few of the many complex issues that the formulation of such a process will ultimately address.

C. Planning Process and Plan Format

I. Planning Process

On October 30, 2000, the President of the United States signed into law the Disaster Mitigation Act of 2000 (Public Law 106-390 or DMA2K) to amend the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988. Together with Senate Bill 300 (SB300), passed in the year 2000 session of the North Carolina legislature, this Federal and State legislation, and its subsequent regulations, require that local governments wishing to receive Federal disaster recovery assistance after November 1, 2004, must complete local hazard mitigation plans (HMP) and submit them to the N.C. Division of Emergency Management (NCDEM) for review and receive full approval of the HMP by the Federal Emergency Management Agency (FEMA).

The MAC was composed of a single-representative from each participating city and town and a representative from Franklin County. In turn, each community's MAC member will be responsible for working with the city/town employees and/or

elected officials in each community responsible for natural hazards and disasters and for working with the Kerr-Tar Regional Council of Governments (KTCOG) to compile the information required for the HMP.

All five communities listed above participated fully with KTCOG and the County in the overall HMP process.

Mitigation Advisory Committee (MAC) members and the community's they represent are as follows:

Judy M. Jeffreys, CMC, Town Clerk, Town of Bunn
Margaret Nelms, Mayor, Town of Centerville
Tammy Ray, Planning Director, Town of Franklinton
Tony L. King, Asst. Town Administrator, Town of Louisburg
Brenda T. Robbins, Town Administrator, Town of Youngsville
Scott Hammerbacher, Planning Director, Franklin County
Michael Ciriello, Planning Director, Kerr-Tar Regional Council of Governments

The consulting planner served as the facilitator by organizing meetings, drafting plan section for County review, making plan revisions based on reviews comments, and compiling the full draft plan for final review and approval. The process was organized to ensure that individual mitigation projects and initiatives undertaken by the County are carried out in a cooperative manner to ensure an overall goal of creating a safer environment for all citizens of Franklin County. The planning process also played an important role in generating community understanding of and support for hazard mitigation by creating a forum for discussion.

II. Plan Maintenance

In the five years since the adoption of the original plan, the public participated in the maintenance of the plan in a number of ways including invitations to attend and participate in Public Hearing Process (notification via internet, newspaper, public hearing before Council/Commissioners/Planning Boards) to consider amendments to plan components.

To facilitate property protection, and in an effort to incorporate knowledge gained through the process of the hazard mitigation planning process, local municipalities and the County have updated, are updating, or adopted the following existing plans, studies, reports, and technical information:

- (1) Franklinton Code of Ordinances
- (2) Town of Bunn Land Plan Ordinance
- (3) FEMA Flood Mapping

In 2010, Franklin County signed a contract with the Kerr-Tar Regional Council of Governments (KTCOG) to update the HMP. The MAC reconvened in May 2010 by the KTCOG staff, County staff, and staff from all participating local governments. The purpose of this initial meeting was to update members of the MAC about the need for a plan update and the roles each will play in the update. Additional meetings were held over the course of the next two months between the KTCOG, MAC, and individuals, to collect data - such as policies, plans and procedures – related to natural hazards and to answer any questions that officials and MAC members may have had. The original Hazard Mitigation Plan adopted in 2005 is the basis of the updated plan.

Each municipality and the County sent one representative to participate the in HMP MAC Team meetings. In addition, state agencies like NC Forestry Department were also engaged. Each entity was responsible for reviewing the sections pertaining to their jurisdiction/ area of concern and for providing Kerr-Tar COG staff with information and updates needed to update the plan and prepare for meetings.

The first County-wide public meeting was held on October 5, 2010, in Louisburg, North Carolina. No comments were received from those who attended this meeting. The meeting was publicly advertised by postings in each Town/City and County primary administrative office and in the Franklin Times, the County's regional newspaper of record.

A draft version of the HMP was completed on October 15, 2010 and distributed to MAC members and representatives of the following stakeholder offices/organizations for comments and input on that date:

- Franklin County Emergency Management Department
- Franklin County Health Department
- Officials from the Municipalities of:
 1. Bunn
 2. Centerville
 3. Franklinton
 4. Louisburg
 5. Youngsville
- North Carolina Department of Transportation, Division 5

- North Carolina Division of Forest Resources, Franklin County Office
- Franklin County Sheriff's Department
- Franklin County EMS
- Franklin Regional Medical Center
- Salvation Army
- American Red Cross, Triangle Chapter
- Vance-Granville Community College (Franklin County Campus)
- Franklin County Chamber of Commerce
- Franklin County Economic Development Commission
- Progress Energy
- Louisburg College

Please note that the parties listed above were not formal members of the MAC, but were invited to comment on/provide input on the HMP. No comments or concerns were received from these solicitations for comments.

Please note that the County and the participating municipalities determined, again in response to the limited time and resources available to complete this planning process, that the non-governmental and non-local government stakeholders listed above would be invited to participate in this initial planning process through their invitations to comment on initial plan drafts and their invitations to speak at public meetings ("the drafting stage" as defined at 44 CFR 201.6(b)(1)), rather than having all stakeholders attend all initial and preliminary meetings.

The final MAC meeting was held on November 16, 2010 and followed the same format as the first meeting, no comments were received.

The intent of the initial and second public meetings was to enable all representatives from the communities, state agencies, federal agencies, the public, businesses, academia, nonprofit organizations, and all other interested parties to be given the opportunity to be involved in the development of the Franklin County HMP update.

The HMP was submitted to NCDEM for final review on November 22, 2010, and on December 7, 2010 were resubmitted after revisions addressing NCDEM comments were received on December 3, 2010. NCDEM recommended adoption of the HMP at that time and the HMP was adopted by the County on June 20, 2011, and by the participating municipal governments by the Town of Bunn on May 2, 2011, Town of Youngsville on May 12, 2011, Town of Franklinton on May 17, 2011, Town of Centerville on May 3, 2011, and Town of Louisburg on June 20, 2011.

We anticipate NCDEM will submit the updated HMP to the Federal Emergency Management Agency (FEMA) for final review and approval in February 2011.

A 3rd public meeting (in the form of a public hearing) will be held concurrent with HMP adoption by each governing body, assuming no significant public comments that change the nature of the plan are received.

The updated Plan must be adopted within one calendar year of FEMA's "approval pending adoption" of the Updated Plan. The Plan Update adoption meetings will be held upon approval by NCEM/FEMA.

III. Plan Format

The format for the Franklin County HMP follows the suggested format proposed in *"Keeping Natural Hazards from Becoming Disasters: A Mitigation Planning Guidebook for Local Governments"* published in May 2003, by the NCDEM Hazard Mitigation Section and the Hazard Mitigation Planning Clinic at the Department of City and Regional Planning at the University of North Carolina at Chapel Hill.

Each section of the plan was reviewed individually by the committee for changes during the initial phase of the update. The Committee identified areas for update and this process impacted all sections. It was also decided to combine two sections to make the plan more efficient. Sections VII and VIII were combined to form Section VI; and, Sections V and VI were combined to create Section VI. The plan format is provided below:

Section I. Introduction

This section of the HMP provides a statement of the problem, the purpose of the plan, acknowledges the participants in the planning process, describes the planning process, and reviews the citizen participation and adoption process for the HMP.

Section II. Identification of Potential Natural Hazards

This section of the HMP provides relevant data and narrative descriptions of natural hazards that Franklin County's citizens are subject to, based on interviews with local officials and on public data sources such as the National Climatic Data Center and FEMA, for example.

Section III. Vulnerability Assessment

This section of the HMP identifies specific locations throughout the County that are vulnerable to natural hazards through narrative, data and maps and establishes "Geographic Planning Areas", which are areas of particular vulnerability to natural hazards, and provides detailed data and analysis of these areas.

Section IV. Community Capability Assessment

The section of the HMP provides an assessment of each community's current hazard mitigation practices, as well as their potential to engage in mitigation activities.

Section V. Acceptability Assessment and Mitigation Values and Goals

This section of the HMP identifies high priority areas of focus for the latter, or "action," sections of the plan by providing an overview of conclusions formed from the data and analysis provided in Sections II through IV above. Mitigation values and goals are provided with each community's values and goals statements, and provide the basis of the "action" section of the plan – Section VII below.

Section VII. Mitigation Strategies and Policies; Monitoring, Evaluating and Reporting Progress

This section of the HMP identifies specific strategies and policies that will "put into action" the mitigation values and goals established in Section VI above by completing the following steps:

- Prioritizing each community's Geographic Planning Areas (GPA)
- Determining which types of mitigation strategies are appropriate for each GPA
- Formulating selection criteria
- Identifying policies to carry out the mitigation strategies

- Creating an action plan for the mitigation strategies
- Prioritizing the policies
- Identifying funding sources
- Assigning implementation responsibilities

Monitoring, Evaluating and Reporting Progress

This section of the HMP provides procedures for ongoing monitoring and evaluation after the HMP is adopted by each community's governing body, NCDDEM and FEMA and establishes procedures to insure that an annual evaluation report is prepared and appropriate revisions and updates of the plan are completed.

In addition to a review and update of these sections, the Committee utilized contacts in the County, including the Forest Service, municipal and county planning departments, the regional planning organization, and the tax and GIS departments to complete the update of the Hazard Mitigation Plan. Plans, including land use, zoning, and transportation; and, data, including tax, property ownership, and population, from local, county and region were reviewed and considered in particular as these related to identifying potential hazards, community capability and vulnerability assessments.

Maps, Tables and Appendices referenced in the HMP will be attached to the plan include maps and data used in the review process.

D. Authority for HMP Adoption and Relevant Legislation

This HMP will be adopted by the Franklin County Board of Commissioners and the governing bodies of each of the five (5) participating municipalities under the authorities and police powers granted to county and municipal governments by the North Carolina General Statutes (see N.C.G.S., Chapter 153A).

The HMP has been developed in accordance with the requirements of the following laws, regulations, and guidance:

- North Carolina General Statutes (N.C.G.S), Chapter 166-A: North Carolina Emergency Management Act, as amended by Senate Bill 300: An Act to Amend the Laws Regarding Emergency Management as Recommended by the Legislative Disaster Response and Recovery Commissioner (a.k.a. Session Law 2001-214), adopted June 15, 2001.
- Public Law 106-390, The Robert T. Stafford Disaster Mitigation Act of 2000, as amended (adopted October 30, 2000).

- Interim Final Regulations regarding Hazard Mitigation Planning and the Hazard Mitigation Grant Program at 44 C.F.R. Parts 201 and 206 as published in the Federal Register: October 1, 2002 (Volume 67, Number 190, Page 61512-61515).
- *Keeping Natural Hazards from Becoming Disasters: A Mitigation Planning Guidebook for Local Governments* published in May 2003, by the NCDDEM Hazard Mitigation Section and the Hazard Mitigation Planning Clinic at the Department of City and Regional Planning at the University of North Carolina at Chapel Hill.

The above laws, regulations, and guidance should be carefully monitored for continued compliance.

F. Resolution of Adoption

The signed/certified resolution of adoption update of the plan updates will be included on this page.

(Insert Adopted Resolution)

RESOLUTION OF ADOPTION

Franklin County Hazard Mitigation Plan Update

WHEREAS, the citizens and property within Franklin County are subject to the effects of natural hazards and man-made hazard events that pose threats to lives and cause damages to property, and with the knowledge and experience that certain areas, i.e., flood hazard areas, are particularly susceptible to flood hazard events; and

WHEREAS, the County and local municipalities desire to seek ways to mitigate situations that may aggravate such circumstances; and

WHEREAS, the Legislature of the State of North Carolina has in Part 6, Article 21 of Chapter 143; Parts 3, 5, and 8 of Article 19 of Chapter 160A; and Article 8 of Chapter 160A of the North Carolina General Statutes, delegated to local governmental units the responsibility to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry; and

WHEREAS, the Legislature of the State of North Carolina has in Section 1 Part 166A of the North Carolina General Statutes (adopted in Session Law 2001-214—Senate Bill 300 effective July 1, 2001), states in Item (a) (2) “For a state of disaster proclaimed pursuant to G.S. 166A6(a) after November 1, 2004, the eligible entity shall have a hazard mitigation plan approved pursuant to the Stafford Act”; and

WHEREAS, Section 322 of the Federal Disaster Mitigation Act of 2000 states that local government must develop an All-Hazards Mitigation Plan in order to receive future Hazard Mitigation Grant Program Funds, and

WHEREAS, it is the intent of the County and local governments to fulfill this obligation in order that the County and/or Town(s) will be eligible for state assistance in the event that a state of disaster is declared for a hazard event affecting the County and/or Town(s);

NOW, therefore, be it resolved that the signatories to this Plan Update hereby:

1. Adopts Franklin County Hazard Mitigation Plan, as revised ; and,
2. Vests the County Manager with the responsibility, authority, and the means to:
 - (a) Inform all concerned parties of this action.
 - (b) Cooperate with Federal, State and local agencies and private firms which undertake to study, survey, map, and identify floodplain or flood-related erosion areas, and cooperate with neighboring communities with respect to management of adjoining floodplain and/or flood-related erosion areas in order to prevent aggravation of existing hazards.

- (c) Adjust the boundaries of Franklin County and municipal planning jurisdictions whenever a municipal annexation or extraterritorial jurisdiction revision results in a change whereby a municipality assumes or relinquishes the authority to adopt and enforce floodplain management regulations for a particular area in order that all Flood Hazard Boundary Maps (FHBMs) and Flood Insurance Rate Maps (FIRMs) accurately represent the planning jurisdiction boundaries. Provide notification of boundary revisions along with a map suitable for reproduction, clearly delineating municipal corporate limits and extraterritorial jurisdiction boundaries to all concerned parties.
- 3. Appoints the County Manager to assure that the Hazard Mitigation Plan is reviewed annually and in greater detail at least once every five years to assure that the Plan is in compliance with all State and Federal regulations and that any needed revisions or amendments to the Plan are developed and presented to the Franklin County Board of Commissioners and local municipal Boards for consideration.
- 4. Agrees to take such other official action as may be reasonably necessary to carry out the objectives of the Hazard Mitigation Plan.

Adopted on May 2, 2011 (to be adopted within one year after FEMA approval).

Town of Bunn

, Mayor

Adopted on May 12, 2011 (to be adopted within one year after FEMA approval).

Town of Youngsville

, Mayor

Adopted on May 17, 2011 (to be adopted within one year after FEMA approval).

Town of Franklinton

, Mayor

Adopted on May 3, 2011 (to be adopted within one year after FEMA approval).

Town of Centerville

, Mayor

Adopted on June 20, 2011 (to be adopted within one year after FEMA approval).

Town of Louisburg

, Mayor

Adopted on June 20, 2011 (to be adopted within one year after FEMA approval).

Franklin County

, Chairman, County Board of Commissioners

Attest:

, Town Clerk

, County Clerk

SEALS

Section II: Identification of Potential Natural Hazards

Section II: Identification of Potential Natural Hazards

This section of the HMP identifies and analyzes the hazards facing Franklin County and its constituent jurisdictions by answering the following questions:

- What are the *types* of natural hazards that threaten the community?
- What are the *characteristics* of each hazard?
- What is the *likelihood* of occurrence (or probability) of each hazard?
- What is the likely *magnitude* of the potential hazards?
- What are the possible *impacts* of the hazards on the community?

These questions are answered in the following subsections:

Hazard Profile Worksheets and Structure for Analysis including Keys and Charts

Types of Natural Hazards

Hazard Profile Worksheets and Structure for Analysis

Members of the Franklin County Mitigation Advisory Committee agreed that all natural hazards that would affect Franklin County would also affect the Towns of Bunn, Centerville, Franklinton, Louisburg, and Youngsville. The only natural hazard that would affect the Towns of Bunn, Franklinton, Louisburg, and Youngsville different than that of the County would be flooding. According to the new floodplain maps produced by the State of North Carolina in 2004, the Town of Centerville does not have any special flood hazard areas and does not participate in the National Flood Insurance Program (NFIP). The one hazard would affect the unincorporated areas of Franklin County that would not affect the incorporated Towns of Bunn, Centerville, Franklinton, Louisburg, and Youngsville are dam failures.

When considering the Hazard Index, the Committee reviewed the likelihood of each hazard; the geographic distribution (local vs. County-wide); the frequency of occurrence and associated historic impacts on property and lives. In this vein, it is understood that winter storms, hurricanes, severe thunderstorms and droughts are most likely to have a County-wide impact, while other hazards, including wildfire, tornadoes and severe thunderstorms are more localized. Among the least-likely hazards, tsunamis pose the most compelling risk given the potential impact of tectonic activity and the potential for catastrophic damage. Nevertheless, the likelihood of this occurrence is remarkably low. Several hazards were not considered at all since the geomorphic location and make-up of the County and local municipalities. These include earthquakes, volcanoes, landslides, and estuarine flooding.

The resulting analysis impacted the Committee’s review and assessment of the County’s and each municipalities’ response to each hazard including a review of whether or not the County and local municipalities have addressed the potential impact of the hazard in their planning efforts. Hazards that represent the greatest threats received the closest scrutiny when considering mitigation activities.

The following charts discuss the strategies for calculating risks and for evaluating the impact of specific hazards that follow.

Key to Analysis Charts

“Likelihood of Occurrence”

- Highly Likely = Near 100% probability in the next year.
- Likely = Between 10% and 100% probability in the next year, or at least one chance in the next 10 years.
- Possible = Between 1% and 10% probability in the next year, or at least one chance in the next 100 years.
- Unlikely = Less than 1% probability in the next year, or less than one chance in 100 the next 100 years.

“Affected Area”

- Small = Less than 25% of the County
- Medium = Between 25% and 50% of the County
- Large = Greater than 50% of the County

“Impacts”

- Catastrophic = Multiple deaths. Complete shutdown of critical facilities for 30 days or more. More than 50% of property is severely damaged.
- Critical = Multiple severe injuries. Complete shutdown of critical facilities for at least two weeks. More than 25% of property is severely damaged.
- Limited = Some injuries. Complete shutdown of critical facilities for more than one week. More than 10% of property is severely damaged.
- Negligible = Minor injuries. Minimal quality-of-life impact. Shutdown of critical facilities and services for 24 hours or less. Less than 10% of property is severely damaged.

Explanation of Hazard Identification

Table One. Explanation of Hazards Identified

Hazard	How Identified	Why Identified
Wildfires	Large undeveloped areas of Franklin County contain remote heavily wooded areas which provide large amounts of materials that frequently	Historical records indicate particular areas of Franklin County are consistently subject to the effects of wildfires.

Hazard	How Identified	Why Identified
	cause fires.	
Flooding	Using historical events and information from FIRM flood maps a number of areas within Franklin County have been identified as flood prone areas.	The presence of numerous creeks and rivers, as well as localized drainage concerns, gives rise to the possibility of flooding events.
Severe Winter Storms	Historical meteorological data indicates that Franklin County almost annually receives significant amount of snow, sleet, and freezing rain.	The effects of Winter Storms on the availability of electricity for warmth and potable water for drinking and cooking during and after such events could have devastating impacts on the citizens of Franklin County.
Severe Thunderstorms	Throughout the summer and spring month's afternoon thunderstorms appear on a fairly regular basis.	Airflow patterns and the long term predictability of severe thunderstorms make these events sudden and often devastating to Franklin County.
Tornados	This type of meteorological phenomenon most often occurs with the presence of severe thunderstorms. With the frequency of such storms tornados should always be considered a factor.	As with thunderstorms, the unpredictability and sudden onset of tornadic activity often leads to devastating effects on Franklin County.
Hurricanes/ Nor'easters	Recent historical events (1996 and 1999) and existing meteorological data reflect the vulnerability of Franklin County to hurricanes. Since 2000 a lull hurricane and tropical storm activity in eastern and central North Carolina raises concerns that this pattern will change and the County needs to be prepared to face new challenges from these storms.	Hurricanes, high winds and inland flooding associated with these types of storms have had catastrophic impacts on the County historically, including events in 1996 (Hurricane Fran) 1999 (Hurricane Floyd). The County has learned much from these events but an increase in population and new development mean the County must be vigilant about applying lessons learned in the past.
Dam Failure	State Dam Safety office records were consulted and reviewed.	Although the risks of occurrence and damages are minimal, some damages would occur in the County in the case of a dam failure
Tsunamis	National Geophysical Data Center Research	Although the risk of Tsunami occurrence in Franklin County is very low, portions of the County located within low-lying river basins leading directly to North Carolina's coast mean the impacts could be

Hazard	How Identified	Why Identified
		catastrophic if they were to occur.
Drought	National Oceanic and Atmospheric Administration, North Carolina Drought Monitoring Council	Recently, the effect of drought on the County created significant impacts and while the County and local governments responded to the challenges of water shortages; the threat of drought in the future could increase as population growth and continued water resource depletion deserve the continued vigilance of the County and local governments.

Explanation of Hazards Not Identified

Table Two. Explanation of Hazards Not Identified

Hazard	Why Not Identified
Earthquakes	Although minor earthquakes have been known to occur, the County is not in an area subject to significant seismic activity in recorded history.
Estuarine Erosion	Franklin County does not contain estuarine waters.
Landslides	The slopes/grades of land in Franklin County are not sufficient to result in any significant land subsidence.
Volcanoes	There has been no record of any volcanic activities within Franklin County in recent geologic time.

Table Three. Summary of Hazard Vulnerability Franklin County and Local Municipalities

Franklin County Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Wildfires	Highly Likely	Medium	Limited to Critical	3
Floods	Likely	Medium	Limited	3
Winter Storms	Likely	Large	Limited	2
Severe Thunderstorms	Highly Likely	Large	Limited	3
Tornadoes	Possible	Medium	Critical	3
Drought	Likely	Large	Critical	3

Franklin County Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Dam Failure	Unlikely	Small/Medium	Limited	1
Hurricane/ Nor'easters	Possible	Large	Limited	3
Tsunami	Extremely Unlikely	Large	Catastrophic	1

Town of Bunn Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Floods	Likely	Medium	Limited	3

Town of Centerville Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Floods	Likely	Medium	Limited	3

Town of Louisburg Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Floods	Likely	Medium	Limited	3

Town of Youngsville Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Floods	Likely	Medium	Limited	3

The following section identifies each hazard that poses an elevated threat to Franklin County. The section goes on to provide a description of the threat and the geographic impact of each. Unless otherwise noted, the likelihood of occurrence, affected area, impacts and hazard index are applicable to the County and each participating municipal government.

Review of Natural Hazards

A. Wildfire

A wildfire is an uncontrolled burning of grasslands, brush, or woodlands. The potential for wildfire depends upon surface fuel characteristics, recent climate conditions, current

meteorological conditions and fire behavior. According to Fred Harris, County Ranger with the NC Forest Service and Robert Smith, Law Enforcement Supervisor of the NC Division of Forest Resources, Franklin County is most susceptible to wildfire during the winter and spring. During the period January 1998 – December 2009, the Forest Service responded to 541 wildfires burning a total of 3,595 acres and causing a total of \$6,720,000 worth of damage; the majority of these occurring in the winter and spring (see Exhibit 2).

The potential for a major fire hazard depends on the characteristics of the fuel, the climate, and fire behavior. While natural fires occur in any area in which there is vegetation, flammability varies by species, moisture content, and is influenced by the climate. Temperate, primarily deciduous forests, such as those in central and eastern North Carolina, are most vulnerable to fire in winter and spring, after foliage has dried, humidity is low, and winds are generally high. Grasses are least prone to ignition in the morning, when their moisture content is greatest.

According to NC Forest Service in 2009, 192,300 acres of the County's total acreage of 314,600 acres are in forestland. This represents approximately 60.4% of the County. Overall, 186,500 acres of the total 192,300 acres of forest lands in the County (approximately 95.4%) are in private ownership and as such are susceptible to development, especially in the fast-growing southwestern part of the County. The remaining forested acreage in the County is primarily in the ownership of the forest industry (5,700 acres). Only 117 acres of forestland in the County are owned by the Federal, State or local governments in the County.

Almost annually, wildfires erupt throughout the region. On average, for the period between 1995 and 2000, Franklin County experienced 45 wildfires per year (see Exhibit 2). As population densities spread out into heavily forested areas, citizens and private property increasingly becomes more susceptible to the effects of wildfires, especially in high-growth areas of the County as noted above. Reflecting this increased threat, the incidence of wildfires in the County was an average of 37.6 during the period 1995 – 2000.

Table Four. Wildfires By Cause

Wildfires by Cause: 2008 (and 5 year average)		
	Cause	5-Year Average
Lightning:	2	2
Campfire:	1	0
Smoking:	7	5
Debris burning:	17	20
Incendiary:	0	1
Machine use:	6	3

Railroad:	0	0
Children:	4	4
Miscellaneous:	14	10
Total:	51	45

Exhibit 2: Causes of Wildfires in Franklin County 2008 (Source: NC Division of Forest Resources)

Although the incorporated government jurisdictions in Franklin County have significantly less forest land within their corporate limits and extraterritorial jurisdictions (ETJs) than in the unincorporated County, the municipal governments' boundaries exist at the "urban/wild land interface" – the area where human development meets undeveloped, forested areas that provide fuel for fires. This "urban/wild land interface" presents the greatest risk to life and property from wildfires. On several occasions, wildfires have directly impacted incorporated areas including a fire in 2008 when a wildfire crossed US 1 and threatened the Town of Franklinton. Therefore, the risk is considered significant, however, due to the fact that the areas abutting the majority of developed areas in the County are adjacent to areas containing large amount fuel for wildfires including forests, and fallow agricultural lands.

National Fire Danger Rating System (NFDRS)

The National Fire Danger Rating System (NFDRS) was developed in the early 1970s. It was designed around four basic guidelines. The research charter said the National Fire Danger Rating System would be:

- a. Scientifically based.
- b. Adaptable to the needs of local managers.
- c. Applicable anywhere in the country.
- d. Reasonably inexpensive to operate.

In 1972, the National Fire Danger Rating System was released for general use by agencies throughout the United States. Modifications to the original system were made in 1978 and 1988. The current system is based on the physics of combustion and laboratory developed constants and coefficients reflecting the relationships between various fuels, weather, topography, and risk conditions. The National Fire Danger Rating System tracks the effect of previous weather events through their effect on live and dead fuels and adjusts them accordingly based on future or predicted weather conditions. These complex relationships and equations can be computed by nomograms and handheld calculators, but are more commonly handled by computers (laptop, desktop, and mainframe). In any case the outputs are expressed in simple terms easily understood by users. The current National Fire Danger Rating System is utilized by all federal and most state agencies to assess fire danger conditions.

Key Assumptions within the National Fire Danger Rating System

There are four fundamental assumptions associated with the National Fire Danger Rating System that must be understood if the system is to be properly applied and interpreted. They include:

1. NFDRS outputs relate only to the potential of an initiating fire, one that spreads, without crowning or spotting, through continuous fuels on a uniform slope.
2. NFDRS outputs address fire activity from a containment standpoint as opposed to full extinguishment.
3. The ratings are relative, not absolute and they are linearly related. In other words if a component or index doubles the work associated with that element doubles.
4. Ratings represent near worst-case conditions measured at exposed locations at or near the peak of the normal burning period.

In summary, fire danger rating is a numeric scaling of the potential over a large area for fires to ignite, spread, and require fire suppression action. It is derived by applying local observations of current or predicted conditions of fuel, weather, and topographic factors to a set of complex science-based equations. The outputs of a fire danger rating system are numeric measures of fire business that provide a tool to assist the fire manager in making the best fire business decisions.

While the overall risk of wildfire damages in Franklin County is mitigated by the fact that forested tracts are generally of manageable size, accessible to firefighting equipment and personnel wildfires have crossed major roads and waterways and threatened populated areas.

Table Five. Likelihood of Occurrence, Affected Area, Impacts and Hazard Index Rating for Wildfires in Franklin County.

Franklin County Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Wildfires	Highly Likely	Medium	Limited to Critical	3

B. Flooding

The dominant sources of flooding in Franklin County are the Tar River – which traverses the County from northwest to southeast – and its tributaries of Sandy Creek, Cypress Creek, Cedar Creek, Crooked Creek, Norris Creek, Mocassin Creek, Shocco Creek, and the Little River. These tributaries suffer from backwater flooding during periods of high intensity rainfall. Relatively less flooding occurs on the main stem of the Tar River, due to the relatively steep gradient of the County from approximately 320 feet mean sea level on the

Tar River at the Granville County (western) border to approximately 145 feet mean sea level at the Nash County (eastern) border.

According to information from the Army Corps of Engineers, the maximum known flood on the Tar River at Louisburg occurred in December 1934, (estimated discharge 20,500 cubic feet per second (cfs), estimated elevation at the Main Street Bridge 204.9 feet National Geodetic Vertical Datum (NGVD)). The maximum flood recorded by the USGS since 1963 occurred April 28, 1978 (discharge 13,100 cfs, elevation 201.07 feet NGVD) at the current gage location.

There are several different types of flooding which have various levels of potential of affecting Franklin County. These types of flooding are as follows:

1. Riverine Flooding: This is the most common type of flooding. This occurs when a river or streams overflow its banks. In large rivers, it usually occurs after a serious, large-scale weather event. In streams, this can occur from more localized weather systems.
2. Flash Floods: Flash floods typically encompass a quick rise of high velocity water and large amounts of debris. Factors that contribute to flash flooding include the length and intensity of rain and the steepness of watershed and stream gradients. Other factors influencing flash floods include the amount of watershed vegetation, natural and artificial water storage, and the configuration of the streambed and floodplain. Flash floods not only occur from weather systems, but also from a dam failure, or breakup of ice. This type of flood poses the most risk to property and lives. Because of the rapid rise of the water levels, a large percentage of flood deaths occur from motorists who underestimate the depth and velocity of the floodwaters and attempt to cross flooded areas. This typically occurs when a weather event quickly drops an extensive amount of water. Walls of water from this type of event can reach 15 to 20 feet.
3. Dam Break Floods: Results from structural failures of dams.
4. Local Drainage or High Groundwater Levels: Heavy precipitation from local weather events may produce flooding outside of delineated flood plains. If the local soil cannot handle precipitation through infiltration and runoff, the water may accumulate. During winter, frozen ground and accumulated snow will contribute to this problem. This type of flooding generally occurs in flat and urban areas. High groundwater levels may cause leakage in susceptible basements.

5. **Fluctuating Lake Levels:** Lake levels can change over a short period of time, over a season, or on a long-term basis. Heavy rain or snow can influence levels. All lakes are susceptible to changes in water level, but the problem seems to occur most often in lakes that are landlocked or have inadequate outlets for maintaining a balance between in and outflow. These types of lakes can fluctuate from 5 to 15 feet over an extended period of time.

Franklin County and municipal jurisdictions within Franklin County (except Centerville) administer local ordinances which regulate development within designated flood areas. The County also participates in the National Flood Insurance Program which rates areas in the County in regards to susceptibility of flooding.

Updated Flood Insurance Rate Maps were prepared for Franklin County in 2002 and 2003, by the Federal Emergency Management Agency (FEMA). These maps were adopted by the County and its municipalities (except Centerville) in January, 2004. The 100-year flood line represents the level that water would reach or “rise to” during a flood that may be expected to occur on the average of once during a 100-year period. Thus, there is a 1% chance of a 100-year flood occurring during any one year.

Map Five provides the approximate boundaries of Franklin County’s areas which would be inundated by a 100-year flood. Major flooding in the area is caused primarily by runoff from rain and thunderstorms, but occasionally large floods are caused by hurricanes and tropical storms. In 1996, Hurricane Fran caused extensive county-wide flooding and wind damage.

Since 1993, the County has suffered 17 documented flooding events reported to the National Climatic Data Center (NCDC) (see Table Two), an average of over 1 flooding event per year. This list is not exhaustive, but rather represents the best available historical data source on inland flooding. The 1993 flood event north of Franklinton resulted in a death, the last recorded death from flooding in the County.

Table Six. Recent Flood Events in Franklin County, North Carolina (since 1993)

Location	Date	Type of Event
Franklinton Area	3/4/1993	Flood
Eastern Franklin County	7/11/1995	Flash Flood
Countywide	9/10/1996	Flash Flood
Countywide	7/24/1997	Flash Flood
Countywide	2/9/1998	Flood
Southern Franklin County	8/26/1999	Flash Flood
Countywide	9/15/1999	Flash Flood
Countywide	7/23/2000	Flash Flood
Northern Franklin County	8/4/2000	Flash Flood

Louisburg	9/3/2000	Flash Flood
Countywide	10/11/2002	Flash Flood
Countywide	3/20/2003	Flood
Bunn and Franklinton	8/8/2003	Flash Flood
Louisburg	6/14/2006	Flash Flood
Countywide	6/14/2006	Flash Flood
Youngsville	6/23/2006	Flash Flood
Franklinton	12/3/2009	Flash Flood

Major historical flooding was experienced in July 1919, and September 1996, following Hurricane Fran (source: "Atmospheric Circulation and Inland Flooding in Twentieth Century North Carolina, USA: Implications for Climate Change Impacts", Peter J. Robinson, 2003, *Natural Hazards* 29: 155-172).

Table Seven. Likelihood of Occurrence, Affected Area, Impacts and Hazard Index Rating for Floods in Franklin County.

Franklin County Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Floods	Likely	Medium	Limited	3

C. Severe Winter Storms

Severe winter storms display themselves in a wide variety of ways including heavy snow, blizzards, freezing rain, ice pellets, and extreme cold. Severe winter storms are extra-tropical cyclones fueled by strong temperature gradients and an active upper-level jet stream. The storms that hit North Carolina usually form in the Gulf of Mexico or off the southeast Atlantic Coast. In North Carolina, very few of these result in a blizzard.

Franklin County, in the northern part of the state, lies within a region that is somewhat unlikely to be hit with severe blizzard conditions (i.e., high winds with blowing snow), but more likely to experience freezing rain, icing, and heavy snowfall conditions. Essentially stated, problems occur when a winter storm event exceeds the average annual snowfall total of 0.5 inches of snow in a single event or when icing occurs. When such events occur, they can and often time do produce numerous negative impacts upon the transportation network, power transmission facilities, communications facilities, agricultural commodities, and the health of citizens.

Snow and ice storms are common, with 21 reported incidents recorded since 1994, an average of almost two significant snow and/or ice events per year (Source: National Climatic Data Center).

Table Eight. Documented Severe Winter Weather Occurrences Since 1994 in Franklin County

Location or County	Date	Type
Countywide	1/3/1994	Heavy Snow
Countywide	2/10/1994	Ice Storm
Countywide	1/6/1996	Winter Storm
Countywide	1/11/1996	Ice Storm
Countywide	2/2/1996	Ice Storm
Countywide	2/16/1996	Heavy Snow
Countywide	12/23/1998	Ice Storm
Countywide	1/18/2000	Winter Storm
Countywide	1/20/2000	Winter Storm
Countywide	1/22/2000	Winter Storm
Countywide	1/24/2000	Winter Storm
Countywide	1/28/2000	Winter Storm
Countywide	11/19/2000	Heavy Snow
Countywide	12/3/2000	Winter Storm
Countywide	1/3/2002	Winter Storm
Countywide	12/4/2002	Ice Storm
Countywide	1/23/2003	Winter Storm
Countywide	2/16/2003	Winter Storm
Countywide	1/26/2004	Winter Storm
Countywide	2/15/2004	Winter Storm
Countywide	2/26/2004	Winter Storm
Countywide	1/18/2007	Winter Weather
Countywide	2/1/2007	Winter Storm
Countywide	2/1/2007	Winter Weather
Countywide	12/7/2007	Winter Weather
Countywide	1/19/2008	Winter Storm
Countywide	1/20/2009	Winter Storm
Countywide	3/2/2009	Winter Storm
Countywide	12/18/2009	Winter Storm
Countywide	12/18/2009	Winter Weather
Countywide	1/30/2010	Winter Storm

Source: National Climatic Data Center.

Table Nine. Likelihood of Occurrence, Affected Area, Impacts and Hazard Index Rating for Winter Storms in Franklin County.

Franklin County	Likelihood of	Affected Area	Impacts	Hazard Index
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Threat/Hazard	Occurrence			1-5 Scale w/5 Being Greatest
Winter Storms	Likely	Large	Limited	2

D. Severe Thunderstorms and Windstorms

Thunderstorms are underrated in the damage, injury, and death they can bring. Lighting precedes thunder, because lightning causes thunder. As lightning moves through the atmosphere, it can generate temperatures of up to 54,000 degrees Fahrenheit. This intense heating generates shockwaves which turn into sound waves, thus generating thunder.

Warm, humid conditions encourage thunderstorms as the warm, wet air updrafts into the storm. As warm, moisture rich air rises; it forms cumulus nimbus clouds, thunderstorm clouds, usually with a flattened top or an anvil shape, reaching to altitudes of over 40,000. If this air is unstable, the conditions are then there to cause hail, damaging winds and tornados.

Damage to property from direct or indirect lightning can take the form of an explosion or a burn. Damage to property has increased over the last 35 years. This is probably due to increased population. The National Weather Service recorded 19,814 incidents of property damage between 1959 and 1994. Yearly losses are estimated at \$35 million by the National Weather Service. This amount is compiled from newspaper reports, but many strikes are not reported. The National Lightning Safety Institute estimates annual damages between \$4 and \$5 billion. This information is compiled from insurance reports and other sources that keep track of weather damages.

Thunderstorm winds also cause widespread damage and death. Thunderstorm 'straight line' wind occurs when rain-cooled air descends with accompanying precipitation. A thunderstorm is considered severe when winds exceed 57.5mph. At the very extreme, winds of 160mph have been recorded. These winds can smash buildings and uproot and snap trees, and are often mistaken for tornados.

'Downbursts' are often spawned during thunderstorms. Downbursts are an excessive burst of wind that is sometimes mistaken for tornadic activity. These are defined as a surface winds in excess of 125 mph, which are caused by small scale downdrafts from the base of a convective cloud. A downburst occurs when rain-cooled air within a convective cloud becomes heavier than its surroundings. Since cool air is heavier than warm air, it rushes toward the ground with a destructive force, exactly what triggers the sudden downward rush is still unknown.

Downbursts appear to strike at a central point and blow outward. (Picture a bucket of water dashed against grass. If it hits straight on, the grass will be flattened in a circular pattern. If it hits at an angle, the grass will be flattened in a teardrop pattern). Downbursts resulted in 268 deaths and 8 related accidents between 1974 and 1982.

Downbursts can be further classified into two categories:

1. **Microburst:** Less than 2 1/2 miles wide at the surface, duration less than 5 minutes and winds up to 146 miles per hour.
2. **Macroburst:** Greater than 2 1/2 miles wide at the surface, duration of 5-30 minutes with winds up to 117 miles per hour.

Franklin County is very susceptible to thunderstorms and windstorms, suffering 106 significant events since 1966 (*source: National Climatic Data Center, see Table Six below*), an average of almost 2 significant event per year. These events have caused at least 4 injuries, according to conservative estimates provided by the National Climatic Data Center but no reported deaths or injuries since 2005. Please note that if wind speed is reported as "0 kts.", it means that the wind speed was unknown.

Table Ten. Significant Thunderstorm and Windstorm Events in Franklin County Since 1966

Location	Date	Type	Speed
Countywide	5/1/1966	Thunderstorm Wind	0 kts.
Countywide	9/21/1966	Thunderstorm Wind	0 kts.
Countywide	7/3/1968	Thunderstorm Wind	0 kts.
Countywide	5/20/1973	Thunderstorm Wind	0 kts.
Countywide	3/19/1975	Thunderstorm Wind	0 kts.
Countywide	6/3/1982	Thunderstorm Wind	0 kts.
Countywide	3/21/1984	Thunderstorm Wind	0 kts.
Countywide	5/6/1984	Thunderstorm Wind	0 kts.
Countywide	5/8/1984	Thunderstorm Wind	0 kts.
Countywide	5/8/1984	Thunderstorm Wind	0 kts.
Countywide	5/22/1985	Thunderstorm Wind	0 kts.
Countywide	10/15/1985	Thunderstorm Wind	0 kts.
Countywide	4/6/1986	Thunderstorm Wind	0 kts.
Countywide	8/10/1986	Thunderstorm Wind	0 kts.
Countywide	8/11/1986	Thunderstorm Wind	0 kts.
Countywide	7/10/1988	Thunderstorm Wind	0 kts.
Countywide	2/21/1989	Thunderstorm Wind	0 kts.
Countywide	3/18/1989	Thunderstorm Wind	0 kts.

Countywide	4/25/1989	Thunderstorm Wind	0 kts.
Countywide	4/27/1989	Thunderstorm Wind	0 kts.
Countywide	6/5/1989	Thunderstorm Wind	0 kts.
Countywide	6/16/1989	Thunderstorm Wind	0 kts.
Countywide	4/2/1990	Thunderstorm Wind	0 kts.
Countywide	6/3/1990	Thunderstorm Wind	0 kts.
Countywide	6/18/1990	Thunderstorm Wind	0 kts.
Countywide	6/30/1990	Thunderstorm Wind	0 kts.
Countywide	7/11/1990	Thunderstorm Wind	0 kts.
Countywide	8/29/1990	Thunderstorm Wind	0 kts.
Countywide	4/15/1991	Thunderstorm Wind	0 kts.
Countywide	6/16/1991	Thunderstorm Wind	0 kts.
Countywide	7/2/1991	Thunderstorm Wind	0 kts.
Countywide	4/24/1992	Thunderstorm Wind	0 kts.
Countywide	6/24/1992	Thunderstorm Wind	0 kts.
Countywide	8/12/1992	Thunderstorm Wind	0 kts.
Southern Franklin County	8/17/1993	Thunderstorm Winds	N/A
Countywide	8/16/1994	Thunderstorm Winds	N/A
Epson Community	3/8/1995	Thunderstorm Winds	N/A
Franklinton	6/11/1995	Thunderstorm Winds	N/A
Eastern Franklin County	7/30/1995	Thunderstorm Winds	N/A
Louisburg	10/5/1995	Thunderstorm Winds	N/A
Bunn and Louisburg	11/11/1995	Thunderstorm Winds	N/A
Louisburg	4/20/1996	Thunderstorm Wind	0 kts.
Franklinton	5/11/1996	Thunderstorm Wind	0 kts.
Bunn	7/2/1996	Thunderstorm Wind	0 kts.
Youngsville	8/22/1996	Thunderstorm Wind	50 kts.
Franklinton and Bunn	11/8/1996	Thunderstorm Wind	50 kts.
Youngsville	3/5/1997	Thunderstorm Wind	50 kts.
Bunn	5/1/1997	Thunderstorm Wind	50 kts.
Pilot Community	5/1/1997	Thunderstorm Wind	50 kts.
Franklinton	5/1/1997	Thunderstorm Wind	50 kts.
Louisburg	8/20/1997	Thunderstorm Wind	50 kts.
Countywide	2/16/1998	High Wind	52 kts.
Louisburg	5/8/1998	Thunderstorm Wind	50 kts.
Louisburg	6/3/1998	Thunderstorm Wind	50 kts.
Franklinton	6/23/1998	Thunderstorm Wind	50 kts.
Louisburg	6/30/1998	Thunderstorm Wind	50 kts.
Countywide	3/3/1999	Thunderstorm Wind	50 kts.

Countywide	8/14/1999	Thunderstorm Wind	0 kts.
Louisburg	8/26/1999	Thunderstorm Wind	0 kts.
Franklinton	4/8/2000	Thunderstorm Wind	50 kts.
Louisburg	5/20/2000	Thunderstorm Wind	50 kts.
Centerville	5/25/2000	Thunderstorm Wind	50 kts.
Louisburg	6/14/2000	Thunderstorm Wind	50 kts.
Louisburg	6/14/2000	Thunderstorm Wind	50 kts.
Countywide	8/18/2000	Thunderstorm Wind	50 kts.
Youngsville	8/18/2000	Thunderstorm Wind	50 kts.
Louisburg	5/13/2002	Thunderstorm Wind	50 kts.
Bunn	5/13/2002	Thunderstorm Wind	50 kts.
Franklinton	6/1/2002	Thunderstorm Wind	50 kts.
Centerville	7/5/2002	Thunderstorm Wind	50 kts.
Countywide	3/7/2004	High Wind	65 kts.
Youngsville	3/8/2005	Tstm Wind	50 kts.
Franklinton	6/7/2005	Tstm Wind	50 kts.
Youngsville	4/22/2006	Tstm Wind	50 kts.
Louisburg	4/25/2006	Tstm Wind	50 kts.
Ingleside	5/14/2006	Tstm Wind	50 kts.
Ingleside	5/26/2006	Tstm Wind	50 kts.
Franklinton	6/2/2006	Tstm Wind	50 kts.
Ingleside	7/13/2006	Tstm Wind	50 kts.
Countywide	4/16/2007	Strong Wind	43 kts.
Franklinton	7/10/2007	Thunderstorm Wind	50 kts.
Youngsville	7/17/2007	Thunderstorm Wind	50 kts.
Franklinton	7/27/2007	Thunderstorm Wind	50 kts.
Centerville	8/10/2007	Thunderstorm Wind	50 kts.
New Hope	8/21/2007	Thunderstorm Wind	50 kts.
Louisburg	8/26/2007	Thunderstorm Wind	50 kts.
Stallings	10/24/2007	Thunderstorm Wind	50 kts.
Countywide	2/10/2008	Strong Wind	43 kts.
Pearces	3/4/2008	Thunderstorm Wind	52 kts.
Stallings Xrds	6/27/2008	Thunderstorm Wind	50 kts.
Franklinton	7/4/2008	Thunderstorm Wind	50 kts.
New Hope	7/31/2008	Thunderstorm Wind	50 kts.
Countywide	9/6/2008	Strong Wind	39 kts.
Countywide	9/6/2008	High Wind	50 kts.
Countywide	1/7/2009	Strong Wind	46 kts.
Countywide	1/7/2009	High Wind	55 kts.
Franklinton	1/28/2009	Thunderstorm Wind	56 kts.

Daddysville	5/5/2009	Thunderstorm Wind	50 kts.
Franklinton	5/9/2009	Thunderstorm Wind	50 kts.
New Hope	7/28/2009	Thunderstorm Wind	50 kts.
Louisburg	8/11/2009	Thunderstorm Wind	50 kts.
Louisburg Frnkln Arp	8/11/2009	Thunderstorm Wind	50 kts.
Bunn	8/11/2009	Thunderstorm Wind	50 kts.
Justice	8/11/2009	Thunderstorm Wind	50 kts.
Countywide	11/11/2009	Strong Wind	35 kts.
Countywide	12/9/2009	Strong Wind	40 kts.

Source: National Climatic Data Center.

Table Eleven. Likelihood of Occurrence, Affected Area, Impacts and Hazard Index Rating for Severe Thunderstorms in Franklin County

Franklin County Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Severe Thunderstorms	Highly Likely	Large	Limited	3

E. Tornadoes

Tornadoes are produced during severe thunderstorms, which are created near the convergence zone between warm, moist air and cold, dry air. Tornadoes derive their energy from the heat contained in warm, moist air masses. Tornadoes do not form during every thunderstorm. They occur when the moist, warm air is trapped beneath a stable layer of cold dry air by an intervening layer of warm dry air. This is called an inversion. If this is disturbed, the moist air will push through the stable air that is holding it down. This warm air will then condense as the latent heat it holds is released. This air will then spiral upwards. With the help of different types of winds, this spiral gains speed, producing a tornado.

The path of a tornado is generally less than 0.6 miles wide. The length of the path ranges from a few hundred yards to dozens of miles. A tornado will rarely last longer than 30 minutes. The combinations of conditions that cause tornadoes are common across the southern U.S. in early spring, especially in April and May. Tornadoes have been reported lifting and moving objects weighing more than 300 tons up to 30 feet. They can also lift homes off of their foundations and move them 300 feet. They collect an incredible amount of debris, which then can be projected outward at high velocities. Typically tornadoes are accompanied by heavy rain.

The National Weather Service issues a tornado watch for a specific geographic area when conditions favor tornadic activity. A tornado warning is issued when a tornado has actually been sighted or indicated by weather radar. Tornado intensity or strength is measured using the Fujita Tornado Scale; since 2007, the Enhanced Fujita Scale is also employed to gauge tornado strength and damage (see Table Eight and Table Nine below).

Table Twelve. Fujita Tornado Scale

Category	Maximum Wind Speeds	Equivalent Saffir-Simpson Scale	Typical Effects
F0	40 – 72 mph	N/A	Gale Tornado. Light Damage: Some damage to chimneys; breaks twigs and branches off trees; pushes over shallow-rooted trees; damages signboards; some windows broken; hurricane wind speed begins at 73mph.
F1	73 – 112 mph	Cat 1/2/3	Moderate Tornado. Moderate damage; Peels surfaces off roofs; mobile homes pushed off foundations or overturned; outbuildings demolished; moving autos pushed off the roads; trees snapped or broken.
F2	113 – 157 mph	Cat 3/4/5	Significant Tornado. Considerable damage: Roofs torn off frame houses; mobile homes demolished; frame houses with weak foundations lifted and moved; boxcars pushed over, large trees snapped or uprooted; light-object missiles generated.
F3	158 – 206 mph	Cat 5	Severe Tornado. Severe damage: Roofs and some walls torn off well-constructed houses; trains overturned; most trees in forests uprooted; heavy cars lifted off the ground and thrown; weak pavement blown off roads.
F4	207 – 260 mph	Cat 5	Devastating Tornado. Devastating damage: Well constructed homes leveled; structures with weak foundations blown off some distance; cars thrown and disintegrated; large missiles generated; trees in forest uprooted and carried some distance away.
F5	261 – 318 mph	NA	Incredible Tornado. Incredible damage: strong frame houses lifted off foundations and carried considerable distance to disintegrate; automobile-sized missiles fly through the air in excess of 200 ft; trees debarked; incredible phenomena will occur.

Category	Maximum Wind Speeds	Equivalent Saffir-Simpson Scale	Typical Effects
F6 – F12	Greater than 319 mph.	NA	The maximum wind speeds of tornados are not expected to reach the F6 wind speeds.

A total of 8 reported tornado events have been documented by the National Climatic Data Center in Franklin County since 1951 (an average of approximately one event every 6 years) resulting in twenty-four (24) injuries and approximately \$26.6 million in documented property damage.

Table Thirteen. Recorded Tornados in Franklin County since 1951, with estimated magnitudes and damages

Location	Date	Type	Magnitude	Estimated Property Damage (in dollars)	Injuries
Countywide	06/09/1951	Tornado	F1	25K	0
Countywide	03/18/1956	Tornado	F1	25K	0
Countywide	11/02/1966	Tornado	F2	250K	0
Countywide	05/28/1973	Tornado	F1	25K	2
Countywide	05/08/1984	Tornado	F1	250K	0
Countywide	11/28/1988	Tornado	F4	25.0M	17
Pilot Community	04/15/1996	Tornado	F2	1.0M	5
Louisburg	03/20/1998	Tornado	F1	50K	0
Bunn	05/16/2006	Tornado	F0	0K	0

In conclusion, tornados represent a moderate threat to Franklin County due primarily to their relative infrequency, but large impact.

Table Fourteen. Likelihood of Occurrence, Affected Area, Impacts and Hazard Index Rating for Tornados in Franklin County.

Franklin County Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Tornados	Possible	Medium	Critical	3

F. Hurricanes and Nor'easters

Hurricanes are cyclonic storms that originate in tropical ocean waters poleward of about 50 degrees N. latitude. Basically, hurricanes are heat engines, fueled by the

release of latent heat from the condensation of warm water. Their formation requires a low pressure disturbance, sufficiently 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.

Hurricanes that impact North Carolina form in the so-called Atlantic Basin, from the west coast of Africa westward into the Caribbean Sea and Gulf of Mexico. Hurricanes in this basin generally form between June 1 and November 30, with a peak around mid-September. As a hurricane develops, barometric pressure at its center falls and winds increase. Winds at or exceeding 39 mph result in the formation of a tropical storm, which is given a name and closely monitored by the NOAA National Hurricane Center in Miami, Florida. When winds are at or exceed 74 mph, the tropical storm is deemed a hurricane.

Because hurricanes derive their strength from warm ocean waters, they are generally subject to deterioration once they make landfall. The forward momentum of a hurricane can vary from just a few miles per hour to up to 40 mph. This forward motion combined with a counterclockwise surface flow make the right front quadrant of the hurricane the location of the most potentially damaging winds.

Hurricane intensity is measured using the Saffir-Simpson Scale, ranging from 1 (minimal) to 5 (catastrophic). The following scale categorizes hurricane intensity linearly based upon maximum sustained winds, minimum barometric pressure and storm surge potential.

Category 1. Winds of 74 to 96 miles per hour. Damage primarily to shrubbery, trees, foliage, and unanchored mobile homes. No appreciable wind damage to other structures. Some damage to poorly constructed signs. Storm surge possibly 3 to 5 feet above normal. Low-lying roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings.

Category 2. Winds of 97 to 111 miles per hour. Considerable damage to shrubbery and tree foliage; some trees blown down. Major damage to exposed mobile homes. Extensive damage to poorly constructed signs. Some damage to roof materials of buildings; some window and door damage. No major wind damage to buildings. Storm surge possibly 6 to 8 feet above normal. Coastal roads and low-lying escape routes inland cut by rising water 2 to 4 hours before arrival of hurricane center. Considerable damage to piers. Marinas flooded. Small craft in unprotected anchorages torn from moorings. Evacuation of some shoreline residences and low-lying island areas required.

Category 3. Winds of 112 to 131 miles per hour. Foliage torn from trees; large trees blown down. Practically all poorly constructed signs blown down. Some damage to roofing materials of buildings; some window and door damage. Some structural damage to small buildings. Mobile homes destroyed. Storm surge possibly 9 to 12 feet above normal. Serious flooding at coast and many smaller structures near coast destroyed; larger structures near coast damage by battering waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives.

Category 4. Winds of 132 to 155 miles per hour. Shrubs and trees blown down; all signs down. Extensive damage to roofing materials, windows, and doors. Complete failure of roofs on many small residences. Complete destruction of mobile homes. Storm surge possibly 13 to 18 feet above normal. Major damage to lower floors of structures near shore due to flooding and battering by waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives. Major erosion of beaches.

Category 5. Winds greater than 155 miles per hour. Shrubs and trees blown down; considerable damage to roofs of buildings; all signs down. Very severe and extensive damage to windows and doors. Complete failure of roofs on many residences and industrial buildings. Extensive shattering of glass in windows and doors. Some complete building failures. Small buildings overturned or blown away. Complete destruction of mobile homes. Storm surge possibly greater than 18 feet above normal. Major damage to lower floors of all structures less than 15 feet above sea level. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives.

North Carolina's geographic location on the Atlantic Ocean, and its proximity to the Gulf Stream, makes it prone to hurricanes. In fact, North Carolina has experienced the fourth greatest number of hurricane landfalls of any state in the 20th-century (trailing Florida, Texas, and Louisiana).

North Carolina has had an extensive hurricane history dating back to colonial times. During the nineteenth century, storms occurred in 1837, 1846, 1856, 1879, 1883, and 1899. Between 1960 - 1990, there was a decrease in landfalling hurricanes, with the exception of Hurricane Donna in 1960. However, during the 1950s, North Carolina was ravaged by several hurricanes, including Hazel, Connie, Diane, and Ione. Recent history has included several hurricanes as well, with Hugo (1989), Emily (1993), Opal (1995), Bertha (1996), Fran (1996), Bonnie (1998), Dennis (1999), and Floyd (1999) all leaving

their mark on North Carolina. However, these storms had varying impacts on Franklin County (see Table 11 below).

Nor'easters share many of the same characteristics of hurricanes, but unlike hurricanes, these storms are extratropical, deriving their strength from horizontal gradients in temperature.

The presence of the warm Gulf Stream waters off the eastern seaboard during the winter acts to dramatically increase surface horizontal temperature gradients within the coastal zone. During winter offshore cold periods, these horizontal temperature gradients can result in rapid and intense destabilization of the atmosphere directly above and shoreward of the Gulf Stream. This period of instability often precedes wintertime coastal extratropical cyclone development.

It is the temperature structure of the continental air mass and the position of the temperature gradient along the Gulf Stream that drives this cyclone development. As a low pressure deepens, winds and waves can uninhibitedly increase and cause serious damage to coastal areas as the storm generally moves to the northeast. The proximity of North Carolina's coast to the Gulf Stream makes it particularly prone to nor'easters.

As noted previously, Hurricane Fran was the hurricane with the most significant impact on Franklin County since records have been kept. The following provides an assessment of damages to residential properties after Hurricane Fran.

Table Fifteen (A). Identified Damages to Residential Structures in Franklin County – Hurricane Fran, September of 1996

Area	Homes Destroyed (50% or more damage)	Homes with Major Damage (25 – 50%)	Homes with Minor Damage (less than 25%)	Total Homes Damaged
Louisburg	5	17	115	137
Bunn	3	52	229	284
Lake Royale	40	4	19	65
Centerville	1	8	20	29
Youngsville	2	46	102	150
Epsom	0	7	72	79
Franklinton	0	23	116	139
Pilot	5	52	188	245
Mitchiners	1	2	7	10
White Level	0	1	32	33

Justice	5	19	61	85
Goldsand	0	5	4	9
TOTAL- Countywide	62	236	965	1,263

Source: Franklin County Office of Emergency Management/Federal Emergency Management Agency.

Approximately 75% of the above referenced structures were damaged by downed trees and other debris that caused damage to residential structures. The remaining 25% (315 or so) of structures suffered some level of flooding due to heavy rains.

The following (Table 11B) provides a brief hurricane history of Franklin County for the past fifty years, with a description of damages:

Table Fifteen (B). Recorded Hurricanes in Franklin County since 1954, with Estimated Damages

Date	Event Name	Damages/indirect costs
October 15, 1954	Hazel	minor property damage
August 12, 1955	Connie	minor property damage
August 17, 1955	Diane	minor property damage
September 19, 1955	Ione	minor property damage
September 11-12, 1960	Donna	minor property damage
September, 1984	Diana	minor property damage
September 6, 1996	Fran	moderate property damage
September 14, 1999	Floyd	flash flooding; minor / moderate property damage

Source: Franklin County/North Carolina's Hurricane History by Jay Barnes.

Table Sixteen. Likelihood of Occurrence, Affected Area, Impacts and Hazard Index Rating for Hurricanes/Nor'easters in Franklin County

Franklin County Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Hurricane/ Nor'easters	Possible	Large	Limited	3

G. Dam/Levee Failure

A dam is defined as a barrier constructed across a watercourse for the purpose of storage, control, or diversion of water (source: “Multi-Hazard Identification and Risk Assessment”, FEMA, 1997). This term is roughly synonymous with the term “levee” and these terms will be used interchangeably in this document.

Dams provide tremendous benefits, including water supply for drinking, irrigation and industrial use control, hydroelectric power, recreation and navigation. At the same time, however, dams also represent a great risk to public safety, the environment and local and regional economies when they fail. Dam failure is the collapse, breach or other failure of a dam resulting in downstream flooding (source: “Multi-Hazard Identification and Risk Assessment”, FEMA, 1997). Since 1993, more than 200 documented dam failures nationwide have caused millions of dollars in property damage and repair costs (source: “Report Card on Dams”, American Society of Civil Engineers, 2003).

In 1994, the Federal Emergency Management Agency (FEMA) and the U.S. Army Corps of Engineers (USACE) sponsored a National Inventory of Dams (NID) and, through working with State dam safety officials, assigned each dam a downstream hazard classification based on the potential for loss of life and damage to property should the dam fail (source: “Multi-Hazard Identification and Risk Assessment”, FEMA, 1997). This NID is updated yearly by FEMA with USACE funds and the assistance of state regulators.

The three classifications of dams identified by the NID are “high-hazard”, “significant hazard” and “low hazard”. High hazard dams are those dams whose failure would cause loss of human life and significant property damage (source: “Report Card on Dams”, American Society of Civil Engineers, 2003). As of 2001, North Carolina has 994 “high hazard” dams – the largest number of “high hazard” dams in the United States (source: “Fiscal Years 2000-2001: A Report to Congress on the National Dam Safety Program”, FEMA, 2001). Another 800 dams in the State are classified as “intermediate hazard”, meaning that significant property damage would occur in the event of a dam failure.

Dams in North Carolina are regulated under the Dam Safety Law of 1967 (NCGS 143-215.24), which authorizes the implementation of a dam inspection and certification program in the interest of public health, safety and welfare. The dam inspection and certification program is administered by the Dam Safety Program (DSP) of the Division of Land Resources, N.C. Department of Environmental and Natural Resources (DENR). Each year the DSP performs about 2,000 inspections and identifies an average of 100 dams that exhibit conditions that could lead to failures. These dams are called “unsafe” dams, which mean that they have deficiencies that leave the dam susceptible to failure. Most “unsafe” dams are also “high-hazard” dams.

Dams are dynamic structures that experience both internal and external changes in their conditions as they age. Old pipes deteriorate and development in a watershed causes more runoff that can result in the overtopping of dams. Large storm events, such as hurricanes or severe thunderstorms, can overwhelm a dam's ability to function properly. For example, 40 dams failed in North Carolina following Hurricane Floyd in September of 1999 and over 100 dams overtopped, causing property damage and requiring evacuation of downstream areas to avoid the loss of life and injury (*source: "Successes and Challenges: National Dam Safety Program 2002", Association of State Dam Safety Officials, 2002*).

It does not take a hurricane, however, for a dam to fail. About six dams a year (on average) fail in North Carolina, for a variety of reasons. While engineering explanations, such as hydraulic, geotechnical or structural conditions can answer the question of why dams fail, most dam failures occur because the owners of the dams do not have the financial means to address dam maintenance and repair. Repairs to dams are very costly, averaging \$500,000 for required repairs to each dam classified as "unsafe" (*source: "Report Card on Dams", American Society of Civil Engineers, 2003*). If financial resources were available to dam owners to perform repairs on dams, the risk of failure posed by these dams would be reduced. This is becoming more important, as the population of North Carolina has increased by approximately 20 percent in the past decade, resulting in more people living in areas that can be impacted by dam failures (*source: "Successes and Challenges: National Dam Safety Program 2002", Association of State Dam Safety Officials, 2002*).

In conclusion, the growing number of dams, the aging of the dams, and the significant increase in population exposed to consequences of dam failure mean that the risk to citizens of North Carolina from dam failure is increasing.

Franklin County's risk from dam failure remains fairly small, however, due to the relatively small number of major dams and the relatively flat topography and sparsely developed floodplain areas in the County that would allow the impacts of a dam failure to be dispersed over a relatively wide area.

Table Seventeen. Likelihood of Occurrence, Affected Area, Impacts and Hazard Index Rating for Dam Failure in Franklin County

Franklin County Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Dam Failure	Unlikely	Small/Medium	Limited	1

H. Tsunami

The phenomenon called a "tsunami" (soo-NAH-mee) is a series of waves of extremely long wave length and long period, generated in a body of water by an impulsive disturbance that displaces the water such as an earthquake, landslide, or sub-marine volcanic eruption.

The term tsunami was adopted for general use in 1963 by an international scientific conference. Tsunami is a Japanese word represented by two characters: "tsu" and "nami."

The character "tsu" means harbor, while the character "nami" means wave. In the past, tsunamis were often referred to as "tidal waves" by many English speaking people. The term "tidal wave" is a misnomer. Tides are the result of gravitational influences of the moon, sun, and planets. Tsunamis are not caused by the tides, nor are they related to the tides, though a tsunami striking a coastal area is influenced by the tide level at the time of impact. The scientific community once referred to tsunamis as "seismic sea waves." "Seismic" implies an earthquake-related mechanism of generation, which is often, but not always the case (*source: National Geophysical Data Center*).

Researchers at the Woods Hole Oceanographic Institute in Massachusetts made national headlines in the year 2000 when they discovered that cracks in the ocean floor could warn of an unpredictable disaster threatening the U.S. East Coast. The cracks, a 25-mile-long series of roof shingle-shaped ridges located 300 to 600 feet below the ocean surface and just north of Cape Hatteras in North Carolina, may mean that a tsunami, a giant wave, could roar onshore without warning.

The cracks, located in the Mid-Atlantic Ocean, may cause the seabed to crumble, creating a submarine landslide, or "slump," to push huge masses of seawater toward the shore. The cracks were found near the edge of the continental shelf, where the land drops sharply, forming the continental slope. If land breaks off at the cracks, the slump would cascade down the slope, sucking down the sea surface behind it and creating a tsunami or even a series of tsunamis that would crash onto the Virginia and North Carolina Coasts 20 minutes later.

The uncertainty of this risk, however, combined with the uncertainty of how far inland effects would be felt and the uncertainty of the science behind tsunami formation minimize this risk, especially considering Franklin County's large distance (+/- 150 miles) from the coast.

Table Eighteen. Likelihood of Occurrence, Affected Area, Impacts and Hazard Index Rating for Tsunami Hazard in Franklin County

Franklin County Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Tsunami	Extremely Unlikely	Large	Catastrophic	1

I. Drought

Although the National Climatic Data Center has not listed drought events in Franklin County, since 1999, Franklin County, like the majority of North Carolina cities, towns and counties has faced a moderate to severe drought (see Exhibit Three). This drought officially ended in 2003. Drought conditions, including a period of “severe drought” in 2007 – 2008, returned to the County in 2005, 2009 and the first half of 2010.

Drought has several meanings, but generally, drought reduces the amount of water available for agriculture, municipalities, industry, commerce, tourism, fire suppression, and wildlife. Reduction of electrical power generation and water quality deterioration is likely.

Water shortages in some communities have had dramatic effects on local budgets, revenues, and citizens. Near panic situations among some members of the public, have caused elected officials to spend considerable revenue to assist the public.

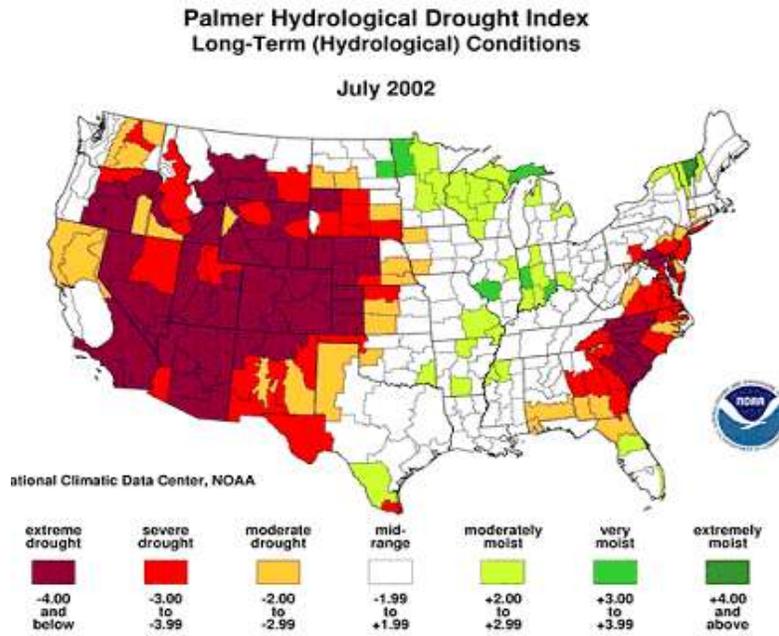
As severe drought continued in North Carolina 2007 and 2008, it led to a declaration of disaster for agriculture. This led to funding becoming available for many farmers in the form of Small Business Administration low interest loans.

The Drought Monitoring Council, a council of various state agencies, is organized to coordinate activities of state agencies in the assessment and the response to drought and activates the Drought Assessment and Response Plan, a part of the North Carolina Emergency Operations Plan. The Federal Agricultural Assistance Act of 2003 *may* provide assistance to the agriculture community during times of crop or livestock losses during drought periods.

Drought effects are often severe. Drought can last for extended periods and drought affects all citizens, businesses and government. Franklin County and its municipalities have the authority to restrict use of certain water resources. These restrictions and how they are imposed are found in local ordinances.

Table Nineteen. Likelihood of Occurrence, Affected Area, Impacts and Hazard Index Rating for Drought in Franklin County

Franklin County Threat/Hazard	Likelihood of Occurrence	Affected Area	Impacts	Hazard Index 1-5 Scale w/5 Being Greatest
Drought	Possible	Limited	Critical	3



Section III: Vulnerability Assessment

Section III: Vulnerability Analysis

This section of the HMP identifies specific locations throughout the County that are vulnerable to natural hazards through narrative, data and maps and establishes “Geographic Planning Areas,” which are areas of particular vulnerability to natural hazards, and provides detailed data and analysis of these areas. These tasks are broken into the following subsections:

- A) Community Description
 - I) Major Physical Features
 - II) Developed Areas, Undeveloped Areas and Anticipated Growth Areas
- B) Critical Facilities
- C) Hazardous Locations
 - I) Individual Hazard Areas
 - II) All-Hazards Exposure
 - III) Areas of Natural Hazard Risk Exposure (ANHRE)
- D) Intersection of Hazardous Areas with Community Features
- E) Repetitive Loss Structures
- F) Geographic Planning Areas

A. Community Description

Franklin County and its constituent municipalities had a total population of 51,652 as of July, 2003, the latest date for which population estimates are available (source: North Carolina State Data Center). The County had a growth in population of 9.3 percent between April, 2000 and July of 2003, based on estimates produced by the North Carolina State Data Center (see Table Eighteen below).

Table Twenty: Estimated Population and Population, April 2000 to July 2008, Franklin County and Selected Municipalities

County / Municipality	April 2000	July 2008
Franklin	47,260	54,980
Bunn	357	420
Centerville	99	107
Franklinton	1,745	1,879
Louisburg	3,111	3,446
Youngsville	651	1,598

Source: North Carolina State Data Center.

The remainder of this section of the HMP describes the physical layout of the community, assesses the current location of development in the County and identifies where development may be located in the future.

I. Major Physical Features

Franklin County is located on the northeastern edge of the Piedmont and is bounded by Wake, Granville, Vance, Warren, and Nash counties (see Exhibit 1 and Map 1, which depicts the regional location). Franklin County's location is a key asset for its future economic development. Franklin County is close to the state governmental center and the cultural activities located in Raleigh. The education and research resources of the Research Triangle area are also readily available to the citizens and businesses in Franklin County.

The region has a network of interstate and other major highways and a trunk railroad system. Interstate 85 to the west and Interstate 95 to the east are the major arteries for truck and passenger traffic. In the county, US 1, US 401, and US 64 provide major highway access. This highway and rail network connects the county with the major market centers of the eastern seaboard as well as the growing Piedmont industrial complex. Major air transportation is less than one hour away at the Raleigh-Durham airport and a regional airport (Franklin County Airport) is located just south of Louisburg off of U.S. Highway 401. Map 2 provides a depiction of major transportation infrastructure in the County.

Franklin County is located on the northern edge of the North Carolina piedmont plateau. It is bordered by Wake, Granville, Warren, Vance, and Nash counties. Franklin County consists of 316,224 acres, or roughly 494 square miles. This acreage includes 315,462 acres of land and 762 acres of water. Franklin County has the smoothest surface relief of all the counties which make up the piedmont plateau. The surface relief ranges from level and gently rolling in the broad inter stream areas to strongly rolling bordering stream courses. Elevation in the county ranges from 143 feet along the Tar River near the Nash County line to 562 feet above sea level near the community of Pocomoke, which is located in the western part of the county. The Tar River runs across the county from the northwestern border to the southeastern border, forming the main drainage basin. The Tar River and the following streams, Little Shocco, Sandy, Red Bud, Cypress, Cedar, Tooles, Middle, Crooked, and Moccasin Creeks, drain the county. The forest growth consists chiefly of old field pine, post oak, white oak, red oak, black oak, red maple, poplar, hickory, and a few birch. Map 3 depicts the major topography of the County and Map 4 depicts the major hydrological features.

II. Developed Areas, Undeveloped Areas, Anticipated Growth Areas and Tax Values

Historically, Franklin County has provided a predominantly rural setting. Nearly half of the land within the county is comprised of either agricultural, forest, or cropland. However, the county's rural atmosphere is gradually changing due to a variety of factors. Certain parts of the county are experiencing growth at a much quicker pace than others. The densest development is centered along an arc across the southern and western portions of the County (see Map 5).

Along U.S. 1, a great deal of growth is taking place. This stretch of highway traverses Franklin County and runs adjacent to Youngsville and through Franklinton. This area has been the focal point of the county's most dense and diverse development. The existing water line which runs between Franklinton and Youngsville as well as the increasing volume of traffic along U.S. 1 has been major stimulants to the growth in this section of the county. The water line was a significant objective of Franklin County discussed in the County's land use plan. There is also a water line running between Franklinton and Louisburg along State Road 56 which has mainly been used to service the increasing industrial development which has been taking place along this corridor since its installation in the early 1980's. Residential development has generally centered on the three major municipalities in southeastern Franklin County (Youngsville, Franklinton, and Bunn). The majority of this growth is taking place east and west of Youngsville and south of Bunn where high density subdivision development is an increasing trend. The Lake Royale area has also experienced some high density residential development, but serves mainly as a vacation site and houses very few year round residents (*source: Franklin County Comprehensive Land Use Plan, 1999*).

In Franklin County there appears to be a dividing line which distinguishes between the northern and southern parts of the county with respect to development. The northern and southern halves of the county are split by State Road 56 which is oriented east to west through the middle of the county. The northern portion roughly comprises 49% of Franklin County's unincorporated land area, but only supports 24% of the population. Land area for the north and south are nearly equal, but the difference in acreage for various land uses varies considerably. The majority of commercial, industrial, and office and institutional development have taken place in the southern portion of the county. The northern half has a predominantly rural setting. The lots are much larger in the north (average, 17.5 acres) versus the south (average, 8.6 acres), providing more open space and much lower residential densities. High density subdivision activity in the northern portion of the county is nearly non-existent (*source: Franklin County Comprehensive Land Use Plan, 1999*).

This subsection of the plan briefly discusses existing land uses and future growth areas relative to known hazard areas.

Developed and Undeveloped Areas

Table Twenty-One (below) provides, in acres, the area of unincorporated Franklin County and each participating municipality (and its extra-territorial jurisdiction (ETJ), if one exists) that is developed and undeveloped.

Table Twenty-One: Acres of Land, Developed and Undeveloped for Unincorporated Franklin County and Selected Municipalities and Value of Property - 2010

	Undeveloped Parcels	Undeveloped Acres	Developed Parcels	Developed Acres	Total Acres	% from Total Undeveloped
Bunn	320	2,663	423	2,640	5,303	50.21%
Centerville	35	198	60	285	484	40.96%
Franklinton	968	3,066	1,466	3,609	6,676	45.96%
Louisburg	948	6,372	1,524	4,643	11,015	57.84%
Youngsville	641	4,320	1,379	2,827	7,148	60.44%
Unincorporated County	15,883	161,463	16,134	116,001	277,465	58.20%
TOTAL	18,795	178,086	20,986	130,008	308,094	57.80%

	Tax Value of Property
Bunn	\$16,852,340
Franklinton	\$84,711,023
Louisburg	\$211,154,779
Youngsville	\$90,782,515
Centerville	\$4,350,251
Unincorporated County	\$3,556,208,418

Source: Franklin County GIS and Tax Departments.

Maps Five (A through F) graphically depict the data in Table Nineteen. Please note that the numbers used in Table nineteen above are rounded to the nearest whole number.

The above data was derived from an analysis of tax record data provided by Franklin County Tax Office to the Kerr-Tar Regional Council of Governments. Any land parcel with a building value less than \$5,000.00 was considered undeveloped, while any land parcel with a building value of more than \$5,000.00 was considered developed. The \$5,000.00 figure was arrived at based on an investigation of 75 sites with building values between \$0.00 and \$10,000. In general, properties with building values less than \$5,000.00 contained no habitable structures, but rather contained only well pumps, asphalt paving, small sheds or storage structures, or other items that would not preclude the property from being further developed.

Map Six (A through F) depict the current zoning classifications for each participating municipality and the County. Appendix VIII provides a tabular summary of allowable uses in the undeveloped areas of each participating municipality and the unincorporated County.

Anticipated Growth Areas

Maps Six (A through F) depict anticipated growth areas in Franklin County and in the boundaries (and extra-territorial jurisdictions) of the participating municipalities. These areas were identified by each jurisdiction's MAC member, in consultation with planning (if applicable), town administration, and public works staff (if applicable) of each community. When available, local comprehensive plans, capital improvement plans, NC Department of Transportation Improvement Plans, and recent permits were reviewed. For municipalities, the depicted anticipated growth areas are areas where established based on the following criteria:

- 1) Water, sewer, roads, and other public services are available or will very shortly (within five years) be available; and/or
- 2) Permits for development have been filed and/or development permit activity in these areas has been high; and
- 3) Recent, historical growth trends support future development; and
- 4) Local land use plans permit or encourage development in identified areas.

Descriptions of specific anticipated growth areas and the potential impact of natural hazards on these areas follow in Sections III(C) (iii) (Areas of Natural Hazard Risk Exposure (ANHRE) and Section III (D) (Intersection of Hazardous Areas with Community Features) of this plan below.

B. Critical Facilities

Of the properties located within Franklin County, the damage or destruction of publicly owned facilities poses an immense potential of disrupting the day-to-day lives of the citizens of Franklin County.

Critical facilities are defined for the purpose of this document as those facilities essential to the preservation of life and property during a disaster and/or those facilities critical to the continuity of government as well as those necessary to ensure timely recovery. Some square footage dimensions are approximate.

A map of the critical facilities listed below is provided as Maps Six (A through F). A listing of critical facilities, including map references, is provided as Appendix IX to this Plan.

C. Hazardous Locations

I. Individual Hazard Areas

Individual hazards to which only specific areas of the County are uniquely exposed are flooding and wildfire.

Flooding

As stated above, flood hazard risk varies significantly within Franklin County, with minimal floodplain areas in the north and east of the County and more extensive floodplain coverage in the south and east of the County along the Tar River and its tributaries.

Maps A through F graphically depict the extent of the high risk flooding areas within the County as defined by the County’s Flood Insurance Rate Maps (FIRMs) developed by the Federal Emergency Management Agency (FEMA). FEMA defines areas within “flood zones”, based on varying levels of risk of flooding in each area (see Table 22 below). Properties in zones “A” and “AE” are considered to be high-risk flood zones, as there is a 1% or greater chance of flooding each year (source: FEMA). Properties in zone “X-500” have an approximately .02 or 1 in 500 chance of flooding each year.

Table Twenty-Two. Definitions of FEMA Flood Zones

Flood Zone	Definition*
A	Zone A is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no Base Flood Elevations (BFEs) or

Flood Zone	Definition*
	depths are shown within this zone. Mandatory flood insurance purchase requirements apply.
AE	Zone AE is the flood insurance rate zone that corresponds to the 100-year floodplains that are determined in the Flood Insurance Study by detailed methods. In most instances, Base Flood Elevations (BFEs) derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply.
X	Zone X is the flood insurance rate zone that corresponds to areas outside the 100-year floodplains, areas of 100-year sheet flow flooding where average depths are less than 1 foot, areas of 100-year stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 100-year flood by levees. No Base Flood Elevations (BFEs) or depths are shown within this zone.
X - 500	Zone X-500 is the flood insurance rate zone that corresponds to the 500-year floodplains. No Base Flood Elevations (BFEs) or depths are shown within this zone.

Source: FEMA. Appendix VIII provides information on the number of acres in the FEMA-defined 100-year and 500-year floodplains by jurisdiction.

Wildfires

As noted above, the risk of wildfire damages in Franklin County is mitigated by the fact that forested tracts are generally of manageable size, accessible to firefighting equipment and personnel and circumscribed by roadways or waterways that limit the extent and severity of wildfires. There are, however, numerous areas of “urban-wild land interface” that pose a wildfire risk, particularly in those areas that are not covered by one of Franklin County’s incorporated fire departments.

II. All-Hazards Exposure

The entire County is prone to the effects of severe winter weather storms, severe thunderstorms, and tornados which are capable of paralyzing the functions of the County and municipal governments. Electrical distribution systems are often interrupted by such storms which gives rise to the need for provisions for shelters where the citizens of the County can receive emergency shelter and other provisions. Mapping of each of these three hazards was not provided. The rationale behind not providing mapping was that the entire geographic area of the County is subject to these events and such mapping would not prove much value. Maps A through F (Composite Hazards) map all site-specific hazards for the county and for each municipality.

III. Areas of Natural Hazard Risk Exposure (ANHRE)

The process of identifying ANHRE is central of the planning process the produced this document, and serves as the centerpiece of practical hazard mitigation in Franklin County. The ANHRE are areas within the County that have historically flooded, been subject to wildfires, or been subject to other hazards or that have a high potential for

future exposure to natural hazards that may result in property damage or loss of life. Areas were identified by a team of staff members from each community, including town/county administration, planning and public works, coordinated by the MAC representative from each community.

Prioritization criteria are based on the actual or potential frequency and severity of the natural hazard at each location, as described in Table Twenty-Two.

Table Twenty-Two. Planning Model for the ANHRE Process

	Frequency		
Severity	High	Medium	Low
High	High Priority	High/Medium Priority	Medium Priority
Medium	High/Medium Priority	Medium Priority	Low/Medium Priority
Low	Medium Priority	Low/Medium Priority	Low Priority

The County believes that this process is politically supportable, as it focuses on hazards that have historically occurred rather than those that are solely speculative. Real people have suffered damages at the identified ANHRE sites or very likely may in the future. The process, therefore, makes the goals of mitigation concrete rather than abstract to political leaders and citizenry.

ANHRE for each participating community are provided as Composite Hazards Maps attached and depicts the ANHRE for each participating jurisdiction and for the County.

D. Intersection of Hazardous Areas with Community Features

The Composite Hazards Maps attached depict the intersection of all hazards described in subsection C of this section of the HMP above with the County’s existing land use, zoning, and critical facilities map coverage. No buildings, infrastructure or critical facilities are anticipated to be developed in identified hazard areas. The Composite Hazards Spreadsheet (Appendix A) provides a tabular representation of this map by describing the following items:

- The area (in square feet and acres) of each jurisdiction in multi-hazard areas and in each hazard area; and,
- The number of parcels in each jurisdiction in multi-hazard areas and in each hazard area; and,
- The value of the land and buildings in each jurisdiction in multi-hazard areas and in each hazard area; and,
- All of the above broken down by developed and undeveloped property and by zoning classification.

E. Repetitive Loss Structures

As noted in “Keeping Natural Hazards from Becoming Disasters: A Mitigation Planning Guidebook for Local Governments” (NCDEM and UNC-CH, 2003), “repetitive loss structures” are those that have suffered damage from repeated hazard events. The only reliable source of information on repetitive loss structures are flood insurance claims data available through the National Flood Insurance Program (NFIP), administered by the NCDEM Mitigation Division.

According to an inquiry made to NCDEM in October of 2003, there are no documented repetitive loss structures in Franklin County or its constituent municipalities. An inquiry made as part of this update confirmed that there are no repetitive loss structures in Franklin County (2010).

F. Geographic Planning Areas

Each participating municipality and unincorporated Franklin County will constitute its own Geographic Planning Area (GPA). Henceforth in this document, each GPA will be identified by the community name (e.g., Town of Louisburg). The reason for this decision is that different governing bodies are responsible for growth and development decisions in each GPA and that multiple GPAs within one jurisdiction would unduly focus on one hazard or one area over others when all hazards will be addressed in a prioritized fashion as described in Section VII of this HMP.

G. Special Populations

A detailed review of U.S. Census data, local comprehensive plans and zoning ordinances, and disaster damage data does not indicate that any particular demographic group is disproportionately affected by natural hazards in Franklin County or its constituent jurisdictions by natural hazards, even though approximately 23% of Franklin County residents are racial minorities. Please refer to the County and municipal comprehensive land use plans cited in Section IV of this plan for further review of this issue.

Section IV: Community Capability Assessment

Section IV: Community Capability Assessment

This section of the HMP is intended to analyze Franklin County and its constituent jurisdiction's capacity to address the threats that natural hazards pose to them. This section of the HMP will identify those areas in which the participating jurisdictions are already undertaking positive hazard mitigation efforts that should be supported or enhanced and may also identify areas where their current policies may be worsening hazard risks. In order to achieve these goals, this section contains the following subsections:

- A) Agency/ Organizational Review
- B) Existing Policies and Program Review
- C) Legal Capability Review
- D) Fiscal Capability Review
- E) Political Acceptability Review

Where necessary, each of the above subsections will be further "broken-down" for each participating jurisdiction, as follows:

- I. Franklin County (unincorporated areas)
- II. Town of Bunn
- III. Town of Centerville
- IV. Town of Franklinton
- V. Town of Louisburg
- VI. Town of Youngsville

A. Agency/Organizational Review

The purpose of this subsection of the HMP is to list and describe all local government departments, agencies and organizations that have a direct (or indirect) impact on hazard mitigation and/or hazard control through specific responsibilities in these areas or through seemingly unrelated responsibilities (e.g., site selection for school facilities) and to describe these responsibilities.

I. Franklin County (unincorporated areas)

The Franklin County area has a rich history, beginning well before 1750 with the movement of settlers into the area. Settlements spread along the Tar River, and a travelers' rest at the old Tar River ford became the village of Louisburg. Franklin County, named in honor of Benjamin Franklin, was formed in 1779

when the state legislature voted to divide what was then Bute County into what are now Franklin and Warren counties. The legislature also authorized the incorporation of the county seat, Louisburg, which was named in honor of Louis XVI.

Louisburg, the county seat, developed as the regional trade center for the local agricultural economy and is the largest municipality in the county. There are four other incorporated towns in the county: Franklinton, Youngsville, Bunn, and Centerville.

Franklin County is governed by a Board of Commissioners. The Board is comprised of five members. The current Board Chairman is Penny McGhee. A County Manager, Angela Harris and nineteen County department heads/supervisors are responsible for day-to-day management and oversight of County business.

Table Twenty-Two below provides an overview of offices, organizations and agencies responsible for hazard control and hazard mitigation activities in the County.

Table Twenty-Two. Agency/Organization Review for Franklin County

Area of Responsibility	Description	Contact Person and Telephone
Planning and Zoning (includes building inspections)	The Franklin County Planning and Inspections Department administers Franklin County's Zoning Ordinance, Subdivision Ordinance, Mobile Home Park Ordinance, Floodplain Management Ordinance and other relevant regulations through a four person staff. This department is responsible for helping to educate the public on regulations pertaining to land use issues. These ordinances serve to protect and promote health, safety, morals or general welfare of Franklin County, and its citizens. The County also has an appointed, eleven-member Planning Board and five-member Zoning Board of Adjustment, staffed by the Planning Department. Inspections and permitting (building, plumbing, HVAC) are administered to State standards through the eight-person Franklin County Inspections Department.	Scott Hammerbacher Planning and Inspections Director (919) 496-2909 Eddie Strickland Inspections Supervisor (919) 496-2281
Engineering (includes	The County does not have a licensed professional	Angela Harris

Area of Responsibility	Description	Contact Person and Telephone
capital improvement plan)	engineer on County staff, and contracts for engineering services on an "as-needed" basis.	County Manager (919) 496-5994 Bryce Mendenhall Public Utilities Director (919) 494-5415
Sewer	<p>Most of Franklin County's residents rely upon individual septic tanks for sewage disposal. However, public wastewater systems are provided in the towns of Louisburg, Franklinton, Bunn, and Youngsville. At Lake Royale, a package treatment plant (small wastewater collection and treatment system) serves the camping area. The towns of Bunn and Louisburg operate their wastewater treatment plant (WWTP) and collection systems independently of the Franklin County Department of Water and Sewer (FCDWS). The FCDWS maintains the Franklin County WWTP located near the Town of Franklinton southeast of Lane Store Road (SR 1118). Wastewater is collected from the towns of Franklinton and Youngsville via sewer lines along Cedar Creek Road. Effluent is treated through an extended aeration activated sludge process consisting of an influent pump station, manual bar screen and grit chamber, activated sludge biological treatment, secondary clarification, ultraviolet disinfection with chlorine backup, and cascade aeration. Sludge is aerobically digested, dewatered, thickened, and then either wasted to drying beds or land applied through a contract hauler.</p> <p>This facility has a permitted capacity of 3.0 million gallons per day (MGD) and on average operates at approximately 40% of its capacity. Treated wastewater is discharged into Cedar Creek.</p>	Bryce Mendenhall Public Utilities Director (919) 494-5415
Water	The Franklin County Department of Water and Sewer (FCDWS) has constructed water lines between Louisburg and Franklinton and Franklinton and Youngsville. The FCDWS purchases water from the towns of Franklinton and Louisburg and the City of Henderson and sells water to the Towns of Bunn and Youngsville. Because the FCDWS relies on municipal water systems for its water supply, it does not own any groundwater wells. However, the FCDWS does maintain a 500,000 gallon elevated storage tank off of US 1 near Youngsville and approximately 24 miles of distribution lines (source: Franklin County	Bryce Mendenhall Public Utilities Director (919) 494-5415

Area of Responsibility	Description	Contact Person and Telephone
	Comprehensive Land Use Plan).	
Fire	Franklin County is served by 11 fire departments in the county and two departments in adjacent counties. Franklin County is divided into 13 fire district service areas. Map 7 provides the locations of these districts. Approximately 400 volunteers staff the county's fire departments (approximately 30-35 per station). The Town of Louisburg operates its own fire department governed by the Town Council. This department serves the Central Franklin Fire District. The remaining ten fire departments in the county are private, non-profit corporations each governed by its own Board of Commissioners. The Youngsville and Bunn Fire Departments serve as substations. There is an automatic mutual aid agreement between the county's Fire Departments in which two or more departments are dispatched simultaneously during structure fires.	Randy Likens Franklin County Emergency Services (919) 496-5005
Electricity	Electric service is provided by Progress Energy, Wake Electric Membership Corporation (WEMC), and the Town of Louisburg.	Progress Energy (800) 452-2777 WEMC (919) 863-6300 Town of Louisburg (919) 496-3406
Roads/Streets	The County does not own or maintain streets – this function is served by NCDOT and select municipalities.	N/A
Stormwater Management/ Drainage Maint.	The County adopted a stormwater management ordinance in September, 2004. The ordinance ensures treatment of stormwater in the Neuse River basin to State and Federal standards. Although the County does not currently administer a county-wide stormwater management program, but Franklin County has and will continue to work with the NC Division of Water Quality in its ongoing assessment of the Tar/Pamlico and Neuse River Basins through the Basinwide Water Quality Planning process.	Scott Hammerbacher Planning and Inspections Director (919) 496-2909
Parks, Greenways, Open Space	The county re-established its Parks and Recreation Department in 1997, after termination in 1977. Staff positions include four (4) full-time employees: Director, Administrative Services Manager, Recreation Services Manager, and a Parks Development and Operations Manager.	Bob Yeatman Interim Director of Parks and Recreation (919) 496-6624

Area of Responsibility	Description	Contact Person and Telephone
	The department offers a Youth Basketball Program (from 320 players on 31 teams in 1998 to 640 players on 73 teams in 1999). The department has also started offering special events (Easter egg hunt), special trips (Baltimore Orioles trip), and classes (gardening). The department also provides more support activities to operate facilities for its programs such as the department's New Adult Softball League (ball field maintenance at the Louisburg Moose Lodge Field) and support to the Franklinton Youth Baseball and Softball Programs (field maintenance at the four fields at Franklinton Elementary School). Additionally, staff is providing support to market new programs of the Recreation Division. <i>(source: Franklin County Comprehensive Land Use Plan, 1999).</i>	

II. Town of Bunn

The Town of Bunn is located in the southeastern portion of the county along NC 39, and is seeing area growth, with a new Food Lion recently developed in Town. Nearby is Lake Royale, a beautiful, private resort featuring an 18-hole golf course and a new country club.

The Town had an approximate population of 376 in July, 2003. The Town has a Town Council as its governing body with a town administrator, Ms. Judy M. Jeffreys, CMC is responsible for day-to-day management and oversight of Town business.

Table Twenty-Three below provides an overview of offices, organizations and agencies responsible for hazard control and hazard mitigation activities in the Town:

Table Twenty-Three. Agency/Organization Review for the Town of Bunn

Area of Responsibility	Description	Contact Person and Telephone
Planning and Zoning (includes building inspections)	The Town of Bunn has adopted a Comprehensive Land Use Plan (2000), a zoning ordinance (including a mobile home park ordinance, and a landscape	Judy M. Jeffreys, CMC Town Administrator (919) 496-2992

Area of Responsibility	Description	Contact Person and Telephone
	<p>ordinance. These ordinances are administered through the Town Administrator's office (acting as the zoning administrator) with the assistance of the Kerr-Tar Regional COG in Henderson, as necessary.</p> <p>The Town also has an appointed, five-member Planning Board and Zoning Board of Adjustment.</p> <p>Inspections and permitting (building, plumbing, HVAC) and septic tank regulations are administered to State standards through the County's Planning/Inspections and Health Departments (respectively).</p>	
Engineering (includes capital improvement plan)	As needed, under contract – no Town staff. Majority of recent water and sewer engineering work has been conducted through Peirson and Whitman of Raleigh.	<p>Ricky Jeffreys Maintenance Supervisor (919) 496-2992</p> <p>Dr. Mike Acquesta Peirson and Whitman Engineers and Arch. (919) 782-8300</p>
Sewer	Bunn owns a wastewater treatment system of the land application type with a design capacity of 150,000 gpd. The Bunn Water Department reported an average daily discharge capacity of approximately 70,600 gallons, meaning that the Town has an additional 80,000 gallons per day of capacity available (source: Town of Bunn 2020 Land Use Plan). The Town's wastewater system is operated under contract by Envirolink, Inc. of Bailey, North Carolina.	<p>Ricky Jeffreys Maintenance Supervisor (919) 496-2992</p> <p>Jeff Whitley, Manager Envirolink, Inc. (252) 235-4900</p>
Water	The Town owns a public water supply system, supplying up to 100,000 gallons of water per day purchased from the County. The Town owns community wells that, if upgraded, could provide additional capacity if needed. Approximate average daily demand is currently 100,000 gallons per day (gpd). The Town also owns an elevated potable water tank with a capacity of 200,000 gpd (source: Town of Bunn 2020 Land Use Plan).	Ricky Jeffreys Maintenance Supervisor (919) 496-2992
Fire	Fire and EMS services provided by the Bunn Volunteer Fire Department, which has a fire house at 505 Main Street in Bunn and substations on NC Highway 98 and on Baptist Church Road.	Ken Pearce, Chief Bunn Volunteer Fire Department (919) 496-5051
Electricity	Electricity is provided Town-wide by Progress Energy.	Progress Energy 1-800-452-2777

Area of Responsibility	Description	Contact Person and Telephone
Roads/Streets	The Town owns and maintains 2.72 miles of roads, and received \$13,484 in NC Powell Bill monies for street maintenance in 2004. (source: NCDOT)	Ricky Jeffreys Maintenance Supervisor (919) 496-2992
Stormwater Management/ Drainage Maint.	As needed, under contract from Town Council.	Ricky Jeffreys Maintenance Supervisor (919) 496-2992
Parks, Greenways, Open Space	No Town owned or managed facilities at this time	N/A

III. Town of Centerville

The Town of Centerville was incorporated in 1965 and is located at the junction of NC 561 and NC 58 in the northeastern corner of Franklin County.

A three-member Council and Mayor oversee municipal government.

Table Twenty-Four below provides an overview of offices, organizations and agencies responsible for hazard control and hazard mitigation activities in the Town:

Table Twenty-Four. Agency/Organization Review for the Town of Centerville

Area of Responsibility	Description	Contact Person and Telephone
Planning and Zoning (includes building inspections)	The Town of Centerville does not currently have any land use ordinances in effect. Inspections and permitting (building, plumbing, HVAC), as well as septic tank regulations are administered to State standards through the County's Inspections office.	Margaret Nelms Mayor (919) 853-2641
Engineering (includes capital improvement plan)	As needed, under contract – no Town staff. No services requiring engineering currently or are likely to exist in Town.	Margaret Nelms Mayor (919) 853-2641
Sewer	The Town currently has no centralized sewer system, relying on individual septic systems (and in some few cases, outhouses) for its citizens waste disposal needs.	Margaret Nelms Mayor (919) 853-2641
Water	The Town currently has no centralized water system, relying on individual wells for its citizens potable water needs.	Margaret Nelms Mayor (919) 853-2641
Fire	Fire protection provided by the Centerville V.F.D.	Chief Marvin Edwards

Area of Responsibility	Description	Contact Person and Telephone
		Centerville V.F.D.
Electricity	Electricity is provided Town-wide by Progress Energy	Progress Energy 1-800-452-2777
Roads/Streets	The Town does not maintain any roads - all roads in its jurisdiction are maintained by NCDOT.	Margaret Nelms Mayor (919) 853-2641
Stormwater Management/ Drainage Maint.	As needed, under contract from Town Council.	Margaret Nelms Mayor (919) 853-2641
Parks, Greenways, Open Space	No Town owned or managed facilities at this time.	Margaret Nelms Mayor (919) 853-2641

IV. Town of Franklinton

The second largest municipality, Franklinton (pop. 1,806) is a growing community located on US 1 which is a four-lane highway, in the western part of the county 15 minutes north of Raleigh city limits. Franklinton lifestyle is centered on continual improvement. Franklinton's real success is its ability to offer responsive, personalized town services and utilities. The modified mayor-council form of government includes a five-member Board of Commissioners, Mayor, and a Town Manager (*source: Town of Franklinton*). Contact is Town Manager, Larry Carver, telephone number (919) 494-2520.

Table Twenty-Five below provides an overview of offices, organizations and agencies responsible for hazard control and hazard mitigation activities in the Town:

Table Twenty-Five. Agency/Organization Review for the Town of Franklinton

Area of Responsibility	Description	Contact Person and Telephone
Planning and Zoning (includes building inspections)	The Town of Franklinton has adopted a zoning ordinance (including watershed protection), subdivision ordinance, flood damage prevention ordinance, minimum housing code and other building regulations administered through the Town Zoning Administrator's office.	Tammy Ray Planner/Zoning Administrator (919) 494-2520

	Inspections and permitting (building, plumbing, HVAC), as well as septic tank regulations are administered to State standards through the County's Inspections office.	
Engineering (includes capital improvement plan)	As needed, under contract – no Town staff. Primary contractor is DMP Engineering.	DMP Engineering, Inc. 1 (800) 326-3289
Sewer	The Town operates and maintains a sewage transmission system consisting of transmission lines and six sewer lift stations. Sewage is transferred to the County for treatment and disposal at its Cedar Creek Treatment Facility, which is currently operating at approximately 35% of capacity. (source: Town of Franklinton 20-year Land Use Plan).	Raymond Bragg Public Works Director (919) 496-9685
Water	The Town operates a potable water treatment and supply system that consists of two reservoirs (Taylor Creek and Cedar Creek), a treatment plant with a permitted supply capacity of 1 million gpd and 2 storage tanks with a total holding capacity of 10 million gpd. As of the year 2000, the system was operating at approximately 70% of its permitted capacity.	Ashley Roberson Water Plant Supervisor (919) 494-2218
Fire	Fire protection provided by the Franklinton V.F.D.	Chief Darrell Chalk Franklinton V.F.D. (919) 494-2230
Electricity	Electricity is provided Town-wide by Progress Energy	Progress Energy 1-800-452-2777
Roads/Streets	The Town of Franklinton Public Works Department (PWD) operates and maintains 13.56 miles of Town roads and received approximately \$77,800 in NC Powell Bill monies in 2004 to assist it with road maintenance (source: NCDOT). PWD is also responsible for snow removal and drainage system maintenance.	Raymond Bragg Public Works Director (919) 496-9685
Stormwater Management/ Drainage Maint.	As needed, under contract from Town Council.	Raymond Bragg Public Works Director (919) 496-9685
Parks, Greenways, Open Space	No Town owned or managed facilities at this time.	Larry Carver Town Manager (919) 494-2520

V. Town of Louisburg

Louisburg, the county seat and largest town (estimated population of 3,249 in July, 2003) is located in the geographical center of the county and was founded

in 1779 when Franklin County was established. Louisburg is governed by a Mayor and six-member Town Council with a Town Administrator, C.L. Gobble, overseeing general government operations. Contact telephone number is (919) 496-3406.

Current issues being dealt with by the town are: Hwy. US 401 South improvements and four lane expansion, implementing an updated land use plan, annexation, quality water supplies, economic development and orderly overall development plans. The annual budget for the Town of Louisburg is eleven million dollars and the town provides its own electric supply system. (source: Franklin County Chamber of Commerce).

Table Twenty-Six below provides an overview of offices, organizations and agencies responsible for hazard control and hazard mitigation activities in the Town:

Table Twenty-Six: Agency/Organization Review for the Town of Louisburg

Area of Responsibility	Description	Contact Person and Telephone
Planning and Zoning (includes building inspections)	<p>The Town of Louisburg has adopted a land use plan, a zoning ordinance (including mobile home park regulations and watershed protection regulations), a subdivision ordinance, a flood damage prevention ordinance. These ordinances are administered through the Asst. Town Manager's office, which serves as Zoning Administrator.</p> <p>Inspections and permitting (building, plumbing, HVAC) are administered to State standards through the Town's Planning and Inspections office.</p> <p>The Town also has an appointed Planning Board and Board of Adjustment staffed by the Town Manager's office.</p>	Tony King Asst. Town Manager (919) 496-3406
Engineering (includes capital improvement plan)	There is no Town Engineering staff - engineering is procured as needed, under contract.	Tony King Asst. Town Manager (919) 496-3406
Sewer	The Town operates a wastewater collection and treatment system with an approximate treatment capacity of 1.5 million gpd. The Town operates numerous lift stations, a treatment plant, and a sprayfield for application of treated sewage. Almost every housing unit in town is connected to the sewerage system.	Ray Patterson Public Works Director (919) 496-3406 Jimmy Ellington Sewage Treatment Plant Operator

		(919) 496-3406
Water	The Town operates a potable water treatment and distribution system composed of three wells with a maximum daily capacity of 1 million gpd. Average demand allows sufficient capacity for future system growth or sale to adjacent local governments. Almost every housing unit in town is connected to the potable water system.	Ray Patterson Public Works Director (919) 496-3406 Ron Watkins Water Plan Supervisor (919) 496-3433
Fire	The Louisburg Fire Department is a professional department accountable to the Town Council with volunteer assistance.	Chief Timmy Smith Louisburg F.D. (919) 496-4290
Electricity	Electricity is provided Town-wide by the Town of Louisburg	Mike Ayscue Electric Services Director (919) 496-3408
Roads/Streets	The Town of Louisburg Public Works Department (PWD) operates and maintains 16.06 miles of Town roads and received approximately \$103,720 in NC Powell Bill monies in 2004 to assist it with road maintenance (source: NCDOT). PWD is also responsible for snow removal and drainage system maintenance.	Ray Patterson Public Works Director (919) 496-3406
Stormwater Management/ Drainage Maint.	As needed, under contract from Town Council and with ongoing maintenance from Town Public Works staff.	Ray Patterson Public Works Director (919) 496-3406
Parks, Greenways, Open Space	The Town operates two parks. One is a primarily passive park along the banks of the Tar. The second provides a soccer field and open field and walking trails. Both facilities have playground equipment and shelters. The facilities are operated by the Town Recreation Department.	Town of Louisburg Recreation Department (919) 496-3406

VI. Town of Youngsville

Just a few miles south of US 1, the Town of Youngsville (estimated 2003 population was 1,049 - source: NC State Demographic Office) is in the center of exploding industrial and residential growth. Youngsville is governed by a Mayor and a five member Board of Commissioners. Town Administrator Brenda T. Robbins is responsible for day-to-day oversight of town affairs. Contact telephone number is (919) 556-5073.

Youngsville's location on the Wake/Franklin border has attracted new development. Several new subdivisions have been built and there are approximately 80 subdivisions in the surrounding area. People are attracted to Youngsville because of the short commute to the Triangle, but they can still enjoy the small town way of life. Youngsville is an attractive site for industry and features four Industrial Parks (two in corporate limits, two in the ETJ). The town has been recognized by the Governor's Community of Excellence award five consecutive years (source: Franklin County Chamber of Commerce).

Table Twenty-Seven below provides an overview of offices, organizations and agencies responsible for hazard control and hazard mitigation activities in the town:

Table Twenty-Seven. Agency/Organization Review for the Town of Youngsville

Area of Responsibility	Description	Contact Person and Telephone
Planning and Zoning (includes building inspections)	The Town of Youngsville has adopted a Comprehensive Land Use Plan, a zoning ordinance, a subdivision ordinance, and a flood damage prevention ordinance. These ordinances are administered through the Town Administrator's office, who serves as Zoning administrator. Inspections and permitting (building, plumbing, HVAC) are administered to State standards through the County's Planning and Inspections Office.	Brenda T. Robbins Town Administrator (919) 556-5073
Engineering (includes capital improvement plan)	The Town does not have a licensed professional engineer on Town staff, and contracts for engineering services on an "as-needed" basis. Boney and Associates of Raleigh has been the Town's primary consulting engineer in recent years.	Brenda T. Robbins Town Administrator (919) 556-5073 George Finch Boney and Associates Engineers (919) 833-1212
Sewer	The Town operates a wastewater collection system and four pump stations with treatment provided by the Franklin County Sewer Treatment Plant. The Town system serves approximately 300 customers in and near Town. Projected capacity far exceeds current demand (source: Town of Youngsville Land Use Plan, 2000).	Brenda T. Robbins Town Administrator (919) 556-5073 George Finch Boney and Associates Engineers (919) 833-1212
Water	The Town operates a potable water distribution system to approximately 300 customers. Treatment and supply of water are provided by the Franklin County water system. The Town owns and maintains	Brenda T. Robbins Town Administrator (919) 556-5073

	a 75,000 gallon storage tank.	George Finch Boney and Associates Engineers (919) 833-1212
Fire	Fire protection in the Town is provided by the Youngsville Fire Department, with a main station on Wheaton Avenue in Town, sub-station located on the east and west sides of Town in the County. The Department has paid staff on duty during normal business hours Monday through Friday	Chief George Lloyd, Jr. Youngsville F.D. (919) 556-5073
Electricity	Electric service is provided Town-wide by Progress Energy.	Progress Energy 1-800-452-2777
Roads/Streets	Town owns and maintains 5.85 miles of Town streets, with major thoroughfares maintained by NCDOT. Town maintenance of local streets is conducted with assistance from \$34,630 in NC Powell Bill funds (approximate 2004 allocation) and with Town general revenue monies.	Brenda T. Robbins Town Administrator (919) 556-5073
Stormwater Management/ Drainage Maint.	As needed, under contract from Town Council and with ongoing maintenance from Town Public Works staff.	Brenda T. Robbins Town Administrator (919) 556-5073
Parks, Greenways, Open Space	The Town owns two recreational facilities - one is a passive park (Irene Mitchell Park) and one is a 10-acre recreational facility with ball fields maintained by the Youngsville Optimist Club.	Brenda T. Robbins Town Administrator (919) 556-5073

B. Existing Policies and Program Review

The purpose of this subsection of the HMP is to describe the policies, programs, ordinances, and practices that each participating community has in place that affect hazard control and/or hazard mitigation. Whereas many participating communities have similar policies and ordinances, several of the most common of these policies and ordinances will be described in the following overview section. Deviations from the “generic” descriptions provided below will be noted in each community’s individual subsection below.

I. Flood Damage and Prevention Ordinance

Each community that participates in the National Flood Insurance Program (NFIP) must adopt a flood damage prevention ordinance. In general, this ordinance requires the following provisions in all areas of special flood hazard (100-year floodplain) identified by the Federal Emergency Management Agency in its Flood Insurance Rate Map (FIRM):

- All new construction and substantial improvements shall be anchored to prevent flotation, collapse, or lateral movement of the structure;

- All new construction and substantial improvements shall be constructed with materials and utility equipment resistant to flood damages;
- All new construction or substantial improvements shall be constructed by methods and practices that minimize flood damages;
- Electrical, heating, ventilation, plumbing, air conditioning equipment, and other service facilities shall be designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding;
- All new and replacement water supply systems shall be designed to minimize or eliminate infiltration of flood waters into the system;
- New and replacement sanitary sewage systems shall be designed to minimize or eliminate infiltration of flood waters into the systems and discharges from the systems into flood waters;
- On-site waste disposal systems shall be located and constructed to avoid impairment to them or contamination from them during flooding; and,
- Any alteration, repair, reconstruction, or improvements to a structure which is in compliance with the provisions of this ordinance, shall meet the requirements of "new construction" as contained in this ordinance.

In areas designated as floodways, no encroachments, including fill, new construction, substantial improvements, and other developments shall be permitted unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in the flood levels during the occurrence of the base flood.

Implementation responsibility is through the County Planning and Inspection office for all Franklin County Municipalities, except in the Town of Centerville who does not have any identified flood hazard areas within its jurisdiction and therefore do not currently participate in the NFIP. The County Planning and Inspection office ensures compliance to Town Ordinance standards concurrent with issuance of a building permit. The Town of Bunn is currently working with the State Division of Emergency Management to develop an Ordinance for adoption in the near future.

New FIRMs produced by the State of North Carolina Floodplain Mapping Program and the Federal Emergency Management Agency were adopted by Franklin County and its

constituent municipalities in January, 2010, providing a higher level of accuracy regarding flood hazard areas.

II. North Carolina State Building Code

The NC State Building Codes regulate for fire resistance, in addition to seismic, flooding, and high wind resilience. These codes are reviewed annually and amended as new requirements and materials are introduced. Building codes apply primarily to new construction or buildings undergoing substantial alteration.

Enforcement at the local level is provided by the Franklin County Building Inspector (BI). An applicant for a building permit must submit plans to the BI for approval. The BI reviews the plans and elects to approve or reject them or to require revisions. Construction cannot begin until local officials confirm that the plans are in accordance with the code.

A building inspector must then visually monitor the construction of the building. The inspector's duty is to make sure that the project follows the plans as approved. Inspectors are empowered to stop work on projects that fail to conform to the plans. Any observed errors must be fixed before work can continue. The inspector must perform a final review before an occupancy permit is issued.

III. Zoning Ordinance

Zoning is the traditional and nearly ubiquitous tool available to local governments to control the use of land. Broad enabling authority for municipalities in North Carolina to engage in zoning is granted in N.C.G.S. 160A-381 and for Counties at N.C.G.S. 153A-340. The statutory purpose for the grant of power is to promote health, safety, morals, or the general welfare of the community. Land "uses" controlled by zoning includes the type of use (e.g., residential, commercial, industrial) as well as minimum specifications for use such as lot size, building height and setbacks, density of population, and the like. The local government is authorized to divide its territorial jurisdiction into districts, and to regulate and restrict the erection, construction, reconstruction, alteration, repair or use of buildings, structures, or land within those districts. Districts may include general use districts, overlay districts, and special use districts or conditional use districts. Zoning ordinances consist of maps and written text.

Each municipality in Franklin County, except Centerville, has zoning, which is reviewed and administered locally by the Zoning Administrator (see Section IV(A) above).

IV. Subdivision Ordinance

Subdivision regulations control the division of land into parcels for the purpose of building development or sale. Flood-related subdivision controls typically require that developers install adequate drainage facilities, and design water and sewer systems to minimize flood damage and contamination. They prohibit the subdivision of land subject to flooding unless flood hazards are overcome through filling or other measures and prohibit filling of floodway areas. They require that subdivision plans be approved prior to the sale of land. Subdivision regulations are a more limited tool than zoning and only indirectly affect the type of use made of land or minimum specifications for structures.

Broad subdivision control enabling authority for municipalities is granted in N.C.G.S. 160-371. Subdivision is defined as all divisions of a tract or parcel of land into two or more lots and all divisions involving a new street (N.C.G.S. 160A-376). The definition of subdivision does not include the division of land into parcels greater than 10 acres where no street right-of-way dedication is involved.

The community thus possesses great power (in theory, anyway) to prevent unsuitable development in hazard-prone areas.

V. Capital Improvements Plan

A capital improvements program is a planned schedule of capital expenditures for physical improvements within a local government's jurisdiction, usually over a five-year period, listed according to priority.

VI. Watershed Protection Ordinance

Pursuant to State law, the County and its constituent jurisdictions administer an overlay zoning district which limits density in areas upstream of water supply intake. This overlay zoning district is implemented primarily to ensure the quality of the County's (and its neighbors) drinking water supply. This overlay zoning district also has the effect, however, of limiting the density and intensity of development in some areas of the Tar/Pamlico and Neuse watersheds. Franklin County and the Towns of Franklinton and Louisburg have such ordinances.

VII. Water and Sewer Policies

A Twenty-Year County-Wide Water and Sewer Study was completed in June 2003, by Oliver Incorporated of Charlotte. This study examined projected water and wastewater system needs through a 20-year planning period.

As noted above, the County operates a potable water system, currently concentrated in the southwestern and south-central portion of the County.

Public water systems are provided in the towns of Louisburg, Franklinton, Youngsville, and Bunn. A private central water system provides service to the Lake Royale community. The Franklin County Department of Water and Sewer (FCDWS) constructed water lines between Louisburg and Franklinton and Franklinton and Youngsville. The FCDWS purchases water from the towns of Franklinton and Louisburg and the City of Henderson and sells water to the Towns of Bunn and Youngsville. Because the FCDWS relies on municipal water systems for its water supply, it does not own any groundwater wells. However, the FCDWS does maintain a 500,000 gallon elevated storage tank off of US 1 near Youngsville and approximately 24 miles of distribution lines. *(Source: Franklin County Comprehensive Land Use Plan).*

Sewerage systems are operated by the Towns of Bunn, Centerville, Louisburg, and Youngsville and sewer services are generally available only in areas in and abutting these towns. *(Source: Franklin County Comprehensive Land Use Plan).*

VIII. Unified Development Ordinance

Franklin County adopted its Unified Development Ordinance September 16, 1991, and has updated it on several occasions since. The purpose of the ordinance was to consolidate all of the county's ordinances into one document. This ordinance is more user-friendly than having numerous separate ordinances, is easier to administer, and promotes efficiency.

IX. Comprehensive Land Use Plans

N.C.G.S. 160A-383 requires that zoning regulations be made in accordance with a comprehensive plan. While the ordinance itself may provide evidence that zoning is being conducted "in accordance with a plan," the existence of a separate planning document ensures that the government is developing regulations and ordinances that are consistent with the overall goals of the community. A Comprehensive Land Use Plan, therefore, identifies community goals and objectives, assesses current capabilities and resources and sets policy recommendations necessary to achieve the stated goals. Franklin County and the municipalities of Bunn, Franklinton, Louisburg, and Youngsville currently have comprehensive land use plans in place.

The following provides a capability assessment and assessment of existing programs and policies for each participating jurisdiction in Franklin County:

Franklin County (unincorporated areas). Table Twenty-Eight below provides a hazard mitigation capability assessment for Franklin County.

Table Twenty-Eight: Community Capability Assessment for Franklin County

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
Comprehensive Land Use Plan (CLUP)	Adopted 1983, Updated most recently 6/2000	<p>The Franklin County Comprehensive Land Use Plan contains the following policy statements and implementing actions:</p> <p>Objective 1, Strategy c:</p> <p>Conservation/open space land uses should be provided in areas where there is the potential for flooding (100-year floodplain) or the need for buffering.</p> <p><i>*Objective 3: Protect floodplains from undesirable development.</i></p> <p><i>Implementation Strategies:</i></p> <p>a. Prohibit the development of any industry within the 100-year floodplain that may pose a risk to public health and safety. Such industries may include but not be limited to: chemical refining and processing, petroleum refining and processing, hazardous material process or storage facilities.</p> <p>b. Discourage improvements of any kind in undisturbed areas within the 100-year floodplain. These areas should be designated for open space corridors, greenways, and other low-intensity uses.</p> <p>c. Prohibit the installation of underground storage tanks in the 100-year floodplain.</p> <p>d. Zone for open space, recreational, agricultural or other low-intensity uses within the floodplain. (See Section V: Land Development Policies and Implementing Actions)</p>	High, sets prudent planning objectives for reduction of hazards.	None, other than updates of Plan as necessary
Zoning Ordinance	Adopted January 1987, incorporated into UDO in September 1991, and updated on many occasions since.	<p>Franklin County's zoning ordinance is a component of the County's Unified Development Ordinance (UDO) and is administered by the County Planning and Inspections Department.</p> <p>Adopts development use, design standards, density and intensity requirements in the County and enables a zoning board of adjustment to oversee</p>	High, coordinates zoning districts with land suitability and infrastructure availability.	None

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
		ordinance provisions; allows cluster (Article 10) and "planned unit developments" (PUD) that can cluster development (see Article 13) and protect areas subject to natural hazards. Ordinance also includes flood damage prevention requirements (Article 19) and watershed protection requirements (Article 20).		
Subdivision Ordinance	Adopted in August 1985, incorporated into UDO in September 1991, and subsequently updated.	Specifies procedures for review and approval of subdivision plats and specifies required design standards for land development and approval of subdivisions (see Article 30, especially). Allows for unique designs to provide open space and protect natural resource/hazard areas in some cases.	High, requires adequate ditching/drainage structures and requires detailed information on natural features, storm drains, grade of lots and proposed roads, flood hazard areas and flood elevations as prerequisite for subdivision. Allows for unique designs to provide open space and protect natural resource/hazard areas in some cases.	None
Parks/ Greenway System	Parks and Recreation Master Plan (1999)	This plan was prepared by the Franklin County Recreation Advisory Board, Master Planning Committee, and the Parks and Recreation Department.	High, the Master Plan provides an inventory of existing facilities and programs and provides an identification of future needs based on recreation and park facility open space standards. Recommendations and an action plan for future improvements are also provided.	None
Inspections/ Permitting	Conducted through Franklin County Planning and Inspections Department	Ensures compliance with State building, electrical, plumbing and mechanical codes	High, centralized and efficient County-wide system for enforcement of State building code	None
Stormwater Management	County is currently considering regulations that would ensure compliance with Tar/Pamlico Stormwater Rules	Franklin County has participated in the NC Department of Environment and Natural Resources River Basin Planning program for the Neuse and Tar/Pamlico Basins.	High, since the County is an ongoing partner with the State in assessing stormwater management issues in the Neuse and Tar/Pamlico River basins and will adopt ordinance	None
Flood Damage	Adopted in	Ensures that properties developed in	High, requires lowest	None

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
Prevention Ordinance	November, 1996 and incorporated into UDO at that time. Updated in 2004 and again in 2010 to reflect new NFIP Flood Insurance Rate Maps (FIRM).	Special Flood Hazard Areas (SFHA) meet elevation and design requirements as required by the Federal Emergency Management Agency (FEMA) for provision of Federally backed flood insurance in the County (see Section 19 of UDO).	finished floor of new or substantially rebuilt structures to be above Base Flood Elevation (BFE) for all developments in SFHA	
Capital Improvements Plan	None	N/A	Low, since no CIP exists	Consider adoption of a CIP

Town of Bunn. Table Twenty-Nine below provides a hazard mitigation capability assessment for the Town of Bunn.

Table Twenty-Nine: Community Capability Assessment for the Town of Bunn

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
Comprehensive Land Use Plan (CLUP)	Adopted in 2000	Town of Bunn 2020 Land Use Plan: A 20-Year Development Strategy: Adopts goals and implementation measures intended to guide future land use, including; * Strengthening buffer requirements in zoning and subdivision ordinances between incompatible land uses; and * Join National Flood Insurance Program; and * Appoint review committee to study environmental impact of development proposals (see Chapter Eight of Town Plan)	High, sets prudent planning objectives for reduction of hazards.	None, other than updates of Plan as necessary
Zoning Ordinance	Adopted in 1998 and in effect.	Adopts development use, design standards, density and intensity requirements within the Town and enables a zoning board of adjustment to oversee ordinance provisions. Zoning ordinance also includes a mobile home park ordinance regulating the location, density and intensity of mobile home park development in the Town.	High, coordinates zoning districts with land suitability and infrastructure availability.	None
Subdivision Ordinance	Technically no subdivision ordinance, but a Landscape Ordinance was adopted in 2002	Landscape Ordinance: Specifies procedures for review and approval of new development and specifies required design standards for land development and approval of new development.	Medium, requires a landscaping plan for new development, but does not specify a description of adequate ditching / drainage structures or other detailed information on natural features, storm drains, grade of lots and	Consider adoption of a subdivision ordinance that incorporates current landscape ordinance features and that considers impact of subdivisions on natural hazard risk exposure (Deferred)

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
			proposed roads, flood hazard areas and flood elevations as prerequisite for subdivision	
Parks/ Greenway System	N/A - No program at this time	N/A - No parks at this time	Low, since no Town owned parks or greenways exist	Consider development of a parks and recreation master plan to purchase natural hazard-prone land for development as parks/recreational facilities.
Inspections/ Permitting	Conducted through Franklin County Planning and Inspections Department	Ensures compliance with State building, electrical, plumbing and mechanical codes	High, centralized and efficient County-wide system for enforcement of State building code	None
Stormwater Management	None currently in place	No document reference	High, NCDOT and Town do conduct ditch/drainage way maintenance as necessary.	None
Flood Damage Prevention Ordinance	None	N/A - although Town is currently reviewing a model Flood Damage Prevention Ordinance for adoption	Low, since no Flood Damage Prevention Ordinance is in place	Consider adoption of a Flood Damage Prevention Ordinance
Capital Improvements Plan	None	N/A	Low, since no CIP exists	Consider adoption of a CIP

Town of Centerville. Table Thirty below provides a hazard mitigation capability assessment for the Town of Centerville.

Table Thirty: Community Capability Assessment for the Town of Centerville

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
Comprehensive Land Use Plan (CLUP)	None Currently Adopted	N/A	Low, because policy guidance document does not exist for growth and development	Consider adoption of a CLUP
Zoning Ordinance	None currently adopted	N/A	Low, since there is not control on development intensity and density in town	Consider adoption of a zoning ordinance
Subdivision Ordinance	None at this time	N/A	Low, since no Town-wide subdivision standards exist	Consider adoption of reasonable subdivision/design

				guidelines
Parks/ Greenway System	None at this time	N/A	Low, since no Town owned parks or greenways exist	None, since large lots and rural location afford many recreational opportunities and no floodplain exists in the Town to protect
Inspections/ Permitting	Conducted through Franklin County Planning and Inspections	Ensures compliance with State building, electrical, plumbing and mechanical codes	High, centralized and efficient County-wide system for enforcement of State building code	None
Stormwater Management	NCDOT (for State roads), Town council conducts ditch/ drainage maintenance under contract as necessary	None	High, NCDOT and Town do conduct ditch/drainageway maintenance as necessary.	None
Flood Damage Prevention Ordinance	N/A	N/A	High, because no 100-year floodplain areas exist in the Town's jurisdiction, according to FEMA flood insurance rate maps and no significant areas of flooding are known.	None
Capital Improvements Plan (CIP)	None	N/A	Medium, since no CIP exists, but Town's foreseeable capital investments are very minimal over the planning period (5 years)	None

Town of Franklinton. Table Thirty-One below provides a hazard mitigation capability assessment for the Town of Franklinton.

Table Thirty-One: Community Capability Assessment for the Town of Franklinton

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
Comprehensive Land Use Plan (CLUP)	Adopted in February, 2001	Town of Franklinton 20-Year Land Use Plan: Adopts goals intended to guide future land use; Sets objective to "protect natural resources of the community from incompatible development and infrastructure (p.5-3) and implementing action of preparation of ordinance for cluster and traditional neighborhood design for protection of environment/open space, for example (see p. 6-5) (see Sections V	High, sets prudent planning objectives that should result in the reduction of the impacts of hazards.	None

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
		(Goals/Objectives) and VI (Implementing Actions)).		
Zoning Ordinance	Adopted in December, 1988 and subsequently updated.	See Chapter 154 of Town Code of Ordinances: Adopts development use, design standards, density and intensity requirements within the Town and enables the Town Planning Department and a zoning board of adjustment to oversee ordinance provisions. Allows for cluster development (Section 154.202), protects watershed areas from high density development (Section 154.207 and others), and requires buffering of natural features (Section 154.054 and others).	High, coordinates zoning districts and structure design with land suitability and infrastructure availability.	None
Subdivision Ordinance	Adopted in September, 1993 as part of the zoning ordinance and subsequently amended.	Specifies procedures for review and approval of subdivision plats and specifies required design standards for land development and approval of subdivisions, particularly in the watershed protection areas under the Town's jurisdiction (see Article 2).	High, requires adequate ditching/drainage structures and requires detailed information on natural features, storm drains, grade of lots and proposed roads, flood hazard areas and flood elevations as prerequisite for subdivisions in watershed protection areas.	None
Parks/ Greenway System	N/A - No program at this time	N/A - No parks at this time	Low, since no Town owned parks or greenways exist	Consider development of a parks and recreation master plan to purchase natural hazard-prone land for development as parks/recreational facilities.
Inspections/ Permitting	Conducted through Franklin County Planning and Inspections	Ensures compliance with State building, electrical, plumbing and mechanical codes	High, centralized and efficient County-wide system for enforcement of State building code	None
Stormwater Management	NCDOT (for State roads), Town council conducts ditch/ drainage maintenance under contract as necessary	None	Medium, NCDOT and Town do conduct ditch/drainage way maintenance as necessary.	None
Flood Damage Prevention Ordinance	Adopted January, 2001, updated in January, 2004 pursuant to new Flood Insurance Rate Maps (FIRMs)	Ensures that properties developed in Special Flood Hazard Areas (SFHA) meet elevation and design requirements as required by the Federal Emergency Management Agency (FEMA) for provision of Federally backed flood insurance in the	High, elevation above Base Flood Elevation (BFE) for all developments in SFHA in Town.	None

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
	being made available	Town		
Capital Improvements Plan (CIP)	None	N/A	Low, since no CIP exists	Consider adoption of a CIP

Town of Louisburg. Table Thirty-Two below provides a hazard mitigation capability assessment for the Town of Louisburg.

Table Thirty-Two: Community Capability Assessment for the Town of Louisburg

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
Comprehensive Land Use Plan (CLUP)	Adopted and in effect	Sets goals and objectives for future development of Town, including objectives for natural resource protection and efficient growth.	High, sets prudent planning objectives that should result in the reduction of the impacts of hazards.	None
Zoning Ordinance	Adopted in March, 1977 and amended subsequently on several occasions	Adopts development use, design standards, density and intensity requirements within the Town and enables the Town Planning Department and a zoning board of adjustment to oversee ordinance provisions.	High, coordinates zoning districts and structure design with land suitability and infrastructure availability.	None
Subdivision Ordinance	Adopted in April, 1977 and amended subsequently on several occasions	Specifies procedures for review and approval of subdivision plats and specifies required design standards for land development and approval of subdivisions	High, requires adequate ditching/drainage structures and requires detailed information on natural features, sediment control, storm drains, grade of lots and proposed roads, flood hazard areas and flood elevations as prerequisite for subdivision	None
Parks/ Greenway System	Town operates one passive park	No Parks and Recreation Master plan	High, because recreation needs in and near Town are met by existing park facility	None
Inspections/ Permitting	Conducted through Franklin County Planning and Inspections	Ensures compliance with State building, electrical, plumbing and mechanical codes	High, centralized and efficient County-wide system for enforcement of State building code	None
Stormwater Management	NCDOT (for State roads), Town council conducts ditch/ drainage	None	Medium, NCDOT and Town do conduct ditch/drainageway maintenance as	None

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
	maintenance under contract as necessary		necessary, but limited resources/powers to control overall stormwater quality and quantity	
Flood Damage Prevention Ordinance	Adopted in March, 1988 and updated in January, 2004 in response to	Ensures that properties developed in Special Flood Hazard Areas (SFHA) meet elevation and design requirements as required by the Federal Emergency Management Agency (FEMA) for provision of Federally backed flood insurance in the Town	High, elevation above Base Flood Elevation (BFE) for all developments in SFHA in Town.	None
Capital Improvements Plan (CIP)	None	N/A	Low, since no CIP exists	Consider adoption of a CIP

Town of Youngsville. Table Thirty-Three below provides a hazard mitigation capability assessment for the Town of Youngsville.

Table Thirty-Three: Community Capability Assessment for the Town of Youngsville

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
Comprehensive Land Use Plan (CLUP)	Original adopted in 1983, updated in October, 2000	Town of Youngsville Land Use Plan 2000-2010: Adopts goals intended to guide future land use; Plan encourages environmental protection with "complementary land use patterns and protection of environmental resources (see "Implementation" Section of Plan).	High, sets prudent planning objectives that should result in reduced hazard impacts	None, except periodic plan update
Zoning Ordinance	Current version revised in October, 2003	Adopts development use, design standards, density and intensity requirements within the Town and ETJ and enables the Town Planning Department to oversee ordinance provisions. Allows Planned Unit Development to cluster development as special use in certain cases (see Section 710).	High, coordinates zoning districts and structure design with land suitability and infrastructure availability.	None
Subdivision Ordinance	Adopted in September, 1993	Specifies procedures for review and approval of subdivision plats and specifies required design standards for land development and approval of subdivisions	High, requires adequate ditching / drainage structures and requires detailed information on natural	None

Policies and Programs	Policy/ Program Status	Document Reference	Effectiveness/ Rationale for Mitigation	Recommendations for Future Action
			features, storm drains, grade of lots and proposed roads, flood hazard areas and flood elevations as prerequisite for subdivision	
Parks/ Greenway System	Town owns one passive park and one park with active recreational facilities	No Parks and Recreation Master Plan	Low, since no comprehensive Parks and Recreation master plan exists to develop and maintain future parks for future recreation needs	Consider development of a parks and recreation master plan to purchase natural hazard-prone land for development as parks/recreational facilities.
Inspections/ Permitting	Conducted through Franklin County Planning and Inspections	Ensures compliance with State building, electrical, plumbing and mechanical codes	High, centralized and efficient County-wide system for enforcement of State building code	None
Stormwater Management	NCDOT (for State roads), Town council conducts ditch/ drainage maintenance under contract as necessary	None	Medium, NCDOT and Town do conduct ditch/drainageway maintenance as necessary, but limited resources/powers to control overall stormwater quality and quantity	None
Flood Damage Prevention Ordinance	Adopted in October, 2003 as part of Zoning Ordinance	Ensures that properties developed in Special Flood Hazard Areas (SFHA) meet elevation and design requirements as required by the Federal Emergency Management Agency (FEMA) for provision of Federally backed flood insurance in the Town	High, requires all new and substantially rebuilt structures to be above Base Flood Elevation (BFE) for all developments in SFHA	None
Capital Improvements Plan	None	N/A	Low, since no CIP exists	Consider adoption of a CIP

C. Legal Capability Review

As a general rule, local governments have only that legal authority which is granted to them by their home state. This principle, that all power is vested in the State and can only be exercised to the extent it is delegated, is known as "Dillon's Rule," and applies to all North Carolina's political subdivisions. Enabling legislation in North Carolina grants a wide array of powers to its cities, towns, and counties.

Local regulations which are enacted within the bounds of the state's enabling authority do not automatically meet with judicial acceptance. Any restrictions which local governments impose

on land use or building practices must follow the procedural requirements of the Fourteenth Amendment, or risk invalidation.

These and other constitutional mandates apply to federal and state governments, and all their political subdivisions. Any mitigation measures that are undertaken by the local government in its regulatory capacity must be worded and enforced carefully within the parameters established by the state and federal Constitutions, even when such measures are authorized by the General Statutes of North Carolina, and even when such measures are enacted in order to protect public health and safety by protecting the community from the impacts of natural hazards.

Within the limits of Dillon's Rule and the federal and state Constitutions, local governments in North Carolina have wide latitude within which to institute mitigation programs, policies, and actions. All local government powers fall into one of four basic groups (although some governmental activities may be classified as more than one type of power): regulation, acquisition, taxation, and spending. Hazard mitigation measures can be carried out under each of the four types of powers. Following are a list of these powers and how they may be useful tools for hazard mitigation:

i) Regulations

a. General Police Power

Local governments in North Carolina have been granted broad regulatory powers in their jurisdictions. North Carolina General Statutes bestow the general police power on local governments, allowing them to enact and enforce ordinances which define, prohibit, regulate, or abate acts, omissions, or conditions detrimental to the health, safety, and welfare of the people, and to define and abate nuisances (including public health nuisances). Since hazard mitigation can be included under the police power (as protection of public health, safety, and welfare), towns, cities, and counties may include requirements for hazard mitigation in local ordinances. Local governments may also use their ordinance-making power to abate "nuisances," which could include, by local definition, any activity or condition making people or property more vulnerable to any hazard.

b. Building Codes and Building Inspections

Many structural mitigation measures involve constructing and retrofitting homes, businesses, and other structures according to standards designed to make the buildings more resilient to the impacts of natural hazards. Many of these standards are imposed through the building code. North Carolina has a state compulsory building code which

applies throughout the state (N.C.G.S. 143-138). However, municipalities and counties may adopt codes for the respective areas if approved by the state as providing "adequate minimum standards." However, local regulations cannot be less restrictive than the state code.

Local governments in North Carolina are also empowered to carry out building inspection. N.C.G.S. Ch. 160A, Art. 19, Part 5; and Ch. 153A, Art. 18, Part 4 empower cities and counties to create an inspection department, and enumerates its duties and responsibilities, which include enforcing state and local laws relating to the construction of buildings; installation of plumbing, electrical, heating systems, etc.; building maintenance; and other matters.

c. Land Use

Regulatory powers granted by the state to local governments are the most basic manner in which a local government can control the use of land within its jurisdiction. Through various land use regulatory powers, a local government can control the amount, timing, density, quality, and location of new development; all these characteristics of growth can determine the level of vulnerability of the community in the event of a natural hazard. Land use regulatory powers include the power to engage in planning, enact and enforce zoning ordinances, floodplain ordinances, and subdivision controls.

Zoning: See Section IV(B)(c) above.

Floodway Regulation: The North Carolina General Statutes declare that the channel and a portion of the floodplain of all the state's streams will be designated as a floodway, either by the local government or by the state. The legislatively declared purpose of designating these areas as a floodway is to help control and minimize the extent of floods by preventing obstructions which inhibit water flow and increase flood height and damage and other losses (both public and private) in flood hazard areas, and to promote the public health, safety, and welfare of citizens of North Carolina in flood hazard areas.

To carry out this purpose, local governments are empowered to grant permits for the use of the floodways, including the placement of any artificial obstruction in the floodway. No permit is required for certain uses, including agricultural, wildlife and related uses; ground level uses such as parking areas, rotary aircraft ports; lawns, gardens, golf courses, tennis courts, parks, open space, and similar private and public recreational uses. Existing artificial obstructions in the floodway may not be enlarged or replaced without a permit; local governments are empowered to acquire existing

obstructions by purchase, exchange, or condemnation if necessary to avoid flood damages.

The procedures that are laid out for issuing permits for floodway use require the local government to consider the dangerous effects a proposed artificial obstruction may create by causing water to be backed up or diverted; or the danger that the obstruction will be swept downstream to the injury of others; and by the injury or damage that may occur at the site of the obstruction itself. Local governments are to take into account anticipated development in the foreseeable future which may be adversely affected by the obstruction, as well as existing development.

Planning: In order to exercise the regulatory powers conferred by the General Statutes, local governments in North Carolina are required to create or designate a planning agency. The planning agency may perform a number of duties, including: make studies of the area; determine objectives; prepare and adopt plans for achieving those objectives; develop and recommend policies, ordinances, and administrative means to implement plans; and perform other related duties. The importance of the planning powers of local governments is emphasized in N.C.G.S. 160A-383, which requires that zoning regulations be made in accordance with a comprehensive plan. While the ordinance itself may provide evidence that zoning is being conducted "in accordance with a plan," the existence of a separate planning document ensures that the government is developing regulations and ordinances that are consistent with the overall goals of the community.

Subdivision Regulation: See Section IV(B)(d) above.

ii. Acquisition

The power of acquisition can be a useful tool for pursuing mitigation goals. Local governments may find the most effective method for completely "hazard-proofing" a particular piece of property or area is to acquire the property (either in fee or a lesser interest, such as an easement), thus removing the property from the private market and eliminating or reducing the possibility of inappropriate development occurring. North Carolina legislation empowers cities, towns, and counties to acquire property for public purpose by gift, grant, devise, bequest, exchange, purchase, lease, or eminent domain.

iii. Taxation

Taxation is yet another power granted to local governments by North Carolina law which can be used as a hazard mitigation tool. The power of taxation extends beyond

merely the collection of revenue. Many communities set preferential tax rates for areas which are unsuitable for development (e.g., agricultural land, wetlands) and can be used to discourage development in hazardous areas.

Local units of government also have the authority to levy special assessments on property owners for all or part of the costs of acquiring, constructing, reconstructing, extending, or otherwise building or improving beach erosion control or flood and hurricane protection works within a designated area. This can serve to increase the cost of building in such areas, thereby discouraging development.

Because the usual methods of apportionment seem mechanical and arbitrary, and because the tax burden on a particular piece of property is often quite large, the major constraint in using special assessments is political. Special assessments seem to offer little in terms of control over land use in developing areas. They can, however, be used to finance the provision of services a Town deems necessary within its boundaries. In addition, they are useful in distributing to the new property owners the costs of the infrastructure required by new development.

iv. Spending

The fourth major power that has been delegated from the North Carolina State General Assembly to local governments is the power to make expenditures in the public interest. Hazard mitigation principles should be made a routine part of all spending decisions made by the local government, including annual budgets and Capital Improvement Plans.

A capital program is usually a timetable by which a Town indicates the timing and level of municipal services it intends to provide over a specified duration. Capital programming, by itself, can be used as a growth management technique, with a view to hazard mitigation. By tentatively committing itself to a timetable for the provision of capital to extend municipal services, a community can control its growth to some extent especially where the surrounding area is such that the provision of on-site sewage disposal and water supply are unusually expensive.

In addition to formulating a timetable for the provision of services, a local community can regulate the extension of and access to municipal services.

A capital improvement program (CIP) that is coordinated with extension and access policies can provide a significant degree of control over the location and timing of growth. These tools can also influence the cost of growth. If the CIP is effective in

directing growth away from environmentally sensitive or high hazard areas, for example, it can reduce environmental costs.

D. Fiscal Capability Review

There are many diverse sources of funding available to communities to implement local hazard mitigation plans, including both government and private programs. Often an organization with a particular focus will fund only part of a project. However, with coordination, the community can combine the funding efforts of one program with those of another, thereby serving multiple missions. The grant and loan programs described in the following two pages of this plan are a significant, although certainly not a sole source of funding options.

While federal and national programs carry out the bulk of disaster relief programs that provide funds for mitigation, local governments are encouraged to open the search field as widely as possible, and include alternative funding sources to supplement the local hazard mitigation budget. For instance, local businesses and organizations will frequently support projects that benefit their customers or employees, or which constitute good "PR." Other groups or individuals may be willing to donate "in-kind" services, eliminating the need for cash. Often the in-kind and volunteer services of local community members can be counted toward the local share that is typically needed to match an outside source of funds.

Local governments may also engage in their own "fund-raising" efforts to pay for mitigation programs that benefit the community at large. In North Carolina, local governments are granted limited powers to raise revenue for public purpose. The General Assembly has conferred upon cities, towns, and counties the power to levy property taxes for various purposes, including: "ambulance services, rescue squads, and other emergency medical services; beach erosion and natural disasters (including shoreline protection, beach erosion control, and flood and hurricane protection); civil defense; drainage projects or programs; fire protection; hospitals; joint undertakings with other county, Town, or political subdivisions; planning; sewage; solid waste; water; water resources; watershed improvement projects" N.C.G.S. §16A-209. These statutorily enumerated purposes make it clear that local governments are empowered to finance certain emergency management activities, including mitigation activities, with property taxes.

The following is a list and description of several programs which offer funding for hazard mitigation, redevelopment, and post disaster recovery:

A. Hazard Mitigation Grant Program (HMGP)

The Federal Disaster Assistance Act (Stafford Act) provides funds authorized by the federal government and made available by FEMA for a cost-share program to states. The HMGP provides 75% of the funds while the states provide 25% of the funds for mitigation measures through the post-disaster planning process. The Division of Emergency Management administers the program in this state. The state share may be met with cash or in-kind services. The program is available only for areas affected by a Presidentially-declared disaster.

B. Disaster Preparedness Improvement Grant (DPIG)

This grant provides federal matching funds for communities to develop hazard mitigation plans, expand existing plans, update disaster preparation plans, and to prepare the administrative plans required to qualify for Hazard Mitigation Grant Program grants. Funds for the DPIG are provided by FEMA and the Division of Emergency Management administers the program in each state.

C. Flood Mitigation Assistance Program (FMAP)/Pre-Disaster Mitigation (HMGP)

The FMAP program provides grants for cost-effective measures to reduce or eliminate the long-term risk of flood damage to the built environment and real property. The program's main goal is to reduce repetitive losses to the National Flood Insurance Program. The FMAP is available to eligible communities every year, not just after a

Presidentially-declared disaster. Funds for the FMAP are provided by FEMA and the Division of Emergency Management administers the program in each state.

The HMGP program is very similar to the FMAP, except that it is funded by a yearly appropriation from FEMA and may address all hazards. Application is made to the State of North Carolina Division of Emergency Management (NCDEM).

D. Public Assistance Program (PA)

The Public Assistance provides federal aid to communities to help save lives and property in the immediate aftermath of a disaster and to help rebuild damaged facilities. Grants cover eligible costs associated with the repair, replacement, and restoration of facilities owned by state and local governments and nonprofit organizations. The Public Assistance program is administered by FEMA.

E. Small Business Administration Disaster Assistance Program

This program provides loans to businesses affected by Presidentialy-declared disasters. The program provides direct loans to businesses to repair or replace uninsured disaster damages to property owned by the business, including real estate, machinery and equipment, inventory and supplies. Businesses of any size are eligible. Nonprofit organizations are also eligible. The SBA administers the Disaster Assistance Program.

F. Community Development Block Grant (CDBG)

The CDBG program provides grants to entitlement communities (metropolitan cities and urban counties) for post-disaster hazard mitigation and recovery following a presidential declaration of a Major Disaster of Emergency. Funds can be used for activities such as acquisition, rehabilitation, or reconstruction of damaged properties and facilities and redevelopment of disaster-affected areas. Funds may also be used for emergency response activities, such as debris clearance and demolition and extraordinary increases in the level of necessary public services. HUD provides funds for the CDBG and the Division of Community Assistance administers the program in each state.

E. Political Acceptability Review

This subsection of the plan is intended to address the participating communities' "political willpower" to address hazards threats in a proactive manner. This "political willpower" is a significant component of a community's capability to implement hazard mitigation. It is, however, a very difficult factor to assess and evaluate as it is constantly

changing based on the turnover in elected officials and the (perceived and actual) frequency and severity of natural hazard events.

The following principals of political acceptability are applicable for all six (6) local governments participating in this plan:

- I) Independent of existing regulations that directly address hazard mitigation (e.g., floodplain management ordinance), hazard mitigation is not a goal that should be addressed *independent of* other goals and objectives of the local government, due to limited local government resources; and
- II) Hazard mitigation should be considered and incorporated into policies, procedures and programs which affect land use and development, such as siting of roadways, siting and building of public facilities, zoning and subdivision ordinances, and extension of infrastructure necessary for growth; and
- III) Local revenues are insufficient to support hazard mitigation projects for mitigation of existing hazards at the local level, however, Federal and State grant funds for priority hazard mitigation projects should be pursued when available; and
- IV) One of local government's primary roles in implementing hazard mitigation is educating the public about the risks of natural hazards and how to reduce these risks and/or the costs of these risks.

Section V: Acceptability Assessment and Mitigation Values and Goals

Section V: Acceptability Analysis

This section of the HMP identifies high priority areas of focus for the latter, or “action,” sections of the plan by providing an overview of conclusions formed from the data and analysis provided in Sections II through IV above.

As noted in Section I of this plan (above), two public meetings of the County-wide Mitigation Advisory Committee (MAC) were (held on hazard mitigation needs, issues, and priorities in Louisburg in October and November 2010. Public notice was made for both meetings in the Franklin Times newspaper and through posting of notices in the administrative offices of each local government.

At these hearings, and through a series of meetings between staff, local officials and the data collection processes in section II through IV above, the following acceptability assessment was compiled.

A. Vulnerability Statement

- The Tar River, which traverses Franklin County from west to east, and its tributaries have modest flows in the County. Additionally, the topography of the County, (particularly in the north and west of the County) which is gently rolling, helps speed waters into lakes and streams and out of the County under normal conditions.

Due to the reasons stated above and existing mitigation measures, flooding risk is moderate in Franklin County and is generally confined to localized, low-lying areas and crossings of drainage ways with roads or other transportation infrastructure, rather than being widespread.

However, the existence of poor drainage conditions in some areas the presence of backflow flooding of Tar River tributaries during heavy rainfall events, and the existence of critical water supply watersheds, call for continued evaluation and implementation of density and intensity controls in sensitive watershed areas, continued enforcement of floodplain management ordinances, pursuit of solutions to long-standing drainage problems and effective stormwater management practices and policies.

- Effective forest management, prudent zoning and subdivision regulations and excellent fire coverage have helped minimize the impact of wildfires in the County. While the overall risk of wildfire damages in Franklin County is mitigated by the fact that forested tracts are generally of manageable size,

access to firefighting equipment and personnel wildfires have crossed major roads and waterways and threatened populated areas in recent years.

Therefore, while the incorporated government jurisdictions in Franklin County have significantly less forest land within their corporate limits and extraterritorial jurisdictions (ETJs) than in the unincorporated County, all municipal governments' boundaries share borders with the "urban/wild land interface" – the area where human development meets undeveloped, forested and fallow agricultural areas that provide fuel for fires. This "urban/wild land interface" presents the greatest risk to life and property from wildfires.

This situation calls for consideration of public education efforts regarding wildfire risk reduction and the consideration of subdivision regulations in "urban-wild land interface" areas that require fire breaks, the use of fire-resistant materials, and other reasonable and cost-effective measures to reduce the risk of wildfires.

- Due to a combination of the frequency of winter storms and thunderstorms with high winds and damaging microbursts of rain, the threat of tree limbs and other debris damaging electrical generation facilities is one of the most significant hazards faced by Franklin County and its constituent jurisdictions. Power outages caused by such events debilitate commerce and endanger health and safety due to the failure of critical infrastructure such as sewer lift stations and water pumps and life support equipment (especially at private homes).

This situation calls for increased coordination with utility companies and other service providers to ensure maximum coordination of activities, especially limb/tree removal close to electric transmission lines, planned deployment of available resources for snow/ice removal equipment and supplies, and increased/improved sheltering opportunities for vulnerable populations.

- Tornadoes pose significant risk to the County. Increased warning devices and public education efforts should be considered.

B. Statement of Commitment

The County and all participating municipalities are committed to reducing the impact of natural hazards, with the following broad principals in mind:

- I) Hazard mitigation is, first and foremost, the responsibility of the individual. As such, goals and strategies that focus on individual initiative and public education will be paramount; and
- II) Due to limited local financial capabilities, State and Federal funding sources will be the primary source of funds to implement hazard mitigation projects for the foreseeable future; and
- III) Hazard mitigation should be pursued, in general, as one of many overall community goals (e.g., economic development, improvement of housing conditions) when pursuing a particular policy or program.

Mitigation Values and Goals

This section of the HMP provides each community's values and goals statements, and provides the basis of Section VI, the "action" section of the plan.

This will be achieved by development of the following sub-sections:

- A) Development of Goal Categories
- B) Community Goals

C. Development of Goal Categories

A "goal" is defined as "the state of affairs that a plan is intended to achieve" (source: wordnet.com). As such, it is general, aspirational, "almost philosophical in nature" (NCDEM and UNC-CH, 2003, p.65) and is unique to each participating jurisdiction. Nevertheless, all communities face basic issues in regards to hazard mitigation, and therefore, common goal categories have been developed for each community, as follows:

- **General**
 - Goals that address the community's level of vulnerability and hazard threat in general
- **Future Development**
 - Goals that consider future development in areas exposed to an elevated risk of natural hazard damage
- **Existing Development**
 - Goals that address existing infrastructure and buildings in areas exposed to an elevated risk of natural hazard damage

- **Redevelopment**
 - Goals that address redevelopment in case of a natural disaster

- **Public Education and Outreach**
 - Goals that are focused on educating the public on natural hazard risks

- **Natural Resource Protection**
 - Goals that are focused on natural resource protection and a means of hazard mitigation

D. Community Goals

It is critically important that hazard mitigation goals do not exist in isolation from overall community goals. As such, all documents, such as comprehensive land use plans, zoning ordinances, emergency management plans, etc., as referenced in Section IV of this plan were consulted and reviewed in developing the following community goals. It is clear that without this Plan, the ability of the County and local municipalities to address the health, safety, and welfare of its citizens would be greatly diminished. This overriding goal of local government is enhanced when one is able to see the frequency, severity, and location of hazards and understands the threats from these. It follows then that all planning documents and processes for planning, inspections, and construction rely on this Hazard Mitigation Plan to ensure they are complete and thoroughly incorporate effective responses to hazards identified in the Plan.

Table Thirty-Four below provides the community goals for Franklin County. As stated above, hazard mitigation goals are unique to each community. However, the participating communities in this plan that comprise Franklin County recognize their interconnectedness and the need to achieve coordinated goals. If this is not done, communities will essentially be “competing” against each other in their concern for mitigation, creating a situation where some citizens of the County are safer than others.

Table Thirty-Four: Hazard Mitigation Goal Statement for Participating Communities in Franklin County

Goal Category	Goal Number	Goal Statement and Source Reference	New or Existing Goal?	Hazard Threat Addressed
General	1	Reduce the risk of loss of life and personal injury from natural hazards (see Franklin County Emergency Operations Plan)	Existing	All
Future Development	2	Reduce the risk and impact of future natural disasters by regulating development in known high hazard areas (see Franklin County and local zoning, Comprehensive	Existing	All (primarily flooding; drought

		Plans and watershed protection ordinances – citations provided in Section III above)		and fire)
Existing Development	3	Pursue funds to reduce the risk of natural hazards to existing developments where such hazards are clearly identified and the mitigation efforts are cost effective	Existing	All (primarily flooding, drought and fire)
Redevelopment	4	Ensure that hazard mitigation is considered when redevelopment occurs after a natural disaster	Existing	All
Public Education and Outreach	5	Provide education to citizens that empowers them to protect themselves and their families from natural hazards	Existing	All
Natural Resource Protection	6	Protect the fragile natural and scenic areas of the County, particularly those areas that protect drinking water supplies (see Franklin County, Louisburg and Franklinton ordinances)	Existing	Flooding, Dam Failure, Drought and Fire

Section VI: Mitigation Strategies and Policies, Monitoring and Evaluation

Section VI: Mitigation Strategies and Policies; Monitoring, Evaluation and Reporting

This section of the HMP identifies specific strategies and policies that will “put into action” the mitigation values and goals established in Section VI above by completing the following steps:

- Prioritizing each community’s Geographic Planning Areas (GPA)
- Determining which types of mitigation strategies are appropriate for each GPA
- Formulating selection criteria
- Identifying policies to carry out the mitigation strategies
- Creating an action plan for the mitigation strategies
- Prioritizing the policies
- Identifying funding sources
- Assigning implementation responsibilities

These steps will be undertaken through use of the following sub-sections:

- A) Discussion of GPAs
- B) Discussion of Mitigation Strategies and Section Format
- C) Mitigation Objectives
- D) Mitigation Policies

A. Discussion of GPAs

As noted in Section III above, each participating municipality and unincorporated Franklin County will constitute its own Geographic Planning Area (GPA). Henceforth in this document, each GPA will be identified by the community name (e.g., Town of Franklinton). The reason for this decision is that different governing bodies are responsible for growth and development decisions in each GPA and that multiple GPAs within one jurisdiction would unduly focus on one hazard or one area over others when all hazards will be addressed in a prioritized fashion as described in Section VII of this HMP.

B. Discussion of Mitigation Strategies and Section Format

In the following sub-sections (subsection C, below), the County and its participating jurisdictions have identified hazard mitigation **objectives**, which can be defined as measurable, concrete steps towards achieving the goals presented in the preceding section.

Since the adoption of the original Hazard Mitigation Plan in 2005, the County and local municipalities have worked on completing a number of the mitigation actions but work remains. With the exception of the adoption of a Floodplain Management Ordinance by the Town of Bunn (Policy #4 of the 2005 Franklin County HMP); the County and local municipalities have not had the staff nor the fiscal resources to complete the mitigation actions from the 2005 plan. The mitigation actions listed below are continued from the previous version of the Hazard Mitigation Plan with the goal to complete more of these in the course of the next five years. The MAC has updated the timetable for these actions and these are reflected below.

When all objectives are completed, the goals stated in the preceding section will be considered to have been met. In sub-section D, below, the County and its participating jurisdictions have identified hazard mitigation **policies**, which are specific tasks and actions that achieve the above stated objectives. When all policies have been implemented, the objectives presented in sub-section C below will be considered to have been met.

When formulating objectives and policies, the County and its participating jurisdictions were very mindful of the available types of activities, or **strategies**, that will result in natural hazard mitigation, as presented in *“Keeping Natural Hazards from Becoming Disasters: A Mitigation Planning Guidebook for Local Governments”* published in May of 2003 by the NCDHEM Hazard Mitigation Section and the Hazard Mitigation Planning Clinic at the Department of City and Regional Planning at the University of North Carolina at Chapel Hill. These are summarized below:

- *Prevention*
 - Actions designed to reduce the community’s future vulnerability, such as zoning or stormwater management regulations
- *Property Protection*
 - Retrofitting or removal of existing structures subject to a elevated risk of natural hazard damage
- *Natural Resource Protection*
 - Preserving or restoring natural features to ensure or enhance their mitigative functions
- *Structural Projects*
 - Modification of the natural environment through built structures to protect property and life
- *Public Information*
 - Educational and informational activities

A variety of policies, and combination of policies, will be utilized to meet the stated goals and objectives through the policies provided below. Policies selected will meet the following criteria:

- The policy will solve the problem it is intended to solve, or begin to develop a solution; and
- The policy meets at least one community mitigation goal; and
- The policy complies with all laws and regulations; and
- The policy is cost-beneficial; and
- The community implementing the policy has (or will have) the capability to do so; and
- The policy is environmentally sound; and
- The policy is technically feasible.

The basis for prioritization of mitigation policies was determined by the MAC members from each local government for which the policy is applicable based on their review and consideration of the data collected as part of the HMP plan development and their (i.e., MAC members) collective knowledge of hazards in their community.

The following factors were considered during the prioritization process for HMP policies:

- Cost-effectiveness
- The results of the Hazard Identification and Analysis review included in this plan
- The results of the Vulnerability Assessment included in this plan
- The results of the Community Capability Assessment included in this plan

The MAC identified mitigation policies as being either "high," "medium," or "low" priority, based on the following working definitions:

- High Priority: Highly cost-effective, administratively feasible and politically feasible policies that should be implemented in the next year (by December, 2011)
- Medium Priority: Policies that have at least two of the following characteristics (but not all three):
 - Highly cost-effective; or
 - Administratively feasible, given current levels of staffing and resources; or
 - Are politically popular and supportable given the current environment; and, that should be implemented in the next two (2) years (by December, 2012) were considered medium priority
- Low Priority: Policies that have at least one of the following characteristics (but not two or three):
 - Highly cost-effective; or

- Administratively feasible, given current levels of staffing and resources; or
- Are politically popular and supportable given the current environment; and, that should be implemented in the next five (3) years (by December, 2015) were considered low priority. Policies will be implemented earlier if resources are available.

Please note that for any implemented task or proposed project, a cost-benefit review consistent with Federal Emergency Management Agency (FEMA) guidelines for cost-effectiveness will be conducted and will be found to be cost-beneficial/ cost-effective prior to implementation. If a proposed project or activity is not found to be cost effective, it will not be implemented. As such, cost-effectiveness will be the most important, but not the only prioritization criteria considered.

C. Mitigation Objectives

As stated in sub-section B above, **objectives** are defined as measurable, concrete steps towards achieving the goals presented in the section VI of this plan. When all objectives are completed, the goals stated in the preceding section will be considered to have been met.

Objectives were generated by and approved by the MAC. Each individual MAC member indicated the applicability of each objective to their local government. This is also true of the hazard mitigation policies discussed below, although the applicability of each individual policy to each individual local government is primarily a function of the vulnerability and community capability analyses produced in Sections III and IV of this plan.

Goal Number	Objective Number	Objective	Participating Jurisdiction to Which Objective is Applicable
1	1	Ensure that all sheltering facilities are well publicized, accessible, and meet National standards for safety and supply	All (Franklin County is lead)
1	2	Ensure that on-site sheltering is a safe option (or as safe as possible) for families that cannot or will not leave their homes	All (Franklin County is lead)
1	3	Reduce the frequency of electrical outages and length of time such	All (Franklin County is lead)

		outages last	
2	1	Preserve open space in floodplain areas	All
2	2	Reduce the risk of damage from wildfires to future development	Franklin County
3	1	Reduce the risk of drainage-related flooding to existing development and citizens	All except Centerville
3	2	Maximize the use of available hazard mitigation grant programs to protect the most vulnerable structures and populations from existing and known hazards	All
4	1	Develop specific, timely recommendations for hazard mitigation measures following a State or Federally declared natural disaster	All (Franklin County is lead)
5	1	Ensure that the public is aware of the risks of different types of natural hazards, and reduces their personal exposure to natural hazards	All (Franklin County is lead)
6	1	Reduce, or maintain, the quantity and improve the quality of water discharging into water bodies, particularly those that provide drinking water supplies	Franklin County

D. Mitigation Policies

Specific actions, or “policies”, are needed to realize each objective provided above. For each policy, the following information will be provided in this subsection:

- A statement of the policy
- A listing of the jurisdictions it is applicable to
- The type of strategy represented by the policy
- The hazard(s) it is developed to address
- The objective(s) it will achieve
- The priority the action has (high, medium or low)

- Possible funding sources, if any
- The agency or staff member assigned with responsibility for the policy
- Projected completion date
- Notes and/or background information on the policy

The participating community's policy follows below:

Policy Number	1
Policy	Development and adoption (or update) of a Comprehensive Land Use Plan (CLUP)
Applicable Jurisdictions	Town of Centerville
Strategy Type	Prevention
Hazard(s) Addressed	All
Objective(s) Addressed	2.1 and 2.2
Priority	Medium
Possible Funding Sources	Technical assistance available through State Department of Commerce, Division of Community Assistance
Responsible Party	Mayor's Office w/ Kerr-Tar COG Assistance – Town of Centerville
Projected Completion Date	In process of review and update updated to be completed by the end of 2011.
Notes/Background	The intent of the CLUP is to compile an inventory of existing land use patterns and to recommend goals and objectives for future development that are compatible with the general character of the adopting community. This document represents a community's formal policy statements concerning land use and land development. The plan serves as a guide for county officials when they review private development proposals and make decisions on the location of public facilities. This plan also provides a foundation for zoning (N.C.G.S. 160A-383) and subdivision regulations and the capital improvements program, which put this goals and objectives of this land use plan into action. For these reasons, the CLUP affects the exposure of future development to natural hazards.

Policy Number	2
Policy	Adoption of Subdivision Regulations
Applicable Jurisdictions	Town of Bunn and Town of Centerville
Strategy Type	Prevention
Hazard(s) Addressed	All
Objective(s) Addressed	2.1 and 2.2
Priority	Medium
Possible Funding Sources	Technical assistance available through State Department of

	Commerce, Division of Community Assistance
Responsible Party	Town Administrator, w/ Kerr-Tar COG Assistance – Town of Bunn Mayor, w/ Kerr-Tar COG Assistance – Town of Centerville
Projected Completion Date	December, 2012 If funding is available locally or from outside sources
Notes/Background	Subdivision regulations govern the division of land for development or sale. They control the configuration of parcels and set standards for developer-built infrastructure. As such, these regulations can help ensure that development, especially larger developments, are designed to standards that help minimize the impact of hazards.

Policy Number	3
Policy	Development (or update) of a Parks and Recreation Master Plan, incorporating purchase and development of flood-prone or other natural hazard prone lands for recreational activities as a priority.
Applicable Jurisdictions	Town of Bunn and Town of Franklinton
Strategy Type	Prevention
Hazard(s) Addressed	Flooding, primarily
Objective(s) Addressed	2.1 and 2.2
Priority	Low
Possible Funding Sources	Numerous sources of grants funds are available. Primary source should be the North Carolina Parks and Recreation Trust Fund, administered through the NC Department of Environment and Natural Resources. Contact is John Poole, Program Manager 1615 MSC Raleigh, NC 27699-1615 Phone: (919) 715-2662 e-mail: John.Poole@ncmail.net http://www.ils.unc.edu/parkproject/partfund/home
Responsible Party	Town Administrator - Town of Bunn and Town of Franklinton
Projected Completion Date	December, 2015 IF funding is available locally or from outside sources
Notes/Background	The acquisition of parcels of land in hazardous areas to conserve or restore as parks or passive recreational areas will significantly reduce the number of structures and infrastructure elements available to damage in these areas if they are developed for residential or more intense uses. A Parks and Recreation Master Plan helps provide justification for outside funding assistance to purchase parkland.

Policy Number	4
Policy	Consideration of Adoption or Refinement of a Capital Improvements Program (CIP)
Applicable Jurisdictions	Franklin County, Towns of Bunn, Franklinton, Louisburg and Youngsville

Strategy Type	Prevention
Hazard(s) Addressed	All
Objective(s) Addressed	2.1, 2.2, 6.1
Priority	Medium
Possible Funding Sources	Numerous sources of grants funds are available. Primary source should be the North Carolina Rural Economic Development Center. Contact: Billy Ray Hall, Director 4021 Cary Drive, Raleigh, NC 27610 E-mail: info@ncruralcenter.org ; http://www.ncruralcenter.org . The Town of Scotland Neck's CIP is an excellent resource to review for format and content of a CIP.
Responsible Party	County Manager / Town Manager / Town Administrator
Projected Completion Date	December, 2012
Notes/Background	"Capital Facilities" refer to infrastructure and facilities that provide public services (e.g., police stations). Most capital facilities need to be accessible / operational during natural hazard events, and capital improvement planning through production of a CIP can identify and prioritize expenditures needed to improve, relocate or retrofit capital facilities to make them more resistant to hazards. CIPs define when, where and what level of services a government will supply and what level of expenditure should be expected over a 5 to 10 year planning time frame.

Policy Number	5
Policy	Work with the State Office of Dam Safety (ODS) to: <ul style="list-style-type: none"> a) Ensure that all dams in Franklin County for which the ODS has jurisdiction are inspected on a regular basis; and b) Ensure that ODS notifies the Franklin County Emergency Management (EM) office of all ODS jurisdictional dams classified as "high hazard" or "distressed" dams; and c) Attempt to ensure that all high hazard or distressed dams in the County have an updated and implemented operations and maintenance plan and emergency action plans; and d) Provide the County EM office with an inventory of all ODS jurisdictional dams in the County
Applicable Jurisdictions	Franklin County
Strategy Type	Prevention
Hazard(s) Addressed	Dam Failure, Flooding
Objective(s) Addressed	5.1
Priority	Low
Possible Funding Sources	Coordination and technical assistance are available from the NC Dam Safety Program, contact is Max Fowler, P.E., and contact number is (919) 733-4574, http://www.dlr.enr.state.nc.us/dam.html . Some grant funding is available through the NC Rural Center (see policy #4 above

	for contact information).
Responsible Party	Emergency Management Director – Franklin County
Projected Completion Date	December, 2015
Notes/Background	The identification of potentially unsafe dams and the improvement of these dams (if possible) or the establishment of effective emergency action plans (if not possible) is the best feasible method of avoiding dam failure or minimizing damages in the case of dam failure

Policy Number	6
Policy	Work with the North Carolina Department of Transportation (NCDOT) Division Five Highway Operations unit and convene a working group (County-wide or local) to develop solutions to localized drainage issues caused (in part or in whole) by NCDOT maintained drainage facilities.
Applicable Jurisdictions	All
Strategy Type	Any
Hazard(s) Addressed	All, primarily flooding
Objective(s) Addressed	3.1 and 3.2
Priority	Low
Possible Funding Sources	NCDOT Division Five Maintenance Director (R. E. Greene, Jr. P.E.) can be reached at (919) 733-7759. Most funding for any identified solutions to drainage problems caused by NCDOT-owned infrastructure would probably have to come through the State approved Transportation Improvement Plan (TIP) and the NCDOT Division maintenance budget.
Responsible Party	Planning Director – Franklin County Public Works Director / Water System Operator – Towns of Bunn, Centerville, Franklinton, Louisburg, and Youngsville
Projected Completion Date	December, 2015
Notes/Background	Many of the known areas of flooding in the County (as identified in Section 3 of this plan) are caused by the blockage or failure of NCDOT culverts under roadways. While all participating communities in this plan clearly recognize that NCDOT culverts are not designed to contain any and all flooding events, closer coordination with NCDOT to identify priority areas of drainage-induced flooding that can be mitigated is warranted.

Policy Number	7
Policy	Review “Firewise” zoning and subdivision standards and report on their appropriateness for incorporation into existing (or new) zoning and subdivision ordinances.
Applicable Jurisdictions	Franklin County
Strategy Type	Prevention

Hazard(s) Addressed	Wildfire
Objective(s) Addressed	2.2
Priority	Low
Possible Funding Sources	N/A. Information on “Firewise” zoning and subdivision ordinance provisions is widely available in the public record. An excellent resource is http://www.firewise.org
Responsible Party	Planning Director – Franklin County <i>IN CONJUNCTION WITH LOCAL CHIEF FIRE OFFICIALS AND COUNTY FIRE MARSHALL</i>
Projected Completion Date	December, 2015
Notes/Background	A number of design, construction and landscaping techniques have been identified in the past dozen years or so that significantly reduce the risk of wildfire affecting a home (or significantly reduces the damage from wildfire). Due to the amount of “wildland-urban interface” areas – where subdivisions abut large tracts of forest land – a review of such techniques is warranted.

Policy Number	8
Policy	<p>Implement public education efforts designed to help inform the public of their exposure to natural hazards and to inform them of actions they can take to mitigate the damages to their health and property from natural hazards, including but not limited to the following:</p> <ul style="list-style-type: none"> ➤ Ensure that the local library maintains documents about flood insurance, flood protection, floodplain management, and natural and beneficial functions of floodplains. Many documents are available free of charge from the Federal Emergency Management Agency (FEMA). ➤ Encourage builders, developers, and architects to become familiar with the NFIP land use and building standards by attending annual workshops presented by the NC Division of Emergency Management (DEM). This can be accomplished by creating a mailing list and providing it to DEM to use for its announcements. This task can be further supported by distributing copies of DEM’s announcement from the City and County’s inspections departments when builders and developers apply for permits. ➤ Send a flood protection flyer to all properties in the County through a community newsletter, utility bill, telephone book, or other document that is distributed to all residences. The flyer should include the following information: the name and location of the closest, County-approved shelter, a general identification of the local flood hazard, flood safety, flood insurance, property protection, floodplain

	<p>development permit requirements, and drainage system maintenance.</p> <p>➤ Provide local real estate agents with handouts that will advise potential buyers to investigate the flood hazard for the property they are considering purchasing.</p>
Applicable Jurisdictions	All
Strategy Type	Public Information
Hazard(s) Addressed	All
Objective(s) Addressed	1.1, 1.2, 5.1
Priority	Medium
Possible Funding Sources	FEMA, the American Red Cross and numerous other organizations have free public information materials that can be used to achieve this policy. http://www.fema.gov and http://www.redcross.org
Responsible Party	Planning Director – Franklin County Town Clerk – Towns of Bunn, Centerville, Franklinton, Louisburg, and Youngsville
Projected Completion Date	December, 2012
Notes/Background	Public information – particularly that provided to professionals such as builders and realtors who have a direct impact on the built environment – can help lead to a citizenry who makes better decisions before, during and after a disaster, leading to a reduced risk of property damage and loss of life.

Policy Number	9
Policy	Convene a working group with electric service providers in the County and produce a report, with specific recommendations and detailed implementation timelines, that addresses the issues of 1) disaster preparedness techniques (e.g., tree trimming, pole replacement) and 2) communication with County officials during and immediately after a natural hazard event that results in loss of electrical power.
Applicable Jurisdictions	All (Franklin County is lead)
Strategy Type	Prevention, and possibly property protection and/or structural projects
Hazard(s) Addressed	Primarily windstorms and severe winter storms
Objective(s) Addressed	1.3
Priority	Medium
Possible Funding Sources	Background information on utility ice storm preparation can be found at http://www.ncuc.commerce.state.nus.us/reports/part1ice.pdf . The findings of this report are also applicable to severe thunderstorm events, in most cases. Electric utilities contact information is provided in Section IV(iv) of this plan.
Responsible Party	Emergency Management Director – Franklin County (Lead) Town Administrator/Manager – Towns of Bunn, Centerville,

	Franklinton, Louisburg and Youngsville
Projected Completion Date	December, 2012
Notes/Background	Debris removal costs, primarily due to downed trees, and electric restoration costs are always high in Franklin County following any significant wind or ice event. Closer coordination with electric utilities regarding staffing contingencies, tree trimming and debris clearance, and emergency coordination could help minimize the impact of the next ice storm, severe thunderstorm or major hurricane.

Policy Number	10
Policy	Apply for funding from the Hazard Mitigation Grant Program (HMGP) for at least two (2) of the top priority ANHRE identified in Section III of this plan IF they are eligible and in a project category identified by the State of North Carolina as being of high priority. In any case, projects focused on acquisition/demolition and/or structural elevation of flood prone properties will be given highest consideration and priority.
Applicable Jurisdictions	All
Strategy Type	Property protection and/or structural projects
Hazard(s) Addressed	All, primarily flooding
Objective(s) Addressed	3.2
Priority	High
Possible Funding Sources	Background information on the Hazard Mitigation Grant Program (HMGP) and similar hazard mitigation programs can be found at http://www.ncem.org and at http://www.fema.gov . Funding source is Federal (75%) and non-Federal (usually State) (25%)
Responsible Party	Planning Director – Franklin County; Town Administrator/Manager – Towns of Bunn, Centerville, Franklinton, Louisburg, and Youngsville
Projected Completion Date	After next major Presidentially declared disaster
Notes/Background	The post-disaster environment provides the greatest opportunity for hazard mitigation, due to the attention paid to it by citizens and elected officials and due to the existence of damaged facilities and homes in need of repair that lend themselves to mitigation efforts. Therefore, funding should be sought to implement hazard mitigation at the nearest post-disaster opportunity. Acquisition and elevation projects will be given highest priority, due to the ancillary benefits of these types of mitigation measures as they do not negatively impact natural systems and they provide open space (in the case of acquisition). These activities will also be given priority because the risk assessment produced in this document shows that residential and commercial properties in the floodplain are a great risk and mitigating these is consistent with the goals of this plan and the goals of other referenced planning documents in our communities.

Policy Number	11
Policy	The responsible party will coordinate with each department head in the local government and produce a report on ways in which hazard mitigation goals, objectives and tasks can be incorporated into existing

	policies and implemented through existing programs and personnel
Applicable Jurisdictions	All
Strategy Type	Prevention
Hazard(s) Addressed	All
Objective(s) Addressed	3.2
Priority	High
Possible Funding Sources	None currently available, although a thorough review of Section IV (Community Capability) of this document is recommended
Responsible Party	Planning Director – Franklin County Town Administrator/Manager – Towns of Bunn, Centerville, Franklinton, Louisburg and Youngsville
Projected Completion Date	December, 2012
Notes/Background	One of the most important goals of this plan, and of hazard mitigation generally, is to clearly assess how hazard mitigation can be implemented through existing policies, programs and personnel. This is especially critical due to limited resources available at the local level to implement hazard mitigation. Initially in the planning of this document, it was the MAC's goal to incorporate specific recommendations for implementing hazard mitigation through existing policies, programs and personnel. We determined, however, that the concepts and significance of hazard mitigation are poorly understood (in general) and not generally considered a high priority by all departments. Therefore it is our intent to build knowledge of hazard mitigation goals, objectives, tasks and techniques within each department of each participating local government and establish specific recommendations and goals by December, 2011.

Policy Number	12
Policy	Each local government participating in this HMP will: 1) Continue to monitor the types and numbers of structures (including infrastructure and critical facilities) that might be located in known hazard areas based on the best available current projections; and 2) Calculate aggregate projected dollar losses for each type of development and for each hazard risk
Applicable Jurisdictions	All
Strategy Type	Prevention
Hazard(s) Addressed	All
Objective(s) Addressed	3.2
Priority	High
Possible Funding Sources	None currently available, although a thorough review of Section IV (Community Capability) of this document is recommended
Responsible Party	Planning Director – Franklin County; Town Administrator/Manager – Towns of Bunn, Centerville, Franklinton, Louisburg, and Youngsville
Projected Completion Date	Ongoing
Notes/Background	This policy is strongly recommended by NCDDEM and will provide

	guidance to planners and policymakers regarding increasing future vulnerability to hazards.
--	---

E. Monitoring, Evaluating, and Reporting Progress

This section of the HMP provides procedures for ongoing monitoring and evaluation after the HMP is adopted by each community's governing body, and approved by NCDDEM and FEMA.

Monitoring and evaluation are the ongoing processes of compiling information on the outcomes resulting from implementation of the hazard mitigation plan. **Monitoring** is a continuous process of assessing progress towards the goals set in this plan. **Evaluation** is the process of assessing the efficacy of the plan over time.

Through the monitoring and evaluation process, revisions required to respond to changes in regional and local conditions may be identified. Local conditions are constantly changing. Changes in land use and development affect a variety of infrastructure issues such as potable water, sewer, roads, stormwater facilities, and ecological considerations such as water quality. Storms and other natural processes, like coastal and riverine erosion, continually alter a community's hazard areas. In addition, strong policies and programs should help achieve some of a community's mitigation objectives. Because so many factors will affect the success of mitigation efforts, a planned evaluation of the local mitigation strategy is essential. Evaluation gives an opportunity to enhance the balance between effective mitigation and future growth and economic development.

Monitoring

The MAC representative from each participating local government shall be responsible for monitoring progress towards HMP goals on an ongoing basis and ensure that the officials designated as responsible for each task specified in Section VII of this Plan is being completed in the timeframe specified.

Evaluation

The County Planning Director (CPD) will serve as the monitoring and evaluation coordinator for this Hazard Mitigation Plan (HMP). Each year, after January 1 and after each Presidentially-declared disaster that affects the County, he (or she) will produce a report and distribute it to each participating jurisdiction that includes the following information:

- 1) A review of the goals and objectives of the original plan.

This review shall specifically address the following criteria for evaluation:

- a) Do the goals and objectives address current and expected conditions?
 - b) Has the nature or magnitude of risks changed?
 - c) Are the current resources appropriate for implementing the plan?
 - d) Are there implementation problems, such as technical, political, legal or coordination issues with other agencies?
 - e) Are the outcomes that have occurred ones that were expected?
 - f) Did the responsible parties, agencies and partners participate as proposed?
- 2) A review of any disasters or hazards that occurred during the year; and
 - 3) A review of each element or objective of the original plan, including what was accomplished the previous year; and
 - 4) A discussion of why any objectives were not reached or why implementation is behind schedule; and
 - 5) Recommendations for new projects or revised objectives.

Within 30 days of this report, the CPD will convene a meeting of the County-wide Mitigation Advisory Committee (MAC).

MAC members will be appointed by each participating jurisdiction.

All meetings (MAC and governing body) will be advertised in a newspaper of general circulation in the County at least ten (10), but no more than 21 calendar days before the meeting.

The purpose of this meeting will be to obtain input from the public on the HMP and to reevaluate its goals, objectives and policies and updates the required data and analysis.

Public comment will be solicited and received on an ongoing basis - not just at the aforementioned yearly MAC meetings. The HMP will be posted on the County's web site and at all County and municipal libraries, along with notices seeking continued input. The MAC member for each participating jurisdiction will maintain a copy of the MAC available to the public for review at any time during normal business hours (with an appointment, if necessary).

An updated HMP will be adopted by each participating government no later than June, and every five years thereafter, and after each Presidentially-declared disaster that

affects the County. In any case, however, the HMP must be updated every five years and must be reviewed and approved by NCDDEM and FEMA prior to re-adoption by any participating local government.

MAC meetings may be called by the CPD or by the elected governing bodies of any participating jurisdiction at any time if they deem it appropriate.

If any participating jurisdiction wishes to modify data, analysis, goals, objectives and/or policies *only as they apply to themselves*, they may do so by action of their governing body and simply notify the other participating jurisdictions via U.S. Mail and as long as some form of public comment is received.

All plan revisions and updates will be submitted to NCDDEM and FEMA for review and approval.

Appendix

Area at Elevated Risk (Acres)

COMMUNITY NAME	Wildfire	Flood (A and AE)	Flood (X500)
Unincorporated Franklin County	61,407.00	21,224.75	64.21
Town of Bunn	1,415.30	448.91	0.00
Town of Centerville	0.00	0.00	0.00
Town of Franklinton	0.00	11.20	0.00
Town of Louisburg	0.00	1,174.05	0.00
Town of Youngsville	3,455.70	129.31	0.00

Parcels at Elevated Risk

COMMUNITY NAME	Wildfire	Flood (A and AE)	Flood (X500)
Unincorporated Franklin County	12,187.00	3,217.00	94.00
Town of Bunn	964.00	74.00	0.00
Town of Centerville	0.00	0.00	0.00
Town of Franklinton	0.00	8.00	0.00
Town of Louisburg	0.00	270.00	0.00
Town of Youngsville	167.00	95.00	0.00

Assessed Tax Value of at Risk Properties

COMMUNITY NAME	Wildfire	Flood (A and AE)	Flood (X500)
Unincorporated Franklin County	\$492,771,712.00	\$343,665,506.00	7,715,927.00
Town of Bunn	\$11,723,863.00	\$7,109,078.00	0.00
Town of Centerville	\$0.00	\$0.00	0.00
Town of Franklinton	\$0.00	\$2,860,228.00	0.00
Town of Louisburg	\$0.00	\$29,104,429.00	0.00
Town of Youngsville	\$96,106,521.00	\$12,904,184.00	0.00

Undeveloped Areas at Risk (Acres)

COMMUNITY NAME	Wildfire	Flood (A and AE)	Flood (X500)
Unincorporated Franklin County	39,393.20	12,973.63	38.67
Town of Bunn	885.80	276.95	0.00
Town of Centerville	0.00	0.00	0.00
Town of Franklinton	0.00	3.76	0.00
Town of Louisburg	0.00	899.71	0.00
Town of Youngsville	2,315.60	83.78	0.00

Residential Development at Risk (Acres)

COMMUNITY NAME	Wildfire	Flood (A and AE)	Flood (X500)
Unincorporated Franklin County	18,402.70	6,678.67	23.63
Town of Bunn	404.80	155.78	0.00
Town of Centerville	0.00	0.00	0.00
Town of Franklinton	0.00	1.25	0.00
Town of Louisburg	0.00	160.89	0.00
Town of Youngsville	418.70	42.32	0.00

Commercial Development at Risk (Acres)

COMMUNITY NAME	Wildfire	Flood (A and AE)	Flood (X500)
Unincorporated Franklin County	317.30	725.56	0.00
Town of Bunn	0.00	3.33	0.00
Town of Centerville	0.00	0.00	0.00
Town of Franklinton	0.00	4.60	0.00
Town of Louisburg	0.00	48.54	0.00
Town of Youngsville	23.60	0.00	0.00

Industrial Development at Risk (Acres)

COMMUNITY NAME	Wildfire	Flood (A and AE)	Flood (X500)
Unincorporated Franklin County	957.40	112.41	0.00
Town of Bunn	49.20	12.83	0.00
Town of Centerville	0.00	0.00	0.00
Town of Franklinton	0.00	0.00	0.00
Town of Louisburg	0.00	0.03	0.00
Town of Youngsville	17.60	2.18	0.00

Other Development at Risk (Acres)

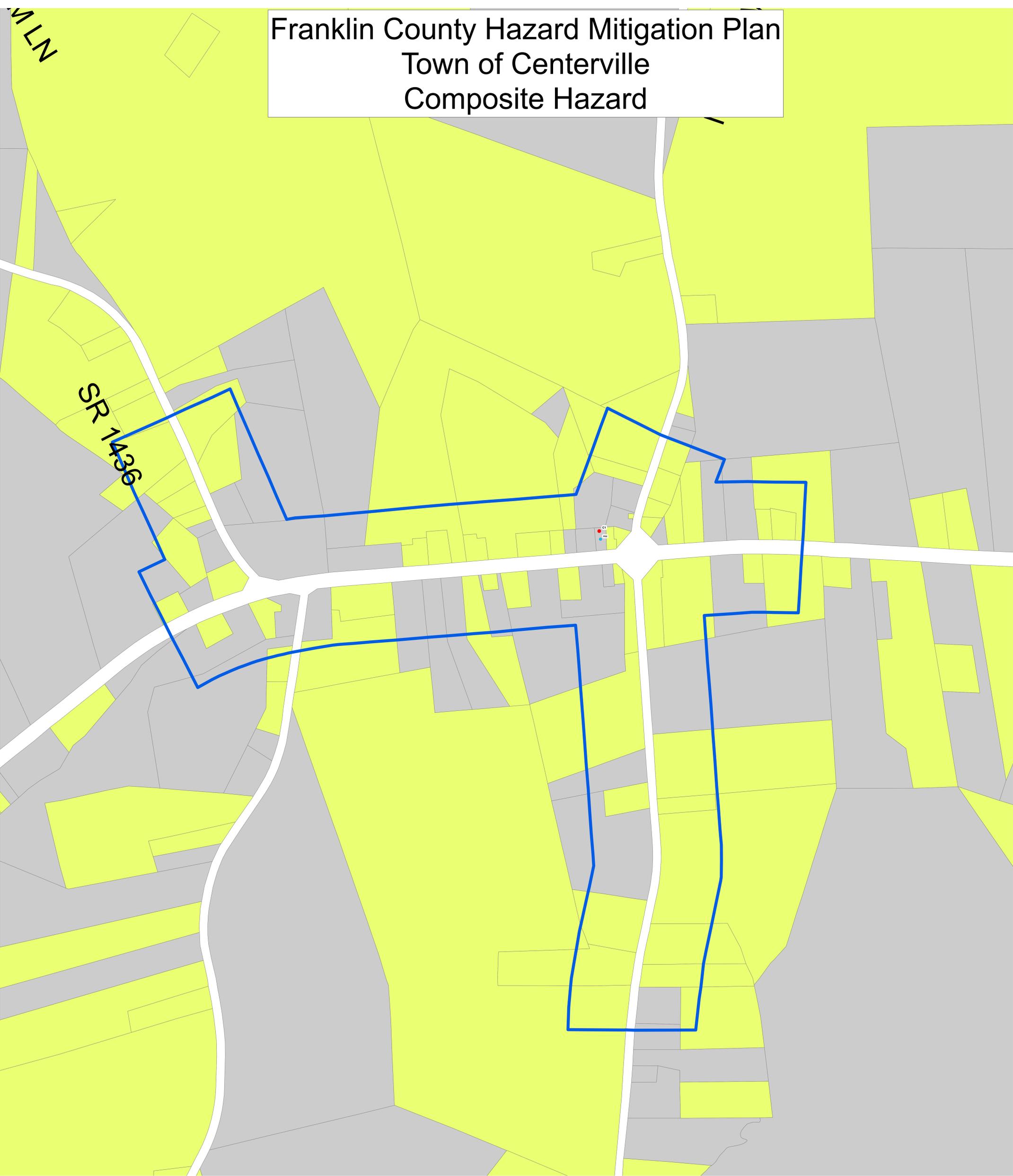
COMMUNITY NAME	Wildfire	Flood (A and AE)	Flood (X500)
Unincorporated Franklin County	522.90	0.00	0.00
Town of Bunn	0.00	0.00	0.00
Town of Centerville	0.00	0.00	0.00
Town of Franklinton	0.00	0.00	0.00
Town of Louisburg	0.00	0.00	0.00
Town of Youngsville	426.90	0.00	0.00

Critical Facilities in Franklin County

Maps A - F Supplement

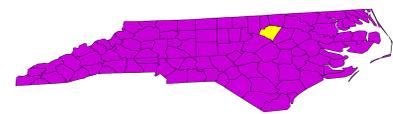
Facility	Map Ref	Facility	Map Ref
Cedar Creek Middle School	M1	Cedar Creek Sewer Treatment Plant	STP2
Bunn Middle	M2	Crooked Creek Sewer Treatment Plant	STP3
Terell Lane Middle	M3	Water Tank Hospital Dr.	WT1
Youngsville Elementary	ES1	Water Tank Nassau St.	WT2
Franklinton Elementary	ES2	Water Tank SR 1003	WT3
Edward Best Elementary	ES3	Water Tank US1	WT4
Laurel Mill Elementary	ES4	Water Tank S. Main St.	WT5
Bunn Elementary	ES5	Water Tank US 1	WT6
Royal Elementary	ES6	Water Tank Gayline Dr.	WT7
Louisburg Elementary	ES7	Water Tank NC 56 Hwy	WT8
Long Mill Elementary	ES8	Water Tank Franklin St.	WT9
Franklinton High	HS1	Franklin County Sherrifs Department	FCSD1
Louisburg High	HS2	Beechwood Dr. Pump Station	PS1
Bunn High	HS3	US 1A Pump Station	PS2
White Level Fire Department	FD1	US 96 Pump Station	PS3
Mitchners Fire Department	FD2	US 1 Pump Station	PS4
Franklinton Fire Department	FD3	Rail Road St. Pump Station	PS5
Youngsville Fire Department 1	FD4	SR 1130 Pump Station	PS6
Bunn Fire Department 2	FD5	S. Nassau St. Pump Station	PS7
Bunn Fire Department 1	FD6	Chavis St. Pump Station	PS8
Youngsville Fire Department 2	FD7	Oak Ridge Rd. Pump Station	PS9
Youngsville Fire Department 3	FD8	Mason St. Pump Station	PS10
Centerville Fire Department	FD9	Pine St. Pump Station	PS11
Gold Sand Fire Department	FD10	Korea St. Pump Station	PS12
Epsom Fire Department	FD11	S. Main St. Pump Station	PS13
Justice Fire Department 2	FD12	SR 1118 Pump Station	PS14
Justice Fire Department 1	FD13	SR 1118 Pump Station	PS15
Bunn Fire Department 3	FD14	SR 1003 Pump Station	PS16
Pilot Fire Deparmtent	FD15	Club Dr. Pump Station	PS17
Louisburg Fire Department	FD16	HWY 56 W. Pump Station	PS18
Franklinton Police Station	PD1	T. Kemp Rd. Pump Station	PS19
Louisburg Police Station	PD2	Bickett Blvd. Pump Station	PS20
Youngsville Police Station	PD3	W. River Rd. Pump Station	PS21
Bunn Police Station	PD4	Horseshoe Circle Pump Station	PS22
White Level EMS	EMS1	401 N. Pump Station	PS23
Youngsville EMS	EMS2	Allen Lane Pump Station	PS24
Bunn EMS	EMS3	Hollingsworth St. Pump Station	PS25
Louisburg EMS	EMS4	Bunn Elementary School Rd. Pump Station	PS26
Franklinton EMS	EMS5	Carolina Ave Ext. Pump Station	PS27
Franklin Regional Medical Center	H1	Warren Ave. Pump Station	PS28
Tar River Sewer Treatment Plant	STP1		

Franklin County Hazard Mitigation Plan Town of Centerville Composite Hazard



- Legend**
- Areas of Natural Hazard
 - Critical Facilities
 - ▭ Corporate Limits
 - Developed Property
 - Undeveloped Property

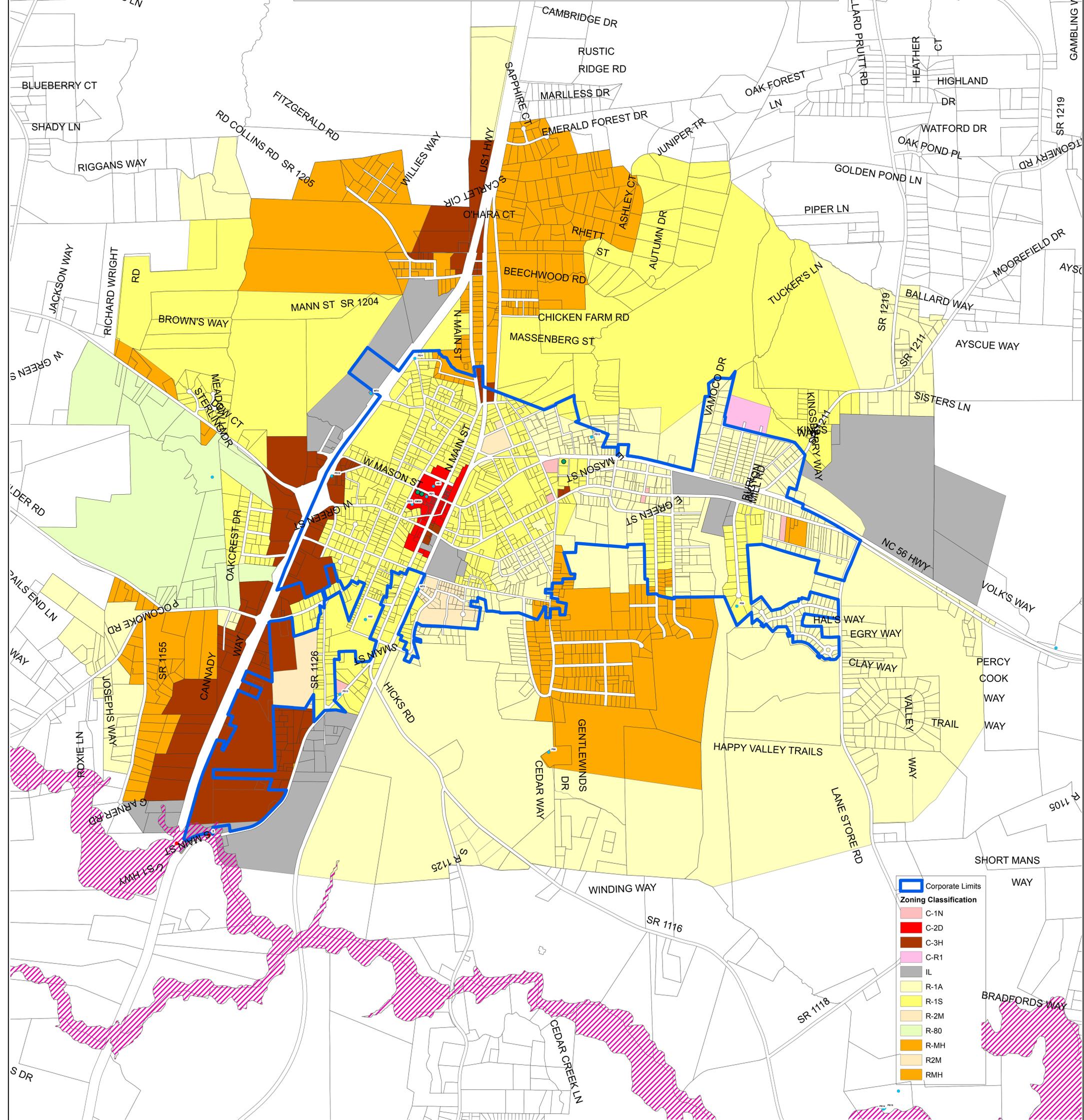
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Telephone: 919 496-2909 Fax: 919 496-2637



Date of Plot:
8 July 2010



Franklin County Hazard Mitigation Plan Town of Franklinton Composite Hazard



Corporate Limits

Zoning Classification

- C-1N
- C-2D
- C-3H
- C-R1
- IL
- R-1A
- R-1S
- R-2M
- R-80
- R-MH
- R2M
- RMH

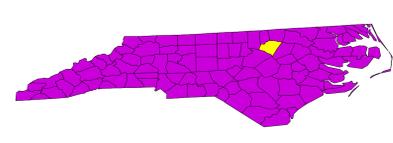
Legend

- Areas of Natural Hazard
- Franklin County Facilities
- Critical Facilities

Floodzone

- AE
- AEFW
- SHADED X

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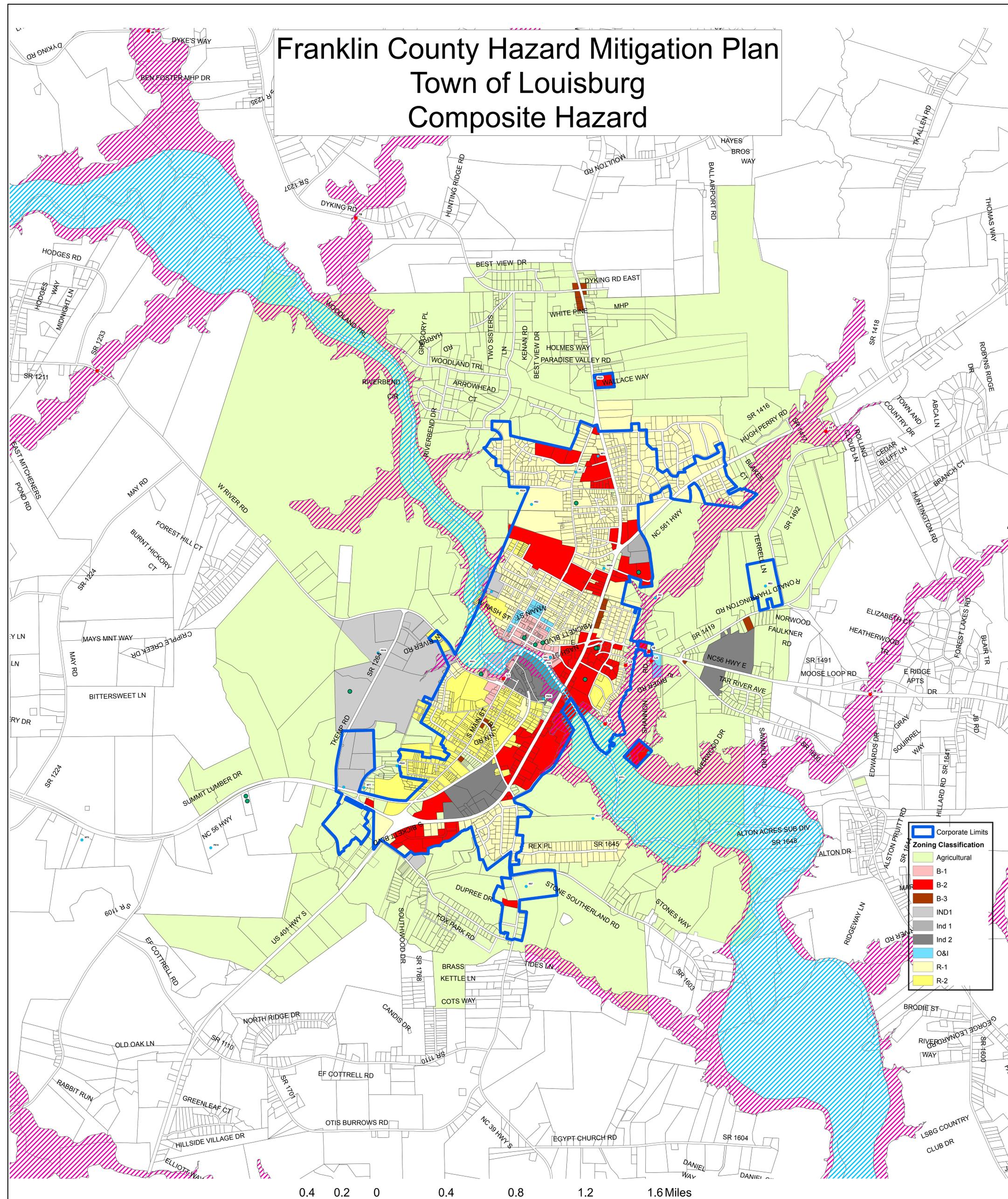
Date of Plot:
8 July 2010



Franklin County Hazard Mitigation Plan

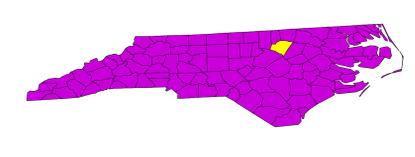
Town of Louisburg

Composite Hazard



Legend	
•	Areas of Natural Hazard
•	Franklin County Facilities
•	Critical Facilities
	AE
	AEFW
	SHADED X

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 Planning Department
 215 E. Nash St. Louisburg, NC 27549
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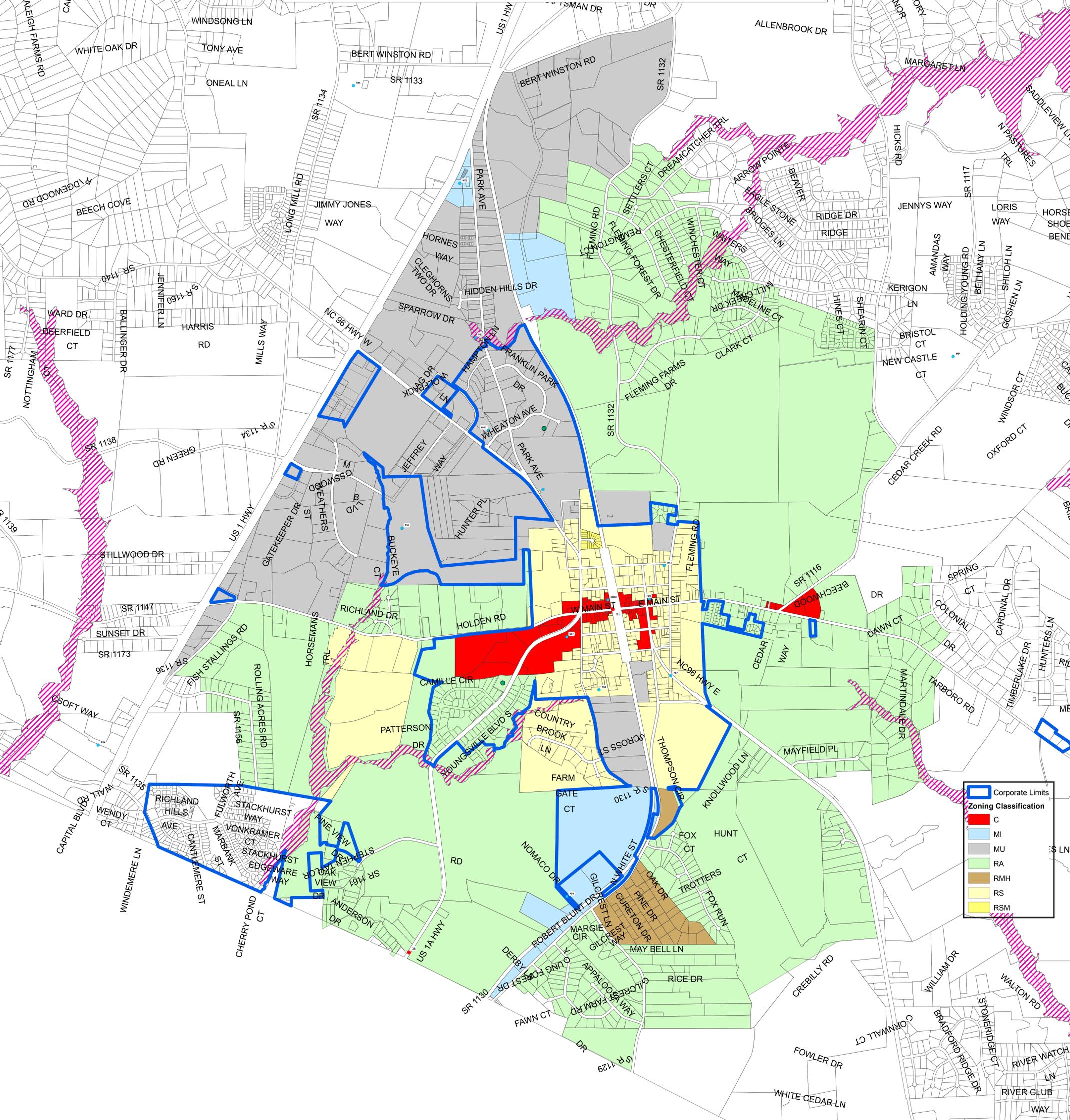
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Franklin County
NORTH CAROLINA

Date of Plot:
8 July 2010

Franklin County Hazard Mitigation Plan

Town of Youngsville Composite Hazard



Corporate Limits

Zoning Classification

- C
- MI
- MU
- RA
- RMH
- RS
- RSM



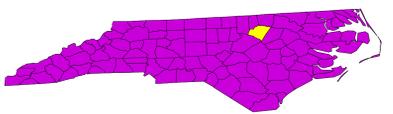
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- Areas of Natural Hazard
- Franklin County Facilities
- Critical Facilities

Floodzone

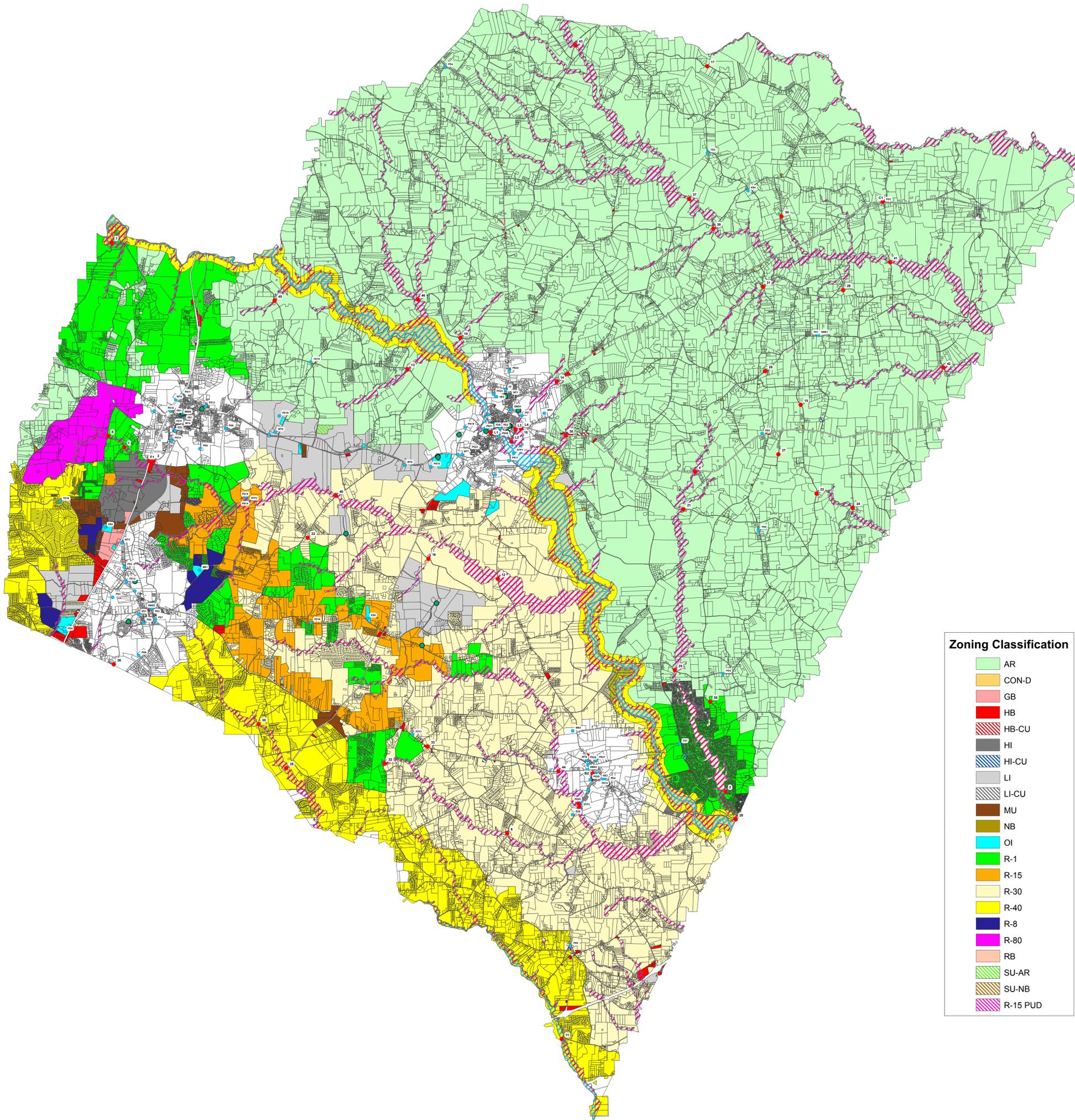
- AE
- AEFW
- SHADED X

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Date of Plot:
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Franklin County Hazard Mitigation Plan Unincorporated Areas Composite Hazard



Zoning Classification

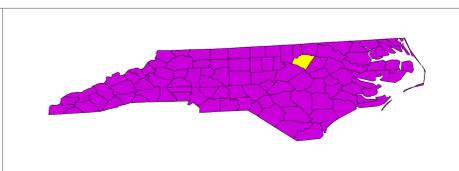
AR
CON-D
GB
HB
HB-CU
HI
HI-CU
LI
LI-CU
MU
NB
OI
R-1
R-15
R-30
R-40
R-8
R-80
RB
SU-AR
SU-NB
R-15 PUD

1 0.5 0 1 2 3 4 5 6 7 8 9 10 11 12 Miles

Legend

• Areas of Natural Hazard	Floodzone
• Franklin County Facilities	AE
• Critical Facilities	AEFW
	SHADED X

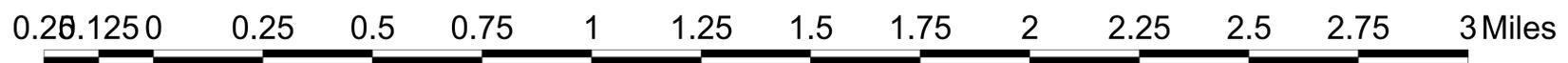
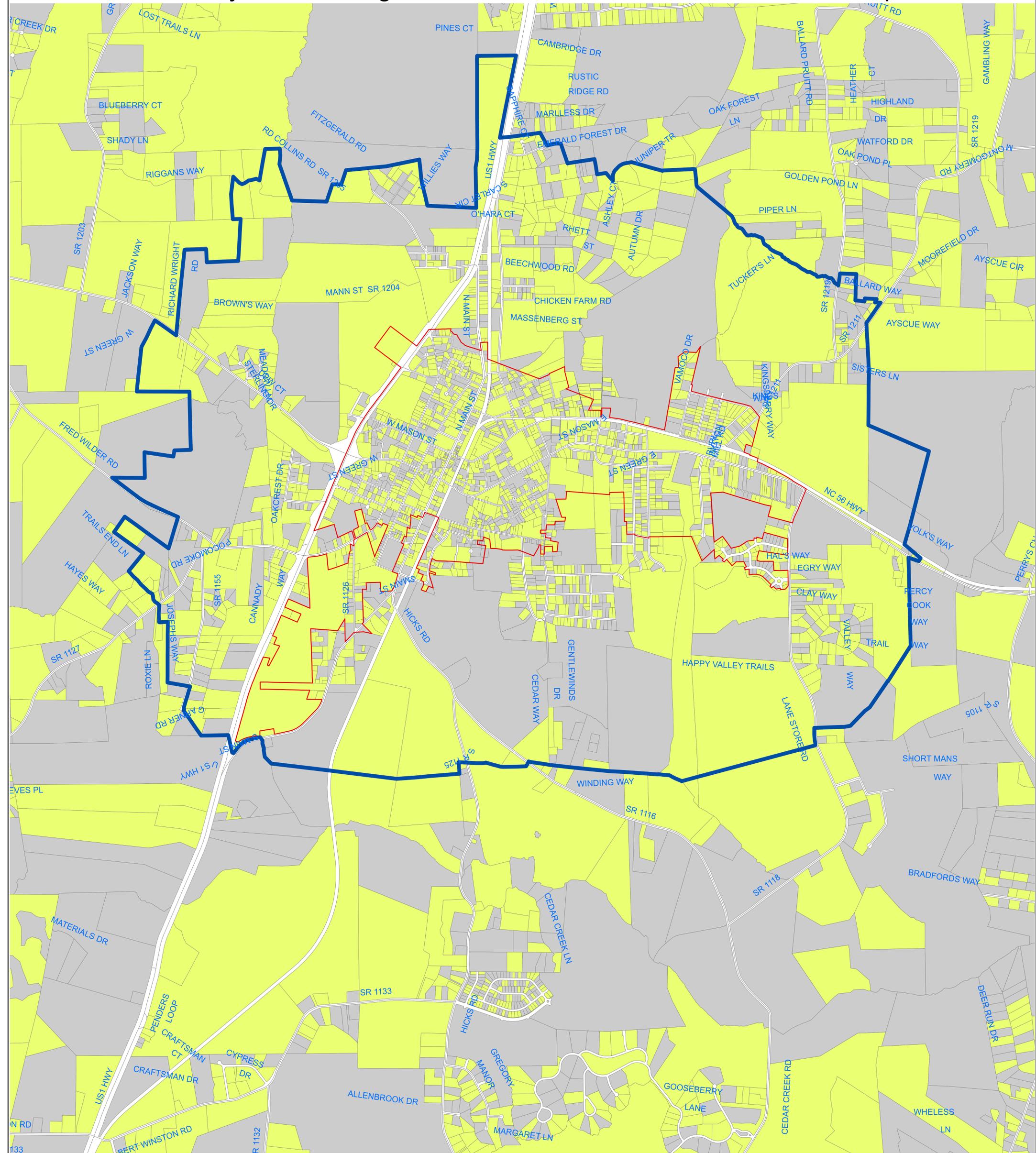
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Telephone: 919 496-2909 Fax: 919 496-2637



Scale:
1 Inch = 1 Mile

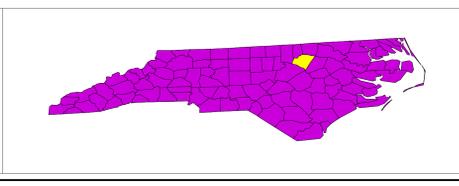
Date of Plot:
8 July 2010

Franklin County Hazard Mitigation Plan Town of Franklinton Land Development



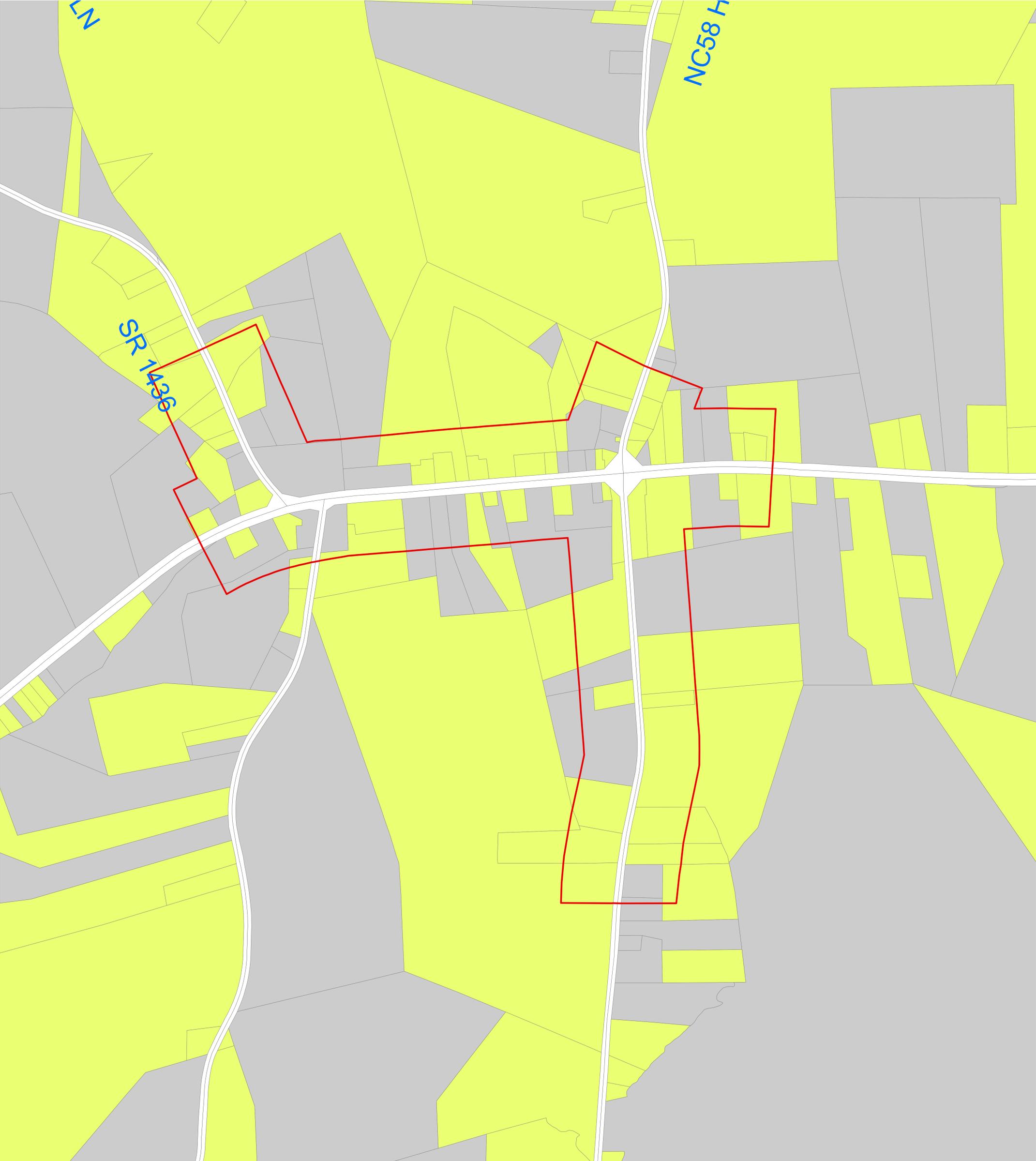
Legend	
	ETJ
	Corporate Limits
	Developed Property
	Undeveloped Property
	Roads

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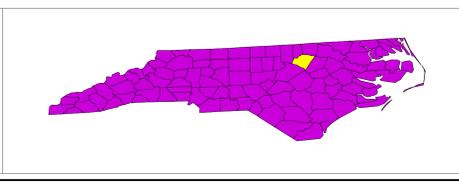
 N	 Franklin County <small>North Carolina</small>
Date of Plot: 11 June 2010	

Franklin County Hazard Mitigation Plan Town of Centerville Land Development



Legend	
	Corporate Limits
	Developed Property
	Undeveloped Property
	Roads

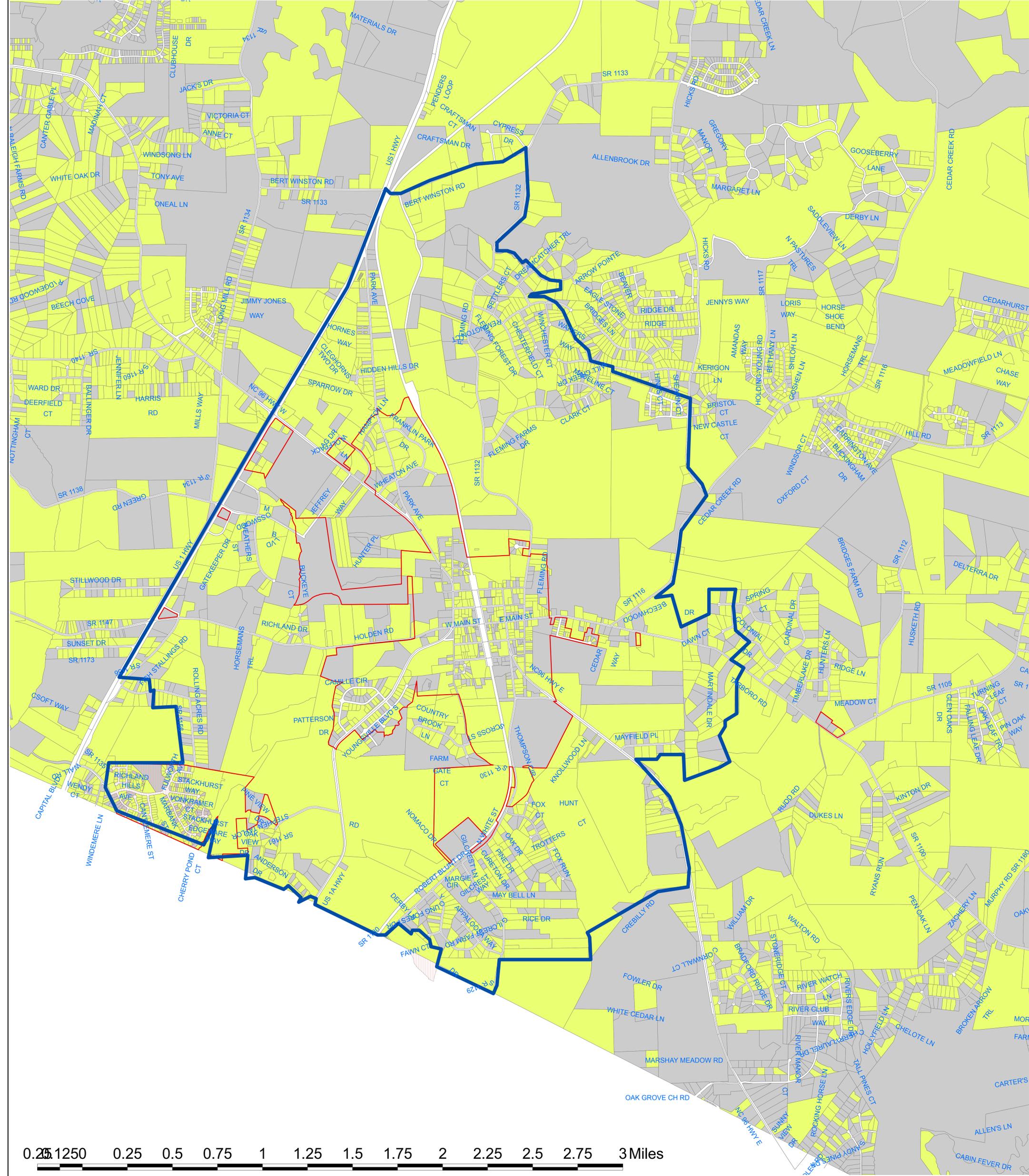
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Telephone: 919 496-2909 Fax: 919 496-2637



Date of Plot:
11 June 2010



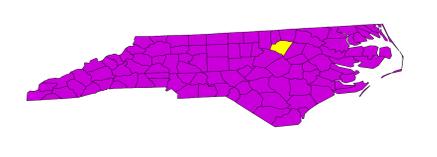
Franklin County Hazard Mitigation Plan Town of Youngsville Land Development



Legend

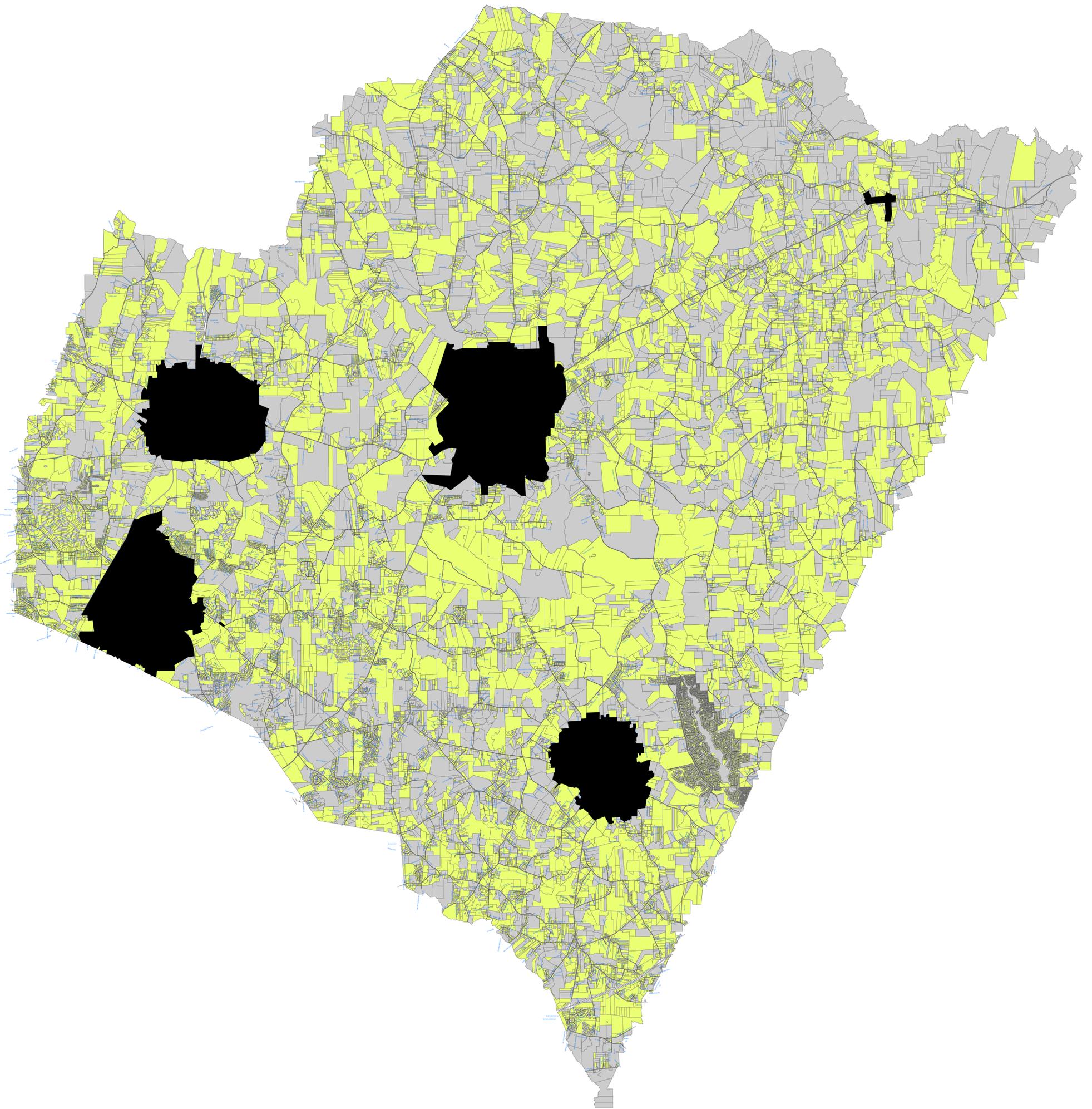
- ETJ
- Corporate Limits
- Developed Property
- Undeveloped Property
- Roads

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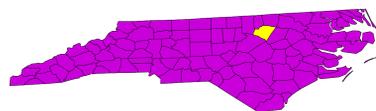
Franklin County Hazard Mitigation Plan Unincorporated Areas Land Development



10.50 1 2 3 4 5 6 7 8 9 10 11 12 Miles

- Legend**
- Developed Property
 - Undeveloped Property
 - Roads
 - Incorporated Areas

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Date of Plot:
11 June 2010



Franklin County Hazard Mitigation Plan Topography



10.50 1 2 3 4 5 6 7 8 9 10 11 12 Miles

Legend	
Contour Intervals	301 - 350
Z_FEET	351 - 420
	421 - 560
	150 - 240
	241 - 300

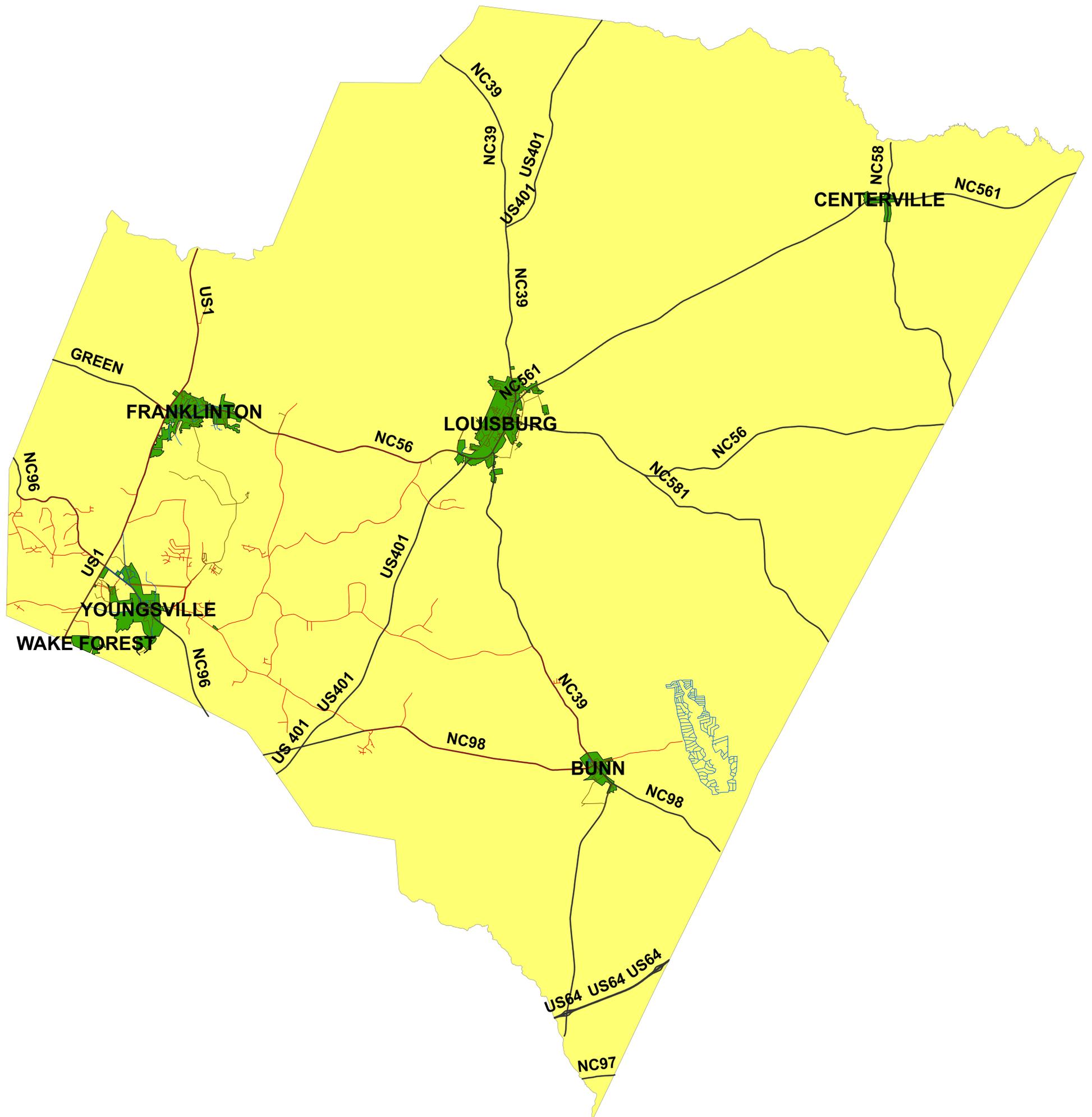
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Date of Plot:
11 June 2010



Franklin County Hazard Mitigation Plan Local Infrastructure Existing Water and Sewer Lines



Legend

- Existing Sewer Lines
- City-Water Lines
- County-Water Lines
- NC DOT Roads
- Corporate Limits
- Franklin County

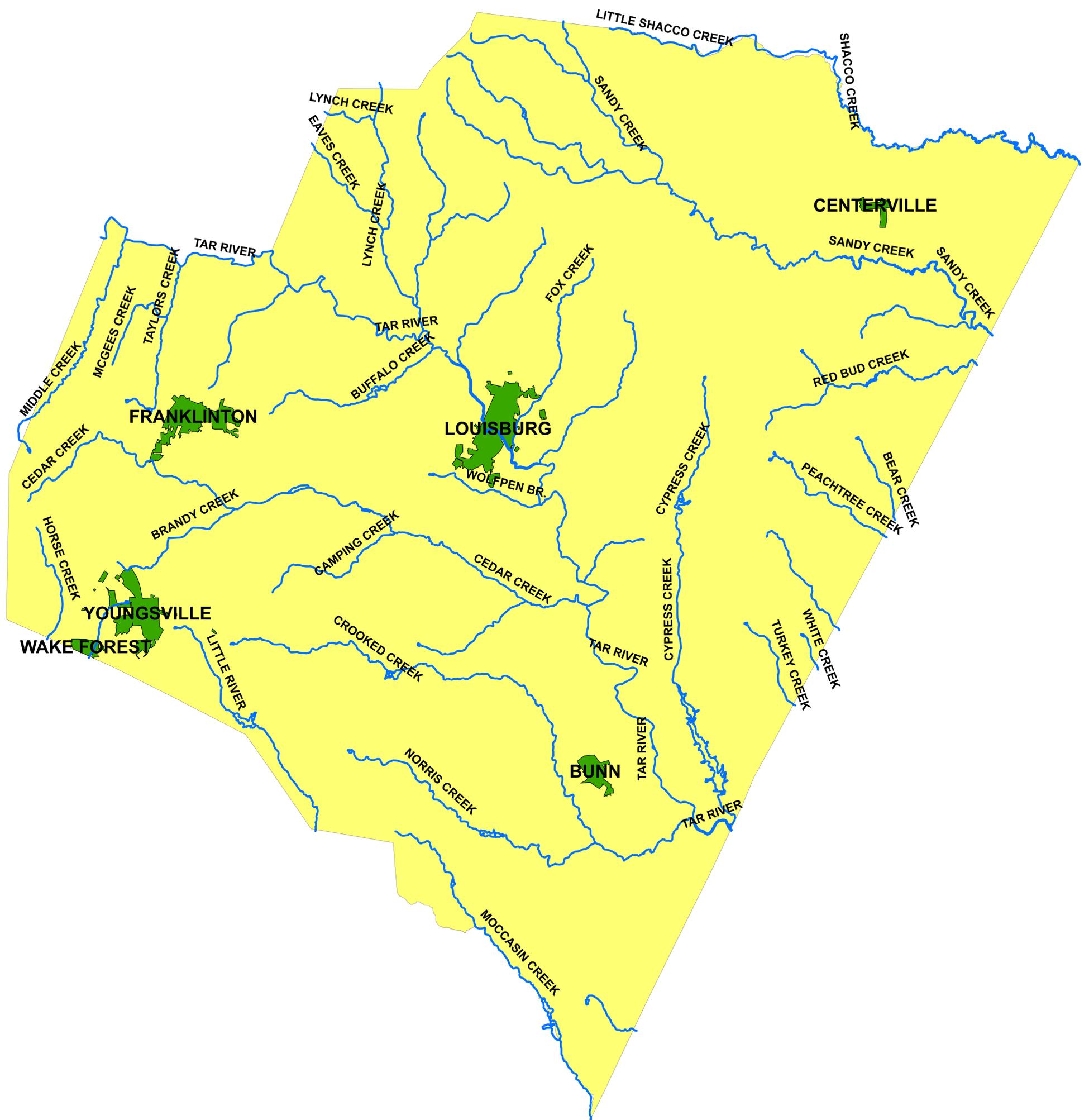
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Date of Plot:
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Franklin County Hazard Mitigation Plan Hydrology



10.50 1 2 3 4 5 6 7 8 9 10 11 12 Miles



Legend

- Franklin County
- Corporate Limits

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Date of Plot:
 11 June 2010





Avoiding Flood Damage: A Checklist for Homeowners

F E D E R A L E M E R G E N C Y M A N A G E M E N T A G E N C Y

Are you looking for ways to protect your home from flooding? There are many things you can do, depending on the flood hazard in your area, the characteristics of your property, and the zoning and building codes in your community. Some methods are fairly simple and inexpensive; others will require a professional contractor.

This homeowner's checklist will help you become familiar with what you can do. For more information about the costs and benefits of each method, talk to a professional builder, architect or contractor. You should also ask your building department about building permit requirements.

▶ **Do you know your flood risk?**

Call your local emergency management office, building department or floodplain management office for information about flooding. Ask to see a flood map of your community. There may be a projected flood elevation for your neighborhood. This information will help you determine how much water is likely to come in.

▶ **Do you have enough flood insurance?**

Even if you have taken steps to protect your home from flooding, you still need flood insurance if you live in a floodplain. Homeowners' policies do not cover flood damage, so you will probably need to purchase a separate policy under the National Flood Insurance Program (NFIP).

It takes 30 days for a flood policy to take effect. This is why you need to purchase flood insurance before flooding occurs.

If your insurance agent is unable to write a flood policy, call 1-800-638-6620 for information.

▶ **Is the main electric switch-box located above potential flood waters?**

The main electric panel board (electric fuses or circuit breakers) should be at least 12" above the projected flood elevation for your home. The panel board height is regulated by code. All electrical work should be done by a licensed electrician.

▶ **Are electric outlets and switches located above potential flood waters?**

Consider elevating all electric outlets, switches, light sockets, baseboard heaters and wiring at least 12" above the projected flood elevation for your home.

You may also want to elevate electric service lines (at the point they enter your home) at least 12" above the projected flood elevation.

In areas that could get wet, connect all receptacles to a ground fault interrupter (GFI) circuit to avoid the risk of shock or electrocution.

Have electrical wiring done by a licensed electrician.

▶ **Are the washer and dryer above potential flood waters?**

For protection against shallow flood waters, the washer and dryer can sometimes be elevated on masonry or pressure-treated lumber at least 12" above the projected flood elevation. Other options are moving the washer and dryer to a higher floor, or building a floodwall around the appliances.

▶ **Are the furnace and water heater above potential flood waters?**

The furnace and water heater can be placed on masonry blocks or concrete at least 12" above the projected flood elevation, moved to inside a floodwall or moved to a higher floor. (You have more

options for protecting a new furnace. Ask your utility about rebates for new energy efficient furnaces. The rebate plus the savings in fuel costs could make the purchase feasible.)

Furnaces that operate horizontally can be suspended from ceiling joists if the joists are strong enough to hold the weight. Installing a draft-down furnace in the attic may be an option if allowed by local codes. Some heating vents can be located above the projected flood elevation.

Outside air conditioning compressors, heat pumps or package units (single units that include a furnace and air conditioner) can be placed on a base of masonry, concrete or pressure treated lumber.

All work must conform to state and local building codes.

▶ **Is the fuel tank anchored securely?**

A fuel tank can tip over or float in a flood, causing fuel to spill or catch fire. Cleaning up a house that has been inundated with flood waters containing fuel oil can be extremely difficult and costly.

Fuel tanks should be securely anchored to the floor. Make sure vents and fill line openings are above projected flood levels.

Propane tanks are the property of the propane company. You'll need written permission to anchor them. Ask whether the company can do it first.

Be sure all work conforms to state and local building codes.

▶ **Does the floor drain have a float plug?**

Install a floating floor drain plug at the current drain location.

If the floor drain pipe backs up, the float will rise and plug the drain.

▶ **Does the sewer system have a backflow valve?**

If flood waters enter the sewer system, sewage can back up and enter your home. To prevent this, have a licensed plumber install an interior or exterior backflow valve. Check with your building department for permit requirements.

You may have other options for avoiding flood damage depending on your needs and financial resources. These include building drainage systems around the property, sealing openings such as low windows, building levees, constructing exterior floodwalls around basement doors and window wells, improving exterior walls, elevating buildings above projected flood levels and relocating buildings away from floodplains.

For more information, talk to a professional builder, architect or contractor. Ask your building department about building permit requirements.



Avoiding Wildfire Damage: A Checklist for Homeowners

F E D E R A L E M E R G E N C Y M A N A G E M E N T A G E N C Y

If you live in a forest or wildland area, you face the real danger of wildfire. Wildfires destroy thousands of homes and devastate hundreds of thousands of acres of woodland every year.

Protecting your home from wildfire is your responsibility. To reduce the risk, you'll need to consider the fire resistance of your home, the topography of your property and the nature of the vegetation close by.

This homeowner's checklist will help learn what you can do. You should also contact your local fire department, forestry office, emergency management office or building department for information about local fire laws, building codes and protection measures.

Always be ready for an emergency evacuation. Evacuation may be the only way to protect your family in a wildfire. Know where to go and what to bring with you. You should plan several escape routes in case roads are blocked by a wildfire.

▶ Do you know your wildfire risk?

Learn about the history of wildfire in your area. Be aware of recent weather. A long period without rain increases the risk of wildfire. Consider having a professional inspect your property and offer recommendations for reducing the wildfire risk.

Determine your community's ability to respond to wildfire. Are roads leading to your property clearly marked? Are the roads wide enough to allow firefighting equipment to get through? Is your house number visible from the roadside?

▶ Have you thinned out and maintained the vegetation around the house?

All vegetation is fuel for a wildfire, though some trees and shrubs are more flammable than others. To reduce the risk, you will need to modify or eliminate brush, trees

and other vegetation near your home. The greater the distance between your home and the vegetation, the greater the protection.

Create a 30-foot safety zone around the house.

Keep the volume of vegetation in this zone to a minimum. If you live on a hill, extend the zone on the downhill side. Fire spreads rapidly uphill. The steeper the slope, the more open space you will need to protect your home.

In this zone, do the following:

- Remove vines from the walls of the house.
- Move shrubs and other landscaping away from the sides of the house.
- Prune branches and shrubs within 15 feet of chimneys and stove pipes.
- Remove tree limbs within 15 feet of the ground.

- Thin a 15-foot space between tree crowns.
- Replace highly flammable vegetation such as pine, evergreen, eucalyptus, junipers and fir trees with lower growing, less flammable species. Check with your local fire department or garden store for suggestions.
- Replace vegetation that has living or dead branches from the ground-level up (these act as ladder fuels for the approaching fire).
- Cut the lawn often.
- Clear the area of leaves, brush, dead limbs and fallen trees.

Create a second zone at least 100 feet around the house.

This zone should begin about 30 feet from the house and extend to at least 100 feet. In this zone, reduce or replace as much of the most flammable vegetation as possible. If you live on a hill, you may need to extend the zone for

several hundred feet to provide the desired level of safety.

▶ **Are combustibles materials away from the house?**

Identify all combustible materials outside the house. Stack firewood 100 feet away and uphill from the house. Keep the gas grill and propane tank at least 15 feet from house. Clear an area 15 feet around the grill. Place a 1/4 inch mesh screen over the grill.

▶ **Are sun decks and porches enclosed underneath?**

Any porch, balcony or overhang with exposed space underneath is fuel for an approaching fire. Overhangs ignite easily by flying embers and by the heat and fire that gets trapped underneath. If vegetation is allowed to grow underneath or if the space is used for storage, the hazard is increased significantly.

Clear leaves, trash and other combustible materials away from underneath sun decks and porches. Extend 1/2-inch mesh screen from all overhangs down to the ground. Enclose wooden stilts with non-combustible material such as concrete, brick, rock, stucco or metal. Use non-combustible patio furniture and covers.

If you're planning a porch or sun deck, use non-combustible or fire-resistant materials. If possible, build the structure to the ground so that there is no space underneath.

▶ **Are eaves and overhangs enclosed?**

Like porches and balconies, eaves trap the heat rising along the exterior siding. Enclose all eaves to reduce the hazard.

▶ **Are house vents covered with wire mesh?**

Any attic vent, soffit vent, louver or other opening can allow embers and flaming debris to enter a home and ignite it. Cover all openings with 1/4 inch or smaller corrosion-resistant wire mesh. If you're designing louvers, place them in the vertical wall rather than the soffit of the overhang.

▶ **Is the roof made of non-combustible materials?**

The roof is especially vulnerable in a wildfire. Embers and flaming debris can travel great distances, land on your roof and start a new fire.

Avoid flammable roofing materials such as wood, shake and shingle. Materials that are more fire resistant include single ply membranes, fiberglass shingles, slate, metal, clay and concrete tile. Clear gutters of leaves and debris.

▶ **Are chimneys and stovepipes covered with spark arrestors?**

Chimneys create a hazard when embers escape through the top. To prevent this, install spark arrestors on all chimneys, stovepipes and vents for fuel-

burning heaters. Use spark arrestors made of 12-gauge welded or woven wire mesh screen with openings 1/2 inch across. Ask your fire department for exact specifications.

If you're building a chimney, use non-combustible materials and make sure the top of the chimney is at least two feet higher than any obstruction within 10 feet of the chimney.

▶ **Is the house siding fire resistant?**

Use fire resistant materials in the siding of your home, such as stucco, metal, brick, cement shingles, concrete and rock. You can treat wood siding with UL-approved fire retardant chemicals, but the treatment and protection are not permanent.

▶ **Have windows been treated to reduce the risk?**

Windows allow radiated heat to pass through and ignite combustible materials inside. The larger the pane of glass, the more vulnerable it is to fire.

Dual- or triple-pane thermal glass, and fire resistant shutters or drapes, help reduce the wildfire risk. You can also install non-combustible awnings to shield windows and use shatter-resistant glazing such as tempered or wire glass.

MANAGING YOUR BUSINESS TO MINIMIZE DISRUPTION



**A Guide for Small Businesses
in North Carolina**

MANAGING YOUR BUSINESS TO MINIMIZE DISRUPTION:

A Guide for Small Businesses in North Carolina

As a small business owner, you have invested considerable time and resources into making your business work. Through careful planning and hard work, you have an established customer base for your products and services. Revenues are steadily increasing. You are optimistic about your future.

Yet, as the experience of Hurricane Floyd on September 15-16, 1999 reminds us, small businesses are vulnerable to natural disasters. Following Floyd, an estimated 20,000 small businesses – manufacturers, retailers, finance and insurance companies, tourism-dependent businesses, farmers, and others – sustained damage. A survey undertaken by East Carolina University following Floyd found that nearly 75 percent of the small businesses in the 44 counties most impacted by the hurricane were forced to temporarily close their doors, due either to direct damages to their facilities, or because of road closures, power outages, and other indirect impacts.

The Good News – A Small Investment of Your Time Can Minimize Business Disruption Following a Disaster

While small businesses continue to suffer a disproportionate share of losses from disasters, there is good news. As experience clearly shows – small businesses can reduce their exposure to the effects of natural disasters by taking basic planning and preparedness steps before the disaster. Losses can be reduced, disruption can be shortened, and recovery time can be accelerated.

Managing Your Business to Minimize Disruption: A Guide for Small Businesses in North Carolina is written for small business owners, the sector of North Carolina's economy that is most vulnerable to disasters, yet with the least time and fewest resources to devote to disaster preparedness and risk management.

The underlying premise of this *Guide* is that the consequences of natural hazards – and the problems faced by small business owners – can be anticipated. By preparing your business for “unplanned disruptions,” you can significantly reduce your “downtime” following a major disaster. These preparations may mean the difference in staying in business or closing down.

The *Guide* outlines a series of ten practical, cost-effective steps that small business owners can take to minimize disruption to their livelihoods following a disaster. By reviewing each step, you will have a much better idea of what your risk is, what parts of your business need to be protected, and practical steps that can be taken to ensure that you stay in business when the next disaster occurs. Detailed guidance on business preparedness measures can be found on the website of the North Carolina Emergency Management Division (NCEMD) at www.ncem.org.



Hurricane Storm Surge Inundation Map for New Hanover County (source: NOAA)

1 What is Your Risk?

The first step in managing your business to minimize disruption is to assess your risk from natural and technological hazards. What are the hazards that your community and business face – including tornadoes, hurricanes, floods, wildfires, severe winter storms, earthquakes, landslides, fires and hazardous materials accidents? What are the probabilities of each of these hazards occurring in your community over the next five years and beyond, and what are the likely consequences?

This information, which is available from the NCEMD and your local emergency management agency, can provide a snapshot of your potential risk from natural hazards. When combined with the business impact analysis (step 2), the risk analysis enables you to anticipate potential problems, their impact, and the likelihood that they may occur. Armed with this information, you can examine a number of options for protecting your company and its employees from natural disasters.

Information about your risk – including the probabilities and consequences of potential hazards – is also important in making decisions on whether to: 1) absorb the risk, 2) attempt to reduce the risk, or 3) transfer the risk (through insurance).

may be most critical. As a farmer or owner of a small manufacturing plant, you may have equipment or machinery that is critical to the success of your business.

The purpose of a business impact analysis is to identify the parts of your business that need to be up and running as soon as possible in the aftermath of a disaster. There are many considerations that should be addressed in analyzing your company's vital functions and resources: electrical systems, computers, voice and data communications, customer information, billing operations, inventory, and equipment.

3 Check Your Insurance Coverage

A survey of businesses following Hurricane Floyd determined that while most businesses carried liability, property and casualty, and fire insurance, almost one of every six small businesses reported having none. As a result, many businesses were under insured, and in some instances were forced to close.

A review of your insurance coverage is another important step that you can take to protect your business investment. The insurance should be tailored to the individual business and take into consideration not only property damage, but loss of revenues and extra expenses that occur when business is halted by a disaster.

The first step is to contact your insurance representative, and discuss the following:

- ❑ The need for a physical inventory of your company's assets, to insure you can substantiate the value of your assets.
- ❑ The adequacy of your coverage, including liability, property and casualty, fire, and flood insurance.

- ❑ The need to purchase business income or extra expense insurance, particularly. If your company is located in an area that has experienced two or more natural disasters in the past three years.
- ❑ Appropriate deductibles given your level of risk.

For more detailed guidance on your insurance needs, check with your insurance agent.

As a business owner, ask yourself the following questions:

- > What are your most critical and time sensitive business functions?
- > What business functions are you most dependent on to stay in business?
- > What specialized equipment is used in your business and how is it used?
- > How long could your business function without this equipment?
- > What special procedures would be necessary if computer systems are not available?
- > What functions can be performed from the homes of employees who can dial into the computer system?
- > What would be the lost revenue for your business if you were shut down for one day, a week, or an entire revenue period? What are possible contractual fines or penalties?
- > What are your dependencies on third party vendors, suppliers, and service providers?
- > What are your business recovery priorities?

4 Protect Your Building and Contents

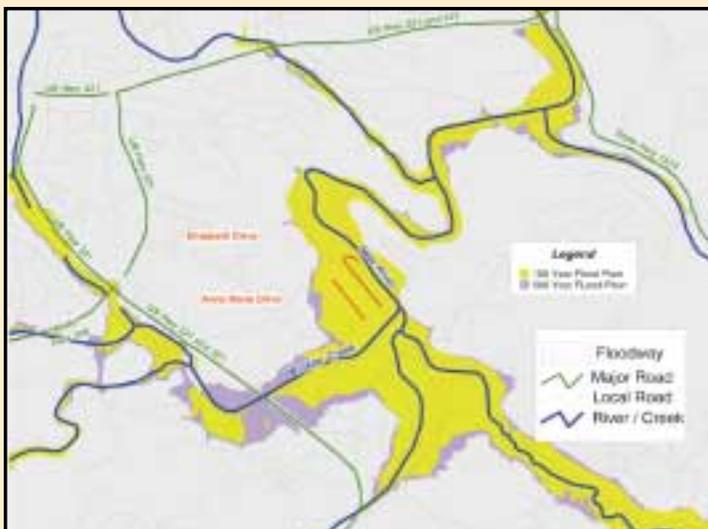
Now that you have a better idea of your risk from natural hazards, and the critical business functions that need to be protected, it is important to determine how well your particular structure and its contents (inventory, equipment, etc.) can withstand these hazards, including high winds, flooding, and ground shaking. A partial list of useful tips for business owners are outlined in below. For a more comprehensive list of protective actions that business owners can take for floods, hurricanes, tornadoes, earthquake, and fire, refer to www.ncem.org

5 Protect Your Vital Records

One of the most important – and least costly – steps that you can take as a small business owner is to protect your business records. These records – information stored on paper and computer – can be classified as “useful,” “important” or “vital.” Useful records contain documents that are easily recreated. Important records can be recreated with little effort and should be stored on both the hard drive and on back-up diskettes in the office, as well as at an off-site location. Vital records – which include financial records, strategic plans, personnel information, building plans, the lease, insurance records, blueprints, inventory warranties, and research data – should be stored at an off-site location, at least 50 miles away.

2 Undertake a Business Impact Analysis

As a small business owner, you know what makes your business operate smoothly and profitably. If you are a retailer, or the owner of a business in the ever-expanding service sector (e.g., finance, insurance, real estate, restaurant, hotel) then the protection of your inventory and business records



Flood maps, such as this one for Boone, can be helpful to business owners and others in identifying flood-prone areas of the community.

Mitigation actions protect small business from major damage

In 1996, the winds and storm surge from Hurricane Fran caused extensive damage to the Masonboro Marina, which was built in the 1970's to accommodate over 100 boat slips. Following Fran, the owner of the marina resolved to rebuild a sustainable marina that would withstand the "worst-case scenario" hurricane event. With an SBA loan, the owner invested approximately \$75,000 on miti-



Marina after hurricane

gation measures in rebuilding the marina. Cement floating docks were installed. The new clubhouse was anchored by pilings that extended from the roof-top to 20 feet in the ground. The air conditioner and heat pump were elevated. Other structural and non-structural mitigation measures were also carried out.

The marina was re-opened on June 23, 1999. Three months later, Hurricane Floyd struck. Water levels were approximately 2 feet below the

13-foot level experienced in Fran. This time, the building and supporting infrastructure performed as expected. The concrete dock and the equipment that was secured in the marina did not sustain any damage.

The elevated utilities performed well, and the hurricane shutters prevented any interior damage. Most importantly, there was no business interruption as a result of a major hurricane event. From a business standpoint, this is critical. The bottom line, the investment of



Elevated air conditioning and heat pump

\$75,000 in mitigation measures was recouped in one disaster – Hurricane Floyd. Losses were avoided, business continuity was enhanced, and the owners of the marina enjoyed a greater peace of mind – before, during and after the event.

In protecting your vital business records, keep your inventory list current and make a photographic or videotaped record of your inventory. Also, make sure computer hardware and software licenses are up to date, and that you have arranged with vendors to replace or repair your computer system immediately.

Protect Yourself, Your Employees, and Your Customers

Every business should have a plan for protecting employees and customers in the event of a major flood, earthquake, tornado, hurricane or other disaster. Make sure that your employees know what to do when there is a "watch" or "warning" for tornadoes, hurricanes, and floods.

At a minimum, keep the following items on hand:

- ✓ First aid kit
- ✓ Battery-operated NOAA weather radio that is portable
- ✓ List of emergency contact numbers
- ✓ Flashlights with extra batteries
- ✓ Tool kit including gloves, wrench and crowbar
- ✓ Waterproof plastic bags
- ✓ Small supply of bottled water
- ✓ Non-electric can opener
- ✓ Cash and credit cards
- ✓ Any essential medicines
- ✓ Three day supply of food and medicine

Taking Care of Employees.

One of the hardest hit communities during Floyd was the town of Greenville, the home of the Grady-White Boat Company. When the company was cut off from the rest of the community after the Tar River crested at over 20 feet, the company president turned his full attention to his employees,

many of whom lost their homes and transportation during the storm. Acknowledging that production would not resume at "full throttle" until the needs of employees were addressed, priority was given to a company-wide self-help initiative that focused on three objectives: providing transportation to employees, arranging for housing of the displaced, and addressing the immediate needs of workers (including short-term financial).

As a result of the spontaneous company-driven relief effort, the Grady-White Boat Company was able to resume business operations quickly. Equally important, the disaster has served as the impetus in a new effort to launch a county-wide business vulnerability assessment project. The premise is that with advances in risk assessment tools, it is possible to anticipate the consequences of natural disasters, and take necessary measures to protect employees and customers alike.

Sample Protective Actions for Your Building & Its Contents

Hurricanes and Windstorms

- Protect windows and doors against wind-borne debris.
- Determine if roof and edge flashing are watertight
- In the case of a hurricane, prepare for possible water infiltration by covering computers,
- Make sure your employees know how to safely shut off your building's utilities.
- Anchor any loose objects that are outside.

Flooding

- Determine whether you are in a flood zone and what type it is. Determine the base flood elevation (BFE) in your area to see if floods will affect your business.
- If you have below-grade floors which are below the BFE, install and maintain a sump pump.
- Raise all utilities and equipment, such as the water heater and electric wiring above the BFE.
- Store inventory in areas above the BFE.
- Use areas that are below the BFE for parking, storage, and access.

Anticipate Interruptions from Your Suppliers & Other Indirect Impacts

One of the lessons from Floyd and other recent major natural disasters in North Carolina is that business disruption can be caused as much by indirect impacts, such as road closures, loss of water and power supply, and the inability of suppliers to deliver goods and services to your business. Following Floyd, road closures had the most prolonged impacts on businesses, followed by loss of water and electric power (FEMA).

During the past decade, small businesses in North Carolina have been closed – in some instances for a week or more – due to flash floods, storm surge, hurricanes, snowstorms, and tornadoes.

For these reasons, it is important to anticipate interruptions, and to develop contingency plans for these eventualities. There are three important steps that you should take to minimize business disruption following a major disaster.

Minimizing Business Disruption Following a Disaster – Three Important Steps:

Step One: Maintain a list of your **business partners** and **major suppliers** that you need to contact in the event a disaster, including their names, addresses, email, contact name, account numbers, and materials or services provided.

Step Two: Request information from your suppliers on what measures they have taken to “keep you supplied” in the event of a disaster – as reflected in their **contingency plans**.

Step Three: Maintain a list of “**backup**” **companies** that can provide your business with materials, supplies, and services in the event that your primary supplier or vendor is impacted by a disaster.



The ability of business to recover following a disaster is often dependent on the condition of roads, bridges and other infrastructure that support day-to-day operations.

9 Prepare a Business Relocation Plan

In areas of the state that have experienced repetitive floods and other disasters during the past decade, it is important to identify alternate sites for business relocation following a disaster. The local planning office (or other appropriate organization) should take the lead role in working with business organizations – including the chamber of commerce – to identify potential locations for temporary office space for businesses that are displaced due to disasters.

For temporary business locations and sites, the planning office or local chamber of commerce should:

- Take a pre-disaster inventory of all commercial buildings in the community, including ownership, value, type of structure, occupancy, and the nature of the business
- Develop a list of viable alternate business locations/sites that would be available after a disaster
- Develop a temporary facilities plan to house displaced businesses
- Construct a building to house small businesses displaced by the disaster and serve as a business development “incubator”
- Consider long-term uses for the building
- Assist in relocating businesses displaced by the disaster
- Identify square footage needs and sitting options or other space options, including relocatables.

This cement factory near Kinston was temporarily out of business following Floyd. As a small business owner, it is important to maintain a list of back-up suppliers in case your primary supplier – in this example a cement company – is impacted by a disaster.

10 Promote Business Preparedness in Your Community

The underlying themes of this Guide are: 1) the consequences of natural hazards – and the problems faced by small business owners – can be anticipated; 2) by taking preparedness and mitigation measures now, you can significantly reduce your exposure and “downtime” following a disaster; and 3) many of steps that are outlined in this Guide entail relatively little cost, other than your time.

The final step in *Managing Your Business to Minimize Disruption* is in many ways the most important – to promote business preparedness in your community. With the ten steps that are outlined in the Guide as a starting point, there are several actions you can take, including:

- Prioritize the steps that need to be taken for your business, and the resources you will need, including technical assistance.
- Approach your Small Business partners – some of whom are outlined below - to initiate a step-by-step business preparedness program in your community.
- Join Project Impact, or other community-based program to promote disaster preparedness.



8 Immediately After a Disaster

Sometime, disasters or major emergencies will occur with little or no warning. For these reasons, it is important to have a plan of action in place for the post-disaster phase, when your building has been stabilized and the damage has been assessed. At the very least, the action plan should include the names and phone numbers of **key individuals** and **organizations** that you need to contact immediately following a disaster, including your:

- insurance carrier
- suppliers
- creditors
- employees and customers
- media contacts
- utility companies
- local emergency management agency

An action plan should also include **emergency steps**, including:

- procedures for shutting off water, gas, and electricity if authorities instruct you to do so
- supplies and materials to take with you should you be instructed to evacuate your business and community

AS A SMALL BUSINESS OWNER
IDENTIFY PRIORITIES, ASSESS COSTS, AND TAKE YOUR FIRST STEPS...

YOUR BUSINESS PREPAREDNESS MEASURES	COST	PRIORITY	PARTNERS
1 Analyze Your Risk	None		NCEMD, Local EMA, FEMA
2 Undertake Business Impact Analysis	None		CPAC, NCEMD
3 Check Your Insurance	None		Local agent, SBA
4 Protect Your Building & Contents	> \$500		Blue Sky, Local EMA
5 Protect Your Vital Records	< \$500		SBTDC, EMA, CPAC
6 Protect Yourself & Employees	< \$500		Local EMA, Blue Sky
7 Plan for Indirect Impacts	None		Local EMA, NCDCA
8 Develop Post-Disaster Checklist	None		Local EMA, NCEMD
9 Prepare a Business Relocation Plan	None		Local EMA, SBA
10 Promote Business Preparedness	None		Local EMA, NCEMD

Network of Cooperating Organizations

- Blue Sky Foundation of North Carolina www.BlueSky-Foundation.com
- Contingency Planning Association of the Carolinas (CPAC) www.cpaccarolinas.org
- Federal Emergency Mangement Agency (FEMA) www.FEMA.gov
- North Carolina Emergency Management Division (NCEMD) www.ncemd.org
- North Carolina Division of Community Assistance (NCDCA) www.ncdca.org
- Small Business Administration (SBA) www.SmallBusiness.gov
- Small Business and Technology Development Center (SBTDC) www.SBTDC.org



Managing Your Business to Minimize Disruption was prepared by the North Carolina Emergency Management Division, in cooperation with the Blue Sky Foundation, Contingency Planning Association of the Carolinas, Small Business and Technology Development Center, and the New Hanover County Emergency Management Agency.

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