<u>COUNTY OF WAYNE</u> <u>NORTH CAROLINA</u> <u>MULTI-JURISDICTION</u> <u>HAZARD MITIGATION PLAN</u>



Also Including City of Goldsboro, Town of Mount Olive, Fremont, Pikeville, Eureka, Seven Springs and Village of Walnut Creek In Accordance with Disaster Mitigation Act of 2000 (44CFR 201.6) and NCGS 166A

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Section A - Introduction

Natural weather events take place each day, everyday throughout the world. Some of these events such as thunderstorms, hurricanes, tornadoes and floods become natural hazards when they interact with people in a way that becomes detrimental to their way of life. As populations continue to rise, so does the chance of interaction with the natural hazard events. These interactions become more fatal and costly as each year passes.

Due to the frequency and intensity of natural disaster events, the federal government created the Federal Emergency Management Agency (FEMA) with the responsibility of providing emergency assistance to state and local governments and to mitigate, prepare, respond and recover from all possible hazards.

In September of 1999, Wayne County, North Carolina experienced a major natural hazard resulting from Hurricane Floyd. Hurricane Floyd struck Wayne County and brought with it: strong wind, flooding, thunderstorms and tornadoes, the most devastating of these being flooding which destroyed practically everything within the flood plain. As a result Local, State and Federal Government entities are now working together trying to minimize the effects of natural hazards.

This plan will:

- Identify and analyze major hazards that threaten the community,
- Give an assessment of local capabilities to implement various mitigation programs and policies, and
- Identify and prioritize feasible mitigation opportunities.

State and Federal regulations require that all communities receiving funds in response to a disaster adopt and implement a Hazard Mitigation Plan to help reduce the potential effects of hazards within a given community. This plan will serve that purpose for the County of Wayne, (County), Towns of Eureka, Fremont, Pikeville, Mount Olive, Seven Springs and Village of Walnut Creek (Municipalities). The Town of Seven Springs had a single jurisdiction plan in 2005 and has chosen to participate in the Wayne County Multijurisdictional HM Plan for 2010. The City of Goldsboro is also a new participant in this plan during this update cycle. Although it was not involved in the process initially, the city determined that it would be best to join the Wayne County plan due to similar hazard risks. The plan will be created at the local level with input from the community citizens. Regulation and control of development, as well as the provision of infrastructure that support development, occurs at the local level. Through public awareness this plan will serve to establish a connection between the community's interest and mitigation measures to be employed.

The communities in Wayne County must not rely solely on state or federal planning initiatives to create and implement hazard mitigation measures. They must create their own unique Hazard Mitigation Plan addressing all issues and concerns that are held by the community relative to its vulnerability to hazard risks. Meetings with government officials, local planners, state and national planners, the public and others were held and input sought prior to the plan completion and submission for approval. The plan will be reviewed by Planning Boards and elected officials for each local government.

Throughout the hazard mitigation planning process, community involvement will be utilized to inform the public about hazards and mitigation techniques for their community. The public will be notified of the planning process through the Internet and newspapers for the county and each municipality. The information in this plan will enable citizens to make informed decisions on where to live, where to purchase property, or where to locate a business. Information on how to protect themselves and their property from the impact of natural hazards is also available. For the government sector, decision-makers will be better informed by the mitigation plan to carry out their official daily activities so that mitigation concepts will be used as a guide to the implementation of goals, objectives, policies and programs. This can be achieved through structural and nonstructural measures. This risk reduction can be implemented through the Hazard Mitigation Plan.

This initial Hazard Mitigation Plan was developed as a direct result of Hurricane Floyd. The plan identified and analyzed hazards defined by the Federal Emergency Management Agency (FEMA) and assessed the counties and towns capability to fully address the threats of natural hazards. The plan provided a tool to help ensure that the public health, safety and welfare needs of Wayne County citizens are addressed. Development of the plan made use all possible resources including but not limited to Federal, State and Local resources.

Section B - Community Profile

As stated above the local jurisdictions participating in this plan are County of Wayne, Town of Eureka, Town of Pikeville, Town of Fremont, Town of Mount Olive, Town of Seven Springs and Village of Walnut Creek. Although it was not involved in the process initially, the City of Goldsboro determined that it would be best to join the Wayne County plan due to similar hazard risks. Each of the local governments included in this plan except Eureka is an active participant in the National Flood Insurance Program. The Town of Eureka has chosen not to participate in the National Flood Insurance Program due to the fact that there are no streams within the Town limits that have a designated flood plain. The two small streams in the extraterritorial area are at the rear of farm and wood tracts. There are no buildings in the floodplain. The areas are not crossed by a road and have no access to public sewer. Therefore development in this area is highly unlikely. The County of Wayne and the City of Goldsboro are the only participants in the Community Rating System.

<u>County of Wayne</u> – Wayne County was founded in 1779 and named for the Revolutionary War hero from Pennsylvania, General Anthony Wayne. The County is located in the east central part of the state and coastal plain region. The county measures approximately 29 miles from north to south and 14 - 27 miles from east to west and encompasses 553.97 square miles.

The 2000 Census figures show the population to be 113, 329. The State Data Center estimates that the 2008 population is 115,696. Migration trends over the past seventy-five years and the establishment of Seymour Johnson Air Force Base in the 1940's have contributed to the steady growth.

Wayne County's surface is level to gently rolling uplands with broad bottoms along the rivers and streams. For this reason flash flooding infrequent. Elevations are predominately 120 to 145 feet above sea level. The largest waterway, the Neuse River, bisects the central and southeastern portion of the county and cuts a channel 20 to 40 feet deep as it flows in an eastward direction. Unusual river bluffs occur in the vicinity of Seven Springs. In addition to the Neuse River and its tributaries the Northeast Cape Fear River drains the county.

The climate in Wayne County is characterized by warm summers and moderate winters. The average temperature is about 62 degrees. Annual precipitation is about 50 inches of rainfall per year, with the major portion occurring in the late spring and summer. Wayne County's local industries are involved in a range of operations from simple assembly to complex manufacturing processes resulting in products ranging from bread and poultry feed to automobile parts and electric transformers. Substantial technological improvements in recent years involving modernization of plant facilities and the addition of sophisticated manufacturing equipment have resulted in enhanced profitability and productivity for many of the local manufacturing firms.

The largest employers are agricultural operations, manufacturing, education and government. The single largest employer is Seymour Johnson Air Force Base. The annual civilian and military payroll for Seymour Johnson AFB is over \$339 million with nearly 6,000 employees. The economic impact of the air base is over \$520 million per year.

<u>Town of Mount Olive</u> – The Town of Mount Olive is in the southern part of the County and includes a small area in Duplin County. It is located at the intersection of US 117 Highway and NC 55 and is about 2.3 square miles in size. The CSX railroad runs north and south through the town. The 2008 population of the town was about 4600.

A tornado in 1984 did major damage to part of the town and the surrounding area. Most of the town drains into the headwaters of the North East Cape Fear River. The remainder of the town drains into a tributary of the Neuse River. For that reason there are no areas in Town within the 100-year floodplain. Major employers include Mt. Olive Pickle Company, Mt. Olive College, Georgia-Pacific and Butterball Turkeys.

<u>Town of Fremont</u> – The Town of Fremont was incorporated in 1869 and was named for John Fremont an engineer with the Wilmington Weldon Railroad. It is at the intersection of US 117 Highway and NC 222 in the northern part of the County. It adjoins Interstate 795. The town is bisected by the CSX railroad and encompasses approximately 1.3 square miles. The 2008 estimated population was approximately 1400. Fremont is located a ridgeline between several small waterways. For this reason there are no areas in town that are designated as being in the 100-year floodplain. The town contains some small businesses and industry. However, most of the work force commutes to Goldsboro or Wilson.

<u>Town of Pikeville</u> – The Town of Pikeville is centrally located in the northern part of the County along US 117 highway, Interstate 795 and is also bisected by the CSX railroad. The Town is

about .53 square mile in size with a population of about 700. The Slough Swamp drains the southern part of town and has a designated 100-year floodplain. The area near Pikeville has seen a large amount of residential growth in recent years, which has resulted in some commercial growth in the Town. Most of the work force commutes to Goldsboro or Wilson.

<u>Town of Eureka</u> – The Town of Eureka is about three tenths of a square mile in size. It is situated in northeastern Wayne County along NC 222 and has a population of approximately 240.

Persons in the work force commute mostly to jobs into Goldsboro or adjoining Counties. The Town has a part time clerk. Businesses are located near the intersection of NC 222 and Church Street.

<u>Town of Seven Springs</u> The Town of Seven Springs is located along the southern bank of the Neuse River at the intersection of Piney Grove Road and NC 55 Highway. The town has been flooded several times most recently in 1999. After that flood event, which was caused by Hurricane Floyd, several families chose to participate in the hazard mitigation buyout program. As a result the population decreased from over 120 to less than 90.

Seven Springs was established as White Hall 1851 but did not incorporate as Seven Springs until 1947. The Towns claim to fame is that the iron-clad CSS Neuse was built here during the Civil War. The attempt by Union forces to destroy the iron-clad resulted in the Battle of White Hall in December 1862. Seven Springs is located in a rural area and is surrounded by farms and forests. It has a total land area of approximately one third of a square mile. The town has a part time clerk. Seven Springs depends on Wayne County for enforcement of the North Carolina Building Codes and for building inspections. Businesses are located on either side of Main Street or on NC 55.

<u>Village of Walnut Creek</u> – The Village of Walnut Creek adjoins US 70 in the eastern part of the County. It surrounds two lakes formed by the damming of Walnut Creek. The spillway to the main lake was washed out due to the flooding associated with Hurricane Floyd. The creek is a tributary is the Neuse River. The Village is a relatively new community that also includes a golf course. The Village of Walnut Creek is home to approximately 900 people in the two square miles of the community. The Village contains limited commercial development.

Village citizens commute to Goldsboro, Kinston or other places for employment. The median family income is one of the highest in the state at \$98,071.

<u>City of Goldsboro</u> - The City of Goldsboro was incorporated in 1847 and is named for Major Matthew T. Goldsborough, an Assistant Chief Engineer with the railroad line. Goldsboro is the County Seat of Wayne County and is located in the central part of the County. The City contains 28.023 square miles and, according to the 2010 decennial census, has a population of 36,437. The City is home to a number of manufacturing, agricultural, educational, medical and governmental firms with the largest single employer being Seymour Johnson Air Force Base which was officially annexed into Goldsboro's corporate limits in 1977.

Section C - Planning Process

Statement of the Problem

Natural hazards are a part of the world in which we live. Floods, hurricanes, tornadoes, winter storms, wildfires, and other hazardous events are natural phenomena. Natural hazards are inevitable and there is little humans can do to control force and intensity. However, how the natural and the built environments interact with hazards is quite different.

The natural environment is amazingly recuperative from the forces of wind, rain, fire and earth and can regenerate with resiliency, restoring habitat and ecosystems in time for the next generation of plant and animal life to begin anew. The built environment, however, is not as resilient. Natural disasters occur when human activity in the form of buildings, infrastructure, agriculture and other land uses are located in the path of the destructive forces of nature. Since the built environment is more susceptible to natural hazards and cannot recuperate like the natural environment, communities impacted by a natural hazard often recover only over a long period of time and at great social and economic cost.

In recent years, the impact of natural disasters has increased not because natural hazards occur more frequently but because more people are choosing to live and work in locations that put them and their property at risk.

While natural hazards cannot be prevented, local communities can use various means to reduce the vulnerability of people and property to damage. Communities can reduce exposure to future natural hazards by managing the location and characteristics of both the existing and future built environment. By utilizing location and construction techniques, a community can mitigate negative impacts and reduce future damage to both human lives and property.

Preparing for natural hazards involves establishing a comprehensive emergency management system consisting of the following four component activities:

<u>Preparedness activities</u> - undertaken to improve a community's ability to respond immediately after a disaster. Preparedness activities include the development of response procedures, design and installation of warning systems, exercises to test emergency operational procedures, and training of emergency personnel.

<u>Response activities</u> - designed to meet the urgent needs of disaster victims. Response activities occur during the disaster and include rescue operations, evacuation, emergency medical care, and shelter programs.

<u>Recovery activities</u> - designed to rebuild after a disaster. These activities include repairs to damaged public facilities such as roads and bridges, restoration of public services such as power and water, and other activities that help restore normal services to a community.

<u>Hazard mitigation</u> - activities designed to reduce or eliminate damages from future hazardous events. These activities can occur before, during, and after a disaster and overlap all phases of emergency management.

Hazard mitigation is defined by FEMA as "any sustained action taken to reduce long-term risk to human life and property from natural hazards. Mitigation activities are ongoing and overlap all phases of emergency management.

Hazard mitigation includes three types of activities:

- 1. Structural mitigation constructing dam and levee projects to protect against flooding, constructing disaster-resistant structures, and retrofitting existing structures to withstand future hazardous events;
- 2. Non-structural mitigation development of land use plans, zoning ordinances, subdivision regulations, and tax incentives and disincentives to discourage development in high-hazard risk areas; and
- 3. Educational programs educating the public about potential natural hazards, the importance of mitigation, and how to prepare to withstand a disaster.

A fundamental premise of mitigation strategy is that current dollars invested in mitigation activities will significantly reduce the demand for future dollars by reducing the amount needed for emergency recovery, repair, and reconstruction following a disaster. Mitigation also calls for conservation of natural and ecologically sensitive areas which enables the environment to absorb some of the impact of hazard events. In this manner, mitigation programs help communities attain a level of *sustainability*, ensuring long-term economic vitality and environmental health for the community as a whole.

The concept of sustainable development has emerged community planning as a means to emphasize the need to regain a balance between the built and natural environment. Sustainable development is defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs. Sustainable development centers on the type of development rather than quantity and is not intended to be a no-growth or slow-growth initiative.

Sustainable development through mitigation is not an impediment to growth. By building a community that is resilient to natural hazards, citizens strengthen the local economy. A locality that reduces its vulnerability will experience less restoration time, shortened business downtime, and less social disruption following a disaster, freeing resources that would otherwise be devoted to response and recovery, and more quickly improving citizens' lives.

Purpose of the Plan

The purpose of the Plan is:

- 1. To demonstrate local commitment to hazard mitigation planning principles;
- 2. To reduce natural hazard vulnerability by reducing the potential for future damages and economic losses;
- 3. To speed recovery and redevelopment following future natural hazard events;
- 4. To comply with both State and Federal legislative requirements for local hazard mitigation planning; and
- 5. To qualify for additional grant funding, in both pre-disaster and post-disaster situations.

Authority

Once the draft plan is approved by NC Emergency Management, the Wayne County Multi Jurisdictional Hazard Mitigation Plan will be adopted by the Wayne County Board of Commissioners, under the authority and police powers granted to counties of the State of North Carolina by North Carolina General Statutes (N.C.G.S., Chapter 153A). The Town Councils of Eureka, Fremont, Pikeville, Mount Olive and Seven Springs and the Village

of Walnut Creek will also adopt the Wayne County Multi Jurisdictional Hazard Mitigation Plan. Although it was not involved in the process initially, the City of Goldsboro determined that it would be best to join the Wayne County plan due to similar hazard risks and will adopt the plan.

The Plan has been developed in accordance with current criteria governing the development of local hazard mitigation plans including 1) Chapter 166A: North Carolina Emergency Management Act as amended by Senate Bill 300: An Act to Amend the Laws Regarding Emergency Management as Recommended by the Legislative Disaster Response and Recovery Commission (2001) and 2) the Disaster Mitigation Act of 2000 (Public Law 106-390, October 30, 2000) that amended the Robert T. Stafford Relief and Emergency Assistance Act.

Participants in the Planning Process

The planning process was overseen by the Wayne County Hazard Mitigation Advisory Committee, which met regularly during the planning process. The Advisory Committee also identified other interested parties who were invited to participate in planning meetings and who were also sent copies of draft documents for review and comment.

Local Government/Agency	Position
Wayne County Planning	Planning Director
Wayne County GIS	GIS Coordinator
Wayne County Inspections	Director or designee
Wayne County Emergency Management	Director or designee
Town of Eureka	Mayor/or designee
Town of Fremont	Mayor/or designee
Town of Mount Olive	Mayor/or designee
Town of Pikeville	Mayor/or designee
Town of Seven Springs	Mayor/or designee
Village of Walnut Creek	Mayor/or designee
Wayne County	Planning Board members
City of Goldsboro	City Engineer

HMP Advisory Committee / Interested Parties

Description of the Planning Process

In the summer of 2009 Wayne County began the process to update the <u>2004 Wayne County Multi-</u> <u>Jurisdictional Hazard Mitigation Plan.</u> Using again the multi-jurisdictional concept from the previous planning process would make it possible for the County to assist the towns with creating a proactive rather than reactive approach to hazard mitigation and to ensuring that all lands subject to hazards were identified and managed appropriately to reduce future exposure. The County provided the lead in the plan development. County and Municipalities representatives worked as an Advisory Committee to create the draft plan. The comprehensive planning process was organized to ensure that individual mitigation projects and initiatives undertaken by the County are carried out in a cooperative manner such that all local initiatives work together and no single action or project detracts from the overall goal of creating a safer environment for all citizens of Wayne County. The planning process also played an important part in generating community understanding of and support for hazard mitigation by creating a forum for discussion and publicizing the need for hazard mitigation planning.

The process included an update of existing risks presented in the previous plan. Those risks include flooding, thunder and hail storms, hurricanes, lighting strikes, tornados, winter storms, dams, and temperature extremes. The Wayne County Planning Director coordinated the preparation of the initial draft for the committee to review. The Planning Department staff, which includes the Geographic Information Office, was used to review documents and prepare maps. During the review the Planning staff used information provided by FEMA, NCDNER, National Weather Service and the National Climatic Data Center. Documents provided by local agencies were also analyzed during the update process. Those documents included: Wayne County Comprehensive Plan, GATEWAY Transportation Safety, Security and Emergency Preparedness Plan, Wayne County Emergency Services Emergency Operations Plan and Continuity of Operations Plan. Near the end of the process, the City of Goldsboro determined that it would be in their best interest to join the Wayne County plan. At this time, the city and county met together to review the plan and both decided that the join would be in their best interest.

Public Input

On June 14, 2009, Wayne County gave public notice of the start of the hazard mitigation planning process at the regularly scheduled Wayne County Planning Board meeting. The Planning Board meeting was covered by the local newspaper, the <u>Goldsboro News Argus</u>. Neighboring communities, State and Federal Agencies, businesses, academia, nonprofits, and other interested parties were invited to attend the advisory committee meetings and participate in the planning process. These individuals were invited by letters, e-mails and telephone calls.

At the first meeting, a presentation was made describing the purpose of the hazard mitigation planning process and the schedule for plan development. The section of the Plan on hazard identification and analysis was also presented. Each page of the existing plan was reviewed for potential changes and notes were made that led to changes in the initial draft. Representatives from the Towns were asked to focus on events that may affect their community. No public comments were received.

At the second meeting sections on community capability and vulnerability were analyzed. Town representatives were again asked to changes in their community.

In addition to the meetings, public announcement of the meetings provided an address and phone number for persons who were unable to attend the meeting but who wanted to receive more information about the planning process. During the planning process, drafts of the plan were also available for public review at the Wayne County Emergency Services Department, the Wayne County Planning Department and each of the municipalities.

Other Public Comments

In September 2009 the draft plan was placed on the Wayne County website as a pop-up. The website is viewed by an average of 1000 persons per day. The plan has also been available at the Town Hall for each of the municipalities. The elected officials were advised that once this plan has been approved by the NC Emergency Management and by FEMA, it will be presented to the Board of Commissioners, the Towns of Eureka, Fremont, Pikeville, Seven Springs, Mount Olive, Village of Walnut Creek and the City of Goldsboro for adoption.

HMP Advisory Committee Meetings

The Hazard Mitigation Planning (HMP) Advisory Committee met three times during the summer of 2009. Those meetings were followed with a series of meetings between the County Planning Director and the Planning Boards and Elected Boards of each jurisdiction. Each jurisdiction conducted a public hearing prior to submission of the plan to NCEM. Comments received at the Mount Olive public hearing resulted in a change to the action statements. Comments received during the hearings for the other communities did not result in a change to the draft plan.

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Meeting Date	Торіс
July 6, 2009	Project Initiation, HMP Advisory Committee
July 27, 2009	HMP Advisory Committee Meeting
August 31, 2009	HMP Advisory Committee Meeting
October 13, 2009	Wayne County Planning Board meeting
January 26, 2010	Town of Pikeville Planning Board meeting
February 1, 2010	Town of Pikeville Board meeting
February 3, 2010	Village of Walnut Creek Planning Board meeting
February 8, 2010	Town of Fremont Planning Board meeting
February 9, 2010	Town of Mount Olive Planning Board meeting
February 10, 2010	Town of Seven Springs Board meeting
February 16, 2010	Town of Fremont Board meeting
March 1, 2010	Town of Mount Olive Board meeting
March 1, 2010	Town of Pikeville public hearing
March 3, 2010	Village of Walnut Creek Planning Board meeting
March 10, 2010	Town of Seven Springs Public Hearing & approval

Plan Meeting Schedule

March 16, 2010	Town of Fremont Public Hearing
March 18, 2010	Town of Eureka Planning Board meeting
April 5, 2010	Town of Mount Olive Public Hearing & approval
April 6, 2010	Town of Eureka Board meeting
April 20, 2010	Town of Fremont approval
April 28, 2010	Village of Walnut Creek Board Public Hearing
May 4, 2010	Town of Eureka Public Hearing & approval
May 11, 2010	Wayne County Planning Board meeting
May 18, 2010	Board of Commissioners meeting work session
May 26, 2010	Village of Walnut Creek approval
June 15, 2010	Board of Commissioners Public hearing & approval
June 15, 2011	City of Goldsboro meeting and approval

The HMP Advisory Committee generally followed the planning steps as outlined in *"Keeping Natural Hazards from Becoming Disasters – A Mitigation Planning Guidebook for Local Governments*", by the NC Division of Emergency Management. Those steps as listed below are explained further in the remainder of this plan.

Step 1 Hazard Identification and Analysis

The first step involved describing and analyzing eleven natural hazards to which Wayne County could be susceptible. Section D – Hazard Identification and Analysis, which represents the results of this planning step, includes historical data on past hazard events and establishes an individual hazard profile and risk index for each hazard based upon frequency, magnitude and impact. The summary risk assessment at the end of Section D serves as the foundation for concentrating and prioritizing local mitigation efforts.

Step 2 Community Vulnerability Assessments

The next step involved research and mapping, using best available data, to determine and assess current conditions. Section E – Vulnerability Analysis, which contains the results of this planning step, includes a description of community characteristics, an assessment of current conditions, a list of critical facilities, projections for future growth and summary conclusions including an assessment of both current (2010) and projected (2030) future conditions. Section E also contains two summary maps that depict 1) multi-hazards (floodplains and past hazard events that lend themselves to mapping, e.g., tornado touchdowns); and 2) critical facilities (those facilities without which each community could not continue to function for long).

Step 3 Community Capabilities Assessment

This step included a comprehensive examination and evaluation of capacity to implement mitigation strategies, a review of local government authority for hazard mitigation planning, a description of local government organization and staff, a review of technical and fiscal capabilities, and a summary statement of local commitment to hazard mitigation planning. The purpose of this step, represented in Section F – Community Capability, was to identify any gaps or weaknesses in local programs or regulations, to determine if any existing programs/regulations had the effect of hindering hazard mitigation, and to identify programs/regulations that could be revised or amended to strengthen local hazard mitigation efforts.

Step 4 Form Interim Conclusions

At the conclusion of Steps 1 - 3, the HMP Advisory Committee developed summary conclusions regarding individual vulnerability to natural hazards and individual capabilities for dealing with hazards.

Step 5 Community Goals and Objectives

Steps 1 through 3 also established the foundation for moving forward with developing an action program for the community to undertake. The HMP Advisory Committee worked to formulate and agree upon general goals and objectives for hazard mitigation before moving forward with developing specific mitigation strategies.

Step 6 Mitigation Strategies

Next the Advisory Committee cooperated in formulating mitigation strategies/actions. This step as detailed in Section I also included assigning responsibility for implementation of each action.

Step 7 Procedures for Monitoring, Evaluating and Reporting Progress

The HMP Advisory Committee developed a procedure for an annual review and progress report on the plan. The review process provides for the HMP Advisory Committee and the general public to have input on plan review.

Step 8 Procedures for Revisions and Updates

The HMP Advisory Committee developed a procedure for a comprehensive review and update of the Plan on a 5-year schedule. The procedure provides for the inclusion of the public.

Step 9 Adoption

Wayne County and each of the individual municipalities held a public hearing on the Plan prior to submission to NCEM. The plan was adopted following review by NCEM and FEMA.

Section D - Hazard Identification and Analysis

Introduction

This section includes a description and history of each type of natural hazard event in Wayne County using the best available data. Members of the Advisory Committee agreed the natural hazards that would equally affect the County and Municipalities are drought, hurricanes, severe thunderstorms, hail storms, tornadoes and severe winter storms. The only natural hazards that would affect each municipality differently would be flooding and dam failure. Wildfires could affect the unincorporated area of Wayne County but would not affect the incorporated Towns. Event histories were updated based on a search of two national databases - the National Climatic Data Center (NCDC - <u>http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms</u>) and the Spatial Hazard Events and Losses Database for the United States (SHELDUS* - <u>http://go2.cla.sc.edu/hazard/db_registration</u>). Information from these data bases were used to update the time from the previous plan and let the Advisory Committee know if changes had occurred in the type and frequency of natural hazards. All historical data searches were conducted for the period 1950 to 2009. Other data from the County is included as available.

*Note: SHELDUS information concerning certain hazards causing fatalities and injuries are in decimal form. Casualties and damages are often listed without specific spatial reference, for instance severe thunderstorms affected Eastern NC. In order to assign the damage amount to a specific county, SHELDUS divides the total number of fatalities or injuries by the number of counties affected. For example, if a severe thunderstorm affected Johnston, Duplin, Lenoir, and Wayne counties and resulted in 1 fatality, each county would receive a 0.25 rating.

Wayne County, which is in the Coastal Plains of North Carolina, is typical of most counties in the eastern part of the state. It has relatively flat topography, which allows for major streams and the Neuse River to carve wide flood plains throughout the county. A major step in creating this hazard mitigation plan is to identify the major hazards that exist in Wayne County. The planning process has determined the specific hazards that that present the greatest potential for disaster.

Many natural hazards have the potential to affect Wayne County. Each hazard has been assessed in terms of likelihood of occurrence, local vulnerability, and the hazards historical impact. The possibility exists for the hazards to occur in Wayne County at any given time depending upon the season. However, each hazard is unique to Wayne County in terms of probability, frequency and severity. Climatic and historical data were used to identify the past, present and potential for each of the hazards. The plan update gave the advisory committee, the general public, elected officials and others the opportunity to changes in frequency and type of natural hazards.

In addition, County and municipal planners and staff provided considerable data regarding current and projected land use. This data was then analyzed to assess potential problem areas, including critical facilities. Initial data from this analysis was used to determine those hazards that present the greatest risk to the County. Hazards were assigned a risk value by potential. This task was completed upon the recommendations of county and municipal agencies, State and Federal agencies and the public. Based upon the risk value, analysis was made for those hazards with the highest ratings first. Limited analysis was also performed on hazards with lower ratings making the plan oriented toward all hazard mitigation.

The hazards identified include those listed below. Other natural hazards that could occur in other parts of the country (i.e. volcanoes, tsunamis, etc.) were not analyzed in depth by the Advisory committee, because of (1) the location of the county, (2) there is no history of any such occurrence and the likelihood of such an occurrence was less than 1%, (3) there is no indication in any researched document that such events were likely to occur, therefore the it was felt appropriate that time and limited resources be used to identify and analyze those realistic hazards listed below.

During the interim revision process, the City of Goldsboro decided to join the Wayne County plan and during that time reviewed the hazards that were identified by Wayne County. After a thorough review, the city determined that it would be affected by the same hazards as the county and, therefore, accepted the hazard identification and analysis section of the plan in its entirety.

Hazard Analysis - Evaluation Method

Each natural hazard is evaluated for three characteristics:

- 1. Likelihood of Occurrence, i.e., expected frequency;
- 2. Likely Range of Impact, i.e., predictable size and location of impact; and
- 3. Probable Level of Impact, i.e., estimated strength and damage potential.

Likelihood of Occurrence

The likelihood, or frequency, of occurrence of a particular hazard within a specific jurisdiction will be classified in one of four categories. These four categories are explained in the table below.

Explanation of Hazard Likelihood of Occurrence

Likelihood	Frequency 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 within
	the next ten years.
Possible	Between 1% and 10% probability in the next year, or at least one chance in the next
1 0001010	100 years.
Unlikoly	Less than 1% probability in the next year, or less than one chance in the next 100
Uninkery	years.

Source: "Keeping Natural Hazards from Becoming Disasters", NC Division of Emergency Management, November 2001, p. 11.

Likely Range of Impact

The likely range of impact, or predictable size and location, of a particular hazard within a specific jurisdiction will be classified in one of three categories. These three categories are described in the Table below.

Description of Likely Range of Impact

Size of Area	Description			
Small	10 % or less of the total jurisdictional area			
Medium	10 % to 40 % of the total jurisdictional area			
Large	40 % to 100 % of the total jurisdictional area			

Source: "Keeping Natural Hazards from Becoming Disasters", NC Division of Emergency Management, November 2001, p. 11.

Probable Level of Impact

The probable level of impact, or estimated strength and damage potential, of a particular hazard within a specific jurisdiction is classified in one of four categories as described in the table below.

Level	Area Affected	Impact ¹
Catastrophic	More than 50%	Multiple deaths.
		• Complete shutdown of facilities for 30 days or
		more.
		• More than 50% of property is severely damaged.
Critical	25 to 50%	Multiple severe injuries.
		Complete shutdown of critical facilities for at
		least 2 weeks.
		• More than 25% of property is severely damaged.
Limited	10 to 25%	Some injuries.
		Complete shutdown of critical facilities for more
		than 1 week.
		• More than 10% of property is severely damaged.
Negligible	Less than 10%	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.

Description of Hazard Probable Level of Impact

Source: "Keeping Natural Hazards from Becoming Disasters", NC Division of Emergency Management, November 2001, p. 12. ¹ The impact of a natural hazard is a combination of the severity of the occurrence, the magnitude of the event, and the density of human activity in the affected area.

Flooding

Flooding is a localized and regional hazard that is generally the result of excess precipitation that usually occurs in the river or stream basin. Flood plain areas can be inundated by spillovers from stream and river flows. Flood hazard areas vary by location and type of flooding. Wayne County is most at risk from flooding caused by hurricanes, tropical storms and nor'easters. Thunderstorms occasionally lead to small stream flooding. Flooding effects from severe winter storms are rare. Some small areas are at risk due to dam failures. In the event of a flood in

Wayne County, the flood depth would likely not exceed 14 feet in any location in the county and municipalities. Floods can be generally considered in two categories, flash floods and general floods.

Flash Floods in Wayne County may occur within minutes to hours due to either heavy amounts of rainfall, dam or levee failure. The severity of a flooding event is determined by a number of local factors including but not limited to basin physiography, precipitation patterns, recent soil moisture content, soil type, vegetative cover, and impervious features such as roads, sidewalks, and drainage ways. Flash flooding along minor streams in the county has not historically been a problem. However, as urban development continues runoff will increase along the streams. Parts of Mount Olive are subject to flooding problems due to limited elevation change and inadequate drainage. The southern part of Pikeville would be subject to flash flooding along the run of The Slough if the stream becomes blocked at the railroad bridge. The lakes at Walnut Creek are designed to handle the runoff from any flash flood event. Eureka, Fremont and Seven Springs do not have streams inside the town that could create flash flood problems. The City of Goldsboro has several major streams subject to flash flooding, particularly Stoney Creek and the Big Ditch, which traverse through the middle of the City.

General Flooding is a long-term event that can last several days. Three major types of general flooding are riverine, coastal and urban. Riverine and urban flooding have been the contributing factors relating to general flooding within Wayne County. General flooding in Wayne County and the municipalities is determined in days not hours. This provides the local governments and emergency personnel time to notify the population of the impending danger.

To better illustrate the flooding potential in Wayne County, the County Planning Department has used a Geographic Information System to identify structures and population at risk to flooding. With this information along with floodplain data provided by FEMA, the County and municipalities can estimate the population at risk to flooding. The following table represents this analysis.

Location	Date	Time	Туре	Deaths
Southern Wayne	6/24/1995	6:30 PM	Flash Flood	0
Wayne (Fran)	9/5/1996	7:40 PM	General Flood	0
Goldsboro	10/8/1996	6:30 AM	Flash Flood	0
NC	1/19/1998	12:00 PM	Flood	0
NC	2/10/1998	7:00 AM	Flood	0
Mt Olive	1/24/1999	6:00 PM	Urban/small Stream Flood	0
Wayne (Dennis)	9/6/1999	8:15 PM	Flash Flood	0
Wayne (Floyd)	9/15/1999	10:00 PM	General Flood	2
Wayne	9/27/1999	6:00 PM	Flash Flood	0
Wayne	9/28/1999	2:30 AM	Flash Flood	0
Wayne	9/28/1999	4:30 PM	Flash Flood	0
Wayne	10/17/1999	5:00 PM	Flash Flood	0
North Wayne	8/4/2000	9:15 PM	Flash Flood	0
Mt Olive	6/16/2001	7:30 PM	Flash Flood	0
Wayne	7/2/2003	8:45 PM	Flash Flood	0
Mt Olive	7/29/2005	5:45 PM	Flash Flood	0
Goldsboro	7/31/2005	7:10 PM	Flash Flood	0
Adamsville	11/16/2006	13:00	Flash Flood	0
Fremont	8/26/2007	17:30	Flash Flood	0
Goldsboro	8/30/2008	21:14	Flash Flood	0
Adamsville	9/6/2008	7:00 AM	Flash Flood	0
Adamsville	9/9/2008	16:50	Flash Flood	0
Fremont	7/25/2009	19:45	Flash Flood	0
TOTALS:				2

Table 1: Flood Event Data for Wayne County 1995 - 2009

Source: National Climatic Data Center, <u>http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms</u>

Table 2: Estimated Structure and Population Vulnerability to Flooding

Total Structures within Wayne County (Including Goldsboro)	113,186
Structures within 100 Year Floodplain	3,143
Structures within 500 Year Floodplain	2,710
Total Structures within Floodplains	5,853
% Of Total Structures within floodplains	5.2%
Persons Per Household (2000 Census)	2.55
Estimated Persons Vulnerable To Flooding (Persons per Household X Total Structures within Floodplains)	14,925
Wayne County Population (Including Goldsboro)	113,465
Estimated % of Population Vulnerable to Flooding	13.2%

Source: Wayne County Planning Department, US Census

Table 2 above shows the total structures throughout the county that may be affected by flooding as determined by Wayne County GIS. The total includes 1871 or 59%, houses and mobile homes. The percentage

is higher in Seven Springs as 88% of the dwellings are in the floodplain. Most dwellings in Seven Springs contain elderly people as the average age of the population is 45. 8. There are no apartment complexes in the flood plain within the County.

Commercial structures number in the flood plain total 157 or 4.4%. The vast majority of these are agricultural buildings. Mount Olive has one commercial building, Seven Springs has eight, and Pikeville has three. The eight in Seven Springs includes the fire station, EMS station, town hall, post office, bank and restaurants. Fremont, Eureka and Walnut Creek do not have any commercial structures or critical facilities in the flood plain.

The remaining 1323 structures are accessory and have limited replacement value.

Hazard Analysis – Floods

Likelihood of Occurrence of Floods

Localized flooding can occur several times a year in Wayne County. In recent years there have also been a number of more widespread flooding events caused by hurricanes and tropical storms. The likelihood of localized flooding as well as area wide flooding can be categorized as "likely".

Likely Range of Impact for Floods

Flooding is normally confined to specific, known flood hazard areas where development can be controlled or limited. The likely range of flood impact can be classified as "small" for the County and all municipalities except Seven Springs. In Seven Springs the impact is large due to the proximity of the town adjoining the Neuse River.

Probable Level of Impact for Floods

As damages have been incurred due to floods within Wayne County, localized flooding typically has a "limited" level of impact, whereas area wide flooding, due to instances of damage sustained during flooding in the past, can also have a "limited" level of impact in Wayne County. The level of impact for Seven Springs is high.

Wayne County Hazard Index for Floods

The hazard index for floods in Wayne County is categorized as "moderate" based on a "likely" level of occurrence, "small" range of impact, and "limited" level of impact. For Seven Springs the hazard index is higher based on a large range of impact and critical level of impact.

Hurricanes

Hurricanes have battered the coast of North Carolina and the United States longer than man has inhabited earth. The National Hurricane Center (NHC) monitors the mid Atlantic Ocean for weather patterns that may lead to hurricanes. The NHC releases to the public prior to June 1st each year its prediction and count of hurricane and tropical storms that may occur in the given year.

Wayne County's recent development has been susceptible to damage from hurricanes due to building in flood prone areas. Loss of human life, property damage and economic loss can be associated with hurricane events, especially major events that make landfall on the south east coast and work their way inland.

The Saffiir-Simpson Scale measures hurricane intensity using a range from 1 (Minimal) to 5 (Catastrophic). The scale based upon minimum barometric pressure that categorizes hurricane intensity, maximum sustained winds and storm surge potential. This is then combined to estimate the potential flooding and damage to property when hurricane intensity is given. Storm surge will not be an issue in Wayne County and the municipalities due to the distance from the coastline. High winds can bring down trees and ultimately power lines. Hurricane Fran in 1996 and Hurricane Floyd in 1999 although being about the same size storm affected the County differently. Fran was the first major wind storm to affect the entire county in thirty years. The result was many toppled trees and downed power lines. Three years later, Floyd brought copious amounts of rain but did not level as many trees and power lines due to the thinning from the 1996 storm.

Saffiir-Simpson Category	Maximum Sustained Winds (mph)	Minimum Surface Pressure	Height of Storm Surge (feet)
1	74-96	>980	3-5
2	97-111	979-965	6-8
3	112-131	964-945	9-12
4	132-155	944-920	13-18
5	156+	<920	19+

Table 3: Saffiir-Simpson Hurricane Scale

Source: North Carolina Division of Emergency Management, 1998: Local Hazard Mitigation Planning Manual.

The following table illustrates the history of hurricanes that have impacted Wayne County in recent years. According to the table the worst hurricane to impact Wayne County was Hurricane Floyd in terms of monetary value.

Table 4: Recent Hurricane & Tropical Storms History of Wayne County

Date	Hurricane	Deaths	P roperty	Crop
			Damage	Damage
7/12/96	Bertha	0	567,000	0
9/5/96	Fran	7	21.6 million	0
8/27/98	Bonnie	0	664,900	50M
9/4/99	Dennis	0	Unknown	3M
9/14/99	Floyd	2	39.3 million	500M
9/18/03	Isabel	0	286,200	-
9/1/06	T.S. Ernesto	0	0	1.6M

Source: National Climatic Data Center, Wayne County Planning Department and Wayne County Emergency Services

Hazard Analysis – Hurricanes

Likelihood of Occurrence of Hurricanes

According to the Local Hazard Mitigation Planning Manual, "(by virtue of its position along the Atlantic Ocean adjacent to and protruding to the edge of the Gulf Stream, North Carolina) is frequently impacted by hurricanes (and tropical storms). In fact, North Carolina has experienced the fourth greatest number of hurricane landfalls of any state in the twentieth century (after Florida, Texas and Louisiana)." Many of these storms track inland and pass over Wayne County, although they usually have weakened below hurricane force by the time they reach the area. There are other storms that do not even make landfall and instead just skirt the North Carolina coastline, but they can still cause high winds and torrential rains in the area, because of the tremendous size of these storms.

Hurricanes that have struck North Carolina in the last 50 years include Hazel in 1954; Connie, Diane, and Iona, all in 1955; Donna in 1960; Hugo in 1989; Emily in 1993; Opal in 1995; Bertha and Fran in 1996; Bonnie in 1998; Dennis and Floyd in 1999; and Isabel in 2003. Because of the size of these storms (up to 400 miles wide), the Wayne County area felt some impact (including torrential rains and high winds) from these storms. In addition to the above named hurricanes there have been smaller tropical storms that may have also impacted Wayne County. The probability of the Wayne County area experiencing the affects of a hurricane, or tropical storm, can be classified as "likely".

Likely Range of Impact of Hurricanes

Hurricanes and tropical storms are not localized events. The diminishment of the destructive force of a hurricane or tropical storm from one side of Wayne County to the other would probably be negligible. The impact of the wind element of a hurricane or a tropical storm within the County would be fairly uniform among structures that were built using comparable construction methods and materials. The impact of the associated rainfall from a hurricane or tropical storm would primarily affect structures and infrastructure in proximity to regulatory floodplains and secondary tributaries and creeks. The accumulation of wind blown debris in public or private storm drainage inlets and drainage swales has the potential to cause minor flooding problems throughout the area. If a hurricane or tropical storm were to occur, the entire Wayne County area would be subject to the effects of the storm, therefore the range of impact can be classified as "large".

Probable Level of Impact of Hurricanes

The <u>Local Hazard Mitigation Planning Manual</u> indicates "hurricanes have the greatest potential to inflict damage as they cross the coastline from the ocean, which is called landfall. 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 makes the right front quadrant of the hurricane the location of the most potentially damaging winds."

Property damage can result when the high winds of a hurricane or a tropical storm combine with saturated soils from extended heavy rains which may cause trees to be uprooted and fall onto nearby structures, or when wind blown debris damages structures. Additionally, hurricanes and tropical storms generally include bands of severe thunderstorms, which may produce hail and spawn tornadoes. The probable level of impact of a hurricane or tropical storm in Wayne County can be classified as "limited". Although most hurricanes cause only limited damage within the area, Hurricane Fran in September of 1996 caused critical damages throughout the County and region.

Wayne County Hazard Index for Hurricanes

The hazard index for hurricane impacts in Wayne County is "moderate" based on the probability of occurrence being "likely", the "large" area that would be impacted, and the probable "limited" damage impact. This hazard index of "moderate" for hurricanes indicates that this particular hazard poses a relatively large, but infrequent threat. Since hurricanes and coastal storms are also significant contributors to flooding, there are opportunities for local hazard mitigation efforts to have a significant impact on exposure to future events.

Thunderstorms/Severe Weather

Thunderstorms are common in Eastern North Carolina during the spring and summer seasons. These storms can become severe producing strong winds, lightning, hail and tornadoes. Since these events are localized, the impact of thunderstorms in Wayne County is considered low. However, each thunderstorm should be taken with caution. The magnitude of a thunderstorm event can be measured by wind speed which, for Wayne County, are not expected to exceed 75 knots. In cases where thunderstorms turn to hail storms, the magnitude can be measured using the size of hail stones which are not expected to exceed a diameter of 2 inches in Wayne County.

Wayne County has experienced 92 thunderstorm events since 1980 with 2 deaths and 2 injuries reported. Almost \$9 million in property damage and \$600,000 in crop damage can be attributed to these thunderstorm events. The table below shows the dates of thunderstorms since 1980. Data recorded since 1994 shows that the storms affect all parts of the County.

Location	Date	Time	Туре	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Goldsboro	4/8/2000	5:25 PM	Tstm Wind	50 kts.	0	0	0	0
Seymour Johnson AFB	5/28/2000	1:20 PM	Tstm Wind	60 kts.	0	0	0	0
Seymour Johnson AFB	6/22/2000	2:40 PM	Tstm Wind	56 kts.	0	0	0	0
Fremont	8/18/2000	5:30 PM	Tstm Wind	50 kts.	0	0	0	0
Dudley	8/24/2000	5:15 PM	Tstm Wind	50 kts.	0	0	0	0

Table 5: Thunderstorm History of Wayne County, 2000 - 2009.

Location	Date	Time	Туре	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Dudley	8/24/2000	6:15 PM	Tstm Wind	50 kts.	0	0	0	0
Fremont	5/13/2002	7:55 PM	Tstm Wind	50 kts.	0	0	0	0
Dudley	5/13/2002	8:05 PM	Tstm Wind	50 kts.	0	0	0	0
Stevens Mill	6/1/2002	5:40 PM	Tstm Wind	50 kts.	0	0	0	0
Wayne	6/1/2002	5:55 PM	Tstm Wind	50 kts.	0	0	0	0
Seven Springs	7/5/2002	6:40 PM	Tstm Wind	50 kts.	0	0	0	0
Grantham	7/10/2002	5:50 PM	Tstm Wind	60 kts.	0	0	0	0
Goldsboro	11/11/2002	11:00 AM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	11/11/2002	11:20 AM	Tstm Wind	50 kts.	0	0	0	0
Belfast	7/10/2003	6:25 PM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	7/11/2003	8:25 PM	Tstm Wind	50 kts.	0	0	0	0
NC	3/7/2004	7:20 PM	High Wind	65 kts.	0	0	136K	0
Goldsboro	5/2/2004	1:10 PM	Tstm Wind	50 kts.	0	0	0	0
Pikeville	6/4/2004	3:30 PM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	3/8/2005	10:15 AM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	3/8/2005	10:35 AM	Tstm Wind	53 kts.	0	3	0	0
Goldsboro Airport	4/2/2005	4:20 PM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	4/17/2006	3:41 PM	Tstm Wind	50 kts.	0	0	0	0
Mount Olive	5/18/2006	7:40 PM	Tstm Wind	50 kts.	0	0	0	0
Mount Olive	6/12/2006	5:00 PM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	6/14/2006	1:15 PM	Tstm Wind	50 kts.	0	0	0	0
Fremont	6/21/2006	1:00 PM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	6/21/2006	1:38 PM	Tstm Wind	50 kts.	0	0	0	0
Rosewood	7/3/2006	4:50 PM	Tstm Wind	50 kts.	0	0	0	0
Mount Olive	7/3/2006	5:40 PM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	7/27/2006	4:15 PM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	7/27/2006	5:16 PM	Tstm Wind	51 kts.	0	0	0	0
Fremont	7/27/2006	5:25 PM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	7/28/2006	3:45 PM	Tstm Wind	50 kts.	0	0	0	0
Fremont	7/28/2006	8:05 PM	Tstm Wind	50 kts.	0	0	0	0
Eureka	7/29/2006	6:30 PM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	8/30/2006	3:20 PM	Tstm Wind	50 kts.	0	0	0	0
Goldsboro	11/16/2006	8:05 AM	Tstm Wind	50 kts.	0	0	0K	0K
Bests	11/16/2006	11:15 AM	Tstm Wind	50 kts.	0	0	0K	0K
Wayne	4/16/2007	11:37 AM	Strong Wind	43 kts.	0	0	0K	5K
Mount Olive	7/10/2007	14:00 PM	Tstm Wind	50 kts.	0	0	0K	0K
Mount Olive	7/10/2007	14:00 PM	Tstm Wind	50 kts.	0	0	0K	0K
Goldsboro	7/10/2007	16:45 PM	Tstm Wind	50 kts.	0	0	0K	0K
Mount Olive	7/10/2007	16:55 PM	Tstm Wind	50 kts.	0	0	0K	0K
Mount Olive	7/17/2007	20:40 PM	Tstm Wind	50 kts.	0	0	0K	0K
Dudley	8/8/2007	17:30 PM	Tstm Wind	50 kts.	0	0	0K	0K
Mount Olive	8/9/2007	18:45 PM	Tstm Wind	50 kts.	0	0	0K	0K
Seven Springs	8/9/2007	19:00 PM	Tstm Wind	50 kts.	0	0	0K	0K
Goldsboro	8/10/2007	17:14 PM	Tstm Wind	74 kts.	0	0	0K	0K
Goldsboro	8/10/2007	17:25 PM	Tstm Wind	75 kts.	0	4	1.0M	0K
Goldsboro	8/10/2007	17:30 PM	Tstm Wind	75 kts.	0	0	0K	0K
Goldsboro	8/10/2007	17:36 PM	Tstm Wind	70 kts.	0	0	0K	0K

Location	Date	Time	Туре	Magnitude	Deaths	Injuries	Property Damage	Crop Damage
Fremont	8/21/2007	18:45 PM	Tstm Wind	50 kts.	0	0	0K	0K
Goldsboro	8/21/2007	18:45 PM	Tstm Wind	50 kts.	0	0	0K	0K
Fremont	8/26/2007	16:30 PM	Tstm Wind	50 kts.	0	0	0K	0K
Wayne	2/10/2008	12:00 PM	Strong Wind	43 kts.	0	0	5K	0K
Genoa	3/5/2008	12:00 AM	Tstm Wind	52 kts.	0	0	0K	0K
Pikeville	4/12/2008	14:23 PM	Tstm Wind	60 kts.	0	0	0K	0K
Fremont	5/20/2008	17:15 PM	Tstm Wind	50 kts.	0	0	0K	0K
Mount Olive	7/22/2008	16:05 PM	Tstm Wind	50 kts.	0	0	0K	0K
Hopewell	8/2/2008	21:21 PM	Tstm Wind	50 kts.	0	0	0K	0K
Genoa	8/7/2008	15:02 PM	Tstm Wind	50 kts.	0	0	0K	0K
Goldsboro	8/10/2008	19:20 PM	Tstm Wind	50 kts.	0	0	0K	0K
Wayne	9/6/2008	6:00 AM	High Wind	50 kts.	0	0	100K	0K
Wayne	1/7/2009	8:00 AM	Strong Wind	46 kts.	0	0	30K	0K
Wayne	1/7/2009	17:40 PM	High Wind	54 kts.	0	0	15K	0K
Eureka	5/7/2009	18:30	Tstm Wind	50 kts	0	0	0K	0K
Hood Swamp	6/15/2009	14:25	Tstm Wind	55 kts	0	0	0K	1K
Fremont	6/26/2009	13:55	Tstm Wind	50 kts	0	0	0K	0K
Grantham	6/26/2009	14:46	Tstm Wind	50 kts	0	0	3K	0K
Rosewood	7/01/2009	17:08	Tstm Wind	50 kts	0	0	15K	0K
Eureka	7/17/2009	14:35	Tstm Wind	50 kts	0	0	0K	0K
Pinkney	7/17/2009	18:25	Tstm Wind	50 kts	0	0	0K	0K
Adamsville	7/31/2009	16:40	Tstm Wind	50 kts	0	0	0K	0K
Pinkney	8/11/2009	19:10	Tstm Wind	50 kts	0	0	0K	0k
TOTALS:	1			1	0	7	302K	6K

Source: National Climatic Data Center, http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms

Table 6: High Wind/Lightning History of Wayne County 2000 - 2009

Location or County	Date	Time	Туре	Deaths	Injuries	Property Damage	Crop Damage
Pikeville	6/22/2000	3:23 PM	Lightning	0	1	0	0
Mount Olive	6/17/2001	12:03 AM	Lightning	0	0	105K	0
Goldsboro	7/8/2002	6:15 PM	Lightning	0	0	190K	0
Goldsboro	7/10/2003	9:00 PM	Lightning	0	0	10K	0
Goldsboro	7/28/2004	6:00 PM	Lightning	0	0	15K	0
Goldsboro	6/21/2006	1:45 PM	Lightning	0	0	30K	0
TOTALS:	•	1	1	396K	0		

The National Climatic Data Center has identified hailstorms separately from thunderstorms to identify the impact that Hail alone has on a given community. For Wayne County there were 51 Hailstorm events since 1980 with a property damage of 50.6 Million Dollars.

Table 7: Hailstorm History of Wayne County 2000 - 2009

Location	Date	Time	Mag	Deaths	Injuries	Property Damage	Crop Damage
Goldsboro	5/27/2000	17:20	.75 in.	0	0	0	0

.

Location	Date	Time	Mag	Deaths	Injuries	Property Damage	Crop Damage
Rosewood	4/1/2001	14:30	1.00 in	0	0	0	0
Nahunta	5/12/2001	16:50	0.75 in	0	0	0	0
Mount Olive	5/26/2001	17:15	0.88 in	0	0	0	0
Seven Springs	5/28/2001	21:55	1.75 in	0	0	0	0
Dudley	3/31/2002	14:50	0.75 in	0	0	0	0
Fremont	3/31/2002	15:15	1.00 in	0	0	0	0
Fremont	3/16/2003	14:45	0.75 in	0	0	0	0
Fremont	3/16/2003	15:10	1.00 in	0	0	0	0
Goldsboro	5/23/2004	15:30	1.75 in	0	0	0	0
Rosewood	6/4/2004	12:30	0.75 in	0	0	0	0
Goldsboro	7/18/2005	15:50	0.75 in	0	0	0	0
Goldsboro	7/18/2005	16:05	0.75 in	0	0	0	0
Mount Olive	1/14/2006	1:15	0.88 in	0	0	0	0
Mount Olive	5/15/2006	18:38	0.88 in	0	0	0	0
Goldsboro	5/15/2006	18:42	0.75 in	0	0	0	0
Goldsboro	5/18/2006	19:12	0.75 in	0	0	0	0
Pikeville	5/18/2006	19:30	0.75 in	0	0	0	0
Goldsboro	6/11/2006	20:25	0.75 in	0	0	0	0
Rosewood	7/3/2006	16:50	0.88 in	0	0	0	0
Goldsboro	7/28/2006	15:45	0.75 in	0	0	0	0
Seven Springs	7/17/2007	16:10	0.75 in	0	0	0	0
Pikeville	7/27/2007	13:10	0.75 in	0	0	0	0
Genoa	2/18/2008	3:21	1.25 in	0	0	0	0
Goldsboro- Wayne	3/15/2008	17:50	0.75 in	0	0	0	0
Patetown	3/15/2008	17:57	0.75 in	0	0	0	0
Pinkney	3/15/2008	18:00	0.75 in	0	0	0	0
Fremont	4/21/2008	15:10	1.00 in	0	0	0	0
Pinkney	4/21/2008	15:20	0.75 in	0	0	0	0
Genoa	5/10/2008	0:44	0.75 in	0	0	0	0
Fremont	5/20/2008	17:15	0.75 in	0	0	0	0
Mount Olive	5/20/2008	18:25	1.00 in	0	0	0	0
Saulston	7/22/2008	14:23	1.00 in	0	0	0	0
Saulston	7/22/2008	14:40	0.88 in	0	0	0	0
Hood Swamp	7/22/2008	14:50	1.50 in	0	0	0	0
Adamsville	8/2/2008	20:44	0.88 in	0	0	0	0
Grantham	8/10/2008	19:12	.88 in.	0	0	0	0
Dobbersville	10/1/2008	14:20	1.00 in	0	0	0	0
Grantham	10/1/2008	14:30	1.25 in	0	0	0	0
Grantham	10/1/2008	14:30	1.75 in	0	0	0	0
Dudley	10/1/2008	14:38	1.00 in	0	0	0	0
Elroy	10/1/2008	14:50	.75 in	0	0	0	0
Pikeville	4/6/2009	9:37	.75 in	0	0	0K	0K
Goldsboro	5/7/2009	15.29	.88in	0	0	0K	0K
Goldsboro	5/72009	17:11	.75 in	0	0	0K	0K
Mount Olive	5/29/2009	15:25	.75 in	0	0	0K	0K
Genoa	6/26/2009	14:46	.75 in	0	0	0K	0K

Location	Date	Time	Mag	Deaths	Injuries	Property Damage	Crop Damage
Fremont	7/25/2009	18:55	.75 in	0	0	0K	0K

Source: National Climatic Data Center, http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms

Hazard Analysis – Thunderstorms

Likelihood of Occurrence of Thunderstorms

Thunderstorms, including both lightning and hail storms, have occurred quite frequently throughout history in and around Wayne County. Therefore, the likelihood of occurrence has been given a rating of "likely".

Likely Range of Impact of Thunderstorms

While thunderstorms have occurred quite frequently in the past, the damages have not been widespread, and therefore have resulted in a rating of "small" for the range of impact.

Probable Level of Impact of Thunderstorms

While thunderstorms, lightning, and hail storms have occurred frequently and have caused instances of damage, the frequency of damage was low enough to give its probability the rating "limited".

Wayne County Hazard Index for Thunderstorms

The Hazard Index for thunderstorms, lightning, and hail storms in Wayne County can be categorized as "moderate-low" based on the "likely" probability of occurrence, the "small" area that would be impacted by a thunderstorm, lightning, or hail event, and the probable "limited" damages that could be expected from such events. The hazard index of "moderate-low" for thunderstorms, lightning, and hail storms in Wayne County indicates that these natural hazards pose a threat, but a low threat, and that hazard mitigation efforts would be more wisely directed if addressed in conjunction with flood mitigation, to which Wayne County is more vulnerable.

Tornadoes

Severe thunderstorms and hurricanes have the potential to produce tornadoes. Like thunderstorms the prediction of tornadoes is limited to a certain degree. Most tornadoes develop during a thunderstorm event. The exact location of the tornado varies widely depending upon atmospheric disturbance.

The intensity, path length and width of tornadoes are rated according to the Fujita-Pearson tornado scale. F0-F1 is considered weak while F2-F3 is considered strong. F4-F5 is considered the most violent. This scale shown below illustrates the ratings of tornadoes.

F-Scale	Damage	Winds (mph) Path Length		Mean Width (miles)
			(Miles)	
F0	Light	40-72	<1.0	< 0.01
F1	Moderate	73-112	1.0-3.1	0.01-0.03
F2	Considerable	113-157	3.2-9.9	0.04-0.09
F3	Severe	158-206	10-31	0.1-0.3
F4	Devastating	207-260	32-99	0.32-0.99

Table 8: Fujita-Pearson Tornado Scale

F5	Incredible	261-318	100+	1.0+				
Source: North Carolina Division of Emergency Management, 1998: Local Hazard Mitigation Planning Manual.								

Between 1995 and 2009 there have been 7 tornado events in Wayne County with three deaths and 155 injuries. The most severe tornado was in 1984, which brought 133 injuries and three deaths. This storm crossed the southern part of the County in particular the Mount Olive area. Over 50 million dollars in property damaged occurred through out Wayne County from this event. This kind of impact can devastate a community long term both financially and emotionally.

Table 9: Tornado History of Wayne County 1995 - 2009.

Location	Date	Time	Туре	Mag	Deaths	Injuries	Property Damage	Crop Damage
Seven Springs	1/7/1995	45	Tornado	F1	0	22	1.5M	0
Goldsboro	3/8/1998	5:10 PM	Tornado	F2	0	0	100K	0
Goldsboro	4/1/1998	3:45 PM	Tornado	F0	0	0	30K	0
Nahunta	6/4/2004	11:03 AM	Tornado	F0	0	0	0	0
Stevens Mill	4/12/2008	14:12 PM	Tornado	F0	0	0	200K	0K
Belfast	4/12/2008	14:22 PM	Tornado	F0	0	0	0K	0K
Fremont	8/27/2008	23:57 PM	Tornado	F0	0	0	100K	100K
TOTALS:		0	22	431K	100K			

Source: National Climatic Data Center, http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms

Hazard Analysis - Tornadoes

Likelihood of Occurrence of Tornadoes

While tornadoes have occurred numerous times around Wayne County, based on

Tables A-25 and A-26, the likelihood of a tornado occurring in Wayne County is "unlikely".

Likely Range of Impact of Tornadoes

The range of impact for tornadoes is "small", as most tornadoes in this area do not exceed the F2 rating.

Probably Level of Impact of Tornadoes

The probability of impact, due to the number of tornadoes (1) that have hit Wayne County is "limited".

Wayne County Hazard Index for Tornadoes

Based on "unlikely" occurrence, "small" range of impact, and "limited" level of impact, the composite hazard rating for tornados for Wayne County is "low".

Note: The combined hazard index for severe storms and tornadoes is "moderate".

Severe Winter Storms

Severe winter storms have the potential to produce heavy snow, freezing rain, ice pellets and extreme cold conditions. The Eastern North Carolina experience of winter storms is not as frequent as in the western and piedmont regions. However, when these storm events do take place, ice accumulates along power lines causing localized blackouts. Given the history of winter storms in Wayne County, snowfall of more than 24 inches is not likely.

During the period of 1996 to 2004 Wayne County experienced eleven winter storms. There were no deaths, injuries or crop damage attributed to these events, however, \$450,000 in property damage was reported in 1996. The storms have been recorded Countywide and affected all local governments.

Table 10: Severe Winter Storm History of Wayne County 1995 - 2009

		_
Date	Time	Туре
1/6/1996	1:00 PM	Ice Storm
1/11/1996	10:00 PM	Ice Storm
2/2/1996	2:00 AM	Ice Storm
12/23/1998	2:00 PM	Ice Storm
1/18/2000	2:00 AM	Winter Storm
1/22/2000	6:00 PM	Winter Storm
1/24/2000	5:00 AM	Winter Storm
12/3/2000	12:00 PM	Winter Storm
1/3/2002	12:00 AM	Winter Storm
1/26/2004	4:30 AM	Winter Storm
2/26/2004	9:00 AM	Winter Storm
12/26/2004	1:00 AM	Winter Storm
1/20/2009	2:00 AM	Winter Storm
2/4/2009	4:00 AM	Winter Weather

Source: National Climatic Data Center, http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwEvent~Storms

Hazard Analysis - Severe Winter Storms (including Nor'easters)

Likelihood of Occurrence of Severe Winter Storms

The numerous occurrences of severe winter storms in the Wayne County area gives the County a likelihood rating of "highly-likely.

Likely Range of Impact of Severe Winter Storms

When severe winter storms do occur, they affect the entire County giving the area a "large" range of impact.

Probable Level of Impact of Severe Winter Storms

Although severe winter storms cause a shutdown on normally daily activities until roads are passable, the probable level of impact remains "limited" since storm effects are normally temporary in nature.

Composite Hazard Index for Severe Winter Storms

The hazard index for severe winter storms in Wayne County is categorized as "high" based on a "highlylikely" occurrence, "large" range of impact, and "limited" level of impact. This hazard index of "high" indicates that the severe winter storms are a serious threat that should be addressed with local hazard mitigation initiatives where possible. Because of the regional impact of severe winter storms, however, many initiatives are more appropriately addressed and coordinated at the State level.

Wildfires

A wildfire is an uncontrolled burn of grasslands, woodlands or brush. Recent climate conditions, current meteorological conditions, surface fuel characteristics and fire behavior all help to determine the potential for this hazard event. When the summers are hot and dry, the dry vegetation increases the susceptibility for fire in the fall. The North Carolina State Forestry Service has assessed each County's wildfire potential for the period 1950 - 2004 based on the number of wildfires and number of acres burned. Wayne County ranks low for this potential Hazard, however, as development continues, areas that were once rural in nature, become populated with new residents that may be unaware of the hazards associated with wildfires. Using highly flammable material for construction will increase the exposure of populated areas to this potential hazard.

Although the potential for wildfires in Wayne County is low some have occurred. The Forestry Service reports that Wayne County averages approximately 70 wildfires per year. The average size is approximately 5 acres with the largest in the past ten years being 300 acres. Areas in the southern part of the county in the vicinity of Dudley, Elroy and Indian Springs have the greatest potential for wildfires due to light soil and native vegetation that creates a flash fuel potential.

	Lightning	Campfire	Smoking	Debris	Incendiary	Machine Use	Railroad	Children	Misc.	Total # Fires
2000	2	0	7	40	1	6	0	10	5	71
Avg # / 5										
Yrs.	1.4	0.2	7.6	41.6	1.2	3.2	0.2	11.8	3.6	70.8

Table 11: Wildfire Previous Occurrences Statistics (including Five Year Average)

Hazard Analysis - Wildfires

Likelihood of Occurrence of Wildfires in Wayne County

Between 1990 and 2000, there were 700 wildfires in Wayne County – an average of 70 per year. The likelihood of occurrence of a wildfire can be classified as "likely". (Note: The NC Division of Forest Resources did not provide personal information for past wildfire events thus no locations are shown on the Map included in this plan. Potential wildfire locations could not be mapped because forest cover information was not available.)

Likely Range of Impact for Wildfires in Wayne County

When wildfires do occur they typically impact a relatively small area of land. Since 1990, wildfires have burned on average 50 acres per year. The range of impact can be classified as "small".

Probable Level of Impact for Wildfires in Wayne County

Wildfires have a very limited impact on the community so the level of impact of wildfires can be classified as "negligible" for Wayne County.

Wayne County Hazard Index for Wildfires

The hazard index for wildfires in Wayne County is categorized as "low" based on a "likely" occurrence, but "small" range of impact, and "negligible" level of impact. This hazard index of "low" indicates that the threat of wildfires does not warrant significant additional hazard mitigation activities at the local level beyond those already in place within the State.

Dam/Levee Failures

Dam and levee failures can be a serious consequence of natural hazards. Dams are structures or appurtenances built to impound or divert water flow in streams or rivers. Levees are embankments built along rivers to contain flood waters.

Dams

There are approximately 80,000 dams listed in the National Inventory of Dams. This number includes impoundment structures greater than or equal to 25' in height or impounding 50 acre-feet (an acre-foot equal's water 1 foot deep across one acre of land) or more of water, or structures above 6 ft in height whose failure would potentially cause damage downstream. Nine thousand dams nationwide have been designated as high hazard dams.

The high hazard designation does not indicate the inherent stability or instability of a dam but instead measures the potential threat posed to downstream populations in the event of a dam failure. In the event of a dam failure in Wayne County, the flood depth would likely not exceed 14 feet in any location in the county and municipalities.

Background Information on Dams

Dams provide a life-sustaining resource to people in all regions of the United States. Unlike most infrastructures, dam owners are solely responsible for the safety and the liability of the dam and for financing upkeep, upgrade and repair. While most infrastructure facilities (roads, bridges, sewer systems, etc.) are owned by public entities, the majority of dams in the United States are privately owned. Across the nation, about 58% of dams are privately owned, 16% are owned by local governments, 4% by states, and the rest by the federal government and public utilities.

Manmade dams are classified according to the type of construction material used, the methods used in construction, the slope or cross-section of the dam, the way the dam resists the forces of water pressure, the means used for controlling seepage and, occasionally, according to the purpose of the dam.

The materials used for construction of dams include earth, rock, tailings from mining or milling, concrete, masonry, steel, timber, miscellaneous materials (such as plastic or rubber) and any combination of these materials.

Embankment dams, the most common type of dam, are usually constructed of natural soil or rock or waste materials obtained from mining or milling operations. An embankment dam is termed an "earth-fill" or "rock-fill" dam depending on whether it is comprised of compacted earth or mostly compacted rock. The ability of an embankment dam to resist water pressure is primarily a result of the mass, weight, type and strength of the materials from which the dam is made.

Overtopping of an embankment dam is very undesirable since embankment materials may be eroded away. Water normally passes through the main spillway or outlet works; it should pass over an auxiliary spillway only during periods of high reservoir levels and high water inflow. All embankment and most concrete dams have some seepage; however, it is important to control the seepage to prevent internal erosion and instability. Proper dam construction, maintenance, and monitoring of seepage provide this control.

Intentional release of water is confined to water releases through outlet works and spillways. A dam typically has a principal or mechanical spillway and a draw down facility. Additionally, some dams are equipped with auxiliary spillways to manage extreme floods. Spillways ensure that the reservoir does not overtop the dam. Outlet works may be provided so that water can be drawn continuously, or as needed, from the reservoir. Outlets also provide a way to draw down the reservoir for repair or safety concerns. Water withdrawn may be discharged into the river below the dam, run through generators to provide hydroelectric power, or used for irrigation. Dam outlets usually consist of pipes, box culverts or tunnels with intake inverts near minimum reservoir level. Such outlets are provided with gates or valves to regulate the flow rate.

Dam Classifications

Dams are classified in one of three categories:

Hazard Classification	Description of Potential Damage	Quantitative Guidelines					
Low	Interruption of road service, low volume roads	Less than 25 vehicles/day					
	Economic damage	< \$30,000					
Significant	Damage to highways, interruption of service	25 to less than 250 vehicles/day					
	Economic damage	\$30,000 < \$200,000					
	Loss of human life*	Probable loss of 1 or more human lives					
	Economic damage	>\$200,000					
High	*Probable loss of human life due to breached roadway or bridge on or	250 vehicles/day at 1000 feet visibility					
	below the dam.	100 vehicles/day at 500 feet visibility					
		25 vehicles/day at 200 feet visibility					

Dam Hazard Classification

Source: Dam Safety Program, NC Division of Land Resources.

Note: Cost of dam repair and loss of services should be included in economic loss estimate if the dam is a publicly owned utility, such as a municipal water supply dam.

National Dam Safety Program

The National Dam Safety Program Act, enacted in 1996, was established to improve dam safety by:

- 1. Providing assistance grants to state dam safety agencies to improve regulatory programs;
- 2. Funding research to enhance technical expertise as dams are built and rehabilitated;
- 3. Establishing training programs for dam safety inspectors; and
- 4. Creating a National Inventory of Dams.

The Act also requires FEMA to provide education to the public, to dam owners and to others about the need for strong dam safety programs, nationally and locally, and to coordinate partnerships among all players within the dam safety community to enhance dam safety.

Potential of Dam Failure

Early in the 20th century, it was recognized that some form of regulation was needed after a number of dams failed due to lack of proper engineering and maintenance. Federal agencies, such as the Corps of Engineers and the Department of Interior, Bureau of Reclamation built many dams during the early part of the twentieth century and established safety standards during this time. It was not until a string of significant dam failures in the 1970s that awareness was raised to a new level among the states and the federal government.

Driving every other issue and all activities within the dam safety community is the risk of dam failure. Although the majority of dams in the U.S. have responsible owners and are properly maintained, still many dams fail every year. In the past several years, there have been hundreds of documented failures across the nation. Dam and downstream repair costs resulting from failures in 23 states reporting in one recent year totaled \$54.3 million.

Dam failures are most likely to happen for one of the following reasons:

- Structural failure of materials used in dam construction
- Cracking caused by movements like the natural settling of a dam
- Piping—when seepage through a dam is not properly filtered and soil particles continue to progress and form sink holes in the dam.

Property owners downstream often know nothing about the potential that an upstream dam has to cause devastation should it fail. Even if citizens understand and are aware of dams, they still can be overly confident in the infallibility of these manmade structures. Living in dam-break flood-prone areas is a risk. Many dam owners do not realize their responsibility and liability toward the downstream public and environment. Adequate understanding of proper dam maintenance and upgrade techniques is a typical problem among many owners across the United States.

History of Dam and Levee Failures in North Carolina

The North Carolina Dam Safety Program has made use of National Dam Safety Program funds to create and implement the North Carolina Emergency Action Plan. The Plan was activated in 1999 during and after Hurricane Floyd and was instrumental in reducing response time in closing roads and evacuating persons from highrisk areas. Following Hurricane Floyd, no injuries were reported despite the failure of 36 dams (14 high hazard, 5 intermediate, and 12 low or unclassified dams). In the days and months following Hurricane Floyd, North Carolina dam safety personnel worked to ensure the safety of over fifty dams damaged by the hurricane. Dam owners, safety inspectors and local emergency management personnel monitored these dams asking owners to lower water levels and/or complete emergency repairs.

Dams in Wayne County

There are 25 dams located in Wayne County, 12 of those dams are rated "high hazard" meaning that if a failure were to occur there is a probable loss of one or more human lives and property damage would probably exceed \$200,000. There are no dams located in Wayne County classified as having a "significant hazard" rating, meaning those dams where failure or misoperation results in no probable loss of human life, but can cause economic loss, environment damage, disruption of lifeline facilities, or impact other concerns. Significant hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure. The remaining 13 dams are classified as having a "low" hazard rating, meaning that no human or property loss would be affected. Losses are principally limited to the owner's property.

		Hazard			Drainage
Dam Name	Dam Status	Potential	Stream	Nearest Town	Area
Aycock Millpond Dam	BREACHED	High	Great Swamp	Snow Hill	5056
Bass Lake Dam	IMPOUNDING	High	West Bear Creek	Lagrange	2637
Cogdell Pond Dam	BREACHED	High	The Canal-Tr	Goldsboro	190
H.F.Lee Ash Pond (Cp&L)	EXEMPT-NCUC	High	Neuse	Goldsboro	
Lake Wackena Dam	IMPOUNDING	High	Walnut Creek	Seven Springs	8355
Old Crescent Lake Dam	BREACHED	High	Poplar Branch	Goldsboro	250
Robin Lake Estates Dam A	IMPOUNDING	High	Carraway Creek-Trib.	Seven Springs	322
Rudy Hill Dam	IMPOUNDING	High	Peters Branch	Lagrange	1914
Sleepy Creek Lake Lower Dam	IMPOUNDING	High	Sleepy Creek	Seven Springs	3114
Sleepy Creek Upper Lake Dam	IMPOUNDING	High	Sleepy Creek	Seven Springs	2777
Spring Lake Dam	IMPOUNDING	High	Walnut Creek-Trib.	Seven Springs	1300
Wayne County Wildlife Pond Dam	IMPOUNDING	High	Beaver Dam	Snow Hill	1150
Williams Millpond Dam	IMPOUNDING	High	Lewis Branch	Hallsville	6528

High Hazard Dams in Wayne County

Source: NCDENR

<u>Hazard Analysis – Dam Failure</u>

Likelihood of Occurrence of Dam Failure

Four of the twelve high hazard dams in Wayne County failed due to rains associated with Hurricane Floyd. Failure of one or more of the other hazard dams in the county could occur due to high rain precipitation or other events could result in significant damage to downstream properties and the possible loss of human life. The likelihood of a significant high hazard dam failure can be classified as "possible".

Likely Range of Impact for Dam Failure

The potential for dam failure is confined to limited areas of the County, thus the range of impact can be classified as "small". For the Village of Walnut the failure of the dam on Lake Wackena would also have a small affect as the drainage area of the dam is outside the Village.
Probable Level of Impact for Dam Failure

With limited possibility of occurrence and small exposure, the probable level of impact of dam failure in Wayne County can be categorized as "negligible". The failure of either of the two dams in Walnut would be 'critical".

Wayne County Hazard Index for Dam Failure

The hazard index for dam failure in Wayne County is categorized as "low" based on a rating of "possible" occurrence, "small" range of impact, and "negligible" level of impact. This hazard index of "low" indicates that dam failure, especially given the regulation and inspection programs of the NC Dam Safety Program, poses a relatively low threat. Hazard mitigation efforts should continue to rely primarily on the State Dam Safety Program to discover and correct any potential failure problems.

Droughts

Droughts are not rare or random events but normal, recurrent features of climate. Droughts occur in virtually all-climatic zones, but drought characteristics vary significantly from one region to another.

Drought is a temporary aberration and differs from aridity, which is restricted to low rainfall regions, and is a permanent feature of climate. Drought originates from a deficiency of precipitation over an extended period of time, usually a season or more. This deficiency results in a water shortage for some activity, group, or environmental sector.

Drought should be considered relative to some long-term average condition of balance between precipitation and evapotranspiration (i.e., evaporation + transpiration) in a particular area, a condition often perceived as "normal". It is also related to the timing (i.e., principal season of occurrence, delays in the start of the rainy season, occurrence of rains in relation to principal crop growth stages) and the effectiveness (i.e., rainfall intensity, number of rainfall events) of rain events. Other climatic factors such as high temperature, high wind, and low relative humidity are often associated with drought and can significantly aggravate drought severity.

The more recent understanding that a deficit of precipitation has different impacts on groundwater, reservoir storage, soil moisture, snow-pack, and stream-flow led to the development of the Standardized Precipitation Index (SPI) in 1993. The SPI was designed to quantify the precipitation deficit for multiple time scales. These time scales reflect the impact of drought on the availability of the different water resources. Soil moisture conditions respond to precipitation irregularities on a relatively short scale. Groundwater, stream-flow, and reservoir storage reflect longer-term precipitation anomalies.

Palmer Drought Index- SPI Values			
2.0+ extremely wet			
1.5 to 1.99	very wet		
1.0 to 1.49	moderately wet		
99 to .99	near normal		
-1.0 to -1.49	moderately dry		
-1.5 to -1.99	severely dry		
-2 and less	extremely dry		

Sequence of Drought Impacts

When drought begins, the agricultural sector is usually the first to be affected because of heavy dependence on stored soil water. Soil water can be rapidly depleted during extended dry periods. If precipitation deficiencies continue, then people dependent on other sources of water will begin to feel the effects of the shortage. Those who rely on surface water (reservoirs and lakes) and subsurface water (ground water), for example, are usually the last to be affected. A short-term drought that persists for 3 to 6 months may have little impact on these sectors, depending on the characteristics of the hydrologic system and water use requirements.

When precipitation returns to normal and meteorological drought conditions have abated, the sequence is repeated for the recovery of surface and subsurface water supplies. Soil water reserves are replenished first, followed by stream-flow, reservoirs and lakes, and ground water. Drought impacts may diminish rapidly in the agricultural sector because of its reliance on soil water, but linger for months or even years in other sectors dependent on stored surface or subsurface supplies. Ground water users, often the last to be affected by drought during its onset, may be the last to experience a return to normal water levels. The length of the recovery period is a function of the intensity of the drought, its duration, and the quantity of precipitation received as the episode terminates.

Location	Date	Time	Type	<u> </u>	Injuries
Wayne County	10/1/1998	12:00 AM	Drought	0	0
Totals	0	0			

Temperature Extremes for Wayne County 1993-2003

Source: NOAA

Hazard Analysis – Droughts

Likelihood of Occurrence of Droughts

Since 1980, there have been several periods of significant drought affecting the southeastern portion of the United States. Although there are six years where I recorded instances of drought that occurred in Wayne County,

these hazardous events can be considered "likely" in Wayne County. This rating indicates that there is between a 10% and 100% probability in the next year or at least one chance within the next ten years that a drought or heat wave will occur in this locality.

Likely Range of Impact for Droughts

When droughts and heat waves do occur, they impact several states or an entire region of the United States; therefore, the range of impact can be classified as "large". This specifies an estimated impacted region consisting of between 40 % to 100 % of the total jurisdictional area.

Extended droughts can have a significant impact on local resources and local economies as evidenced by data on drought impacts since 1980. Heat waves have a much more limited impact, but considered together these two related natural hazards can have a huge impact on a community; therefore, the probable level of impact can be classified as "limited".

Wayne County Hazard Index for Droughts

The hazard index for droughts and heat waves in Wayne County is categorized as "moderate" based on a "likely" occurrence, "large" range of impact, and "limited" level of impact. This hazard index of "moderate" indicates that droughts and heat waves pose a relatively large threat in Wayne County and that major hazard mitigation efforts are advised. However, mitigating the impact of a drought or heat wave is generally considered a State or regional issue and planned for at those levels. Local initiatives could include public education and limits on water usage.

North Carolina Natural Hazards Summary Assessment

The North Carolina Division of Emergency Management has developed a worksheet to identify each of the 100 county's vulnerability to the nine natural hazards. This worksheet ranks each natural hazard into three categories, low, medium and high. The Hazard Analysis identifies the nine natural hazards that have the potential to affect Wayne County.

Based on prior analyses conducted by the North Carolina Division of Emergency Management, Wayne County is at "High Risk" from Tornadoes and Flooding. The Moderate Risks include Hurricanes, Nor'easters and Thunderstorms. Hazards posing Low risk for the County include Wildfire, Severe Winter Storms, Earthquakes and Land slides. Wayne County's assessment is below. The flood threat for the municipalities is low to high depending upon the amount of their jurisdiction that is within the 100-year floodplain.

Other natural hazards that could occur in other parts of the country (i.e.: volcanoes, tsunamis, etc.) were not analyzed because of (1) the location of Wayne County and the municipalities, (2) there is no history of any such occurrence and the likelihood of such occurrence is small, (3) there was no indication in any researched document that such events were ever likely to occur.

The Advisory Committee and staff worked together to form the Hazard Assessment shown below. The information for the table was taken from information provided the NC Division of Emergency Management.

	Hazai u Assessment							
Natural Hazard	ral Hazard Vulnerability							
	Eureka	City of	Walnut	Fremont	Mount Olive	Pikeville	Seven	Wayne
		Goldsboro	Creek				Springs	County
Flood	Low	Moderate	Moderate	Low	Low	Moderate	High	Moderate
Hurricane	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Thunderstorms	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Tornado	High	High	High	High	High	High	High	High
Winter Storms	Low	Low	Low	Low	Low	Low	Low	Low
Wildfire	Low	Low	Low	Low	Low	Low	Low	Low
Dam Failures	Low	Low	Moderate	Low	Low	Low	Low	Low
Drought	Low	Low	Low	Low	Low	Low	Low	Low

Source: North Carolina Local Hazard Mitigation Planning Manual, local emergency personnel and citizens.

NC Emergency Management Hazard Analysis for Wayne County

The North Carolina <u>Local Hazard Mitigation Planning Manual</u>, published by the NC Division of Emergency Management, was used as another reference source for assessing natural hazards. Table A-29 shows the State's summary assessment for Wayne County for the nine natural hazards identified in the <u>Local Hazard Mitigation</u> <u>Planning Manual</u>.

Natural Hazard Summary Assessment for Wayne County

Natural Hazard	Vulnerability of Wayne County ^b
Hurricane	Moderate
Flood	High
Tornado	High
Thunderstorm	Moderate
Severe Winter Storm	Low
Wildfire	Low

Source: Local Hazard Mitigation Planning Manual, NCDEM, 1998, p. 84-5.

^a The "Local Hazard Mitigation Planning Manual" does not rate the following hazards for Wayne County - coastal erosion, levee failures, coastal storms, tsunamis, and volcanoes.

^b The North Carolina Division of Emergency Management Methodology: Each of the one hundred counties in North Carolina was categorized into one of three levels of natural hazard likelihood – "Low", "Moderate", or "High" for eight natural hazards. Some assignments were made, in part, using the Climate Division (formulated by the National Climatic Data Center - Guttman and Quayle, 1995) to which each county was assigned. The Climate Division number for Wayne County is 8. For additional information on how ratings were developed, see Local Hazard <u>Mitigation Planning Manual</u>, North Carolina Division of Emergency Management, November 1998.

^oThunderstorms were not rated in the Local Hazard Mitigation Planning Manual. For the purposes of this report, thunderstorms were rated moderate.

The manual also estimated the potential impact of various natural hazards for Wayne County as shown in Table below. This information from the <u>Local Hazard Mitigation Planning Manual</u> was considered as part of the analysis process.

Natural Hazard	Range	Wayne County
Frequency of All Hurricanes, 1900-2009	Saffiir-Simpson Class 1-5	0
Frequency of Minor Hurricanes, 1900-2009	Saffiir-Simpson Class 1-2	0
Frequency of Major Hurricanes, 1900-2009	Saffiir-Simpson Class 3-5	0
Nor'easter Vulnerability	1 = some direct vulnerability	0
Frequency of Tornadoes, 1953-2009	Number of tornadoes	14
Extreme 1-day snowfall, 1987	In inches	9
Cold Air Damming Vulnerability	1 = some vulnerability	0
Wildfires, 1950-2009	Low = 1, Mod. =2, High = 3	1
Number of Acres Burned	Low = 1, Mod. =2, High = 3	1

Natural Hazards – Potential Impact for Wayne County

Source: Local Hazard Mitigation Planning Manual, NCDEM, 1998, pp. 88-91.

Final Hazard Analysis - Wayne County Composite Hazard Index

Certain parts of the County, such as floodplains and steep slopes, are more prone to hazards. In addition, certain types of hazards are likely to produce only localized effects while others have wide spread effects. Some natural hazards have extraordinary impacts but occur infrequently. Other hazards occur annually or several times a decade, but cause little damage.

The total potential impact of each type of hazard can be projected using a combination of likely strength of the event, the size of the area(s) affected, and the density of human activity within the likely path of the hazard. The tables below give each natural hazard a "hazard index" rating based on the combination of three factors – likelihood of occurrence, size of potential area affected, and the potential impact of the event. An explanation of the terms for likelihood of occurrence and level of potential impact can be found in the tables at the front of this section. (Note: Coastal erosion, tsunamis and volcanoes are not included in the table below as the County has determined that the community is not at risk for these natural hazards.) The hazards not listed for the individual towns below have the same hazard index as the county.

The Advisory Committee discussed each of the Hazards described previously. Being led by the County Planning Department they looked at frequency of events, range and level of impact. The tables below are the result of the analysis.

Hazard Type	Likelihood of Occurrence	Potential Area Affected	Potential Impacts	Hazard Index (Combined
				ranking)
Dam Failures	(2)	(1)	(1)	(4)
	Possible	Small	Negligible	Low
Droughts	(3)	(3)	(2)	(8)
	Likely	Large	Limited	Moderate
Floods	(2)	(2)	(1)	(5)
	Possible	Medium	Limited	Moderate
Hurricanes	(2)	(3)	(2)	(7)
	Possible	Large	Limited	Moderate
Severe Storms and Tornadoes	(4)	(1)	(1)	(6)
	Highly Likely	Small	Negligible	Moderate
Wildfires	(4)	(1)	(1)	(6)
	Highly Likely	Small	Negligible	Moderate
Winter Storms and Freezes	(3)	(3)	(2)	(8)
	Likely	Large	Limited	Moderate

COMPOSITE HAZARD INDEX FOR WAYNE COUNTY

COMPOSITE HAZARD INDEX FOR TOWN OF EUREKA

Hazard Type	Likelihood of Occurrence	Potential Area Affected	Potential Impacts	Hazard Index (Combined ranking)
Floods	(2)	(1)	(1)	(4)
	Possible	Small	Negligible	Moderate

COMPOSITE HAZARD INDEX FOR TOWN OF FREMONT

Hazard Type	Likelihood of Occurrence	Potential Area Affected	Potential Impacts	Hazard Index (Combined ranking)
Floods	(2)	(1)	(1)	(4)
	Possible	Small	Negligible	Moderate

COMPOSITE HAZARD INDEX FOR TOWN OF PIKEVILLE

Hazard Type	Likelihood of Occurrence	Potential Area Affected	Potential Impacts	Hazard Index (Combined ranking)
Floods	(2)	(1)	(1)	(4)
	Possible	Small	Negligible	Moderate

COMPOSITE HAZARD INDEX FOR TOWN OF MOUNT OLIVE

Likelihood of Occurrence	Potential Area Affected	Potential Impacts	Hazard Index (Combined ranking)
(2) Dessible	(1) Small	(1) Nagligible	(4) Moderata
	(2) Possible	Likelihood of OccurrencePotential Area Affected(2)(1)PossibleSmall	Likelihood of OccurrencePotential Area AffectedPotential Impacts(2)(1)(1)PossibleSmallNegligible

Hazard Type Likelihood of Potential Area Potential Hazard Index Affected (Combined Occurrence Impacts ranking) Floods (2) (3) (3) (8) Possible Large Critical Moderate

COMPOSITE HAZARD INDEX FOR TOWN OF SEVEN SPRINGS

COMPOSITE HAZARD INDEX FOR VILLAGE OF WALNUT CREEK

Hazard Type	Likelihood of Occurrence	Potential Area Affected	Potential Impacts	Hazard Index (Combined ranking)
Floods	(2)	(1)	(2)	(5)
	Possible	Small	Negligible	Moderate
Dam Failure	(1)	(1)	(1)	(3)
	Unlikely	Small	Negligible	Moderate

Hazard Type	Likelihood of Occurrence	Potential Area Affected	Potential Impacts	Hazard Index (Combined ranking)
Dam Failures	(2)	(1)	(1)	(4)
	Possible	Small	Negligible	Low
Droughts	(3)	(3)	(2)	(8)
-	Likely	Large	Limited	Moderate
Floods	(2)	(2)	(1)	(5)
	Possible	Medium	Limited	Moderate
Hurricanes	(2)	(3)	(2)	(7)
	Possible	Large	Limited	Moderate
Severe Storms and Tornadoes	(4)	(1)	(1)	(6)
	Highly Likely	Small	Negligible	Moderate
Wildfires	(4)	(1)	(1)	(6)
	Highly Likely	Small	Negligible	Moderate
Winter Storms and Freezes	(3)	(3)	(2)	(8)
	Likely	Large	Limited	Moderate

COMPOSITE HAZARD INDEX FOR THE CITY OF GOLDSBORO

<u>Appendix Footnotes</u> ¹⁻¹ "Preventing Disasters through Hazard Mitigation", Ana K. Schwab, <u>Popular Government</u>, Spring 2000, p.4. ¹⁻² State Climate Office of North Carolina, North Carolina State University.

1-3 North Carolina Natural Hazards Mitigation (Section 409) Plan, North Carolina Department of Environment and Natural Resources, 1998, p. 14.

¹⁻⁴ <u>Local Hazard Mitigation Planning Manual</u>, NC Division of Emergency Management, 1998, p. 77.

Section E - Vulnerability Analysis

Natural phenomenon such as Hurricanes, Earthquakes and thunderstorms take place on a daily, weekly and yearly basis. These phenomenons become hazards when they interact with people and associated property in a way that affects the livelihood of Wayne County. People become vulnerable to these hazards when they experience harm and property damage. This Vulnerability may result in loss of life or injury to people and livestock. Infrastructure, schools, hospitals, airports, homes and businesses can all be vulnerable to any given hazard. The vulnerability analysis will help identify the extent to which Wayne County is susceptible to the impacts of Natural Hazards. Degrees of Vulnerability to hazards generate a set of conditions that exist in both present and future. Those degrees change as development may increase or decrease.

Since Wayne County and its municipalities are susceptible to all hazards, the vulnerability for this plan can be summarized in terms of building count by identifying all of the structures that are in the county and municipalities. The table below identifies the number of structures by residential and commercial/industrial/governmental/institutional typology. These jurisdiction's structures represent the vulnerability.

			Commercial/
			Industrial/
			Governmental/
Municipality or		Residential	Institutional/
County	2010 Population	Structures	Structures
Eureka	197	77	13
Fremont	1,255	492	100
Pikeville	678	266	41
Walnut Creek	835	327	17
Seven Springs	110	43	9
Mount Olive	4,589	1,800	367
Goldsboro	36,437	14,289	1956
County	78,522	29,706	1041
remainder			
	122,623	47,000	3,544

According to the Wayne County Tax Office, approximately \$14,646,300 dollars of real property value was lost due to storm related damages in 1999. Another \$145,350 dollars of personal property value was also lost during this time period. To estimate the potential amount of real property vulnerable to flooding one can use the County's Geographic Information System. Overlaying the floodplain data with the tax parcels can do this. However, when this is done every property is picked out even those that cross the flood boundary. This may not give an accurate count of those properties vulnerable but it will give an exaggerated estimate to get an idea. The following table represents the values of property in 2010 that are vulnerable to flooding.

Total Real Property Value (2010)	\$ 6,544,201,420
Property value within 100-year floodplains with structures.	\$ 624,742,350
Property value within 100 year floodplains without	
structures	\$ 1,087,537,420
All Property Within 100 year floodplains	\$ 1,712,279,770

Real Property Value Vulnerable to Flooding

Source: FEMA Q3 Flood data, Wayne County Tax Assessors Office

Repetitive Loss Structures

The number of structures within the County's jurisdiction that are reported as repetitive loss structures due to flooding is three. The 2005 plan had four structures. One was in an area annexed by the City of Goldsboro and is included as part of the City of Goldsboro's repetitive loss data. The three remaining structures are in areas that are only affected by a 100 year flood from the Neuse River. The tax value of the structures and land is \$201,480. The structures alone are valued at \$160,770. These values may increase as Wayne County is in the process of a re-evaluation. Two of the structures have been elevated to minimum NFIP requirements. As a result of this action and the infrequency of flood events the only appropriate action is acquisition of the property.

In the Repetitive loss area for Wayne County no structures have been built since 1996. After the flood associated with Hurricanes Fran and Floyd the County initiated a buyout program and removed over 200 dwellings from the repetitive loss area. Approximately 210 dwellings remain in the area. However, only the ones described above have suffered from repetitive losses. Wayne County ordinances will not allow any of the vacant property in the flood plain to be developed into a subdivision or mobile home park.

The number of structures within the City of Goldsboro's jurisdiction that continue to be reported as repetitive loss structures due to flooding is nineteen (19). Eighteen of these structures are residential and one is a large commercial structure. The tax value of these structures and land is \$ 1,591,350. The structures alone are valued at \$ 1,286,150. The commercial structure makes up approximately one third of this value. These values may increase as Wayne County is in the process of a property revaluation.

After the floods associated with Hurricanes Fran and Floyd the City initiated a buyout program and removed over 326 dwellings from the flood-prone areas. The City of Goldsboro floodplain development ordinance requires stricter standards than the NFIP model floodplain development ordinance for all development within the 1-percent chance flood areas.









Critical Facilities Vulnerability

The location and type of critical facilities should be updated on a regular basis. These facilities can be disrupted due to a hazard event, which may drastically hinder daily operations. The ability to protect and locate these facilities away from hazards and people is critical to the welfare of the communities in Wayne County.

Critical Facilities

Type of Critical Facility	Number of Facilities
Fire/EMS	34/9
Schools/Shelters	28
Water Treatment Plants	4
Waste Water Treatment Plants	5
Intensive Livestock Operations	178
Rail Transportation	3
Major Thoroughfares	7
Major Bridges	8
Airports	2
Hospitals	2
Military Installation	1

Present Vulnerability

The degree of harm to people and damage to property an area would experience if a hazard would occur today defines present vulnerability. Population, infrastructure and types of development affect an areas current vulnerability. One of the easiest ways to see a community's vulnerability is through a map. Maps can show where the population concentrates and the proximity to certain hazards. It is important to know where and to what extent the community is susceptible to the impacts of hazards. The critical facilities map attached to this plan shows one fire station (Seven Springs) and one EMS station (Station 1) inside the 100-year flood plain. These are the only two critical facilities that could feasibly be moved out of a hazard area. The total cost to replace these facilities would be approximately \$1.1 million. This estimate is based on cost is based for the Town of Pikeville to this year build a fire station out of the 100 year flood plain on an area of higher ground.

Future Vulnerability

As population continues to increase, the vulnerability to any given hazard increases, especially if the people continue to locate in a hazard risk area. In 1990 the population for Wayne County was 104,666. In 2000 the population grew 7.64 % to a total of 113,329. The current estimate is approximately 115,000. At the time of this plan preparation the results from the 2010 US Census had not been released. Those updated figures will be used in the 2015 update.

Wayne County continues to be a mix of agriculture and urban. At the time of the previous plan urban development was projected to continue and lead to a population growth of 1% per year. With the current plan urban development has slowed. This has reduced the potential conflict that can occur when urban type development expands into hazard areas. Prime farmland in Wayne County remains plentiful, and these lands are the first to be developed. Once the best land is developed hazard risk areas such as flood plains will later become more attractive to the population. If urban development starts to grow again in Wayne County the population may become susceptible to adverse impacts of natural hazards. Local plans do not currently call for any critical facilities to be built in hazard areas.





At the present time neither the County nor the Municipalities have plans for any additional critical facilities in high hazard areas. The existing critical facilities in high hazard areas will be relocated as technology and funds will allow.



Section F - Community Capability

The Capability Assessment describes the legal authority vested in local governments to pursue measures to mitigate the impact of natural hazards. This assessment is an inventory of existing mitigation measures and organizations with hazard mitigation responsibility. This includes mitigation measures that may be designed for another purpose but directly or indirectly affects Wayne County's Mitigation efforts.

This assessment allows credit to be given for those mitigation measures that exist and work in Wayne County to reduce further vulnerability to natural hazards. However, the assessment will identify and analyze any existing local policies that may weaken existing mitigation efforts.

Legal Capability

Local governments in North Carolina are allowed to institute mitigation programs, policies and actions. These local government powers fall into four basic groups: regulation, acquisition, taxation and spending. The capability assessment will enumerate the local version of these powers. Hazard Mitigation measures can be carried out under these four types of powers.

A. Regulations

1. General Police Power

Local governments in North Carolina have been granted broad regulatory powers in their jurisdictions. North Carolina General Statutes (NCGS) 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), municipalities 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 (NCGS 160A Art. 8 (Delegation and Exercise of the General Police Power to Cities and Towns); 153A, Art. 6 (Delegation and Exercise of the General Police Power to Counties)). The Wayne County Sheriffs Office is responsible for law enforcement throughout the County including the Towns of Eureka and Seven Springs. Other municipalities included in this plan have their own law enforcement staff.

2. Building Codes and Building Inspection

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 (NCGS 143-138(c)). However, municipalities and counties may adopt codes for their respective areas if approved by the state as providing "adequate minimum standards" (NCGS 143-138(e)). Local regulations cannot be less restrictive than the

state code. Exempted from the state code are public utility facilities other than buildings; liquefied petroleum gas and liquid fertilizer installations, farm buildings outside municipal jurisdictions. No state permit may be required for structures under \$20,000. (Note that exemptions apply only to state, not local permits).

Local governments in North Carolina are also empowered to carry out building inspection. NCGS 160A, Art. 19. Part 5; and 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.

The Wayne County Building Inspections Department is responsible for building code enforcement throughout the County and in each of the municipalities listed in this plan except Mount Olive and the City of Goldsboro.

3. 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, flood plain ordinances, and subdivision controls.

a. 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 (NCGS 160A-3 87). 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 (NCGS 160A-361). The importance of the planning powers of local governments is emphasized in NCGS 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. The County Planning Department and Planning Board are responsible for planning functions throughout the County except the City of Goldsboro. Each municipality except Seven Springs has an independent Planning Board. The County staff assists the municipalities except the City of Goldsboro in planning projects on an as need basis.

b. Zoning

Zoning is the traditional and nearly universal 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 NCGS 160A-381; and for counties in NCGS 153A-340 (counties may also regulate inside municipal jurisdiction at the request of a municipality (NCGS 160A-360(d)). 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 include the type of use (e.g., residential, commercial, industrial) as well as minimum specifications for use such as lot size, building height and set backs, 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 (NCGS 160A-382). Districts may include general use districts; overlay districts, and special use or conditional use districts. Zoning ordinances consist of maps and written text.

Wayne County is divided into various zoning districts primarily around schools and airports. The Planning Department is responsible for enforcement of the zoning ordinance within the County's jurisdiction. The Wayne County Zoning Map can be viewed at <u>www.waynegov.com/documents</u>. Each municipality, except Seven Springs, has a separate zoning ordinance that is enforced by a local official.

c. Flood plain Regulation

In 2000, the North Carolina General Assembly adopted an act entitled "An Act to Prevent Inappropriate Development in the One Hundred-Year Flood plain and to Reduce Flood Hazards". By this act, the North Carolina statutes regulating development within floodways were rewritten to include flood plain regulation (NCGS 143-214.51-214.61). The purpose of the law is to:

- 1. Minimize the extent of floods by preventing obstructions that inhibit water flow and increase flood height and damage.
- 2. Prevent and minimize loss of life, injuries, property damage, and other losses in flood hazard areas.
- 3. Promote the public health, safety, and welfare of citizens of North Carolina in flood hazard areas.

The statute authorizes local governments to adopt a flood hazard prevention ordinance to regulate uses in flood hazard areas and to grant permits for the use of flood hazard areas that are consistent with the requirements of the statute. It also provides for certain uses within flood hazard areas without a permit consistent with local land use ordinances (NCGS 143-215.54).

The statute establishes minimum standards for local ordinances and provides for variances for prohibited uses as follows:

- 1. A flood hazard prevention ordinance adopted by a county or city pursuant to this Part shall, at a minimum:
 - a. Meet the requirements for participation in the National Flood Insurance Program and of this section.
 - b. Prohibit new solid waste disposal facilities, hazardous waste management facilities, salvage yards, and chemical storage facilities in the 100-year flood plain except as noted in section (b) below.

- c. Provide that a structure or tank for chemical or fuel storage incidental to a use that is allowed under this section or to the operation of a water treatment plant or wastewater treatment facility may be located in a 100-year flood plain only if the structure or tank is either elevated above base flood elevation or designed to be watertight with walls substantially impermeable to the passage of water and with structural components capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.
- 2. A flood hazard prevention ordinance may include a procedure for granting variances for uses prohibited under G.S. 143-215.54(c). A county or city shall notify the Secretary (of Crime Control and Public Safety) of its intention to grant a variance at least 30 days prior to granting the variance. A county or city may grant a variance upon finding that all of the following apply:
 - a. The use serves a critical need in the community.
 - b. No feasible location exists for the location of the use outside the 100-year flood plain.
 - c. The lowest floor of any structure is elevated above the base flood elevation or is designed to be watertight with walls substantially impermeable to the passage of water and with structural components capable of resisting hydrostatic and hydrodynamic loads and the effects of buoyancy.
 - d. The use complies with all other applicable laws and regulations.

The statute authorizes priority ratings for local government applications for revolving loans or grants based on adoption of a local comprehensive land use plan, a zoning ordinance, or other measure that significantly contributes to the implementation of the comprehensive land use plan and a flood hazard ordinance.

Wayne County and each of the municipalities have a separate Flood Damage Prevention Ordinance. The County Planning Department is responsible for enforcement of the County and Seven Springs flood ordinance. The County ordinance can be viewed at <u>www.waynegov.com/documents</u>. The City of Goldsboro ordinance can be viewed at <u>www.ci.goldsboro.nc.us/documents/engineering/flood_damage_prevention.pdf</u>. Each of the other municipalities enforces its own flood ordinance.

d. Subdivision Regulation

Subdivision regulations control the division of land into parcels for the purpose of building development or sale. Flood-related subdivision controls typically require that the subdivider install adequate drainage facilities, and design water and sewer systems to minimize flood damage and contamination. The Wayne County subdivision ordinance prohibits 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 NCGS 160-371, and in 153-330 for counties outside of municipalities and municipal extraterritorial areas. 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. (NCGS 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 (NCGS 160A-376(2)).

The community thus possesses great power (in theory, anyway) to prevent unsuitable development in hazard-prone areas. (NCGS 160A, Art. 8. (Delegation and Exercise of the General Police Powers to Cities and Towns); Art. 19 (Planning); Part 3 (Zoning); and 153A. Art. 6 (Delegation and Exercise of the General Police Power to Counties; Art. 18 (Planning and Regulation of Development); Part 2 (Subdivision Regulation); Part 3 (Zoning).

The County and municipalities have separate subdivision ordinances that are enforced by the individual local government. The Wayne County subdivision ordinance can be viewed at <u>www.waynegov.com/documents</u>. The City of Goldsboro subdivision ordinance can be viewed at www.ci.goldsboro.nc.us/city_hall/zoning_code.aspx.

B. 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 simple 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 (NCGS 153A. Art. 8; 160A. Art. 11 or high hazard areas, for example, it can reduce environmental costs.).

Wayne County, Seven Springs and Walnut Creek took advantage of this authority after Hurricane Floyd to acquire over three hundred structures in low-lying areas. The City of Goldsboro took advantage of this authority after Hurricanes Fran and Floyd.

C. Taxation

The power to levy taxes and special assessments is an important tool delegated to local governments by North Carolina law. The power of taxation extends beyond merely the collection of revenue, and can have a profound impact on the pattern of development in the community. Many communities set preferential tax rates for areas, which are unsuitable for development (e.g., agricultural land, and 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 (NCGS 160A-238). 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 necessary services within municipal or county boundaries. In addition, they are useful in distributing to the new property owners the costs of the infrastructure required by new development. The County of Wayne Tax Office is responsible for property tax collections. Each municipality sets their own rate but has contracted with the County for collection.

D. Spending

The fourth major power that has been delegated from the North Carolina 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 a Capital Improvement Plan (CIP).

A CIP is a schedule for the provision of municipal or county services over a specified period of time. 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 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 services. A 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 it can direct growth away from environmentally sensitive.

The County of Wayne and the City of Goldsboro have individually locally adopted Capital Improvement Plans. The plans are updated each year during the budget development process. Items are added or deleted as appropriate.

Institutional Capability

The institutional framework within which the county and municipalities operates helps assess the capability of Wayne County to develop and implement a Hazard Mitigation Program. The type of government and the decision-making positions that will likely play a role in putting the Hazard Mitigation Plan to work are listed below.

A. Elected Officials

This seven-member Board of Commissioners serves as the county's governing body elected in district elections. These commissioners are charged with adopting policies, ordinances and rules for all of the citizens and employees of Wayne County. In addition, each municipality has an elected board that is charged with establishing policies, ordinances and rules for the citizens of the towns.

B. County/City/Town Manager

The county manger sees that the commissioners' decisions on policies, ordinances and laws are put into action. The position's primary duties and responsibilities also include serving as the county budget officer,'

supervising county operations with assistance of department heads,' acting as liaison for the Board of Commissioners,' and addressing issues from Wayne County residents. Each municipality covered in this plan, with the exception of Eureka and Seven Springs, has a chief administrator or manager. The municipal managers are responsible for day-to-day activities in the municipalities.

C. Emergency Services Director

The Emergency Services Director serves a variety of roles including but not limited to: Emergency Management Coordinator, Fire Marshall and Emergency Medical Services Coordinator. Some of the primary responsibilities include:

- Emergency 911 Communications.

- Respond to emergency situations such as hazardous material spills, disasters and fire related incidents on a 24-hour on call basis.

- Supervise emergency personnel; coordinate volunteer and professional emergency responder activities including emergency exercise drills for the county.

- Organize training and education programs for the public, emergency personnel including fire, rescue and law enforcement.

- Develop and administer budgets and policy for Emergency Management, Fire and EMS Service programs.

- Generate and submit reports, databases and associated data within guidelines and time frame of State,

Federal Emergency Management, Fire Service and EMS regulations.

- Maintain liaison with state, federal and local officials.

- Maintain Emergency Operations Center (EOC) operational readiness.

Wayne County maintains a combined Emergency Medical Services and dispatching system for the entire County. All 911 calls are answered at the Communications Center located in the Jeffrey's Building in Goldsboro.

D. Public Information Officer

The Public Information Officer (PIO) is responsible in formulation and releasing information about the County's disaster or incident situation to the news media and other appropriate agencies. Some of the primary responsibilities of the PIO include but are not limited to:

Establish a single incident information center.

Prepare initial information summary as soon as possible after arrival.

Release information to news media and post information in accordance with policy of the Incident Commander.

Attend meetings at Command Post to update news release.

Maintain activity log as necessary.

A representative of the County Managers office serves as the PIO in the event of a disaster.

In addition, each municipality may also designate a PIO to coordinate the release of information during a disaster or incident situation.

E. Inspections Department

The Wayne County Inspections Department is responsible for issuing building permits and inspection of all new construction including residential and non-residential buildings, renovations, and re-inspections of vacant buildings in the County's jurisdiction and all of the towns except Mount Olive and the City of Goldsboro. The Town of Mount Olive has a certified inspector that receives assistance from the County on an as need basis. Inspections are provided in accordance with the North Carolina State Building Code and Wayne County's Building Code Ordinance. The City of Goldsboro has a Building Inspections department with several building inspectors. Inspections are provided in accordance with the North Carolina State Building State Building Code and the City of Goldsboro Building Code Ordinance. The County maintains interlocal agreements with surrounding jurisdictions and the Department of Insurance to provide additional inspectors in the event of a disaster. The inspections department also assists in enforcement of the Flood Ordinance. The City of Goldsboro Flood Ordinance is enforced by the Engineering department with assistance from the Inspections and Planning departments.

F. Planning Department

The Wayne County Planning department oversees land development planning, permitting and zoning in the County's jurisdiction. Included in this responsibility is administration of the County's Zoning, Subdivision, Manufactured Home Park, Junk Vehicle, Flood Damage Prevention, Storm Water and Watershed Ordinances. The purpose of these land development-planning ordinances is to ensure orderly growth and development patterns for the enhancement of the County's environmental and economic well being. The other jurisdictions with the exception of the City of Goldsboro rely on the Town Administrator with assistance from the County on an as need basis. The City of Goldsboro Planning department is responsible for enforcement of the City's Zoning, Subdivision, Manufactured Home Park, Junk Vehicle and Watershed Protection Ordinances.

Political Capability

Many officials listed in the institutional framework analysis are elected. With this is mind; decisions are sometimes swayed due to public outcries of hardships brought upon from natural disasters. Effective public awareness campaigns and information distributed about economic efficiency and social utility of effective mitigation measures in the long run can help achieve acceptance by the local elected officials. Wayne County along with each municipality is capable of implementing a Hazard Mitigation Plan that will benefit the citizens, elected officials and local, state and federal agencies as well.

Fiscal Capability

There are many diverse sources of funding available to communities to implement local hazard mitigation plans, goal and strategies. These funding sources usually have a particular focus, which will fund only part of a project; however, the community can combine theses funding efforts with those of others serving multiple projects. The grant and loan programs described later in this section are significant but not the sole sources of funding options. Listed below are some funding sources communities in Wayne County can explore.

A. Local Funding

Local businesses and organizations will frequently support projects that benefit their customers or employees. Local governments and volunteer organizations can donate in kind services to match grants to aid in additional mitigation opportunities.

B. State and Federal Funds

These Federal and State Programs listed below have funds available to carry out some of Wayne County's Hazard Mitigation Plan Initiatives. These funding sources offer funds for hazard mitigation, redevelopment, and post disaster recovery.

1. Hazard Mitigation Grant Program (HMGP)

The HMGP provides 75% federal and 25% state/local cost share funding for mitigation measures through the post disaster planning process. The state or local share may be met with cash or inkind services. The North Carolina Legislature has agreed to pay local share for the Hurricane Fran and Floyd Disasters. HMGP funds are available to state and local governments, Indian Tribes, and Private Non-Profit organizations following a Presidential Disaster Declaration. These funds can be used for retrofitting facilities, acquisition, relocation and development of comprehensive hazard mitigation programs and standards with implementation components. Wayne County, the City of Goldsboro and Seven Springs have applied for this grant for as a result of the Hurricane Fran and Floyd disasters.

On September 23, 1997 Wayne County was awarded its first grant from the Federal Emergency Management Agency for the acquisition of 37 properties through the Hazard Mitigation Grant Program. The City of Goldsboro acquired 326 properties through the Hazard Mitigation Grant Program. This program was set up by the State and FEMA to purchase homes substantially damaged within the flood plains. This program allowed property owners a chance to relocate themselves out of harms way. Through the years and subsequent projects, Wayne County and Seven Springs have purchased 322 properties and 288 acres through the HMGP process. The table below illustrates the status of the County's HMGP.

Source of Funding	Award Date	Amount	Acquired	Acreage Acquired
			Properties	
FEMA HMGP Fran Phase I	9/23/97	\$2,482,964.00	37	57.00
FEMA HMGP Fran Phase II	11/4/99	\$1,040,571.00	62	40.00
FEMA HMGP Floyd Phase I	5/1/00	\$13,049,365.00	177	150.00
FEMA HMGP Floyd Phase II	10/9/00	\$896,844.00	17	17.00
FEMA HMGP Floyd Phase III	10/18/00	\$101,238.00	3	2.00
FEMA HMGP Floyd Phase IV	3/21/01	\$212,842.00	2	1.00
FEMA HMGP Floyd Phase V	8/7/01	\$330,108.00	8	10.00
FEMA HMGP Floyd Phase VI	7/16/01	\$447,725.00	1	9.00
FEMA HMGP Floyd Phase VII	10/17/01	\$460,171.00	4	2.00
Seven Springs HMGP project			11	4.5
Total		\$19,021,828.00	322	292.5

Table 14: HMGP Funding (Wayne County Planning Department)

2. Flood Mitigation Assistance Program (FMAP)

This grant provides funds for cost-effective measures that reduce or eliminate long-term risk of flood damage to the built environment and real property. The priority goal of this grant is to reduce repetitive losses to the National Flood Insurance Program (NFIP).

3. Public Assistance

This Post-Disaster program provides funds to help communities protect lives and property in the aftermath of a disaster and helps communities rebuild damaged facilities. This assistance has been broken down into four categories which include; Debris Removal, Emergency Work, Repair, restoration, relocation, or replacement of damaged facilities, and Community Disaster Loans. These grants cover eligible costs associated with the repair, replacement, and restoration of facilities owned by State and Local Governments or Nonprofit Organizations.

4. Community Development Block Grants (CDBG)

Community Development type activity may be eligible under the CDBG Program upon presidential declaration of a Major Disaster or Emergency. Long-term needs, such as acquisition, rehabilitation, or reconstruction of damaged property and facilities are eligible for CDBG projects.

5. Clean Water Management Trust Fund

The General Assembly established the North Carolina Clean Water Management Trust Fund (CWMTF) in 1996 to provide grants to local governments, state agencies and conservation non-profit organizations. The programs goal is to help fund projects that specifically address areas

water pollution problems including those that enhance or restore degraded waters and/or contribute to a network of riparian buffers and greenways for environmental, educational and secondary benefits. These funds can be combined with other programs to help achieve some of the hazard mitigation objectives.

Technical Capability

Wayne County's Technical Capability is diversified throughout local, state and federal agencies. First of all, a Geographic Information System (GIS) aids in identifying potential hazard areas including flood plains. This system identifies property boundaries and there placement within these hazard areas. The GIS section of the Planning Department maintains the GIS system. The mapping system for Wayne County was placed on the web in the fall of 2004. This technology provides the public with an easy access to determine flood prone property and hazardous materials sites.

The City of Goldsboro maintains its own separate Geographic Information System (GIS) which aids in identifying potential hazard areas including floodplains and other infrastructure. This system identifies property boundaries and their placement within these hazard areas. This technology provides the public with an easy access to determine flood prone property and hazardous materials sites.

State agencies provide planning assistance for special projects such as Hazard Mitigation and the necessary materials to assist with these projects. State agencies also maintain GIS systems, such as NC One Map, that allow citizens to obtain up to date flood information. The East Carolina Regional Planning Organization provides assistance in transportation projects and planning.



Section G - Mitigation Element and Existing Components

There are four elements in Emergency Management that are widely used at the local, state and federal level that deal with hazards and they're potential to cause disasters within a given community. These four elements, preparedness, response, recovery and mitigation are the components of a comprehensive emergency management system.

Of these, the Mitigation element is the most important. This element includes activities, which reduce damages from a hazardous event. These activities can occur before, during or after a hazard event and can affect all elements of emergency management. The other components are used during a disaster event while mitigation is used to lessen the loss of property or life before a disaster strikes.

During the past years Wayne County and the municipalities haves implemented a wide range of policies and ordinances that have key mitigation component activities which have the potential to reduce loss of life and property damage due to natural hazard events.

The following is a list of current ordinances along with the key mitigation components that exist in Wayne County and the individual municipalities.

Subdivision Ordinance

The purpose of the Subdivision Ordinance is to establish procedures and standards for the development and subdivisions of land within Wayne County's jurisdictions. The ordinance sets out site design standards and requires coordination among various entities including but not limited to; Department of Transportation, Utility Providers, Planning, Surveyors, Engineers, Environmental Health, Resource Conservation, etc. to ensure that the public health, safety and welfare of the general public is met. One of the key components within these ordinances includes:

- 1. No Subdivision shall be created on property entirely within the 100-year flood plain that requires the building of a new road. (Wayne County)
- 2. Property partially within the flood plain may be subdivided if each proposed lot contains an area outside the flood plain equal to the minimum lot size requirement, and any new road is built above the 100-year flood plain level. (Wayne County)

Mobile Home Park Ordinance

The purpose of the Mobile Home Park Ordinance is to regulate the placement of, and the establishment of, mobile home parks in order to promote the public health, safety, and general welfare of the citizens of Wayne County and each municipality. This ordinance sets out site design standards and requires coordination among various entities including but not limited to; Department of Transportation, Utility Providers, Planning, Surveyors, Engineers, Environmental Health, Resource Conservation, etc. Key mitigation components within the ordinance include:

1. All mobile homes must be anchored in such a manner to prevent shifting on their foundations in event of storms or high winds according to NC Building Code requirements.

2. Each mobile home lot shall be located on ground not susceptible to a 100-year base flood as defined by the Federal Emergency Management Agency and graded so as to prevent any water form ponding or accumulating on the premises.

The City of Goldsboro Unified Development Ordinance (UDO) includes both subdivisions regulations and mobile home park regulations.

Storm Water Ordinance

The legislature of the State of North Carolina has designated specific local governments (including Wayne County and the City of Goldsboro) for storm water management requirements as part of the Neuse River Nutrient Sensitive Waters storm water management strategy. This rule adopted by the North Carolina Division of Water Quality affects development within the Neuse River basin. The goal of the rules are to reduce and maintain nitrogen loading 30% below 1995 levels and to reduce the velocity and to control the volume of storm water runoff within the river basin.

The Towns in Wayne County are not required by State regulations to enforce a stormwater ordinance. However, Wayne County has determined that equal enforcement of the rule both outside and inside the municipalities is necessary. Therefore, the County ordinance is enforced in the towns for which the County performs building inspections. The City of Goldsboro Stormwater Ordinance is enforced by the Engineering department through the Development Permitting process.

Flood Damage Prevention Ordinance

Wayne County and each of the municipalities participates and are in good standing with the National Flood Insurance Program (NFIP). The Planning Director and Chief Building Inspector enforce the County's and Seven Springs flood ordinance through the Development Permit issuance process. The City of Goldsboro Flood Damage Prevention Ordinance is enforced by the Engineering department through the Development Permitting process. The Town Administrator or Clerk is the responsible person in each of the remaining municipalities. The key components of each ordinance are as follows:

All subdivision proposals shall be consistent with the need to minimize flood damage,

Development within areas where the base flood information is not provided, then construction of the lowest floor must be at least 2 feet above adjacent grade,

In floodways, no encroachments, including fill, new construction, substantial improvements and other development shall be permitted,

New construction or substantial improvement of and building shall have the lowest floor, including basement, elevated no lower than one (2) foot above the level of the base flood elevation.

Water supply Watershed Protection Ordinance

This ordinance was adopted to protect the drinking water supply watersheds from inappropriate development. This ordinance was established to protect the quality or surface water supplies from non-point source pollution and to minimize storm water runoff by regulation development densities. This ordinance applies to the areas designated as a Public Water Supply Watershed by the North Carolina Environmental Management Commission. There are two areas designated within the watershed, Critical Area and Protected Area.

In Wayne County the water supply watershed is upstream on both the Little River and Neuse River from the City of Goldsboro water treatment plant. The area covers approximately 120 square miles or about 25 % of the County. The water supply watershed area also includes a part of the extraterritorial jurisdiction for the Town of Pikeville and the City of Goldsboro.

Zoning Ordinance

Wayne County and each municipality except Seven Springs currently enforce zoning regulations within their individual jurisdictions. The main purpose of the zoning ordinance is to regulate development and density by controlling;

- Height, number of stories, size of buildings and other structures
- Percentage of lot occupancy, size of yards, courts and other open spaces
- Density of population, location and use of buildings, structures and land for trade, industry, residence or other purposes

While the County zoning ordinance only applies to portions of the county, these areas contain critical facilities such as schools and airports that are utilized during a disaster event.

Riverine Flooding Basic Plan of the Emergency Operations Plan

This plan has been developed to provide for the notification, warning and possible evacuation of the residents and visitors in Wayne County within the areas of possible flooding. Procedures have been developed to respond to various levels of flood events. State and local contacts have been established for the notification of flood levels and those within harms way. The plan implementation is through the Wayne County Emergency Services Office.

Current Mitigation Measures - By Hazard

Wayne County and the individual municipalities are fortunate to have a number of mitigation efforts in place. Some exist as legal measures through local ordinances or resolutions, state law or federal regulation. A general outline of those efforts is listed by hazard. Many efforts overlap into multiple hazards to make Wayne County and the municipalities <u>Hazard Resistant Communities</u>.

Wildfires: General information regarding wildfires and the definition can be found in the Hazard Identification and Analysis Section.

А.	Public awareness of wildfire causes has helped reduce the number of occurrences.
В.	Direct contact with the District Forestry office that issues daily fire potential reports.
C.	Burning bans are imposed and rigidly enforced.
D.	Education has informed the public of the risk in outdoor burning of trash.
E.	Training and response by local fire departments and State Forestry have lowered acreage consumed by
	wildfires.
F.	Fire departments are equipped with specialized equipment to help fight forest fires.
G.	The N.C. Forestry Service has begun conducting a Hazard Analysis of property and development in areas of
	the county susceptible to wildfires.
H.	N.C. Forestry responds to all wildfires involving woodland and can therefore coordinate the response of
	Forestry resources directly.

Thunder Storms: General information regarding thunderstorms and the definition can be found in the Hazard Identification and Analysis Section.

А.	Emergency Services maintains a direct line of communication with the National Weather Service (NWS).
В.	Emergency Services has the capability to monitor weather systems, along with potential storm intensity.
C.	NWS issues watches and warnings to the public and government agencies.
D.	Public education continues to take place regarding watches and warnings.
E.	Weather alert radios have been placed in each school as well as many day care centers and government
	agencies.
F.	Code Red Alert is available for all subscribers.
F.	Local broadcast media warn the public about potential thunderstorms.
G.	Local officials can activate the Emergency Action System (EAS).
H.	Power and utility restoration plans and mitigation efforts are in place with various providers.
I.	Debris clearance can be provided by municipalities along with N.C. D.O.T.

Flooding: General information regarding flooding and the definition can be found in the Hazard Identification and Analysis Section.

А.	Wayne County and each municipality are participants in the National Flood Insurance Program, making
	citizens eligible for flood insurance.
В.	Flood insurance maps are available at the Wayne County Planning Office, each town hall, the Wayne County
	Public Library, and online at <u>www.waynegov.com</u> .
C.	SBCCI Standard for Flood Plain Management enforced in County Inspections and City of Goldsboro
	Engineering department offices.
D.	Potential road closure lists are available from NC DOT.
E.	Cooperation from local broadcast media to warn of potential flooding events.

F.	Watches and warnings issued by the National Weather Service.
G.	Code Red Alert is available free to all subscribers.
G.	Flood warning brochures mailed to property owners in flood prone areas.
H.	Public education to groups on flood risks and mitigation measures.
I.	Weather alert radios in each school to provide early warning.
J.	Local regulations prohibiting development in 100-year floodplain.
К.	Shelter arrangements in place with Red Cross, Salvation Army and Social Services.
L.	Property owner list maintained to provide initial door-to-door contact.

Severe Winter Storms: General information regarding severe winter storms and the definition can be found in the Hazard Identification and Analysis Section.

А.	Emergency Services maintains a direct line of communication with the National Weather Service (NWS).
B.	Emergency Services has the capability to monitor weather systems, along with potential storm intensity.
C.	NWS issues watches and warnings to the public and government agencies.
D.	Participants in Code Red are able to receive weather warnings
E.	Public education continues to take place regarding watches and warnings.
F.	Weather alert radios have been placed in each school as well as many day care centers and government
	agencies.
G.	Local broadcast media warn the public about potential thunderstorms.
H.	Local officials can activate the Emergency Action System (EAS).
I.	Power and utility restoration plans and mitigation efforts are in place with various providers.
J.	Municipalities along with N.C. DOT can provide debris clearance.
K.	Snow and ice removal methods are in place by the municipalities and N.C DOT.
L.	Backup warning systems exist, including call down lists. As many notification calls as possible are made prior
	to the storm system entering the county.
М.	Fire Department sirens may be sounded as an additional warning.
N.	Broadcasts are made on all weather alert frequencies.
О.	Shelter agreements are in place with Red Cross, Salvation Army, and Wayne County Public Schools.

Tornadoes: General information regarding tornados and the definition can be found in the Hazard Identification and Analysis Section.

А.	Emergency Services maintains a direct line of communication with the National Weather Service (NWS).
В.	Emergency Services has the capability to monitor weather systems, along with potential storm intensity.
C.	Code Red alert is in place for dispensing weather warnings.
D.	NWS issues watches and warnings to the public and government agencies.
E.	Public education continues to take place regarding watches and warnings.

F.	Weather alert radios have been placed in each school as well as many day care centers and government
	agencies.
G.	Local broadcast media warn the public about potential thunderstorms.
H.	Local officials can activate the Emergency Action System (EAS).
I.	Power and utility restoration plans and mitigation efforts are in place with various providers.
J.	Debris clearance can be provided by municipalities along with N.C. D.O.T.
K.	Backup warning systems exist, including call down lists. As many notification calls as possible are made prior
	to the storm system entering the county.
L.	Fire Department sirens may be sounded as an additional warning.
М.	Broadcasts are made on all weather alert frequencies.
N.	Shelter agreements are in place with Red Cross, Salvation Army, and Wayne County Public Schools

Hurricanes: General information regarding hurricanes and the definition can be found in the Hazard Identification and Analysis Section.

А.	Wayne County Emergency Management participates in hurricane preparedness planning exercises and it assists
	in actual hurricane events.
В.	Hurricane awareness information is presented to the public as often as possible or practical.
C.	Hurricanes are tracked in the EOC as they develop. Government officials and the media are kept informed of
	response forces preparations.
D.	Response forces (fire, law enforcement, EMS) are experienced and well trained.
E.	Emergency plans are in place, regularly reviewed and exercised.
F.	The National Weather Service issues hurricane watches and warnings.
G.	Code Red weather alert is available free to all subscribers.
H.	Watches and warnings are received on weather alert radios in all schools and many day care centers and
	government offices.
I.	Watch and warning procedures to further alert agencies are carried out by emergency communications.
J.	Shelter agreements are in place with Red Cross, Salvation Army, and Wayne County Public Schools.
Section H - Hazard Mitigation Goals

The county and municipalities have established goals for implementing the Wayne County Multi-Jurisdictional Hazard Mitigation Plan. The goals provide the basis for the implementation strategies included in this plan. These goals are broad statements that illustrate the community's priorities for reducing risks to the potential hazards. The entire plan is presented as a living document and one that will be changed, reviewed, updated and reprocessed over the coming years.

The following have been adopted as goals for the Wayne County Hazard Mitigation Plan.

- 1 To enhance the County of Wayne and Municipal capability to lessen the impacts of natural hazards.
- 2 To identify and protect critical infrastructure that is at risk due to one or more natural hazards and to undertake mitigation efforts as necessary.
- 3 To establish an effective public education program on the risks created by natural hazards and the opportunity to lessen the effects of the risk.
- 4 To protect existing community assets and property and mostly importantly the public.
- 5 To plan for disaster resistant communities.

Section I - Mitigation Strategies

The strategies in this plan are more tangible and specific than goals. These strategies can be crossed off the list once they have been met and other strategies can be added. The following strategies have been developed to define specific methods to accomplish the given goals of this plan. Alongside each strategy listed below is the anticipated timeframe for completion and the agency responsible for implementation. The list below includes the original 16 strategies from the 2005 plan. Each strategy was considered for continuation or deletion by the Steering Committee, Planning Boards and Elected officials. The general public was given the opportunity to comment on the existing strategies during hearings, correspondence with staff from website comments. Each group determined that the strategies continued to be important and needed to be continued. During the previous five years no amendments have been made to the 2005 plan. Fourteen of the sixteen goals from the 2005 plan were ongoing. They do not have a completion date. The remaining two had a short term goal of 1 to 2 years, but were not adopted by the municipalities.

The effectiveness of any plan is dependent upon the timeliness of its implementation. Factors that effect implementation are cost, public support, and importance of the strategy and anticipated ultimate result. All of the strategies cannot be implemented at the same time. Some must be implemented before others. Staffing at the County of Wayne and municipal level must be considered in establishing priorities.

A process for prioritization of identified hazard mitigation strategies was performed. The hazard mitigation advisory committee used the following criteria for prioritization of hazard mitigation strategies:

- 1) cost-benefit review
- 2) results of Hazard Identification and Analysis
- 3) results of Vulnerability Assessment
- 4) results of Community Capability Assessment
- 5) effectiveness in meeting hazard mitigation goals and comprehensive plan goals

Cost-benefit review was given special emphasis, in light of its possible use in environmental reviews for HMGP, FMA and other federal hazard mitigation projects. A priority rating of high, medium or low was given to each mitigation strategy.

Explanation of Columns and Acronyms

Strategy - Description of action to be undertaken.

Hazard - Hazard which the action addresses.

Goal – Number for Hazard Mitigation goal on page 62.

New (N) - Item listed is new to this plan or a revision of the previous plan

Continuation of Existing Policies or Ordinance (C) - Items that are ongoing and need to be continued due to importance to the community.

Relative Priority - Low, medium or high priority for funding and implementation. Determination of ranking made by Steering Committee, Planning Boards, and elected officials following public hearings. Each activity was given a priority based on its anticipated benefit. Those reaching a large cross section on the population were given a high priority. Anticipated funding for the activities were then considered. Projects were then given a final priority based the importance of the project to the community and its anticipated cost.

Funding Sources – Most funding sources are local as noted in the table. This will allow more local control on timing and priority. Wayne County and the municipalities will implement high priority mitigation activities by using existing funds such as property tax and sales tax and seeking new funding sources. In general, all local governments have agreed to be responsible for the high priority mitigation activities and have agreed to complete the activities within the adopted time frame. Those items listed requiring State and Federal sources of funds are noted, where applicable. These projects are given a low priority due to the difficulty in obtaining outside sources of funds.

Responsible Party - Staff department responsible for undertaking the action. Note: The Elected Boards have ultimate authority to approve any policy, program or regulation revisions in their jurisdiction.

Short Term - Financial resources and authority available

Long Term - Financial resources or authority currently not available

Target Completion Date - Date by which the action should be completed.

As a result of bringing Seven Springs into the County plan additional goals were added to the Plan. This was a result of the Town's unique situation when compared with the other Towns in the County. The committees and Boards chose to add nine strategies to the Plan update that are applicable county wide.

The table below lists those new items as 17 - 25. An item 17A was also added to the plan. This item differs from 17 as the Town of Seven Springs was not supportive of an acquisition program but did support an elevation program.

Item 4 from the previous plan was split to reflect different funding opportunities. The new item 4 will be funded locally through individual Board decisions. Item 4A will require Federal or State assistance the relocation of critical facilities in Seven Springs.

Wayne County along with Goldsboro, Eureka, Fremont, Pikeville, Mount Olive, Seven Springs and Walnut Creek Mitigation Action Plan										
Strategy #	Actions	Hazard	Goal	New/ Continuation	Relative Priority	Funding Sources	Jurisdiction/ Responsible Party	Short Term/ Long Term	Target Completion Date	
1	Raise the Finished Floor Elevation Requirement to two feet where base flood elevations (bfe) have been determined within the flood plain zones established by the National Flood Insurance Rate Maps. (Mount Olive 1 foot)	Flooding	1 4 5	N	High	Local	Town Eureka, Fremont, Pikeville, Mount Olive, Seven Springs Walnut Creek, City of Goldsboro	S	1-2 years	
2	Review current and future mitigation components with CRS coordinator to ensure that the lowest possible rating has been established for the citizens of Wayne County. a. Obtain CRS rating for each municipality in the County.	Flooding	5	С	High/Medium	Local	Wayne County Planning Department a. Eureka, Fremont, Pikeville, Mount Olive, Walnut Creek, City of Goldsboro	S	Ongoing	
3	Continue to require and maintain FEMA elevation certificates in hard copy and/or digital form for all permits for new or substantially improved buildings located within the 100-year flood plains.	Flooding	4	С	High	Local	Wayne County Eureka, Fremont, Pikeville, Mount Olive, Walnut Creek, City of Goldsboro	S	Ongoing	
4	Prohibit the development of public and private critical facilities within the 100 and 500-year flood plains.	Flooding	2 4	С	High	Local	All, City of Goldsboro	L	Ongoing	

Strategy #	Actions	Hazard	Goal	New/ Continuation	Relative Priority	Funding Sources	Jurisdiction/ Responsible	Short Term/	Target Completion
							Faity	Term	Date
4A	Relocate where possible existing critical facilities located in 100 and 500 year flood plains	Flooding	2 4	С	Low	Federal	Seven Springs	L	10 years
5	Adopt and enforce latest model building codes and national wind standards.	All	1		Medium	Local	Wayne County Building Inspections, City of Goldsboro	S	Ongoing
6	Ensure manufactured homes and storage buildings are installed and secured properly.	Hurricanes, Tornadoes	4	С	Medium	Local	Wayne County Building Inspections, City of Goldsboro	S	Ongoing
7	Encourage wind resistant construction techniques comparable to those used in coastal regions.	Hurricanes, Tornadoes	1 5	N	Medium	Local	Wayne County Planning Department, City of Goldsboro	L	Ongoing
8	Provide opportunities through forums and programs for contractors and residents to become more informed as to appropriate building materials, equipment and techniques to use to mitigate the potential impacts of natural hazards.	All	3 5	N	Low	Local	Wayne County Eureka, Fremont, Pikeville, Mount Olive, Walnut Creek, City of Goldsboro	S	Ongoing
9	Review the Emergency Operations Manual on a bi-annual basis to ensure that is current with today's possible threats.	All	5	С	Medium	Local	Wayne County Emergency Services, City of Goldsboro	S	Ongoing
10	Establish a program for evaluation and improvement of critical services and facilities to ensure coordination among the	All	2 5	N	Low	Local	Wayne County Emergency Services City	L	Ongoing

Strategy #	Actions	Hazard	Goal	New/ Continuation	Relative Priority	Funding Sources	Jurisdiction/ Responsible	Short Term/	Target Completion
							rarty	Term	Date
	responsible contributors of those facilities.						of Goldsboro		
11	Maintain and update information on the potential of the natural hazards that exist within Wayne County for citizens to easily access this through all available media and the County and Town website.	All	3 5	С	Low	Local	Wayne County Planning Department, City of Goldsboro	S	Ongoing
12	Implement and maintain a web-based Geographical Information System application on Wayne County's web site that will offer citizens the opportunity to evaluate their current or future residence location in relation to the potential natural hazards such flood plains.	All	3 5	С	Low	Local	Wayne County GIS Department, City of Goldsboro	S	Ongoing
13	Post flood level signs on property acquired during the HMGP buyout process and through out flood plain to remind citizens of the past and potential flood dangers that exist within their community.	Flooding	3 5	Ν	Low	State	Wayne County Emergency Services, City of Goldsboro	S	1-2 Years
14	Coordinate with various utility service providers to attach newsletter, notifications, procedure or information for the various natural hazards that exist within Wayne County.	All	3 5	Ν	Medium	Local	Wayne County Eureka, Fremont, Pikeville, Mount Olive, Walnut Creek, City of Goldsboro	S	Ongoing
15	Preserve wetlands within the flood plains to slow and reduce downstream flows associated with floodwaters.	Flooding	5	С	Medium	Local	Wayne County Eureka, Fremont, Pikeville, Mount Olive, Walnut Creek,	S	Ongoing

Strategy #	Actions	Hazard	Goal	New/ Continuation	Relative Priority	Funding Sources	Jurisdiction/ Responsible Party	Short Term/ Long Term	Target Completion Date
							City of Goldsboro		
16	Utilize wetlands for improved water quality within watersheds.	Flooding	4	С	Medium	Local	Wayne County Eureka, Fremont, Pikeville, Mount Olive, Walnut Creek, City of Goldsboro	S	Ongoing
17	Encourage eligible property owners especially those with repetitive losses to participate in the FEMA acquisition program and to elevate their residences.	Flooding	3 5	С	Low	Federal/ Local	Wayne County Walnut Creek, City of Goldsboro	L	Ongoing
17A	Encourage eligible property owners to elevate their residences.	Flooding	3 5	N	Medium	Federal/ Local	Seven Springs, City of Goldsboro	L	Ongoing
18	Create and adopt a zoning ordinance to deter building in the floodplain	Flooding	1 5	С	Low	Local	Seven Springs	L	Ongoing
19	Request the Army Corps of Engineers to study the Neuse River and evaluate alternatives to decrease the effect of flooding on the town	Flooding	4	Ν	Medium	Federal / Local	Seven Springs	L	December 31, 2014
20	Town to obtain a copy of a Water Shortage Response Plan for possible adoption by the Town	Drought	5	N	Medium	Local	Eureka, Fremont, Pikeville, Mount Olive, Walnut Creek, Seven Springs, City of Goldsboro	S	December 31, 2012
21	Discuss with Wayne County OES the	All	3	Ν	Medium	Local	All, City of	S	December

Strategy #	Actions	Hazard	Goal	New/ Continuation	Relative Priority	Funding Sources	Jurisdiction/ Responsible Party	Short Term/ Long	Target Completion Date
	feasibility of establishing community		5				Goldsboro	Term	31, 2010
	response teams.								
22	Ask library to create a resource center on hazard mitigation topics	All	5	Ν	High	Local	Fremont, Pikeville, Mount Olive, Seven Springs, City of Goldsboro	S	December 31, 2010
23	Consider the installation of an alarm system which can be heard throughout the community in the event of a crisis.	All	3 4	N	High	Local	All, City of Goldsboro	S	December 31, 2011
24	Promote the use of Code Red by all citizens	All	3 4	Ν	High	Local	All, City of Goldsboro	S	Ongoing
25	Discuss with Emergency Personnel the feasibility of establishing a registry of special needs citizens	All	5	N	Medium	Local	All, City of Goldsboro	S	December 31, 2011

Upon deciding to join into the Wayne County plan, the City of Goldsboro did an extensive review of the mitigation actions that were initially developed by Wayne County and the other municipalities of the county. The above table has been updated accordingly to reflect the actions that the city intends to enact over the next 5 years.

Section J - Monitoring, Evaluation and Update

After the local hazard mitigation plan has been developed and adopted, it is important to periodically evaluate and revise the plan to ensure that local mitigation efforts include the latest and most effective mitigation techniques. As each strategy has been completed, new or revised strategies need to be included to keep up with the changing environment. As with all plans and ordinances, this plan will need to comply with federal, state and local regulations during the amendment process. The proper advertisement and notifications will need to comply with these guidelines. The County and Municipalities will review the Plan on an annual basis to ensure compliance with the adopted goals and to establish new goals.

The monitoring and evaluation process of the 2010 Wayne County Multi Jurisdictional Hazard Mitigation Plan will run concurrently. The continuation and effectiveness of each strategy in the adopted plan will be monitored each year during the budget preparation. Items that may require local funding will be considered for approval. Each county department included in the plan, Planning, Inspections, Emergency Services and GIS, look at available resources to carry out the strategies.

Annual Review/Progress Report

The County Manager shall direct the County Planner to take responsibility for conducting the annual review. The annual review shall include the re-initiation of the hazard mitigation team planning process utilized during development of the Plan. The team will include representatives of all affected County departments, as well as the Towns of Eureka, Fremont, Pikeville, Mount Olive, Seven Springs and the Village of Walnut Creek. Although it was not involved in the process initially, the City of Goldsboro determined that it would be best to join the Wayne County plan due to similar hazard risks and will participate in the annual review.

The annual review shall ensure:

- 1. That the County and Municipal Planning Boards will receive an annual report and/or presentation on the progress of Plan implementation. The report will include a status report on the implementation of mitigation actions.
- That the Elected Boards receives an annual report and/or presentation on the progress of Plan implementation along with a recommendation from the appropriate Planning Board regarding ongoing implementation of the Plan.
- 3. The annual report will include an evaluation of the effectiveness and appropriateness of the mitigation actions included in the Plan.
- 4. The annual report will recommend, as appropriate, any necessary revisions or amendments to the Plan.

The annual report called for in this section is the same as the previous plan. However, annual reviews were not completed during the previous five years. The staff that would have been doing the review was assigned responsibility for developing a Comprehensive Plan. During the preparation of this plan the Steering Committee realized that it was the tenth anniversary of the disastrous 1999 floods. They

were reminded of the importance of the adequate hazard mitigation and the consequences of inadequate mitigation planning. The completion of the Comprehensive Plan and the awareness of the Steering Committee will allow the County and the Municipalities staff focused on mitigation plan maintenance and updates. If the Elected Board determines that the recommendations warrant amendment of the Plan, the Board may initiate an amendment through the process described below.

Procedure for Amending the Plan

An amendment to the Plan shall be initiated by the Board of Commissioners either at its own initiative or upon the recommendation of the Planning Board, or any other Wayne County municipality or agency who demonstrates that an amendment should be considered.

Upon initiation of an amendment, the County Planner shall re-convene the hazard mitigation planning team and notify other interested parties as described in the Annual Review/Progress Report subsection above. The team will consider any proposed amendment(s) which shall then be forwarded to affected parties, including, but not limited to, County departments, municipalities within the County, and other interested agencies such as the North Carolina Division of Emergency Management, the United States Army Corps of Engineers, and the Federal Emergency Management Agency for a ninety (90) day review and comment period.

At the end of the comment period, the proposed amendment(s) shall be forwarded along with all review comments to the Planning Board for consideration. If no comments are received from the reviewing department or agency within the specified review period, such shall be noted in the report to the Planning Board.

Planning Board Review and Recommendation

The Wayne County Planning Board and each municipal Planning Board as appropriated shall review the proposed amendment(s), the report and any comments received from other local governments and State and Federal agencies.

In deciding whether to recommend approval or denial of an amendment request, the Planning Boards shall consider whether or not the proposed amendment is necessary based upon one or more of the following factors:

- a) There are errors or omissions made in the identification of issues or needs during the preparation of the original Plan;
- b) New issues or needs have been identified which were not adequately addressed in the original Plan;
- c) There has been a change in projections or assumptions from those on which the original Plan was based.

Board of Commissioners Review and Approval

Upon receiving the recommendation of the Planning Board, the Board of Commissioners and elected board for each municipality shall hold a public hearing. The Boards shall review the Planning Board recommendation, and any oral or written comments received at the public hearing. Following that review, the Boards shall take one of the following actions:

- a) Adopt the proposed amendment as presented or with modifications.
- b) Deny the proposed amendment.
- c) Refer the amendment request back to the Planning Board for further consideration.
- d) Defer the amendment request for further consideration and/or hearing.

INCORPORATION INTO EXISTING PLANNING MECHANISMS

The County of Wayne along with the Municipalities involved in the creation of this hazard mitigation plan has created a process by which the requirements of this plan will be incorporated into other plans. During the planning process for any new and updated planning documents such as a comprehensive plan, transportation plans, capital improvement plans, or emergency operations plans the local staff will provide a copy of this plan to each respective advisory committee member. The local staff will make the public aware and help them understand the importance of having goals and strategies for any future plans consistent with the goals and strategies of this plan. This will help ensure that future actions do not contribute to increased hazards in the jurisdiction.

In order to successfully implement the objectives of this plan public involvement must be ongoing. The public will be invited by the County and municipalities to participate in a progress review. Copies of the plan will be readily available in County and Municipal offices. The plan will also be available on the Wayne County website at <u>www.waynegov.com</u> and linked to websites for the municipalities. The web site will include local contacts and addresses.

CONTINUED PUBLIC INVOLVEMENT

Keeping the public involved in the planning process can help the County and municipalities easily accomplish five-year updates of the plan. The local staff will keep the public aware of objectives as they are completed. The public will be asked to keep local staff aware of changing priorities. The general public will be notified through a variety of media, including but not limited to, the local newspaper, the Wayne County website, and mailed or emailed notices, of the review process and the opportunity to comment on the Plan review.

Section K - Adoption Resolutions

Adoption Resolutions from the participating communities will be attached to the Final Plan. The resolution will designate the contact person and address for each community.

Section L – Acknowledgements

The cover photograph was provided by David Reynolds, March 3, 1991, Tornado and Storm Research Organization.