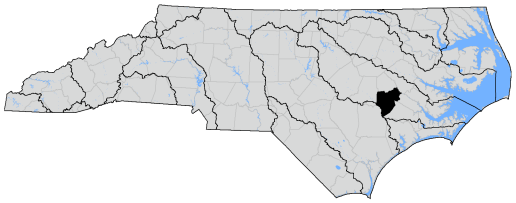
PRELIMINARY FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

A Report of Flood Hazards in

LENOIR COUNTY, NORTH CAROLINA AND INCORPORATED AREAS



Community Name	Community Number
CITY OF KINSTON	370145
LENOIR COUNTY	370144
TOWN OF LA GRANGE	370579
TOWN OF PINK HILL	370599

NORTH CAROLINA
Cooperating Technical State
FEMA'S COOPERATING TECHNICAL PARTNER

PRELIMINARY: 6/30/2016
REVISED: 6/30/2016
Federal Emergency Management Agency
State of North Carolina
Flood Insurance Study Number
37107CV000
www.fema.gov and www.ncfloodmaps.com

FOREWORD

This countywide Flood Insurance Study (FIS) Report was produced through a unique cooperative partnership between the State of North Carolina and the Federal Emergency Management Agency (FEMA). The State of North Carolina has implemented a long-term approach to floodplain management to decrease the costs associated with flooding. This is demonstrated by the State's commitment to map floodplain areas at the state level. As a part of this effort, the State of North Carolina has joined with FEMA in a Cooperating Technical State (CTS) agreement to produce and maintain this FIS Report and the accompanying digital Flood Insurance Rate Map (FIRM) for North Carolina.

NOTICE TO FLOOD INSURANCE STUDY USERS

Communities participating in the National Flood Insurance Program have established repositories of flood hazard data for floodplain management and flood insurance purposes. This Flood Insurance Study (FIS) may not contain all data available within the repository. It is advisable to contact the community repository for any additional data.

The following is a list of the publication dates of this Countywide FIS Report starting with the initial Report accompanying the North Carolina Statewide FIRM:

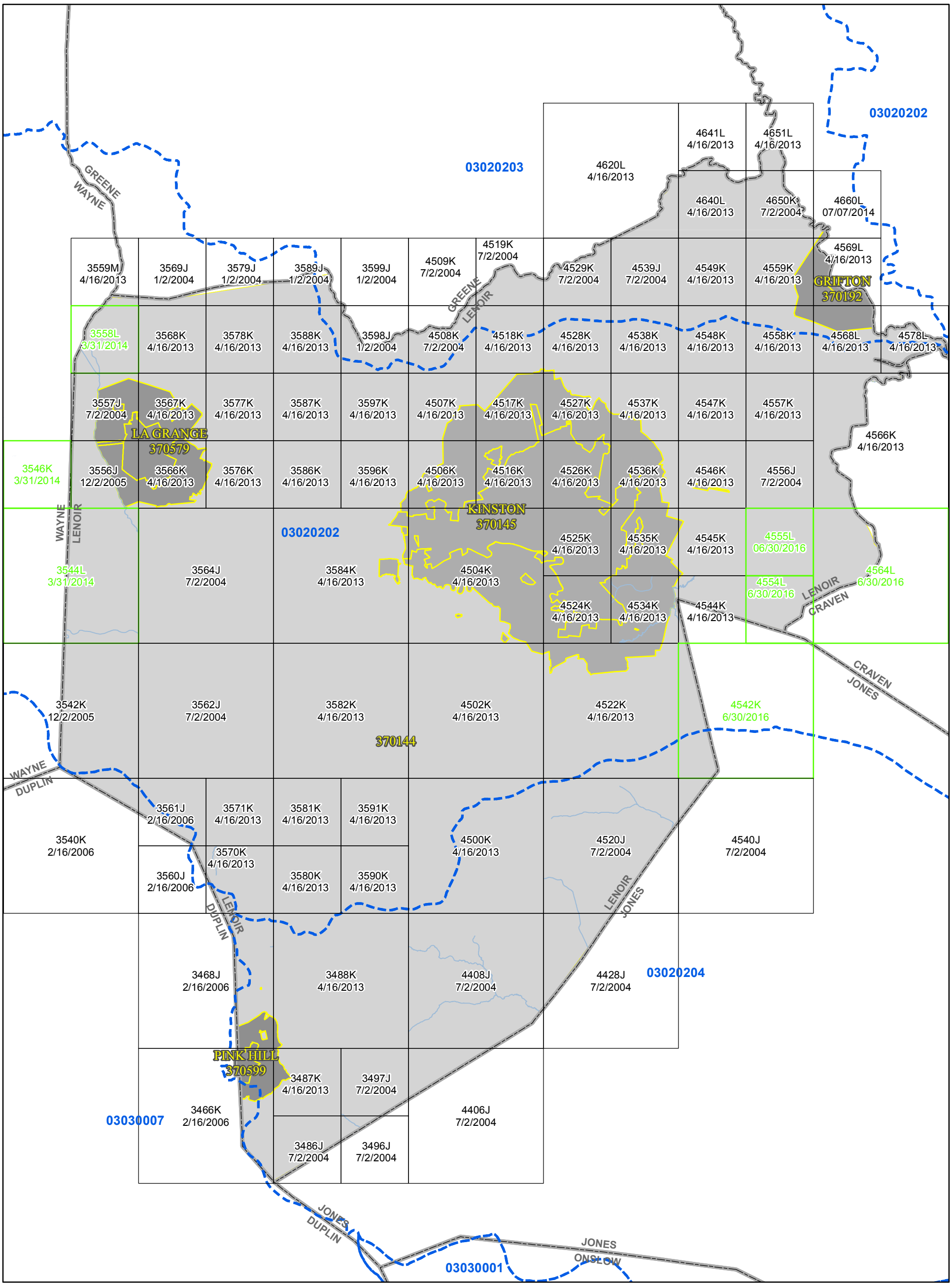
Date	Reason
7/2/2004	Initial Countywide FIS Report Effective Date

This FIS has been produced as part of the North Carolina Floodplain Mapping Program. Lenoir County, North Carolina, falls under the administrative jurisdiction of Region IV of the Federal Emergency Management Agency (FEMA). Questions concerning this FIS may be directed to the North Carolina Floodplain Mapping Program at www.ncfloodmaps.com, the FEMA Map Assistance Center by calling the toll-free information line at 1-877-FEMA MAP (1-877-336-2627), or by contacting the FEMA Regional Office at the following address:

FEMA, Federal Insurance and Mitigation Administration
Koger Center - Rutgers Building
3003 Chamblee Tucker Road
Atlanta, Georgia 30341
(770) 220-5400

Table of Contents

Figures **Page**



1 in = 3 miles

N

0 0.5 1 2 3 Miles

Map Projection:
Lambert Conformal Conic
North American Datum 1983

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT

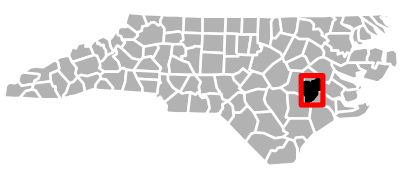
HTTP://FRIS.NC.GOV/FRIS

SEE FLOOD INSURANCE STUDY FOR ADDITIONAL INFORMATION

PRELIMINARY

06/30/2016

COUNTY LOCATOR



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP INDEX

LENOIR COUNTY, NORTH CAROLINA And Incorporated Areas

PANELS PRINTED:

4651, 4569, 4568, 4578, 4650, 4660, 3559, 3558, 3557, 3546, 3556, 3466, 3497, 4406, 3542, 4542, 3540, 3561, 3560, 3570, 3486, 3496, 4566, 3544, 4564, 4534, 4544, 4554, 4520, 4540, 3468, 4408, 4428, 4559, 4558, 4640, 4620, 4641, 3569, 3579, 3589, 3599, 4509, 4519, 4529, 3568, 3578, 3588, 3567, 3487, 3562, 3582, 4502, 4522, 3571, 3580, 3590, 3598, 4508, 4518, 4528, 4538, 4548, 3577, 3587, 3597, 4507, 4517, 4527, 4537, 4547, 4557, 3566, 3576, 3586, 3596, 4506, 4516, 4526, 4536, 4546, 4556, 3564, 3584, 4504, 4525, 4535, 4545, 4555, 4524, 3581, 3591, 4500, 4539, 4549, 3488

FEMA

MAP NUMBER

37107CIND0E

1.0 Introduction

1.1 The National Flood Insurance Program

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer-funded disaster relief for flood victims and the increasing amount of damage caused by floods. The NFIP makes federally backed flood insurance available in communities that agree to adopt and enforce floodplain management ordinances to reduce future flood damage. Federally backed flood insurance is available in more than 19,000 communities across the United States and its territories.

The NFIP is managed by the Federal Insurance and Mitigation Administration of the Federal Emergency Management Agency (FEMA). The Federal Insurance and Mitigation Administration manages the insurance component of the NFIP and oversees the flood hazard mapping and the floodplain management aspects of the program.

The NFIP, through involvement with communities, the insurance industry, and the lending industry, helps reduce flood damage by nearly $800 million a year. Further, buildings constructed in compliance with NFIP building standards suffer approximately 80% less damage annually than those not built in compliance. In addition, every $3 paid in flood insurance claims saves $1 in disaster assistance payments. The NFIP is self-supporting for the average historical loss year, which means that operating expenses and flood insurance claims are not paid by the taxpayer, but through premiums collected for flood insurance policies.

Additional information of interest to homeowners, community officials, insurance companies, lenders, and study contractors is available in Section 9.0 of this FIS Report and on the NFIP Internet homepage at http://www.fema.gov/business/nfip/.

1.2 Purpose of this Flood Insurance Study

Flood Insurance Studies (FISs) are one of the primary means by which the NFIP administers the National Flood Insurance Act of 1968, the Flood Disaster Protection Act of 1973, and the National Flood Insurance Reform Act of 1994. FISs develop flood risk data that are used to establish actuarial flood insurance rates. The information in this FIS Report will also be used by Lenoir County and the jurisdictions therein (hereinafter referred to collectively as Lenoir County) to facilitate the adoption and maintenance of floodplain management ordinances, which form the basis of communities' continued participation in the NFIP. Minimum requirements for participation in the NFIP are set forth in Title 44, Part 60, Section 3 of the Code of Federal Regulations (44 CFR 60.3). In some States and/or communities, floodplain management criteria or regulations may exist that are more restrictive than the minimum Federal requirements. In such cases, the more restrictive criteria will take precedence, and the State and/or community (or other jurisdictional agency) will be able to explain them.

This FIS investigates the existence and severity of flood hazards in, or revises and updates previous FISs for, the geographic area of Lenoir County, North Carolina, including the jurisdictions listed in Table 1.

Table 1 - Jurisdictions in Lenoir County

Community	Included in this FIS	If Not Included, Location of Flood Hazard/Flood Insurance Rate Data
CITY OF KINSTON	Yes	*
LENOIR COUNTY	Yes	*
TOWN OF GRIFTON	No	
TOWN OF LA GRANGE	Yes	*
TOWN OF PINK HILL	Yes	*

1.3 FIS Components

A Flood Insurance Study (FIS) is an analysis of flood hazards, typically presented as a set of Flood Insurance Rate Map (FIRM) panels

and the FIS Report, which includes a set of Flood Profiles and/or Water-surface elevation rasters.

Flood Insurance Study Report
The FIS Report provides a context for the information shown on the FIRM, as well as a summary of the data upon which the analyses are based. It also includes an index of sources of additional information on the NFIP.

1.4 Considerations for Using this Flood Insurance Study Report

The NFIP encourages State and local governments to implement sound floodplain management programs. To assist in this endeavor, each FIS Report provides floodplain data, which may include a combination of the following: 10-, 4-, 2-, 1-, and 0.2-percent annual chance flood elevations (the 1% annual chance flood elevation is also referred to as the Base Flood Elevation (BFE)); delineations of the 1% annual chance and 0.2% annual chance floodplains; and 1% annual chance floodway. This information is presented on the FIRM and/or in many components of the FIS Report, including Flood Profiles, Floodway Data tables, Summary of Non-Coastal Stillwater Elevations tables, and Coastal Transect Parameters tables (not all components may be provided for a specific FIS).

It is, therefore, the responsibility of the user to consult with community officials by contacting the community repository to obtain the most current FIS Report components. Communities participating in the NFIP have established repositories of flood hazard data for floodplain management and flood insurance purposes. Community map repository addresses are provided in Table 27, “Map Repositories,” within this FIS Report.

New FIS Reports are frequently developed for multiple communities, such as entire counties. A countywide FIS Report incorporates previous FIS Reports for individual communities and the unincorporated area of the county (if not jurisdictional) into a single document and supersedes those documents for the purposes of the NFIP.

The Initial Countywide FIS Report for Lenoir became Effective on 7/2/2004. Refer to Table XX for information about subsequent revisions to FIRMs.

Selected FIRM panels for the community may contain information (such as floodways and cross sections) that was previously shown separately on the corresponding Flood Boundary and Floodway Map panels. In addition, former flood hazard zone designations have been changed as follows:

Old Zone	New Zone
A1 through A30	AE
V1 through V30	VE
B	X (shaded)
C	X (unshaded)

FEMA does not impose floodplain management requirements or special insurance ratings based on Limit of Moderate Wave Action (LiMWA) delineations at this time. The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. If the LiMWA is shown on the FIRM, it is being provided by FEMA as information only. For communities that do adopt Zone VE building standards in the area defined by the LiMWA, additional Community Rating System (CRS) credits are available. Refer to Section 2.5.4 for additional information about the LiMWA.

The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Visit the FEMA Web site at http://www.fema.gov or contact your appropriate FEMA Regional Office for more information about this program.

Previous FIS Reports and FIRMs may have included levees that were accredited as reducing the risk associated with the 1% annual chance flood based on the information available and the mapping standards of the NFIP at that time. For FEMA to continue to accredit the identified levees, the levees must meet the criteria of the Code of Federal Regulations, Title 44, Section 65.10 (44 CFR 65.10), titled “Mapping of Areas Protected by Levee Systems.

Since the status of levees is subject to change at any time, the user should contact the appropriate agency for the latest information

regarding levees presented in Table 9 of this FIS Report. For levees owned or operated by the U.S. Army Corps of Engineers (USACE), information may be obtained from the USACE national levee database. For all other levees, the user is encouraged to contact the appropriate local community.

FEMA has developed a Guide to Flood Maps (FEMA 258) and online tutorials to assist users in accessing the information contained on the FIRM. These include how to read panels and step-by-step instructions to obtain specific information. To obtain this guide and other assistance in using the FIRM, visit the FEMA Web site at http://www.fema.gov.

2.0 Floodplain Management Applications

Flood events of a magnitude expected to occur with a 10%, 2%, 1%, or 0.2% annual chance have been selected as having special significance for developing sound floodplain management programs. These events, commonly termed the 10-, 50-, 100-, and 500-year floods, have a 10%, 2%, 1%, and 0.2% chance, respectively, of being equaled in any given year. Therefore, FIS Reports typically determine water-surface elevations for floods with these probabilities. The FIRM delineates 1% and 0.2% annual chance floodplains and 1% annual chance floodway boundaries, and depicts 1% annual chance flood elevations, rounded to the nearest foot, to assist in developing floodplain management measures.

2.1 Floodplains

To provide a national standard without regional discrimination, the 1% annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. A 1% annual chance flood, or base flood, is defined as that having a 1% chance of being equaled or exceeded in any given year. The 1% annual chance floodplains shown on the FIRM identify areas that are expected to be inundated by the 1% annual chance flood. This 1% annual chance floodplain is also called a Special Flood Hazard Area (SFHA), where the NFIP's floodplain management regulations must be enforced by the community as a condition of participation in the NFIP. The 0.2% annual chance floodplain is employed to indicate additional areas of flood risk associated with exceptionally severe floods.

2.2 Floodways

Encroachment on floodplains such as that caused by placement of structures and fill reduces flood-carrying capacity, increases flood heights and velocities, and increases flood hazards in areas beyond the encroachment itself. One aspect of floodplain management involves balancing the economic gain from floodplain development against the resulting increase in flood hazard. For purposes of the NFIP, floodways are provided as a tool to assist local communities in this aspect of floodplain management. Under this concept, the 1% annual chance riverine floodplain is divided into a floodway and a floodway fringe. The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. Figure 1, "Floodway Schematic," illustrates this principle. Minimum Federal standards limit such increases to 1.0 foot, provided that hazardous velocities are not produced. The floodways in this FIS are presented to local agencies as a minimum standard that can be adopted directly or that can be used as a basis for additional encroachment studies.

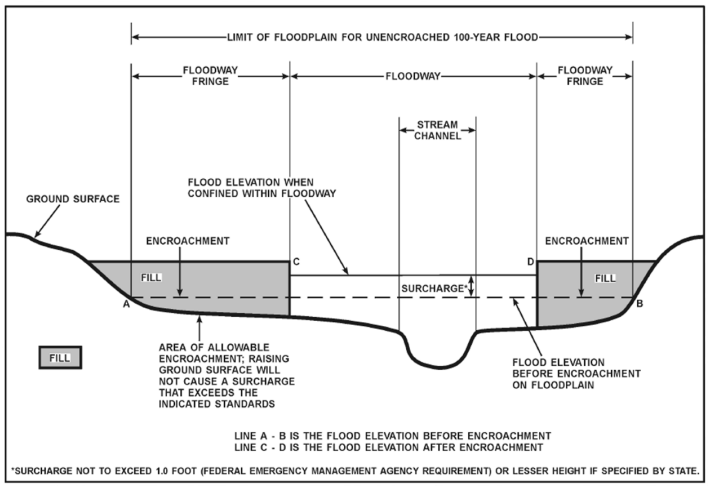


Figure 1- Floodway Schematic

2.3 Base Flood Elevations

The hydraulic characteristics of flooding sources were analyzed to provide estimates of the elevations of floods of the selected recurrence intervals. The Base Flood Elevation (BFE) is the elevation of the 1% annual chance flood. These BFEs are most commonly rounded to the whole foot, as shown on the FIRM, but in certain circumstances or locations they may be rounded to 0.1 foot. Cross section lines shown on the FIRM may also be labeled with the BFE rounded to 0.1 foot. Whole-foot BFEs derived from engineering analyses that apply to coastal areas, areas of ponding, or other static areas with little elevation change may also be shown at selected intervals on the FIRM. Cross sections with BFEs shown on the FIRM correspond to the cross sections shown in the Floodway Data table and Flood Profiles in this FIS Report. BFEs are primarily intended for flood insurance rating purposes. For construction and/or floodplain management purposes, users are cautioned to use the flood elevation data presented in this FIS Report in conjunction with the data shown on the FIRM.

2.4 Watershed Characteristics

Because a FIS is a probability analysis that may not account for some of the factors listed below, communities are strongly encouraged to consider adopting more restrictive or higher floodplain management criteria or ordinances than the minimum Federal requirements. Communities may also increase the validity of their flood hazard data by investing in continuous maintenance of river gages (see the Data Validity and Reliability paragraph below). If the U.S. Geological Survey (USGS) or other agencies do not maintain gages on the flooding sources of interest, partnerships with the USGS may be pursued, or local gages may be installed. For more information, see Section 9.0 of this report.

This flood hazard study represents an analysis of certain watershed characteristics, some of which are summarized as follows:

Drainage Area
In general, streams that drain larger areas have greater flood hazards. FISs, in North Carolina, do not typically analyze flood hazards in places with rural drainage areas of less than one square mile and within urban drainage areas of less than ½ square mile.

Soil Permeability and Infiltration
Differences in the types of soil and the amount of vegetation in a watershed have a significant effect on the amount of water that the soil can absorb; soils with a high sand content absorb much more water than soils with a high clay content. The presence of vegetation increases infiltration; the presence of pavement decreases infiltration and also speeds runoff to receiving waters. As soil permeability and infiltration decrease, the volume and rate of overland flow increases.

Soil Moisture Conditions
In addition to soil permeability and infiltration, the level of the water table helps determine the saturation point, beyond which no water is absorbed. As rainfall duration increases, the height of the water table increases.

Channel and Floodplain Geometry
The geometric contour of a streambed, termed channel geometry, and the geometric contour of a floodplain determine the volume of water that a channel can hold and partially determine the rate at which water flows through it.

Channel and Floodplain Roughness
The roughness of a surface affects the characteristics of runoff whether the water is on the surface of the watershed or in the channel.

FIS Reports include analyses of how these factors will combine to produce overland flow patterns during floods that have a certain probability of occurring in any given year. Although the recurrence interval represents the long-term average period between floods of a specific magnitude, rare floods could occur at shorter intervals or even within the same year. The risk of experiencing a rare flood increases when longer periods are considered. For example, the risk of having a flood which equals or exceeds the 1% annual chance flood (1% chance of annual exceedence) in any 50-year period is approximately 40% (4 in 10), but for any 90-year period, the risk increases to approximately 60% (6 in 10).

It is important to note that the 1% annual chance flood is used as the national standard to allow a consistent approach to floodplain

management, flood hazard assessment, and flood hazard mapping. In any given community, a number of factors may result in flooding characteristics that do not conform to predicted conditions. Therefore, the determination that an area is not shown on the FIRM as being within a Special Flood Hazard Area is no guarantee that it will not flood during a 1% annual chance flood. Examples of these factors include Data Validity and Reliability; Developmental and Topographic Changes Over Time; Erosion, Deposition, and Debris Flow; and Meandering and Lateral Migration.

Data Validity and Reliability

Certain types of analysis methods yield more justifiable characterizations of flood hazards. For example, a gage analysis, to determine peak discharges, is based on actual measurements of watershed conditions over time and, therefore, is typically considered the most accurate method of hydrologic analysis. However, it is not feasible to install enough gages to gather data on every stream. In addition, for many of the gage sites that do exist, there are interruptions in the period of record. The usefulness of gage data for the purpose of predicting flooding behavior decreases with interruptions in the period of record; predicted flooding conditions over a 100-year period based on 20 years of measurements spread over a 35-year period are less valid than those based on 30 years of continuous measurements. A regression analysis is typically considered the best method in the absence of gage data, as it uses gage data from watersheds with similar characteristics to estimate flood frequency and magnitude in an ungaged watershed. Regression equations reflect average conditions for a region; therefore, the results will not exactly match the results of a gage analysis at a particular location. The standard errors of the North Carolina rural regression equations range from 44 to 51 percent for estimates of the 1% annual chance flood. That means the difference between the results of the regression equation and the gage analysis for approximately two-thirds of the locations that gage data exists are within 44 to 51 percent of the gage analysis results. A rainfall-runoff hydrologic analysis may be used for gaged or ungaged watersheds, and can estimate the effects of storage areas and flood control structures and measures. This method is most valid when calibrated against historical data.

Developmental and Topographic Changes Over Time

A FIRM is based on the best topographic and planimetric information available to FEMA and the State of North Carolina at the time the study is produced. In time, however, development and/or natural phenomena can alter the physical characteristics of a watershed and its drainage channels, resulting in changes in the flood hazards in those areas. For example, constructing a housing subdivision reduces the amount of soil that is available to absorb water; this in turn causes an increase in the volume of surface water that flows into the channel.

Erosion, Deposition, and Debris Flow

The flood hazards shown on a FIRM are based on the assumption of unobstructed flow. The FIRM does not reflect an analysis of areas that are subject to erosion caused by the increased water-surface elevations and velocities that occur during flooding. In addition to the risks of landslides or a weakening of the ground underneath roads or structures, any sediment that is removed from one location will be deposited in another; accumulated deposits may have a pronounced effect on flood hazards in those areas. Similarly, debris such as fallen trees or branches, litter, or other items may obstruct stream channels or hydraulic structures, increasing water-surface elevations, velocities, and floodplain width.

Meandering and Lateral Migration

FISs are based on the assumption that channel geometry will remain stable during normal drainage and during flood events. This assumption is valid for most streams, which flow over bedrock or between bedrock outcroppings that form non-alluvial channels. However, alluvial streams change the channel geometry with time, significantly so during flood events. Alluvial streams are subject to erosion and deposition, which may result in braided or meandering channels. Streams of this type may be characterized by lateral migration, or channel shifting, in which the stream may change course entirely during a flood. Whenever clear evidence is available, a FIRM will identify the alluvial nature of a studied flooding source and designate wider floodways to allow for potential migration. However, these floodways are based on qualitative assessments and not on quantitative geomorphic and engineering analyses.

2.5 Coastal Flood Hazard Areas

This section is not applicable to this FIS project.

3.0 Insurance Applications

3.1 National Flood Insurance Program Insurance Zones

For flood insurance applications, the FIRM designates flood insurance rate zones and, in 1% annual chance floodplains that were studied by detailed methods, shows selected whole-foot BFEs or average depths. Insurance agents use the zones and BFEs in conjunction with information on structures and their contents to assign premium rates for flood insurance policies. Table 2, "Flood Zone Designations," includes a description of each type of flood hazard zone.

Table 2 - Flood Designations

Zone	Description
A	Zone A is the flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined in the FIS Report by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no Base Flood Elevations or depths are shown within this zone.
AE	Zone AE is the flood insurance rate zone that corresponds to the 1% annual chance floodplains that are determined in the FIS Report by detailed methods. In most instances, whole-foot Base Flood Elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.
AH	Zone AH is the flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually areas of ponding) where average depths are between 1 and 3 feet. Whole-foot Base Flood Elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.
AO	Zone AO is the flood insurance rate zone that corresponds to the areas of 1% annual chance shallow flooding (usually sheet flow on sloping terrain) where average depths are between 1 and 3 feet. Average whole-foot depths derived from the detailed hydraulic analyses are shown within this zone.
AR	Zone AR is the flood insurance rate zone that corresponds to areas that were formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
A99	Zone A99 is the flood insurance rate zone that corresponds to areas of the 1% annual chance floodplain that will be protected by a Federal flood protection system where construction has reached specified statutory milestones. No Base Flood Elevations or depths are shown within this zone.
V	Zone V is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Because approximate hydraulic analyses are performed for such areas, no Base Flood Elevations are shown within this zone.
VE	Zone VE is the flood insurance rate zone that corresponds to the 1% annual chance coastal floodplains that have additional hazards associated with storm waves. Whole-foot Base Flood Elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone.
X	Zone X is the flood insurance rate zone that corresponds to areas outside the 0.2% annual chance floodplain, areas within the 0.2% annual chance floodplain, and to areas of 1% annual chance flooding where average depths are less than 1 foot, areas of 1% annual chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the 1% annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone.
X (Future)	Zone X (Future Base Flood) is the flood insurance risk zone that corresponds to the 1-percent-annual-chance floodplains that are determined based on future-conditions hydrology. No BFEs or base flood depths are shown within this zone.
D	Zone D is the flood insurance rate zone that corresponds to unstudied areas where flood hazards are undetermined, but possible.

3.2 Coastal Barrier Resources System

3.2 Coastal Barrier Resources System

This section is not applicable to this FIS project.

4.0 Area Studied

Lenoir County is found in the Coastal Plain region of North Carolina. It is surrounded by Greene County to the north, Pitt County to the

northeast, Craven County to the east, Jones County to the southeast, Duplin County to the southwest, and Wayne County to the west.

4.1 Basin Description

Table 3, “Basin Description” contains a description of the characteristics of the HUC-8 sub-basins within which each community falls. The table includes the main flooding sources within each basin, a brief description of the basin, and its area.

Table 3 - Basin Description

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description	HUC Area (square miles)
Contentnea	03020203	Contentnea Creek	The Contentnea Creek Basin begins in southern Franklin County and drains southeast through significant portions of Greene, Nash, Pitt, Wayne, and Wilson Counties. The basin ends at the confluence with Neuse River in Craven County.	1,008
Lower Neuse	03020204	Neuse River	The Lower Neuse River Basin reaches up into Lenoir County, North Carolina and then drains east into the Pamlico Sound. The basin drains significant portions of Cartaret, Craven, Jones, and Pamlico Counties.	1,583
Middle Neuse	03020202	Neuse River	The Middle Neuse River Basin headwaters are in Wayne and Pitt Counties. The basin also drains significant portions of Beaufort, Greene, Jones, and Lenoir Counties and ends near New Bern, North Carolina in Craven County.	1,065
Northeast Cape Fear	03030007	Northeast Cape Fear River	The Northeast Cape Fear River Basin begins in the northeastern region of Sampson County and along the Wayne/Duplin County boundary. The basin then drains south through Pender County, ending at the Cape Fear River in New Hanover County.	1,741

4.2 Principal Flood Problems

Table 4, “Principal Flood Problems” contains a list of principal flooding problems in Lenoir County.

Table 4 - Principal Flood Problems

Flooding Source	Problem
All Sources	Low lying areas of Lenoir County flood periodically from the Neuse River, Adkin Branch, Briery Run and other streams included in this study. Flooding on the Neuse River and Contentnea Creek results primarily from tropical storms and major weather fronts,

4.3 Historic Flood Elevations

Hurricane Floyd
(9/16/1999)

Hurricane Floyd made landfall near Wilmington with category two winds of 105 to 110 mph. Rainfall totals from Floyd were as high as 15 to 20 inches over portions of eastern North Carolina; with a record of 23.45 inches of rain falling in the month of September at Wilmington, NC. This breaks the previous record of 21.12 inches set in July 1886. These rains combined with saturated ground from previous rain events, including Hurricane Dennis, to produce an inland flood disaster. There were 74 deaths in the United States, including 52 in North Carolina, due to drowning from flood waters. This makes Floyd the deadliest U.S. hurricane since Agnes in 1972. Data from the USGS indicate that eleven of their stream gage monitoring sites in North Carolina (Ahoskie, Rocky Mount, Hilliardston, White Oak, Enfield, Tarboro, Lucama, Hookerton, Trenton, Chinquapin, and Freeland) exceeded 0.2% annual chance flood levels due to Floyd. Total losses in North Carolina approach $5 billion with an estimated $3.5 billion in damages to North Carolina homes, businesses, roads, and infrastructure. Floyd passed relatively close to the entire U.S. east coast, justifying hurricane warnings from Florida to Massachusetts and requiring an estimated two million people to evacuate. The last hurricane to require warnings for as large a stretch of coastline was Hurricane Donna in 1960.

Hurricane Bonnie
(8/26/1998)

The landfall location of Bonnie was in southern North Carolina near Cape Fear very close to landfall of both Hurricanes Bertha and Fran in 1996. Even though a powerful storm, damage from Bonnie was much less than Fran, which was also Category 3. Winds gusted up to 100 knots and storm tides of 5 to 8 feet above normal were reported mainly in eastern beaches of Brunswick County, while a storm surge of 6 feet was reported at Pasquotank and Camden Counties in the Albemarle Sound.

Hurricane Fran
(9/5/1996)

The landfall location of Fran near the city of Wilmington and its progression into the Raleigh-Durham area caused an estimated $1.275 billion in damage in North Carolina alone. Fran hit with gusts up to 105 mph and a storm surge of approximately 16 feet. Over $1 billion in damage was reported in North Topsail Beach and Surf City and 23 people were killed.

Hurricane Bertha
(7/12/1996)
1996 was a damaging year in the hurricane history of North Carolina. Tropical Storm Arthur, Hurricane Bertha, and Hurricane Fran all made direct landfall on the North Carolina coastline. It was the most active tropical cyclone season in the state since 1955, when Hurricanes Connie, Diane, and Ione all hit the coast. Bertha entered North Carolina in North Topsail Beach with 105 mph gust and a storm surge of approximately 5 feet.

Hurricane Gloria
(9/26/1985)
The landfall location of Gloria was Cape Hatteras, with 90 knot winds and a storm surge of approximately 6-8 feet.

Hurricane Diana
(9/13/1984)
The landfall location of Diana was 38 miles south of Wilmington with 90 mph winds at its closest approach to Wilmington. Diana had 115 mph sustained winds before landfall. Storm surge was approximately 5-6 feet.

Table 5, “Historic Flood Elevations”, lists selected flooding sources in Lenoir County with records of past stages. The table shows the historic peak, a location description, approximate stream station, the date of the historic peak, and approximate recurrence interval of the flood elevation. The approximate recurrence interval for a flood is often estimated based on an analysis of rainfall amounts from a storm and /or stream gage data.

Table 5 - Historic Flood Elevations

Flooding Source/Tropical Storm	Location Description	Approx. Stream Station	Historic Peak (Feet NAVD 88)	Date	Approximate Recurrence Interval (in years)
Neuse River / Hurricane Floyd	Upstream face of Weyerhaeuser Road	57075	10.6	9/1/1999	100
Neuse River / Hurricane Floyd	Downstream face of West Craven Middle School Road	65300	11.7	9/1/1999	100
Neuse River / Hurricane Floyd	400 feet southwest of intersectioin of River Road and Cowpens Landing Road	76975	14.6	9/1/1999	100
Neuse River / Hurricane Floyd	Approximately 1.0 mile upstream of intersection of River Road and State Camp Road	94750	17.7	9/1/1999	100
Neuse River / Hurricane Floyd	Backwater up Core Creek (approximately 2.9 miles downstream of NC 55)	127000	18.7	9/1/1999	100
Neuse River / Hurricane Floyd	Backwater up Village Creek (downstream face of Biddle Road)	135000	22.2	9/1/1999	100
Neuse River / Hurricane Floyd	Upstream face of U.S. Highway 70/Queen St.	258355	37.6	9/1/1999	100
Neuse River / Hurricane Floyd	Downstream face of Main Street	591830	54.9	9/1/1999	50
Neuse River / Hurricane Floyd	Downstream face of NC 111	636585	61.7	9/1/1999	50
Neuse River / Hurricane Floyd	Upstream face of SR 1915	694195	71.1	9/1/1999	50
Neuse River / Hurricane Floyd	160 feet Southeast of Bryan Boulevard	710650	72.8	9/1/1999	50
Trent River / Hurricane Floyd	Trent River	94770	16.4	10/1/1999	100
Trent River / Hurricane Floyd	Trent River	198194	28.3	10/18/1999	100

* Data Not Available

4.4 Flood Protection Measures

Flood protection measures may be structural (such as levees, dams, and reservoirs) or non-structural (such as land-use management ordinances, policies, or practices).

Table 6, “Non-Levee Flood Protection Measures”, lists the flood protection measures undertaken to mitigate flood damage in Lenoir County.

Table 6 - Non-Levee Flood Protection Measures

Flooding Source	Structure Name	Type of Measure	Location	Description of Measure
Bear Creek	NP	CHANNEL	On Bear Creek that includes several small reservoirs and channel improvements. This project provides significant protection from the 10% and 2% annual chance floods but little protection from the 1% and 0.2% annual chance floods.	Watershed Improvement Project

N/A - Not Applicable

Table 7, “Levees” is not applicable in Lenoir County.

4.5 Scope of Study

For this map maintenance revision, a scoping meeting was held in Lenoir County to present the results of initial research to the county and communities within the county and to discuss their floodplain mapping needs. The county and communities were asked to provide input on proposed study priorities and analysis methods. These meetings resulted in the identification of flooding sources having a floodplain mapping need. Map Maintenance Plans were developed based on the results of the scoping meetings and were both mailed to each jurisdiction within Lenoir County and posted to the State’s website at www.ncfloodmaps.com.

Draft basin plans were developed based on the results of the initial scoping meetings. Final scoping meetings were held by the State and FEMA to provide counties and communities an overview of the draft basin plans, including the proposed scope and schedule for the project, and to provide an opportunity for additional county and community input. After the final scoping meeting was held, the Final Basin Plans were produced.

This FIS covers the geographic area of Lenoir County, North Carolina, and all jurisdictions therein. The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction. Limits of detailed study are indicated on the Flood Profiles and/or Water-surface elevation rasters and/or the FIRM.

Table 8P, “Scope of Revisions: Revised or New Detailed Study - Preliminary” is not applicable in Lenoir County.

Table 9P, “Scope of Revisions: Redelineated - Preliminary” is not applicable in Lenoir County.

Table 10P, “Scope of Revisions: Limited Detailed - Preliminary”, lists flooding sources that were newly studied by limited detailed methods or were previously studied by limited detailed methods and had a change in backwater elevation due to flooding effects from a newly studied flooding source.

Table 10P - Scope of Revisions: Limited Detailed - Preliminary

Source	Riverine Sources		Affected Communties
	From	To	
Tracey Swamp	The confluence with Moseley Creek (into Neuse River)	Approximately 370 feet upstream of Burkett Road	Lenoir County

Table 8, “Flooding Sources Studied by Detailed Methods”, lists all flooding sources within the county that were studied by detailed methods for this FIS and previous FISs.

Table 8 - Flooding Sources Studied by Detailed Methods: Revised or Newly Studied

Source	Riverine Sources		Affected Communties
	From	To	
Adkin Branch	The confluence with Neuse River	Approximately 0.4 miles upstream of Carey Road	City Of Kinston
Bear Creek	At the confluence with Neuse River	At the Lenoir/Wayne County boundary	Lenoir County Town Of La Grange
Contentnea Creek	Confluence with Neuse River	Approximately 1.5 miles downstream of confluence of Wheat Swamp	Lenoir County Town Of Grifton
Mosley Creek	The confluence with Neuse River	The confluence of Tracey Swamp	Lenoir County
Neuse River	Approximately 2.17 miles downstream of the confluence of Swift Creek	Craven/Lenoir/Pitt County boundary	Lenoir County

Table 8 - Flooding Sources Studied by Detailed Methods: Revised or Newly Studied

Source	Riverine Sources		Affected Communties
	From	To	
Neuse River	Craven/Lenoir/Pitt County boundary	Wayne/Lenoir County boundary	City Of Kinston Lenoir County Town Of Grifton
Southwest Creek	The confluence with Neuse River	Approximately 1.0 mile upstream of Liddell Road (SR 1143)	City Of Kinston Lenoir County
Tuckahoe Swamp	Approximately 0.5 miles downstream of West Pleasant Hill RD (SR 1105)	Approximately 560 feet upstream of Ash Davis Road (SR 1113)	Lenoir County Town Of Pink Hill
Tuckahoe Swamp	At the Lenoir/Jones County boundary	Approximately 0.5 mile downstream of West Pleasant Road	Lenoir County

Table 9, “Flooding Sources Studied by Detailed Methods: Redelineated”, lists all flooding sources that were studied by detailed methods for the pre- statewide FIS and redelineated for previous FISs. These flooding sources were not part of this revision and their effective analyses remain valid.

Table 9 - Flooding Sources Studied by Detailed Methods: Redelineated

Source	Riverine Sources		Affected Communties
	From	To	
Goss Swamp	Approximately 1.5 miles downstream of confluence of Wheat Swamp	Confluence of Hominy Swamp	Lenoir County
Mosley Creek	Confluence with Neuse River	Confluence of Tracey Swamp	Lenoir County
Southwest Creek	At the confluence with Neuse River	Approximately 0.95 mile upstream of Liddell Road	City Of Kinston Lenoir County

Table 10, “Flooding Sources Studied by Detailed Methods: Limited Detailed”, lists all flooding sources within the county that were studied by limited detailed methods for either this FIS or previous FISs.

Table 10 - Flooding Sources Studied by Detailed Methods: Limited Detailed

Source	Riverine Sources		Affected Communties
	From	To	
Beaverdam Swamp	At the confluence with Trent River	Approximately 215 feet upstream of Rex Howard Road	Lenoir County
Horse Branch	At the confluence with Trent River	Approximately 0.40 mile upstream of Jesses Howard Road	Lenoir County
Joshua Creek	At the confluence with Trent River	Approximately 1.24 miles upstream of Vine Swamp Road crossing	Lenoir County
Southwest Creek Tributary	The confluence with Southwest Creek	Approximately 170 feet downstream of Whaley Road (SR 1904)	Lenoir County
Tracey Swamp	The confluence with Moseley Creek (into Neuse River)	Approximately 370 feet upstream of Burkett Road	Lenoir County
Trent River	Confluence with Musselshell Creek	Approximately 0.6 mile upstream of State Highway 11	Lenoir County
Vine Swamp	At the confluence with Beaver Creek	Approximately 0.14 mile upstream of Parker Fork Road	Lenoir County
Vine Swamp Tributary	At the confluence with Vine Swamp	Approximately 0.50 mile upstream of Joe Williams Road	Lenoir County

Table 11, “Stream Name Changes” is not applicable in Lenoir County.

Table 12, “Letters of Map Revision” is not applicable in Lenoir County.

5.0 Engineering Methods

For the flooding sources in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded at least once on the average during any 10-, 25-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 25-, 50-, 100-, and 500-year floods, have a 10-, 4-, 2-, 1-, and 0.2% annual chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval

represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of annual exceedance) during the term of a 30-year mortgage is approximately 26 percent (about 3 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

5.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak elevation-frequency relationships for floods of the selected recurrence intervals for each flooding source studied. Hydrologic analyses are typically performed at the watershed level. Depending on factors such as watershed size and shape, land use and urbanization, and natural or man-made storage, various models or methodologies may be applied. For details on the county's hydrologic analyses, the hydrologic report is available by request.

A summary of the drainage area-peak discharge relationships for the flooding sources studied by detailed methods is shown in Table 13, "Summary of Discharges".

Table 13 - Summary of Discharges

Flooding Source		Discharges (cfs)			
Location	Drainage Area (square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Adkin Branch					
At the confluence with Neuse River	6.60	2310	3430	3750	4600
Bear Creek					
At Mays Store Road	59.18	*	*	6760	*
Approximately 0.38 mile upstream of Mays Store Road	57.95	*	*	6600	*
Approximately 1.20 miles downstream of West Washington Street	54.71	*	*	6170	*
Approximately 0.23 mile downstream of West Washington Street	51.40	*	*	5750	*
Approximately 0.47 mile upstream of West Washington Street	50.09	*	*	5580	*
Approximately 0.74 mile downstream of Old Jason Road	23.90	*	*	2820	*
Approximately 0.53 mile downstream of Old Jason Road	21.93	*	*	2690	*
Approximately 0.33 mile downstream of Old Jason Road	20.25	*	*	2570	*
Approximately 0.47 mile upstream of Old Jason Road	19.68	*	*	2530	*
Approximately 0.41 mile upstream of La Grange Road	16.70	*	*	2260	*
Beaverdam Swamp					
At the confluence with Trent River	6.64	*	*	1370	*
Approximately 0.66 mile downstream of U.S. Highway 258	6.17	*	*	1310	*
At U.S. Highway 258	5.27	*	*	1200	*
Approximately 410 feet upstream of U.S. Highway 258	4.42	*	*	1090	*
Approximately 0.65 mile upstream of U.S. Highway 258	3.86	*	*	1010	*
Approximately 0.55 mile downstream of Rex Howard Road	2.89	*	*	854	*
Contentnea Creek					
At the confluence with Neuse River	1007.20	12800	19800	23200	32300
Horse Branch					
At the confluence with Trent River	2.79	*	*	836	*
Approximately 0.43 mile upstream of Jesse Howard Road	2.01	*	*	694	*
Joshua Creek					
Approximately 0.42 mile downstream of Lenoir/Jones County boundary	10.19	*	*	1740	*
Approximately 0.14 mile downstream of Lenoir/Jones County boundary	9.20	*	*	1640	*

Table 13 - Summary of Discharges

Flooding Source		Discharges (cfs)			
Location	Drainage Area (square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
At Elm Grove Road	6.54	*	*	1350	*
Approximately 0.50 mile downstream of Vine Swamp Road	6.09	*	*	1300	*
Approximately 0.20 mile upstream of Vine Swamp Road	4.79	*	*	1140	*
Approximately 0.26 mile upstream of Vine Swamp Road	3.80	*	*	997	*
Moseley Creek (into Neuse River)					
At the confluence with Neuse River	48.90	2060	3490	4230	6290
Approximately 0.4 mile upstream of the confluence with Neuse River	48.10	2040	3460	4190	6230
Approximately 1,610 feet downstream of William Pearce Road	44.80	1950	3320	4030	6000
Approximately 0.4 mile upstream of William Pearce Road	44.00	1930	3280	3990	5940
Approximately 1.5 miles upstream of William Pearce Road	43.10	1900	3240	3940	5880
Approximately 1.5 miles downstream of NC Highway 55	35.70	1700	2910	3540	5310
Approximately 1.1 miles downstream of NC Highway 55	34.90	1670	2870	3500	5250
Approximately 0.5 mile downstream of NC Highway 55	34.50	1660	2850	3470	5210
Just upstream of NC Highway 55	31.80	1580	2720	3320	4990
Approximately 1,680 feet upstream of NC Highway 55	31.70	1570	2710	3310	4980
Approximately 1.5 miles upstream of NC Highway 55	29.60	1510	2610	3180	4800
Approximately 2.1 miles upstream of NC Highway 55	27.00	1430	2480	3030	4570
Approximately 2.1 miles downstream of Dover Fort Barnwell Road	26.90	1420	2470	3020	4560
Approximately 1.8 miles downstream of Dover Fort Barnwell Road	25.90	1390	2420	2960	4470
Approximately 1.6 miles downstream of Dover Fort Barnwell Road	25.10	1360	2370	2900	4390
Approximately 0.9 mile downstream of Dover Fort Barnwell Road at the Lenoir/ Craven County Line	9.70	760	1370	1690	2630
Neuse River					
At the confluence of Contentnea Creek	2835.00	*	*	49000	*
At confluence of Adkin Branch	2696.00	*	*	40500	*
Southwest Creek					
Approximately 1.2 miles downstream of Neuse Road	62.00	2380	4000	4840	7150
At the confluence of Southwest Creek Tributary	57.00	2260	3810	4610	6830
Approximately 0.6 mile downstream of US Highway 70	56.20	2240	3780	4580	6780
At the confluence of Strawberry Branch	50.40	2100	3550	4310	6400
Southwest Creek Tributary					
At the Lenoir / Jones County boundary	4.20	*	*	1060	*
Strawberry Branch					
At the confluence with Southwest Creek	4.80	490	910	1140	1800
Tracey Swamp					
Approximately 365 feet downstream of Seth West Road	14.90	*	*	2160	*
Approximately 0.4 mile upstream of Seth West Road	13.60	*	*	2050	*
Approximately 1.0 mile upstream of Seth West Road	12.80	*	*	1980	*
Approximately 1.7 miles upstream of Seth West Road	8.30	*	*	1550	*
Approximately 2.0 miles upstream of Seth West Road	7.60	*	*	1480	*
Approximately 1.2 miles downstream of U.S. Highway 70	7.20	*	*	1430	*
Trent River					
Approximately 0.50 mile downstream of Jones/Lenoir County boundary	26.50	*	*	2990	*
Approximately 0.42 mile upstream of Lenoir/Jones County boundary	25.54	*	*	2930	*

Table 13 - Summary of Discharges

Flooding Source		Discharges (cfs)			
Location	Drainage Area (square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Approximately 0.89 mile upstream of Lenoir/Jones County boundary	24.54	*	*	2860	*
At the confluence of Beaverdam Swamp	17.26	*	*	2350	*
Approximately 0.36 mile upstream of confluence of Beaverdam Swamp	17.11	*	*	2330	*
At the confluence of Horse Branch	13.33	*	*	2030	*
Approximately 0.28 mile upstream of confluence of Horse Branch	13.17	*	*	2010	*
Approximately 0.30 mile upstream of U.S. Highway 258	12.18	*	*	1930	*
Approximately 1.08 miles upstream of U.S. Highway 258	10.25	*	*	1750	*
Tuckahoe Swamp					
At Lenoir/Jones County boundary	13.34	*	*	2450	*
Approximately 0.32 mile upstream of Lenoir/Jones County boundary	12.13	*	*	2330	*
Vine Swamp					
Approximatey 0.37 mile downstream of Lenoir/Jones County boundary	9.68	*	*	1690	*
Approximately 0.23 mile upstream of Copeland Farm Road	9.09	*	*	1630	*
Approximately 0.32 mile downstream of Vine Swamp Road	6.32	*	*	1330	*
Approximately 0.38 mile upstream of Vine Swamp Road	4.56	*	*	1100	*
Approximately 0.15 mile upstream of Billy Becton Road	2.18	*	*	728	*
Vine Swamp Tributary					
At the confluence with Vine Swamp	1.78	*	*	648	*
Approximately 0.30 mile upstream of Joe Williams Road	1.30	*	*	544	*

Table 14, “Summary of Stillwater Elevations” is not applicable in Lenoir County.

Table 15, “Gage Information”, lists the stream gages located in Lenoir County, including the drainage area of the flooding source at the gage and the period of record available at the time of the publication of this FIS Report.

Table 15 - Gage Information

Gage Number	Flooding Source	Site Name	Drainage Area (square miles)	Period of Record	
				From	To
0208925200	Bear Creek	Bear Creek near Mays Store	57.70	1988	2006

5.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the sources studied were carried out to provide estimates of the flood elevations for the selected recurrence intervals. Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles and/or Water-surface elevation rasters. For stream segments for which BFEs were computed, selected cross-section locations are also shown on the FIRM. Flood Profiles and/or Water-surface elevation rasters were developed showing computed water-surface elevations for floods of the selected recurrence intervals.

Users should be aware that flood elevations shown on the FIRM represent rounded whole-foot elevations and may not exactly reflect the elevations shown on the Flood Profiles and/or Water-surface elevation rasters or in the Floodway Data tables in the FIS Report. For construction and/or floodplain management purposes, users are encouraged to use the flood elevation data presented in the FIS in conjunction with the data shown on the FIRM.

The hydraulic analyses for this FIS were based on unobstructed flow. The flood elevations shown on the Flood Profiles are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail.

For details on the county’s hydraulic analyses, the hydraulic report is available by request.

For the streams studied by detailed methods, water surface elevations of floods of the selected recurrence intervals were computed through use of the Army Corps of Engineers' HEC RAS step backwater computer program . The hydraulic analyses were based on unobstructed flow. The flood elevations shown on the Profiles and/or Water-surface elevation rasters are thus considered valid only if hydraulic structures remain unobstructed, operate properly, and do not fail. The computer models were calibrated using historic high water data collected during field investigations.

The cross section geometries were obtained from a combination of digital elevation data obtained by Light Detection and Ranging (LIDAR) and field surveys. All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry. Natural floodplain cross sections were surveyed approximately every 4000 feet along the detail study reaches to obtain the channel geometry between bridges and culverts. Overbank cross section data for the backwater analyses were obtained from recently flown LIDAR data.

Channel roughness factors (Manning's "n") used in the hydraulic computations were made in the field by an engineer where stream access was possible, with orthophotos used to supplement areas that could not be accessed. The channel and overbank "n" values for all of the streams studied by detailed methods are shown in Table 16, "Roughness Coefficients".

Table 16 - Roughness Coefficients

Stream	Channel "n"	Overbank "n"
Adkin Branch	0.035 to 0.140	0.100 to 0.200
Bear Creek	0.032 to 0.060	0.032 to 0.150
Beaverdam Swamp	0.040 to 0.045	0.130 to 0.150
Contentnea Creek	0.030 to 0.080	0.032 to 0.200
Goss Swamp	0.048	0.130 to 0.140
Horse Branch	0.045 to 0.050	0.140 to 0.150
Joshua Creek	0.040 to 0.050	0.110 to 0.150
Mosley Creek	0.050	0.035 to 0.090
Neuse River	0.035 to 0.060	0.055 to 0.250
Southwest Creek	0.032 to 0.050	0.010 to 0.120
Southwest Creek Tributary	0.050 to 0.060	0.090 to 0.150
Tracey Swamp	0.014 to 0.070	0.100 to 10.000
Trent River	0.045 to 0.063	0.032 to 0.200
Tuckahoe Swamp	0.045 to 0.055	0.035 to 0.180
Vine Swamp	0.040 to 0.050	0.110 to 0.150
Vine Swamp Tributary	0.045	0.100 to 0.130

For flooding sources studied by limited detailed methods in the county, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this report and the FIRM panels. This method entails developing a HEC-RAS hydraulic model, resulting in the calculation of BFEs and the delineation of the 1% annual chance floodplain (designated as Zone AE). Cross sections for the flooding sources studied by limited detailed methods were obtained using digital elevation data obtained with LIDAR technology developed as part of the North Carolina Statewide Floodplain Mapping Program. The hydraulic model is prepared using this digital elevation data, without surveying bathymetric or structural data. Where bridge or culvert data are readily available, such as from the North Carolina Department of Transportation, these data have been reflected in the hydraulic model. If these structural data are not readily available, field measurements of these structures were made to approximate their geometry in the hydraulic models. In addition, this method does not include field surveys that determine specifics on channel and floodplain characteristics. A limited detailed study is a "buildable" product that can be upgraded to a fully detailed study at a later date by verifying stream channel characteristics, bridge and culvert opening geometry, and by analyzing multiple recurrence intervals.

The results of the HEC-RAS computations are tabulated for all cross sections (Table 17, "Limited Detailed Flood Hazard Data"). Flood Profiles have not been developed for streams studied by limited detailed methods. Water-surface elevation rasters were developed for steams studied by limited detailed methods. In addition, floodways for streams studied by limited detailed methods are not delineated on the FIRM. However, the 1% annual chance water-surface elevations, flood discharges, and non-encroachment widths from the limited detailed studies for every modeled cross section are given in Table 17. The non-encroachment widths given at modeled cross sections can be used by communities to enforce floodplain management ordinances that meet the requirement defined in 44 CFR 60.3(c)(10).

Between cross sections for streams studied by limited detailed methods, 1% annual chance water-surface elevations can be calculated

by mathematical interpolation using the distance along the stream centerline. Non-encroachment widths and, therefore, the location of a non-encroachment area boundary between cross sections should be determined based on either 1) mathematical interpolation, or 2) the non-encroachment width at the upstream or downstream cross section, whichever is larger. If the width determined by this second method is wider than the Special Flood Hazard Area (SFHA) or the 1% annual chance floodplain delineated on the FIRM for this location along the stream, the non-encroachment area shall be considered to be coincident with the SFHA. A full detailed study incorporating field survey data in the HEC-RAS hydraulic model may be submitted for a Letter of Map Revision (LOMR) request to map a regulatory floodway along a section of a stream in lieu of applying the non-encroachment widths listed in Table 17.

Table 17 - Limited Detailed Flood Hazard Data

Cross Section	Stream Station	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)	Non-Encroachment Width (feet) Left/Right from Stream Centerline
Ash Branch				
051	5,102	937	60.1	145 / 53
056	5,602	937	60.7	83 / 72
Beaverdam Swamp				
006	577	1,367	67.6[1]	306 / 8
011	1,073	1,367	68.0	420 / 11
015	1,500	1,367	68.3	296 / 30
020	2,000	1,367	68.8	282 / 47
025	2,500	1,367	69.4	273 / 89
029	2,883	1,367	69.6	256 / 158
035	3,457	1,367	70.2	173 / 136
041	4,057	1,311	70.8	96 / 125
045	4,500	1,311	71.1	130 / 40
050	5,000	1,311	71.7	180 / 40
053	5,332	1,311	72.4	102 / 15
060	6,000	1,311	73.5	103 / 57
065	6,500	1,311	74.1	163 / 17
070	7,000	1,311	74.6	158 / 15
078	7,750	1,198	75.4	161 / 30
082	8,220	1,198	76.1	157 / 15
085	8,500	1,198	76.4	77 / 122
090	9,000	1,198	76.8	69 / 50
094	9,433	1,198	77.6	20 / 186
100	10,000	1,198	78.2	159 / 15
105	10,500	1,198	78.9	27 / 53
110	10,970	1,086	79.8	179 / 20
114	11,422	1,086	80.4	55 / 78
122	12,227	1,086	81.6	209 / 43
125	12,500	1,086	81.9	113 / 85
130	13,000	1,086	82.6	140 / 97
134	13,365	1,086	83.0	137 / 136
140	14,000	1,006	84.0	143 / 15
146	14,600	854	85.7	105 / 32
150	15,000	854	86.5	95 / 112
156	15,567	854	87.2	106 / 21
162	16,172	854	88.1	196 / 31
165	16,515	854	88.4	149 / 38
Horse Branch				

Table 17 - Limited Detailed Flood Hazard Data

Cross Section	Stream Station	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)	Non-Encroachment Width (feet) Left/Right from Stream Centerline
008	831	836	71.2[1]	10 / 330
015	1,517	836	71.2[1]	49 / 259
033	3,265	836	73.6	140 / 91
039	3,850	836	73.9	32 / 437
047	4,697	694	74.4	97 / 70
Joshua Creek				
150	14,964	1,741	63.8	91 / 349
155	15,500	1,741	64.0	196 / 113
160	16,000	1,741	64.2	30 / 430
166	16,597	1,741	64.5	121 / 357
171	17,075	1,741	64.7	307 / 153
179	17,928	1,644	65.2	395 / 51
184	18,417	1,644	65.5	437 / 122
188	18,835	1,644	65.8	201 / 92
193	19,277	1,644	66.3	230 / 60
203	20,306	1,355	67.4	299 / 268
210	21,000	1,355	67.6	260 / 26
215	21,500	1,355	67.9	246 / 104
220	22,000	1,355	68.2	200 / 30
225	22,500	1,355	68.8	234 / 85
230	23,000	1,355	69.0	115 / 20
235	23,500	1,355	69.7	100 / 40
240	23,968	1,355	70.3	22 / 113
247	24,661	1,301	71.0	35 / 80
252	25,156	1,301	71.7	56 / 108
257	25,694	1,301	72.2	51 / 100
261	26,093	1,301	72.6	135 / 30
275	27,500	1,301	74.8	42 / 160
280	28,000	997	75.3	100 / 210
286	28,635	997	75.8	190 / 25
290	29,000	997	76.2	155 / 22
295	29,500	997	76.7	35 / 110
300	29,975	997	77.7	20 / 35
305	30,500	997	78.8	50 / 50
309	30,904	997	79.3	38 / 60
Southwest Creek Tributary				
016	1,572	1,060	34.1[1]	122 / 106
025	2,512	1,060	34.1[1]	107 / 85
033	3,291	1,060	34.2	88 / 157
040	3,951	1,060	35.5	66 / 123
Tracey Swamp				
002	231	2,156	38.8	23 / 916
004	430	2,156	38.8	26 / 1,314
005	500	2,156	38.8	26 / 1,314
010	993	2,156	38.9	911 / 662
025	2,520	2,156	39.1	489 / 1,065

Table 17 - Limited Detailed Flood Hazard Data

Cross Section	Stream Station	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)	Non-Encroachment Width (feet) Left/Right from Stream Centerline
036	3,628	2,046	39.2	1,980 / 22
045	4,537	2,046	39.4	1,423 / 90
058	5,804	1,981	39.6	140 / 205
074	7,371	1,981	40.6	24 / 890
086	8,553	1,981	41.0	22 / 1,021
104	10,413	1,550	41.4	1,167 / 505
125	12,477	1,426	41.9	165 / 209
138	13,811	1,426	42.6	18 / 590
157	15,677	1,350	43.2	870 / 45
Trent River				
4234	423,414	2,991	62.7	1,000 / 150
4249	424,905	2,991	63.5	1,000 / 25
4263	426,292	2,929	64.4	500 / 90
4280	428,021	2,864	65.6	550 / 250
4299	429,890	2,864	66.4	492 / 393
4309	430,891	2,864	66.6	1,146 / 524
4321	432,138	2,864	67.1	1,129 / 82
4335	433,488	2,346	68.4	291 / 135
4348	434,776	2,335	69.0	610 / 194
4360	436,021	2,335	69.6	188 / 271
4370	437,021	2,335	70.4	337 / 411
4384	438,369	2,027	71.1	201 / 220
4397	439,676	2,027	72.2	214 / 215
4410	441,021	2,013	73.1	376 / 133
4420	442,021	2,013	73.6	55 / 530
4440	444,021	2,013	76.9	450 / 180
4455	445,518	1,926	77.4	670 / 150
4470	447,021	1,926	78.0	450 / 355
4480	448,021	1,926	78.6	31 / 463
4493	449,344	1,747	79.7	453 / 41
4507	450,704	1,747	80.7	903 / 153
4520	452,021	1,747	81.7	540 / 390
4530	453,021	1,747	82.4	400 / 300
Tuckahoe Swamp				
453	45,340	2,450	81.0	200 / 350
Vine Swamp				
102	10,197	1,692	56.3	234 / 36
107	10,697	1,692	56.5	80 / 120
111	11,101	1,692	56.9	30 / 280
124	12,403	1,692	57.7	192 / 176
130	12,981	1,632	57.8	43 / 103
135	13,543	1,632	58.3	215 / 74
141	14,113	1,632	58.7	55 / 230
147	14,697	1,632	59.2	25 / 284
152	15,197	1,632	59.6	56 / 115
157	15,697	1,632	60.1	86 / 87

Table 17 - Limited Detailed Flood Hazard Data

Cross Section	Stream Station	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)	Non-Encroachment Width (feet) Left/Right from Stream Centerline
162	16,197	1,632	60.5	89 / 97
167	16,729	1,632	61.0	192 / 79
172	17,154	1,632	61.2	195 / 87
177	17,655	1,632	61.6	223 / 49
183	18,256	1,329	62.2	129 / 73
187	18,722	1,329	62.6	129 / 75
192	19,197	1,329	63.1	77 / 150
204	20,421	1,329	64.3	223 / 280
212	21,197	1,329	64.5	241 / 81
221	22,112	1,105	65.8	148 / 55
226	22,551	1,105	66.3	214 / 28
229	22,913	1,105	66.7	230 / 99
233	23,295	1,105	66.9	228 / 125
238	23,824	1,105	67.5	218 / 25
242	24,197	1,105	68.0	233 / 25
247	24,697	1,105	68.4	165 / 89
252	25,197	1,105	68.8	240 / 64
258	25,792	1,105	69.4	264 / 20
271	27,065	1,105	73.6	343 / 83
277	27,726	728	74.2	71 / 59
282	28,197	728	74.8	73 / 62
287	28,688	728	75.4	77 / 84
293	29,314	728	76.4	50 / 47
299	29,950	728	77.8	73 / 112
309	30,890	728	80.2	19 / 149
313	31,265	728	80.7	81 / 24
Vine Swamp Tributary				
005	524	648	61.9[1]	189 / 90
016	1,550	648	64.3	130 / 50
021	2,127	648	64.6	64 / 72
025	2,500	648	65.0	67 / 67
031	3,090	544	65.8	75 / 15
036	3,603	544	67.0	66 / 26

[1]Elevation includes backwater effects

5.3 Coastal Analyses

This section is not applicable to this FIS project. Table 18 “Summary of Coastal Analyses” does not apply to Lenoir County.

6.0 Mapping Methods

6.1 Vertical and Horizontal Control

Vertical Datum

All FISs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and

structure elevations can be referenced and compared. With the finalization of the North American Vertical Datum of 1988 (NAVD 88), all North Carolina FISs have been prepared using NAVD 88 as the referenced vertical datum.

All flood elevations shown on the FIRM for Lenoir County are referenced to NAVD 88. Structure and ground elevations in the county must, therefore, be referenced to NAVD 88. It is important to note that FISs for adjacent communities in neighboring states may be referenced to NGVD 29. This may result in BFE differences across political boundaries between the communities.

As noted above, the elevations shown in this FIS are referenced to NAVD 88. Ground, structure, and flood elevations may be compared and/or referenced to NGVD 29 by applying a standard conversion factor. The conversion factor for Lenoir County is # feet. The locations used to establish the conversion factor were USGS quadrangle corners that fell within the county, as well as those that were within 2.5 miles outside the county. The benchmarks are referenced to NAVD 88. Table 21, "Datum Conversion Locations and Values," is shown below.

Table 21, "Datum Conversion Locations and Values."

Table 21 - Datum Conversion Locations and Values

Latitude	Longitude	Conversion from NGVD29 to NAVD88 (feet)
35.37	-77.50	-1.23
35.37	-77.50	-1.23
35.25	-77.50	-1.20
35.25	-77.50	-1.20
35.12	-77.75	-1.06
35.12	-77.75	-1.06
35.25	-77.75	-1.13
35.25	-77.75	-1.13
35.25	-77.63	-1.15
35.25	-77.63	-1.15
35.13	-77.62	-1.10
35.13	-77.62	-1.10
Average conversion in Lenoir County from NGVD 29 to NAVD 88 = -1.15 feet		

The vertical datum conversion factor for all flooding sources which run along a county boundary are in accordance with the conversion factor used in those contiguous counties.

BFEs shown on the FIRM represent whole-foot rounded values. For example, a 1% annual chance water-surface elevation of 102.4 feet will appear as 102 on the FIRM and 102.6 feet will appear as 103. Therefore, users who wish to convert the elevations in this FIS to NGVD 29 should apply the stated conversion factor(s) to elevations shown on the Flood Profiles and/or Water-surface elevation rasters and supporting data tables in the FIS Report, which are shown, at a minimum, to the nearest 0.1 foot.

For more information on NAVD 88, see Converting the National Flood Insurance Program to the North American Vertical Datum of 1988, or contact the Vertical Network Branch, National Geodetic Survey, Coast and Geodetic Survey, National Oceanic and Atmospheric Administration, Rockville, Maryland 20910 (http://www.ngs.noaa.gov).

Vertical Control Monuments

Qualifying bench marks within Lenoir County that are cataloged by the National Geodetic Survey (NGS) and entered into the National Spatial Reference System (NSRS) as First or Second Order Vertical, with a vertical stability classification of A, B, or C, are shown and labeled on the FIRM with their 6-character NSRS Permanent Identifier (PID).

The National Geodetic Survey establishes precisely located monuments on the North Carolina Grid System and Bench Marks referenced to a vertical datum (NGVD 1929 and NAVD 1988).

Bench marks cataloged by the NGS and entered into the NSRS vary widely in vertical stability classification. NSRS vertical stability classifications are as follows:

- •Stability A: Monuments of the most reliable nature, expected to hold position/elevation well (e.g., mounted in bedrock)
- •Stability B: Monuments which generally hold their position/elevation well (e.g., concrete bridge abutment)
- •Stability C: Monuments which may be affected by surface ground movements (e.g., concrete monument below frost line)
- •Stability D: Mark of questionable or unknown vertical stability (e.g., concrete monument above frost line, or steel witness post)

Monuments with a Stability D classification may be used as Elevation Reference Marks (ERMs) when a Stability C or better monument is not an option. These ERMs must be approved by NCGS and can be set and used as elevation bench marks to establish vertical control and produce NC DFIRMs. Including such ERMs will greatly augment North Carolina's useable vertical control network.

In addition, when local jurisdictions have established their own vertical monument network, these monuments may also be shown on the FIRM with the appropriate designations. Local monuments will be placed on the FIRM if the community has requested that they be included and if the monuments meet the aforementioned criteria.

North Carolina Geodetic Survey (NCGS) and contractor surveyed vertical control monuments will be shown on the FIRM panels. Those cataloged by NCGS meet similar requirements to the NGS monuments as described above. Most monuments that have been cataloged by NCGS have been established to NGS standards, but have not been submitted to NGS for inclusion into the NSRS. The qualifying criteria for depicting bench marks established by the State's contractors on the new digital FIRM panels include:

- •GPS surveying of permanent 3-D survey monuments to 5-centimeter or better local network accuracy guidelines, in accordance with NOAA Technical Memorandum NOS NGS-58 "Guidelines for Establishing GPS-Derived Ellipsoid Heights (Standards: 2 cm and 5 cm)," and conversion to NAVD 88 orthometric heights using NGS' latest geoid mode;
- •Requiring a stability classification of "C" or better; and
- •Submitting GPS files and station descriptions to NCGS.

To obtain current information for cataloging local bench marks in the NSRS, please visit the Data Sheet page of the NGS website at http://www.ngs.noaa.gov/cgi-bin/datasheet.prl, or contact the NGS Information Services Branch at:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-32822
(301) 713-3242

Information regarding the NCGS or State contractor bench marks can be obtained through the NCGS website at www.ncgs.state.nc.us, or by phone at (919) 733-3836.

It is important to note that temporary vertical monuments, sometimes called Elevation Reference Marks, are often established during the preparation of a flood hazard analysis for the purpose of establishing local vertical control. Although these monuments are not shown on the FIRM, interested individuals may contact FEMA to access this information.

Horizontal Datum and Control
The digital files that comprise the FIRM are georeferenced to an established coordinate system. The coordinate system used for the production of this FIRM is North Carolina State Plane (FIPSZONE 3200) referenced to the North American Datum of 1983 (NAD83), GRS80 ellipsoid.

6.2 Base Map

The FIRMs and FIS Report for this project have been produced in a digital format. The flood hazard information was converted to a Geographic Information System (GIS) format that meets FEMA's FIRM database specifications and geographic information standards. This information is provided in a digital format so that it can be incorporated into a local GIS and be accessed more easily by the community. The FIRM Database includes most of the tabular information contained in the FIS Report in such a way that the data can be associated with pertinent spatial features.

The projection used in the preparation of this map was the North Carolina State Plane Coordinate System. The horizontal datum was NAD83, GRS80 spheroid. Differences in datum, spheroid, or projection used in the production of FIRMs for adjacent states may result in slight positional differences in map features across the state boundary. These differences do not affect the accuracy of this FIRM.

As part of the North Carolina CTS Initiative, North Carolina digital FIRM panel numbers are consistent with the North Carolina Land Records Management Program (LRMP).

The 11-digit digital FIRM panel numbering system for North Carolina is: SS MM LLLL PP X, where SS = State Federal Information Processing Code (37); MM = Easting-Northing (EN) 1,000,000-foot coordinates; LLLL = LRMP map numbers to include the EN 100,000-foot coordinates, and the EN 10,000-foot coordinates; PP = place holders for additional EN 1,000-foot coordinates; and X = suffix ("J" for the initial edition). North Carolina's State Plane Coordinate System origin is outside the State boundary to the southwest (in Georgia), the eastings range from approximately 0,404,000 (Tennessee border) to 3,040,000 (Atlantic Ocean); and the northings range from approximately 0,045,000 (South Carolina border) to 1,043,000 (Virginia border). Digital FIRM panels were compiled at either 1"=1,000', covering an area of 20,000 feet x 20,000 feet (20" x 20" panels); or at 1"=500', covering an area of 10,000 feet x 10,000 feet (20" x 20" panels). An additional 2 digits (both zeros) are held in reserve as a "place holder" in the event that future FIRMs are printed at a larger scale; e.g., 1"=250', covering an area of 5,000 feet x 5,000 feet for which the 1,000-foot coordinates would either be 0 or 5.

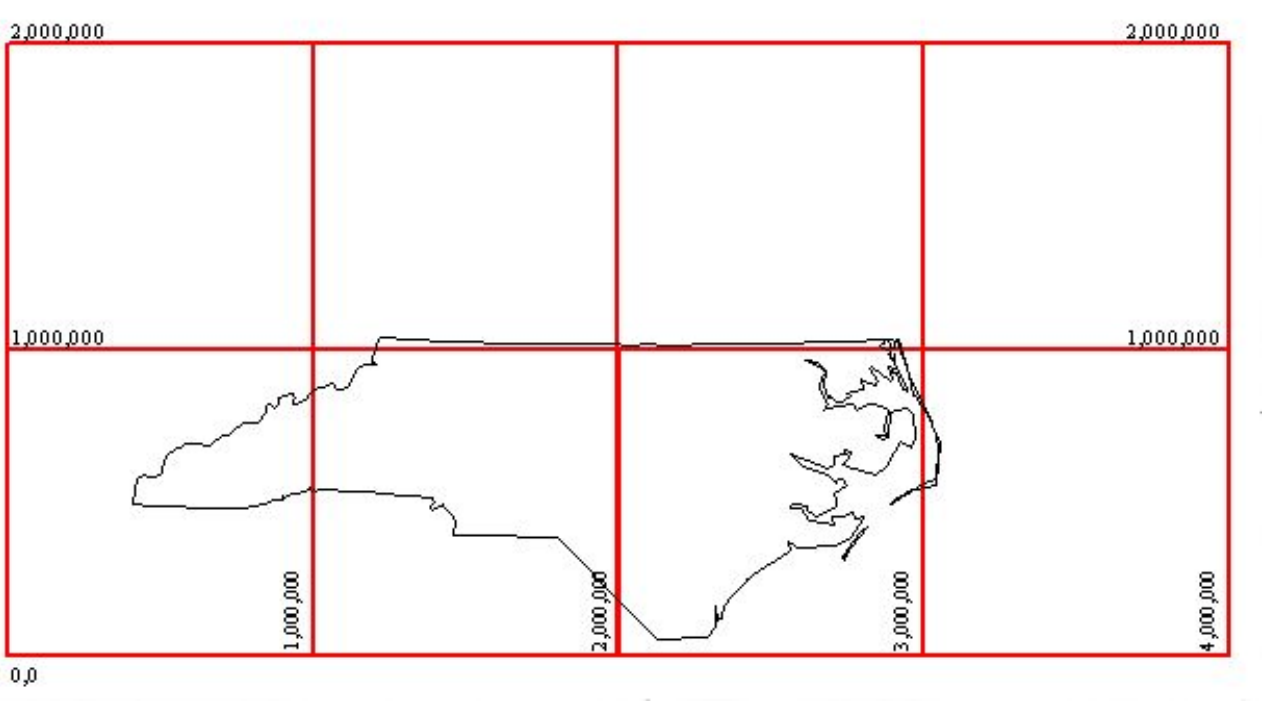


Figure 3 - North Carolina's State Plane Coordinate System

6.3 Floodplain and Floodway Delineation

Floodplain Boundaries

For streams restudied by detailed and limited detailed methods, the 1% and 0.2% annual chance floodplains were delineated using flood elevations determined at each cross section. Between cross sections, the boundaries were interpolated using topographic data acquired using airborne Light Detection and Ranging (LIDAR). This LIDAR data was acquired during the (insert date from basin plan and update for map maintenance, if necessary) flying season.

The topographic data satisfies a vertical root-mean-square error (RMSE) accuracy standard of 20 cm (1.3 feet accuracy at the 95% confidence limit) for the Outer Banks and 25 cm (1.6 feet accuracy at the 95% confidence limit) for those portions of the basin lying west of the Outer Banks. These data could be contoured at roughly a 2-foot vertical contour interval. All elevations were referenced to the NAVD 88 and reflect orthometric heights. Variably spaced, bare-earth digital topographic data in ASCII point file format were combined with imagery (either flown concurrently with the LIDAR data or using existing digital orthophotos) to establish a Triangulated Irregular Network (TIN) of digital elevation points, which include selected breaklines to be used for hydraulic modeling. Furthermore, a uniformly spaced sampling of the TIN resulted in uniformly spaced Digital Elevation Models (DEMs), with 20 ft x 20 ft post spacing, which was generated in multiple file formats.

The 1% annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones VE, AO, AH, A99, AR, A, and AE), and the 0.2% annual chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance floodplain boundaries have been shown.

Floodway Delineation

The floodways presented in this FIS were computed for certain stream segments on the basis of equal conveyance reduction from each side of the floodplain. Floodway widths were computed at cross sections. Between cross sections, the floodway boundaries were interpolated. The results of the floodway computations are tabulated for selected cross sections (Table 22, “Floodway Data”). The computed floodway is shown on the FIRM. In cases where the floodway and 1% annual chance floodplain boundaries are either close together or collinear, only the floodway boundary is shown. In areas where the top of the bridge or road is higher than the 1.0-percent annual chance (100-year) flood, the FIRM will show the flood discharge as contained within the structure for emergency management purposes. It is important to note that FEMA and community floodway regulations still apply in and around those areas.

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
Cross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Bear Creek								
226	22,589	795	6,333	1.1	58.4	58.4	59.4	0.9
234	23,395	750	5,468	1.2	58.7	58.7	59.8	1.0
254	25,416	590	4,968	1.4	60.4	60.4	61.2	0.8
260	26,014	580	5,020	1.4	60.6	60.6	61.5	0.9
265	26,460	590	4,959	1.3	60.8	60.8	61.8	1.0
272	27,204	610	4,556	1.4	61.3	61.3	62.2	0.9
277	27,714	630	4,418	1.5	61.7	61.7	62.6	1.0
284	28,435	670	4,432	1.5	62.4	62.4	63.3	0.9
294	29,393	720	5,482	1.2	63.1	63.1	64.1	1.0
321	32,122	720	5,189	1.3	65.9	65.9	66.6	0.7
330	33,040	730	5,754	1.2	66.3	66.3	67.1	0.8
356	35,554	570	5,288	1.2	68.9	68.9	69.7	0.8
366	36,639	690	5,418	1.1	69.1	69.1	70.1	1.0
378	37,836	1,115	8,246	0.8	69.5	69.5	70.4	1.0
388	38,802	980	6,401	1.0	69.8	69.8	70.7	0.9
394	39,410	990	8,117	0.8	70.0	70.0	70.9	0.9
427	42,741	840	6,425	0.9	71.4	71.4	72.2	0.9
470	46,950	1,255	7,699	0.7	73.3	73.3	74.3	1.0
479	47,944	1,385	7,904	0.7	73.5	73.5	74.5	1.0
493	49,288	890	5,789	1.0	73.9	73.9	74.9	1.0
503	50,287	950	5,770	1.0	74.2	74.2	75.2	1.0
516	51,597	1,020	4,732	0.6	74.5	74.5	75.5	1.0
529	52,933	1,140	5,927	0.4	74.8	74.8	75.8	1.0

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
Cross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
559	55,935	1,400	7,028	0.4	75.8	75.8	76.3	0.5
566	56,645	1,800	6,883	0.4	75.9	75.9	76.4	0.5
573	57,266	750	2,907	0.9	76.1	76.1	76.5	0.4
586	58,618	590	1,984	1.3	76.6	76.6	77.3	0.7
594	59,398	700	2,098	1.2	77.3	77.3	78.0	0.8
631	63,087	450	2,408	0.9	81.4	81.4	82.0	0.6
638	63,765	450	2,338	1.0	82.0	82.0	82.4	0.5
642	64,187	300	1,605	1.4	82.3	82.3	82.8	0.5
646	64,617	500	2,740	0.7	82.6	82.6	83.3	0.8
646	64,617	500	2,740	0.8	82.6	82.6	83.3	0.8
Contentnea Creek								
124	12,386	2,999	39,008	0.6	25.0[1]	21.9	22.9	1.0
191	19,051	2,503	24,781	0.9	25.2[2]	22.5	23.5	1.0
225	22,465	1,691	20,256	1.1	25.2[2]	23.4	24.4	1.0
Moseley Creek (into Neuse River)								
020	1,957	265	3,276	1.3	24.8[2]	19.4	20.4	1.0
060	6,017	465	4,375	1.0	24.8[2]	20.0	21.0	1.0
078	7,784	395	3,661	1.1	24.8[2]	20.6	21.5	0.9
100	9,994	365	1,927	2.1	24.8[2]	22.2	23.0	0.8
114	11,373	120	1,015	4.0	24.8[2]	23.1	23.8	0.7
129	12,944	510	3,557	1.1	24.8[2]	24.0	24.9	0.9
149	14,865	570	4,746	0.8	24.8[2]	24.3	25.2	0.9
167	16,689	470	3,298	1.2	24.8[2]	24.5	25.5	1.0
192	19,223	490	2,838	1.4	25.2	25.2	26.2	1.0
223	22,252	380	2,222	1.8	26.2	26.2	27.1	0.9
263	26,341	460	1,626	2.2	27.6	27.6	28.6	1.0
283	28,330	425	1,817	1.9	29.4	29.4	30.3	0.9
307	30,675	105	1,262	2.8	31.8	31.8	32.3	0.5
326	32,595	450	2,324	1.4	32.6	32.6	33.5	0.9
345	34,499	525	2,364	1.4	33.2	33.2	34.1	0.9
370	36,974	450	2,151	1.5	33.7	33.7	34.6	0.9
396	39,621	425	1,798	1.8	34.9	34.9	35.7	0.8
427	42,727	590	2,246	1.4	35.7	35.7	36.7	1.0
458	45,782	660	2,258	1.3	37.2	37.2	38.2	1.0
483	48,308	725	2,162	1.3	38.1	38.1	39.0	0.9
Neuse River								
1673	167,281	4,400	81,486	0.6	24.4	24.4	25.4	1.0
1762	176,237[3]	3,311	47,314	1.0	25.0	25.0	26.0	1.0
1829	182,945[3]	2,519	39,752	1.0	25.8	25.8	26.8	1.0
1849	184,880[3]	2,671	40,349	1.0	26.2	26.2	27.1	0.9
1881	188,107[3]	2,791	44,455	0.9	26.8	26.8	27.7	0.9
1905	190,531[3]	2,800	45,965	0.9	27.2	27.2	28.1	0.9
1926	192,589[3]	3,020	32,173	1.3	27.6	27.6	28.5	0.9
1946	194,584[3]	2,820	37,349	1.1	28.1	28.1	29.1	1.0
2234	223,385[3]	3,729	57,574	0.7	31.6	31.6	32.6	1.0

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
Cross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
2256	225,587[3]	3,870	65,858	0.6	31.8	31.8	32.8	1.0
2282	228,182[3]	4,058	67,759	0.6	32.0	32.0	33.0	1.0
2315	231,527[3]	3,600[4]	57,642	0.7	32.3	32.3	33.3	1.0
2339	233,871[3]	3,440[4]	51,759	0.8	32.6	32.6	33.6	1.0
2402	240,237[3]	3,250	49,341	0.8	34.2	34.2	35.2	1.0
2434	243,389[3]	3,550	58,832	0.7	34.7	34.7	35.6	0.9
2458	245,813[3]	3,750	61,006	0.7	34.9	34.9	35.8	0.9
3736	373,613[3]	3,525	52,789	0.8	52.5	52.5	53.5	0.9
3772	377,240[3]	3,898	59,729	0.7	52.9	52.9	53.8	0.9
3793	379,304[3]	3,693	51,062	0.8	53.1	53.1	54.0	1.0
3891	389,065[3]	2,982	41,467	1.0	54.7	54.7	55.7	1.0
Southwest Creek								
194	19,402	136	1,103	4.4	33.8[2]	31.5	31.8	0.3
214	21,370	630	5,139	0.9	33.8[2]	33.4	33.6	0.2
225	22,464	368	2,759	1.7	33.8[2]	33.6	34.0	0.4
244	24,421	406	3,286	1.4	33.8[2]	33.9	34.3	0.4
276	27,618	173	1,343	3.4	35.5	35.5	36.1	0.6
321	32,134	696	2,475	1.8	36.4	36.4	36.8	0.4
1135	113,525	110	711	1.3	106.9	106.9	107.3	0.4
1143	114,330	130	434	2.0	107.2	107.2	108.2	1.0
1155	115,500	100	456	1.9	110.7	110.7	111.1	0.4
1158	115,800	90	306	2.8	111.5	111.5	112.1	0.6
1161	116,100	60	239	3.1	113.7	113.7	114.2	0.5
1168	116,800	60	253	2.9	117.5	117.5	118.5	1.0
1183	118,320	60	207	2.8	128.7	128.7	128.9	0.2
Tuckahoe Swamp								
453	45,337	550	2,278	1.1	81.0	81.0	82.0	1.0
459	45,863	575	2,706	0.9	81.6	81.6	82.6	1.0
465	46,511	550	2,533	1.0	82.2	82.2	83.2	1.0
472	47,188	450	2,302	1.0	82.8	82.8	83.8	1.0
477	47,738	446	2,348	1.0	83.3	83.3	84.3	1.0
484	48,366	501	3,159	0.7	83.7	83.7	84.7	1.0
492	49,228	458	2,810	0.8	84.1	84.1	85.1	1.0
499	49,942	400	2,282	0.9	84.5	84.5	85.5	1.0

[1]ELEVATION INCLUDES FLOODING CONTROLLED BY NEUSE RIVER

[2]Elevation includes backwater effects

[3]Feet above US Highway 17

[4]Combined Neuse River and Southwest Creek floodway

6.4 Coastal Flood Hazard Mapping

This section is not applicable to this FIS project.

7.0 Revising the FIS

7.1 Letters of Map Amendment and Letters of Map Revision - Based on Fill

LOMAs and LOMR-Fs are documents issued by FEMA that officially remove a property and/or a structure from a Special Flood Hazard Area (SFHA), if data supporting the removal are submitted. LOMAs and LOMR-Fs are generally determinations regarding areas that are too small to be shown on a FIRM panel; consequently, the changes they describe become official without revising the FIRM or the FIS Report.

NFIP regulations require that the lowest adjacent grade (the lowest ground touching the structure) be at or above the 1% annual chance flood elevation for a LOMA to be issued. Currently, there is no fee for FEMA's review of a LOMA request, but the requester of a LOMA is responsible for providing all the information needed for the review, which may include structure and/or property elevations certified by a licensed land surveyor or professional engineer. Therefore, LOMA requesters may need to retain the services of a land surveyor or engineer.

A LOMA cannot be used for property on which fill has been placed. For those situations, a LOMR-F must be used. As a participant in the NFIP, a local government must adopt ordinances that meet the minimum Federal floodplain management standards, which are outlined in Section 60.3 of the NFIP regulations. For a number of reasons, these ordinances generally vary from community to community. Nonetheless, because the placement of fill within the floodplain can affect flood hazards in the surrounding area, additional information is needed before FEMA can process a LOMR-F request. Among the data required for a LOMR-F is the community acknowledgment form. This form is FEMA's assurance that all appropriate Federal, State, and local floodplain management requirements have been met. Furthermore, NFIP regulations require that the lowest adjacent grade (the lowest ground touching the structure) be at or above the 1% annual chance flood elevation for a LOMR-F to be issued removing the structure from the floodplain. Because LOMR-F requests are the result of changed physical conditions rather than limitations of scale or topographic definition, FEMA charges a fee for the review of a LOMR-F request. As with the LOMA, the requester of a LOMR-F is responsible for providing all supporting information, including structure and/or property elevation data.

In cases where property owners plan to add fill in the SFHA, NFIP regulations require plans and technical information to be submitted for review by FEMA before construction takes place. FEMA will issue a conditional LOMR-F stating how flood hazards would change and what portions of the property, if any, would remain in the SFHA if the project were built according to the submitted plans.

The issuance of a LOMA or LOMR-F ends the property owner's obligation to purchase flood insurance as a condition of Federal or federally backed financing. However, the property owner's mortgage company maintains the prerogative to require flood insurance as a condition of providing financing. Before attempting to obtain a LOMA or LOMR-F, property owners are advised to consult their mortgage companies regarding this policy. Even if the mortgage company indicates that it will require flood insurance if a LOMA or LOMR-F is issued, it may be advantageous for property owners to request a LOMA or LOMR-F because flood insurance premiums are lower for properties removed from the SFHA than for properties that remain within the SFHA.

For additional information regarding LOMAs, LOMR-Fs, conditional LOMR-Fs, or current application fees, please call the FEMA Map Information eXchange (FMIX) toll-free information line at 1-877-FEMA MAP (1-877-336-2627).

7.2 Letters of Map Revision

A Letter of Map Revision (LOMR) is a document issued by FEMA and the NCFMP that revises an FIS Report and/or FIRM. A LOMR is used to change flood risk zones, floodplain and/or floodway delineations, flood elevations, or planimetric features such as road systems or corporate limits. A LOMR provides FEMA and the NCFMP with a cost-effective means of revising the FIS information without physically changing and reprinting the map or report itself. A portion of the FIRM panel or FIS Report showing the revised information

is issued with the LOMR. The LOMR is sent to all affected communities and is archived in the communities' NFIP map repository for public reference.

In cases where a proposed project (such as construction in the 1% annual chance floodplain) would result in a significant rise in 1% annual chance water-surface elevations, NFIP regulations require the community to submit plans and technical information for review by FEMA and the NCFMP before construction takes place. This assures communities participating in the NFIP that proposed projects meet minimum NFIP requirements. The result of FEMA and the NCFMP reviews is documented in a conditional LOMR.

For additional information regarding LOMRs, conditional LOMRs, or current application fees, please call the FEMA Map Assistance Center toll-free information line at 1-877-FEMA MAP (1-877-336-2627) or the NCFMP at 919-715-5711.

7.3 Physical Map Revisions

Physical Map Revisions (PMRs) are processed to incorporate information concerning conditions present in the community that are not reflected in the FIS, and involve distributing republished FISs that supersede the most current NFIP data in the community repository. PMRs may be initiated by a request from a community resident or agency, or FEMA may initiate a PMR to incorporate one or more LOMRs, to reflect significant changes in corporate limits, to correct errors, or to update flood hazards to match new information from an adjacent community's FIS. Due to the costs associated with updating and distributing FISs, map revisions will be processed as LOMRs rather than PMRs whenever possible. For more information regarding PMRs, please contact the FEMA Map Information eXchange (FMIX) toll-free information line at 1-877-FEMA MAP (1-877-336-2627), the FEMA Regional Office at the address listed on the Notice to Flood Insurance Study Users page at the front of this report, or the NCFMP at 919-715-5711.

7.4 Contracted Restudies

The NFIP provides for a periodic review and restudy of flood hazards in a given community. FEMA accomplishes this through a national mapping needs assessment process that assigns priorities and allocates funds to sponsor or subsidize new flood hazard analyses used to update FIS Reports. For map maintenance restudies within the state of North Carolina, scoping will be performed by county approximately 2.5-3.5 years after the previous effective date. Scoping will focus on streams with restudy needs within those previously effective counties rather than on full countywide restudies. A restudy refers specifically to updating or reevaluating engineering analyses that were performed for a flood mapping project that directly impact BFEs and/or flood hazard boundary extents or analysis of previously unstudied flood prone areas. Restudy project evaluation triggers and prioritization values are an essential component of the map maintenance program. For more information regarding NCFMP-contracted restudies, please contact the NCFMP at 919-715-5711 or at www.ncfloodmaps.com. For more information regarding FEMA-contracted restudies, please contact the FEMA Map Information eXchange (FMIX) toll-free information line at 1-877-FEMA MAP(1-877-336-2627) or the FEMA Regional Office at the address listed on the Notice to Flood Insurance Study Users page at the front of this report.

7.5 Map Revision History

The current FIRM is a subset of the Statewide FIRM, showing flood hazard information for the entire geographic area of Lenoir County. Previously, separate Flood Hazard Boundary Maps (FHBMs), Flood Boundary and Floodway Maps (FBFMs), and/or FIRMs were prepared for each identified flood prone jurisdiction within the county. Historical data relating to the NFIP maps prepared for each community prior to and including the 7/2/2004 North Carolina Statewide FIRM, which includes Lenoir County, are presented in Table 24, "Map Revision History."

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Lenoir County has been compiled into this FIS. Therefore, this FIS supersedes all previously printed FIS Reports, FHBMs, FIRMs, and/or FBFMs for all of the incorporated and unincorporated jurisdictions within Lenoir County.

Table 24 - Map Revision History

Community	Initial Identification Date	Initial FIRM Effective Date	FIS Revision Date
CITY OF KINSTON	3/15/1974	6/15/1982	04/16/2013
LENOIR COUNTY	12/27/1974	1/6/1983	04/16/2013
TOWN OF GRIFTON	12/17/1973	2/17/1982	07/07/2014
TOWN OF LA GRANGE	7/2/2004	7/2/2004	04/16/2013

Table 24 - Map Revision History

Community	Initial Identification Date	Initial FIRM Effective Date	FIS Revision Date
TOWN OF PINK HILL	7/2/2004	7/2/2004	04/16/2013

8.0 Study Contracting and Community Coordination

8.1 Authority and Acknowledgments

The sources of authority for this FIS are the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973.

This FIS revises and updates the previous countywide FIS for the geographic area of Lenoir County and Incorporated Areas. Table 25, "Authority and Acknowledgments," includes information for the previous countywide FIS and for this revision. This table also includes information for the single-jurisdiction FISs published for each community included in this countywide FIS (if available) as compiled from their previously printed FIS Reports

Table 25 — Authority and Acknowledgments

Community	FIS Dated	Study Contracted By	Data Source	Contract or IAA Number	Work Completed In
CITY OF KINSTON	7/2/2004	NCFMP	NCFMP	286-000022	12/1/2012
CITY OF KINSTON	7/2/2004	NCFMP	NCFMP	286-000022	8/7/2014
CITY OF KINSTON	7/2/2004	NCFMP	NCFMP	19-000017	8/8/8888
CITY OF KINSTON	7/2/2004	NCFMP	NCFMP	206-000-23	4/16/2013
LENOIR COUNTY	7/2/2004	NCFMP	NCFMP	286-000022	12/1/2012
LENOIR COUNTY	7/2/2004	NCFMP	NCFMP	286-000022	8/7/2014
LENOIR COUNTY	7/2/2004	NCFMP	NCFMP	19-000017	8/8/8888
LENOIR COUNTY	7/2/2004	NCFMP	NCFMP	206-000-23	4/16/2013
TOWN OF GRIFTON	7/2/2004	NCFMP	NCFMP	286-000022	12/1/2012
TOWN OF GRIFTON	7/2/2004	NCFMP	NCFMP	286-000022	8/7/2014
TOWN OF GRIFTON	7/2/2004	NCFMP	NCFMP	19-000017	8/8/8888
TOWN OF GRIFTON	7/2/2004	NCFMP	NCFMP	206-000-23	4/16/2013
TOWN OF LA GRANGE	7/2/2004	NCFMP	NCFMP	286-000022	12/1/2012
TOWN OF LA GRANGE	7/2/2004	NCFMP	NCFMP	286-000022	8/7/2014
TOWN OF LA GRANGE	7/2/2004	NCFMP	NCFMP	19-000017	8/8/8888
TOWN OF LA GRANGE	7/2/2004	NCFMP	NCFMP	206-000-23	4/16/2013
TOWN OF PINK HILL	7/2/2004	NCFMP	NCFMP	286-000022	12/1/2012
TOWN OF PINK HILL	7/2/2004	NCFMP	NCFMP	286-000022	8/7/2014
TOWN OF PINK HILL	7/2/2004	NCFMP	NCFMP	19-000017	8/8/8888
TOWN OF PINK HILL	7/2/2004	NCFMP	NCFMP	206-000-23	4/16/2013

This FIS Report was produced through a unique cooperative partnership between the State of North Carolina and FEMA. The State of North Carolina, through FEMA's Cooperating Technical Partner (CTP) Initiative, has become the first Cooperating Technical State (CTS) and will assume primary ownership of the NFIP FIRM panels for all North Carolina communities. This role has traditionally been fulfilled by FEMA. The North Carolina Floodplain Mapping Program is conducting flood hazard analyses and producing updated, digital FIRM panels. The hydrologic and hydraulic analyses and the FIRM panels for the initial statewide mapping for Lenoir County were produced by NCFMP under contract with the State of North Carolina and issued on effective 6/30/2016. For this revision, the hydrologic and hydraulic analyses and the FIRM panels were produced by NCFMP, under contract with the State of North Carolina.

8.2 Consultation Coordination Officer's Meetings/Scoping Meetings

In general, for each FIS an initial Consultation Coordination Officer's (CCO) meeting is held with representatives from FEMA, the communities, and the study contractors to explain the nature and purpose of the FIS and to identify the streams to be studied by detailed methods. A final CCO meeting is held with representatives from FEMA, the communities, and the study contractors to review the results of the study

The dates of the initial and final CCO meetings held for Lenoir County and Incorporated Areas were compiled from the previous

countywide FIS Report and are shown in Table 26, “Consultation Coordination Officer’s Meetings

Table 26 — Consultation Coordination Officer’s Meetings

Community	For FIS Dated	Initial CCO Date	Attended By	Final CCO Date	Attended By
CITY OF KINSTON	12/15/1981	12/7/1978	Representatives of the USACE, FEMA, the community, and local residents	7/23/1981	Representatives of the community
CITY OF KINSTON	12/15/1981	10/8/1980	Representatives of the USACE, FEMA, the community, and local residents	7/23/1981	Representatives of the community
CITY OF KINSTON ETJ	12/15/1981	12/7/1978	Representatives of the USACE, FEMA, the community, and local residents	7/23/1981	Representatives of the community
CITY OF KINSTON ETJ	12/15/1981	10/8/1980	Representatives of the USACE, FEMA, the community, and local residents	7/23/1981	Representatives of the community
LENOIR COUNTY	7/6/1982	12/7/1978	Representatives of the USACE, FEMA, the county, and local residents	4/2/1981	Representatives of the Town of Hazelwood, the Town of Waynesville, the TVA, and FEMA
LENOIR COUNTY	7/6/1982	12/7/1978	Representatives of the USACE, FEMA, the county, and local residents	4/2/1981	Representatives of the Town of Waynesville, the TVA, and FEMA
LENOIR COUNTY	7/6/1982	12/7/1978	Representatives of the USACE, FEMA, the county, and local residents	2/1/1982	Representatives of the county
LENOIR COUNTY	7/6/1982	12/7/1978	Representatives of the USACE, FEMA, the county, and local residents	2/2/1982	County officials
LENOIR COUNTY	7/6/1982	6/26/1981	Representatives of the USACE, FEMA, the county, and local residents	4/2/1981	Representatives of the Town of Hazelwood, the Town of Waynesville, the TVA, and FEMA
LENOIR COUNTY	7/6/1982	6/26/1981	Representatives of the USACE, FEMA, the county, and local residents	4/2/1981	Representatives of the Town of Waynesville, the TVA, and FEMA
LENOIR COUNTY	7/6/1982	6/26/1981	Representatives of the USACE, FEMA, the county, and local residents	2/1/1982	Representatives of the county
LENOIR COUNTY	7/6/1982	6/26/1981	Representatives of the USACE, FEMA, the county, and local residents	2/2/1982	County officials
TOWN OF GRIFTON	11/20/1998	7/22/1997	NP	8/8/8888	Notified by letter
TOWN OF GRIFTON	11/20/1998	7/22/1997	NP	8/8/8888	NP
TOWN OF GRIFTON ETJ	11/20/1998	7/22/1997	NP	8/8/8888	Notified by letter
TOWN OF GRIFTON ETJ	11/20/1998	7/22/1997	NP	8/8/8888	NP

For each FIS produced during the initial phase of statewide, an Initial Scoping Meeting was held with representatives from FEMA, the county, the incorporated communities, and the State of North Carolina. A Final Scoping meeting was held to review the Draft Basin Plan and finalize the streams to be studied by detailed methods. This information was then used to create the Final Basin Plan.

For map maintenance revisions, only one scoping meeting was held to identify the streams to be newly studied by detailed methods, redelineated, or to be studied by limited detailed methods. This information was then used to create the Map Maintenance Plan.

The historical dates of the Initial and Final Scoping Meetings held during the first round of statewide mapping for Lenoir County are shown in Table 28, “Scoping Meetings.” Meetings held for the map maintenance revision are also included below for Lenoir County.

Table 28 — Scoping Meetings

Community	Riverbasin	Initial Scoping Date	Attended By	Final Scoping Date	Attended By
CITY OF KINSTON	NEUSE	12/7/2000	Representatives of the State, community, and FEMA-MCC/D&D	4/23/2001	Representatives of the State, community, and FEMA-MCC/D&D
CITY OF KINSTON ETJ	NEUSE	12/7/2000	Representatives of the State, community, and FEMA-MCC/D&D	4/23/2001	Representatives of the State, community, and FEMA-MCC/D&D
LENOIR COUNTY	CAPE FEAR	12/7/2000	Representatives of the State, community, and FEMA-MCC/D&D	4/23/2001	Representatives of the State, community, and FEMA-MCC/D&D

Table 28 — Scoping Meetings

Community	Riverbasin	Initial Scoping Date	Attended By	Final Scoping Date	Attended By
LENOIR COUNTY	CAPE FEAR	9/26/2007	Representatives from the State, Lenoir County, City of Kinston, City of La Grange, and Dewberry	8/8/8888	NP
LENOIR COUNTY	NEUSE	12/7/2000	Representatives of the State, community, and FEMA-MCC/D&D	4/23/2001	Representatives of the State, community, and FEMA-MCC/D&D
LENOIR COUNTY	NEUSE	9/26/2007	Representatives from the State, Lenoir County, City of Kinston, City of La Grange, and Dewberry	8/8/8888	NP
TOWN OF LA GRANGE	NEUSE	12/7/2000	Representatives of the State, community, and FEMA-MCC/D&D	8/8/8888	NP
TOWN OF LA GRANGE ETJ	NEUSE	12/7/2000	Representatives of the State, community, and FEMA-MCC/D&D	8/8/8888	NP
TOWN OF PINK HILL	NEUSE	12/7/2000	Representatives of the State, community, and FEMA-MCC/D&D	8/8/8888	NP
TOWN OF PINK HILL ETJ	NEUSE	12/7/2000	Representatives of the State, community, and FEMA-MCC/D&D	8/8/8888	NP

Preliminary Meetings are held in each county to disseminate and review the FIS Report and FIRM panels. This meeting is required by FEMA. Public Participation Meetings are not required by FEMA, but provide an opportunity to review and discuss the FIS Report and FIRM panels for each jurisdiction in a public setting. The dates for the preliminary and public participation meetings are shown in Table 30, “Preliminary and Public Participation Meetings.”

Table 30 — Preliminary and Public Participation Meetings

Community	For FIS Dated	Meeting Location	Preliminary Meeting Date	Attended By	Public Meeting Date	Attended By
LENOIR COUNTY	7/2/2004	Kinston	7/25/2003	Representatives of the county, the State, Dewberry, and Watershed Concepts	4/17/2002	The Public
LENOIR COUNTY	7/2/2004	Kinston	7/25/2003	Representatives of the county, the State, Dewberry, and Watershed Concepts	5/5/2002	The Public
LENOIR COUNTY	7/2/2004	Kinston	7/25/2003	Representatives of the county, the State, Dewberry, and Watershed Concepts	8/18/2003	NP
LENOIR COUNTY	7/2/2004	Kinston	7/25/2003	Representatives of the county, the State, Dewberry, and Watershed Concepts	10/28/2003	NP
LENOIR COUNTY	4/16/2013	Kinston	6/29/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas	8/10/2010	Representatives of the State, Franklin County and Incorporated Communities
LENOIR COUNTY	4/16/2013	Kinston	6/29/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas	8/10/2010	Representatives of the State, Granville County, and Dewberry
LENOIR COUNTY	4/16/2013	Kinston	6/29/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas	8/10/2010	Representatives of the State, Vance County and Incorporated Communities, and Dewberry
LENOIR COUNTY	4/16/2013	Kinston	6/29/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas	8/10/2010	Representatives of the State, Wake County and Incorporated Communities, and Dewberry
LENOIR COUNTY	4/16/2013	Kinston	6/29/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas	11/15/2010	Representatives of the State, Nash County and Incorporated Communities, and Dewberry
LENOIR COUNTY	4/16/2013	Kinston	6/29/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas	1/16/2011	Representatives of the State, Nash County and Incorporated Communities, and Dewberry

Table 30 — Preliminary and Public Participation Meetings

Community	For FIS Dated	Meeting Location	Preliminary Meeting Date	Attended By	Public Meeting Date	Attended By
LENOIR COUNTY	4/16/2013	Kinston	6/29/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas	4/18/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas
LENOIR COUNTY	4/16/2013	Kinston	6/29/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas	10/19/2011	Representatives of the State, FEMA, Dewberry, and Pitt County and Incorporated Areas
LENOIR COUNTY	4/16/2013	Kinston	6/29/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas	10/20/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas
LENOIR COUNTY	4/16/2013	Kinston	6/29/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas	12/2/2011	Representatives of the State, FEMA, Dewberry, and Greene County and Incorporated Areas
LENOIR COUNTY	4/16/2013	Kinston	6/29/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas	12/2/2012	Representatives of the State, FEMA, Dewberry, and Greene County and Incorporated Areas
LENOIR COUNTY	4/16/2013	Wilson, NC	2/22/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas	8/10/2010	Representatives of the State, Franklin County and Incorporated Communities
LENOIR COUNTY	4/16/2013	Wilson, NC	2/22/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas	8/10/2010	Representatives of the State, Granville County, and Dewberry
LENOIR COUNTY	4/16/2013	Wilson, NC	2/22/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas	8/10/2010	Representatives of the State, Vance County and Incorporated Communities, and Dewberry
LENOIR COUNTY	4/16/2013	Wilson, NC	2/22/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas	8/10/2010	Representatives of the State, Wake County and Incorporated Communities, and Dewberry
LENOIR COUNTY	4/16/2013	Wilson, NC	2/22/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas	11/15/2010	Representatives of the State, Nash County and Incorporated Communities, and Dewberry
LENOIR COUNTY	4/16/2013	Wilson, NC	2/22/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas	1/16/2011	Representatives of the State, Nash County and Incorporated Communities, and Dewberry
LENOIR COUNTY	4/16/2013	Wilson, NC	2/22/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas	4/18/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas
LENOIR COUNTY	4/16/2013	Wilson, NC	2/22/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas	10/19/2011	Representatives of the State, FEMA, Dewberry, and Pitt County and Incorporated Areas
LENOIR COUNTY	4/16/2013	Wilson, NC	2/22/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas	10/20/2011	Representatives of the State, FEMA, Dewberry, and Lenoir County and Incorporated Areas
LENOIR COUNTY	4/16/2013	Wilson, NC	2/22/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas	12/2/2011	Representatives of the State, FEMA, Dewberry, and Greene County and Incorporated Areas
LENOIR COUNTY	4/16/2013	Wilson, NC	2/22/2011	Representatives of the State, FEMA, Dewberry, and Wilson County and Incorporated Areas	12/2/2012	Representatives of the State, FEMA, Dewberry, and Greene County and Incorporated Areas

9.0 Guide to Additional Information

Information concerning the pertinent data used in the preparation of this FIS Report can be obtained by submitting an order with any required payment to the FEMA Engineering Library. For more information on this process, see http://www.fema.gov.

The Map Repositories table below lists locations where FIRMs for Lenoir County can be viewed. Please note that the maps at these locations are for reference only and are not for distribution. Also, please note that only the maps for the community listed in the table are available at that particular repository. A user may need to visit another repository to view maps from an adjacent community.

Table 27 — Map Repositories

Community	Address	City	State	Zip Code
Town of Grifton	Grifton Town Hall, 528 Queen Street	Grifton	NC	28530
Town of Pink Hill	Town Hall, 303 South Central Avenue	Pink Hill	NC	28572
Town of La Grange	La Grange Town Hall, 120 East Railroad Street	La Grange	NC	28551
Lenoir County	Lenoir County Building Inspectors Office, 201 East King Street	Kinston	NC	28501
City of Kinston	Kinston City Planning Department, 205 East King Street	Kinston	NC	28502

9.1 Additional Information

All FIRM panels created for the State of North Carolina are produced in a seamless statewide format; however, FIS Reports are produced for individual counties.

Copies of FIRM panels are available for a nominal fee. To obtain a copy of the current flood map for a specific community, contact the FEMA Map Service Center at 1-800-358-9616. To facilitate the processing of your request, please review the current flood map on file at your local community repository and obtain the panel number in which you are interested. If necessary, users may also order a FIRM Index from the Map Service Center to determine the appropriate panel numbers. The Map Service Center also accepts orders for the Community Status Book and the Flood Insurance Manual. The FIS Report, FIRM panels, and digital data used to produce the FIRM panels are available online at www.ncfloodmaps.com.

Information concerning the data used in the preparation of this FIS, contained in an Engineering Study Data Package, may be obtained by contacting the FEMA Regional Office at the address listed on the Notice to Flood Insurance Study Users page at the front of this report.

Table 29, “Additional Information” is not applicable in Lenoir County.

10.0 Appendix

10.1 Bibliography

All bibliography and reference information associated within this Flood Insurance Study are maintained and accessible within the geodatabase structure and associated metadata. Users requiring more specific information should contact the North Carolina Floodplain Mapping Program (NCFMP) at www.ncfloodmaps.com under the Contacts menu