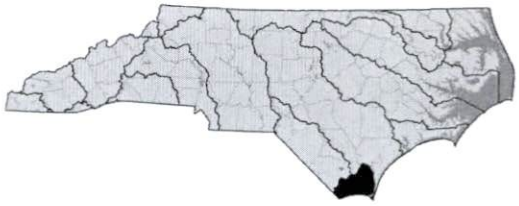
FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

A Report of Flood Hazards in

BRUNSWICK COUNTY, NORTH CAROLINA AND INCORPORATED AREAS



Community Name	Community Number
BRUNSWICK COUNTY	370295
CITY OF BOILING SPRING LAKES	370453
CITY OF NORTHWEST	370513
CITY OF SOUTHPORT	370028
TOWN OF BELVILLE	370545
TOWN OF BOLIVIA	370394
TOWN OF CALABASH	370395
TOWN OF CAROLINA SHORES	370517
TOWN OF CASWELL BEACH	370391
TOWN OF HOLDEN BEACH	375352
TOWN OF LELAND	370471
TOWN OF NAVASSA	370593
TOWN OF OAK ISLAND	370523
TOWN OF OCEAN ISLE BEACH	375357
TOWN OF SAINT JAMES	370530
TOWN OF SANDY CREEK	370677
TOWN OF SHALLOTTE	370388
TOWN OF SUNSET BEACH	375359
TOWN OF VARNAMTOWN	370648
VILLAGE OF BALD HEAD ISLAND	370442

NORTH CAROLINA
Cooperating Technical State
FEMA'S COOPERATING TECHNICAL PARTNER

REVISED: 12/6/2019

Federal Emergency Management Agency

State of North Carolina

Flood Insurance Study Number

37019CV000D

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.

Flood Insurance Study (FIS) means an examination, evaluation, and determination of flood hazards, corresponding water surface elevations, flood hazard risk zones, and other flood data in a community issued by the North Carolina Floodplain Mapping Program (NCFMP). The Flood Insurance Study (FIS) is comprised of the following products used together: the Digital Flood Hazard Database, the Water Surface Elevation Rasters, the digitally derived, autogenerated Flood Insurance Rate Map and the Flood Insurance Survey Report. A Flood Insurance Survey is a compilation and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. This report contains detailed flood elevation data, data tables and FIRM indices. When a flood study is complete for the National Flood Insurance Program (NFIP), the digital information, reports and maps are assembled into a FIS. Information shown on in the FIS is provided in digital format by the NCFMP.

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 North Carolina Floodplain Mapping Program. It is advisable to use www.fris.nc.gov/fris or 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
6/2/2006	Initial Statewide FIS Report Effective Date
10/16/2008	To update coastal mapping in the Village of Bald Head Island and add flooding information to the FIS report for Beaverdam Swamp
8/28/2018	A Portion of the County Received New H&H Analysis
12/6/2019	A Portion of the County Received New H&H Analysis

This FIS has been produced as part of the North Carolina Floodplain Mapping Program. Brunswick 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) 220-5402

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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

lood Insurance Studies (FISs) are one of the primary means by which the NFIP administers the National Flood Insurance Act of 1968, ..ie 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 Brunswick County and the jurisdictions therein (hereinafter referred to collectively as Brunswick 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 Brunswick County, North Carolina, including the jurisdictions listed in Table 1.

Table 1 - Jurisdictions in Brunswick County

Community	Included in this FIS	If Not Included, Location of Flood Hazard/Flood Insurance Rate Data
BRUNSWICK COUNTY	Yes	
CITY OF BOILING SPRING LAKES	Yes	
CITY OF NORTHWEST	Yes	
CITY OF SOUTHPORT	Yes	
TOWN OF BELVILLE	Yes	
TOWN OF BOLIVIA	Yes	
TOWN OF CALABASH	Yes	
TOWN OF CAROLINA SHORES	Yes	
TOWN OF CASWELL BEACH	Yes	
TOWN OF HOLDEN BEACH	Yes	

Table 1 - Jurisdictions in Brunswick County

Community	Included in this FIS	If Not Included, Location of Flood Hazard/Flood Insurance Rate Data
TOWN OF LELAND	Yes	
TOWN OF NAVASSA	Yes	
TOWN OF OAK ISLAND*	Yes	
TOWN OF OCEAN ISLE BEACH	Yes	
TOWN OF SAINT JAMES	Yes	
TOWN OF SANDY CREEK	Yes	
TOWN OF SHALLOTTE	Yes	
TOWN OF SUNSET BEACH	Yes	
TOWN OF VARNAMTOWN	Yes	
VILLAGE OF BALD HEAD ISLAND	Yes	

*The Town of Long Beach and the Town of Yaupon Beach annexed to form the Town of Oak Island. The information located in historic FIS reports for Long Beach and Yaupon Beach has been combined and used as the information for the Town of Oak Island.

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 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.

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)

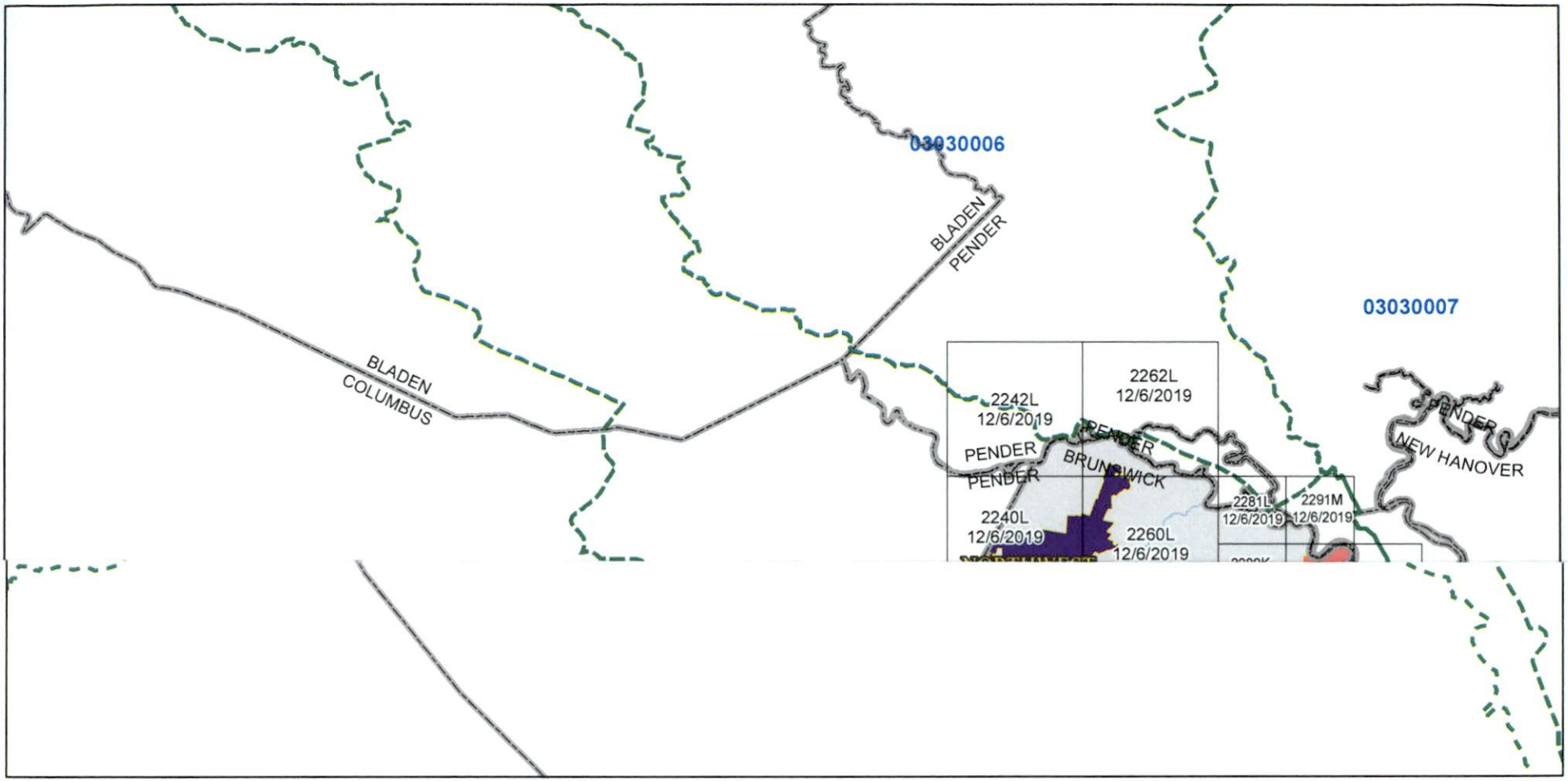
FEMA does not impose floodplain management requirements or special insurance ratings based on Limit of Moderate Wave Action (LiMWA) delineations at this time. The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. If the LiMWA is shown on the FIRM, it is being provided by 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.



1 in = 4.4 miles

Miles

0 0.5 1 2 3

Map Projection:
North Carolina State Plane Projection Feet (Zone 3200)
Datum: NAD 1983 (Horizontal), NAVD 1988 (Vertical)

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
*PANEL NOT PRINTED

Figure 1 - FIRM Index

COUNTY LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP INDEX

BRUNSWICK COUNTY, NORTH CAROLINA And Incorporated Areas

PANELS PRINTED:

1006, 1007, 1008, 1009, 1016, 1017, 1018, 1019, 1024, 1025, 1026, 1028, 1033, 1034, 1035, 1043, 1044, 1045, 1048, 1054, 1055, 1056, 1057, 1064, 1065, 1066, 1067, 1068, 1069, 1074, 1075, 1076, 1077, 1078, 1079, 1085, 1086, 1087, 1088, 1089, 1095, 1096, 1097, 1098, 1099, 1110, 1120, 1121, 1130, 1131, 1132, 1133, 1134, 1140, 1142, 1144, 1160, 1162, 1164, 1180, 1182, 1184, 1186, 2005, 2006, 2007, 2008, 2009, 2015, 2016, 2017, 2018, 2019, 2026, 2027, 2028, 2029, 2036, 2037, 2038, 2039, 2046, 2047, 2048, 2049, 2056, 2057, 2058, 2059, 2065, 2066, 2067, 2068, 2069, 2075, 2076, 2077, 2079, 2085, 2086, 2087, 2088, 2089, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2102, 2104, 2106, 2120, 2121, 2122, 2124, 2126, 2128, 2130, 2131, 2140, 2141, 2142, 2143, 2144, 2146, 2148, 2150, 2151, 2152, 2153, 2160, 2162, 2164, 2165, 2166, 2168, 2169, 2174, 2175, 2178, 2179, 2180, 2181, 2182, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2194, 2195, 2196, 2197, 2198, 2199, 2240, 2242, 2260, 2262, 2280, 2281, 2290, 2291, 3003, 3004, 3005, 3006, 3007, 3008, 3009, 3013, 3014, 3015, 3016, 3017, 3018, 3019, 3026, 3027, 3028, 3029, 3100, 3101, 3102, 3103, 3104, 3105, 3106, 3107, 3108, 3109, 3110, 3111, 3112, 3113, 3114, 3115, 3116, 3117, 3118, 3120, 3121, 3122, 3123, 3124, 3200

FEMA

MAP NUMBER
37019CIND0E

MAP REVISED
December 6, 2019

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 2, "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.

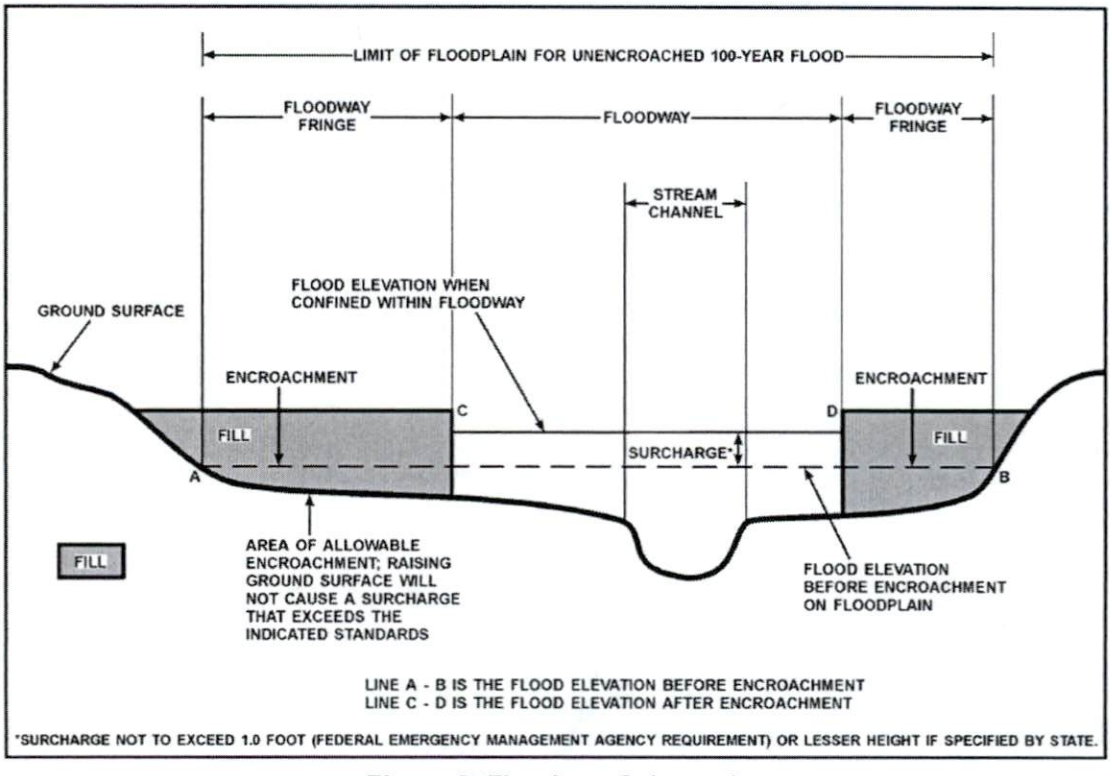


Figure 2- Floodway Schematic

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 exceedance) 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

For most areas along rivers, streams, and small lakes, BFEs and floodplain boundaries are based on the amount of water expected to enter the area during a 1% annual chance flood and the geometry of the floodplain. Floods in these areas are typically caused by storm events. However, for areas on or near ocean coasts, large rivers, or large bodies of water, BFE and floodplain boundaries may need to be based on additional components, including storm surges and waves. Communities on or near ocean coasts face flood hazards caused by offshore seismic events as well as storm events.

Coastal flooding sources that are included in this Flood Risk Project are shown in Table 18.

2.5.1 Water Elevations and the Effects of Waves

Specific terminology is used in coastal analyses to indicate which components have been included in evaluating flood hazards.

The stillwater elevation (SWEL or still water level) is the surface of the water resulting from astronomical tides, storm surge, and freshwater inputs, but excluding wave setup contribution or the effects of waves.

- *Astronomical tides* are periodic rises and falls in large bodies of water caused by the rotation of the earth and by the gravitational forces exerted by the earth, moon and sun.
- *Storm surge* is the additional water depth that occurs during large storm events. These events can bring air pressure changes and strong winds that force water up against the shore.
- *Freshwater inputs* include rainfall that falls directly on the body of water, runoff from surfaces and overland flow, and inputs from rivers.

The 1% annual chance stillwater elevation is the stillwater elevation that has been calculated for a storm surge from a 1% annual chance storm. The 1% annual chance storm surge can be determined from analyses of tidal gage records, statistical study of regional historical storms, or other modeling approaches. Stillwater elevations for storms of other frequencies can be developed using similar approaches.

The total stillwater elevation (also referred to as the mean water level) is the stillwater elevation plus wave setup contribution but excluding the effects of waves.

- *Wave setup* is the increase in stillwater elevation at the shoreline caused by the reduction of waves in shallow water. It occurs as breaking wave momentum is transferred to the water column.

Like the stillwater elevation, the total stillwater elevation is based on a storm of a particular frequency, such as the 1% annual chance storm. Wave setup is typically estimated using standard engineering practices or calculated using models, since tidal gages are often sited in areas sheltered from wave action and do not capture this information.

Coastal analyses may examine the effects of overland waves by analyzing storm-induced erosion, overland wave propagation, wave runup, and/or wave overtopping.

- *Storm-induced erosion* is the modification of existing topography by erosion caused by a specific storm event, as opposed to general erosion that occurs at a more constant rate.
- *Overland wave propagation* describes the combined effects of variation in ground elevation, vegetation, and physical features on wave characteristics as waves move onshore.
- *Wave runup* is the uprush of water from wave action on a shore barrier. It is a function of the roughness and geometry of the shoreline at the point where the stillwater elevation intersects the land.
- *Wave overtopping* refers to wave runup that occurs when waves pass over the crest of a barrier.

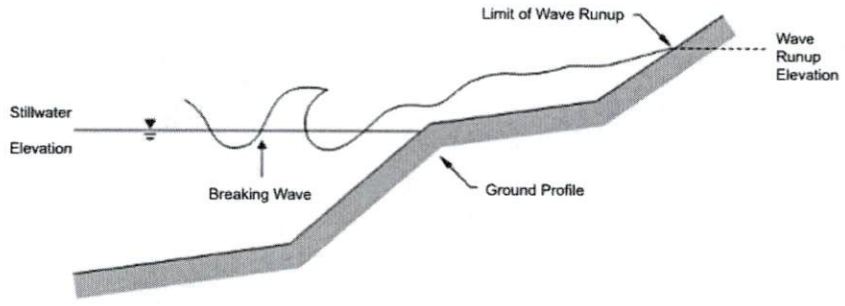


Figure 3: Wave Runup Transect Schematic

2.5.2 Floodplain Boundaries and BFEs for Coastal Areas

For coastal communities along the Atlantic and Pacific Oceans, the Gulf of Mexico, the Great Lakes, and the Caribbean Sea, flood hazards must take into account how storm surges, waves, and extreme tides interact with factors such as topography and vegetation. Storm surge and waves must also be considered in assessing flood risk for certain communities on rivers or large inland bodies of water.

Beyond areas that are affected by waves and tides, coastal communities can also have riverine floodplains with designated floodways, as described in previous sections.

Floodplain Boundaries

In many coastal areas, storm surge is the principle component of flooding. The extent of the 1% annual chance floodplain in these areas is derived from the total stillwater elevation (stillwater elevation including storm surge plus wave setup) for the 1% annual chance storm. The methods that were used for calculation of total stillwater elevations for coastal areas are described in Section 5.3 of this FIS Report. Location of total stillwater elevations for coastal areas are shown in Figure 8, "1% Annual Chance Total Stillwater Levels for Coastal Areas.

In some areas, the 1% annual chance floodplain is determined based on the limit of wave runup or wave overtopping for the 1% annual chance storm surge. The methods that were used for calculation of wave hazards are described in Section 5.3 of this FIS Report.

Table 18 and 18P presents the types of coastal analyses that were used in mapping the 1% annual chance floodplain in coastal areas.

Coastal BFEs

Coastal BFE's are calculated as the total stillwater elevation (stillwater elevation including storm surge plus wave setup) for the 1% annual chance storm plus the additional flood hazard from overland wave effects (storm-induced erosion, overland wave propagation, wave runup and wave overtopping).

Where they apply, coastal BFEs are calculated along transects extending from offshore to the limit of coastal flooding onshore. Results of these analyses are accurate until local topography, vegetation, or development type and density within the community undergoes major changes.

Parameters that were included in calculating coastal BFEs for each transect included in this FIS Report are presented in Table 20, "Coastal Transect Parameters." The locations of transects are shown in Figure 9, "Transect Location Map." More detailed information about the methods used in coastal analyses and the results of intermediate steps in the coastal analyses are presented in Section 5.3 of this FIS Report. Additional information on specific mapping methods is provided in Section 6.4 of this FIS Report.

2.5.3 Coastal High Hazard Areas

Certain areas along the open coast and other areas may have higher risk of experiencing structural damage caused by wave action and/or high-velocity water during the 1% annual chance flood. These areas will be identified on the FIRM as Coastal High Hazard Areas.

- *Coastal High Hazard Area (CHHA)* is a SFHA extending from offshore to the inland limit of the primary frontal dune (PFD) or any other area subject to damages caused by wave action and/or high-velocity water during the 1% annual chance flood.
- *Primary Frontal Dune (PFD)* is a continuous or nearly continuous mound or ridge of sand with relatively steep slopes immediately landward and adjacent to the beach. The PFD is subject to erosion and overtopping from high tides and waves during major coastal storms.

CHHAs are designated as "V" zones (for "velocity wave zones") and are subject to more stringent regulatory requirements and a different flood insurance rate structure. The areas of greatest risk are shown as VE on the FIRM. Zone VE is further subdivided into elevation zones and shown with BFEs on the FIRM.

The landward limit of the PFD occurs at a point where there is a distinct change from a relatively steep slope to a relatively mild slope; this point represents the landward extension of Zone VE. Areas of lower risk in the CHHA are designated with Zone V on the FIRM. More detailed information about the identification and designation of Zone VE is presented in Section 6.4 of this FIS Report.

Areas that are not within the CHHA but are SFHAs may still be impacted by coastal flooding and damaging waves; these areas are shown as "A" zones on the FIRM.

Figure 4, "Coastal Transect Schematic," illustrates the relationship between the base flood elevation, the 1% annual chance stillwater elevation, and the ground profile as well as the location of the Zone VE and Zone AE areas in an area without a PFD subject to overland wave propagation. This figure also illustrates energy dissipation and regeneration of a wave as it moves inland.

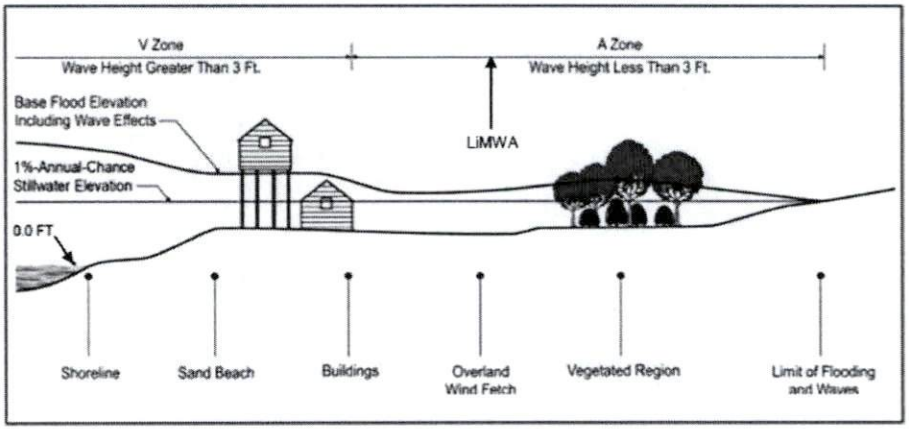


Figure 4: Coastal Transect Schematic

Methods used in coastal analyses in this Flood Risk Project are presented in Section 5.3 and mapping methods are provided in Section 6.4 of this FIS Report.

In many cases, the BFE on the FIRM is higher than the stillwater elevations shown in Table 17 due to the presence of wave effects. The higher elevation should be used for construction and/or floodplain management purposes.

2.5.4 Limit of Moderate Wave Action

Laboratory tests and field investigations have shown that wave heights as little as 1.5 feet can cause damage to and failure of typical Zone AE building construction. Wood-frame, light gage steel, or masonry walls on shallow footings or slabs are subject to damage when exposed to waves less than 3 feet in height. Other flood hazards associated with coastal waves (floating debris, high velocity flow, erosion, and scour) can also damage Zone AE construction.

Therefore, a LiMWA boundary may be shown on the FIRM as an informational layer to assist coastal communities in safe rebuilding practices. The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. The location of the LiMWA relative to Zone VE and Zone AE is shown in Figure 6.

The effects of wave hazards in Zone AE between Zone VE (or the shoreline where Zone VE is not identified) and the limit of the LiMWA boundary are similar to, but less severe than, those in Zone VE where 3-foot or greater breaking waves are projected to occur during the 1% annual chance flooding event. Communities are therefore encouraged to adopt and enforce more stringent floodplain management requirements than the minimum NFIP requirements in the LiMWA. The NFIP Community Rating System provides credits for these actions.

Where wave runup elevations dominate over wave heights, there is no evidence to date of significant damage to residential structures by runup depths less than 3 feet. Examples of these areas include areas with steeply sloped beaches, bluffs, or flood protection structures that lie parallel to the shore. In these areas, the FIRM shows the LiMWA immediately landward of the VE/AE boundary. Similarly, in areas where the zone VE designation is based on the presence of a primary frontal dune or wave overtopping, the LiMWA is delineated immediately landward of the Zone VE/AE boundary.

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.

4.0 Area Studied

Brunswick County is found in the Coastal Plain region of North Carolina. It is surrounded by Columbus County to the north, New Hanover County to the east, and Pender County to the northeast.

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)
Coastal Carolina	03040208	Intracoastal Waterway	The Coastal Carolina Basin lies adjacent to the Waccamaw River Basin and covers the Coastal Regions through a southern portion of Brunswick County, North Carolina and Horry County, South Carolina. The basin includes the Intracoastal Waterway.	680
Lower Cape Fear	03030005	Cape Fear River	The Lower Cape Fear River Basin begins in Cumberland County, southeast of Fayetteville, North Carolina. The basin then drains southeast through Bladen, Brunswick, Columbus, New Hanover, and Pender Counties.	1,122
New River	03020302	New River	The New River Basin begins above the northwestern corner of Onslow County. The basin also includes coastal regions of Brunswick, New Hanover, Pender, and Onslow Counties.	891
Waccamaw	03040206	Waccamaw River	The Waccamaw River Basin headwaters rise from Bladen County, North Carolina. The basin then drains portions of Columbus and Brunswick Counties before flowing into South Carolina and joining the Intracoastal Waterway.	1,652

4.2 Principal Flood Problems

Table 4, "Principal Flood Problems" contains a list of principal flooding problems in Brunswick County.

Table 4 - Principal Flood Problems

Flooding Source	Problem
All Sources	In the past, Brunswick County has been subjected to numerous tropical storm and hurricanes that have caused extensive damage due to the effects of high-water levels and wave action. These storms occur most frequently during the summer and early fall. Because of the relatively low elevations and the lack of a continuous dune ridge, the beach development is particularly susceptible to damages caused by tropical storms. Partly due to the east-west orientation of the beach, northeasters are not a major source of flooding (North Carolina Science and Technology Research Center, 1978). In the Town of Shallotte, during heavy rains, surface drainage problems occur.Streams experience and increase in water level and flood low-lying areas. Hurricanes can bring tides several feet above normal, causing flooding in low areas.

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.

Hurricane Hazel

(10/5/1954)

Hurricane Hazel was the most destructive storm in the history of North Carolina. The storm crossed the coast just north of Myrtle Beach, South Carolina, as hurricane winds hit the Atlantic coast between Georgetown, South Carolina, and Cape Lookout, North Carolina. Storm tides (i.e., hurricane surge) devastated the immediate ocean front of this stretch of coast. Every fishing pier along 170 miles of coast, from Myrtle Beach to Cedar Island, North Carolina, was destroyed. The waterfront between the South Carolina/North Carolina state boundary and Cape Fear was destroyed. Beach homes, which had been built in a continuous line five miles long behind and along grass-covered dunes (some of which were 20 feet high), simply disappeared – dunes, houses, and all. From Cape Fear to Cape Lookout, the degree of devastation was not as great, but oceanfront property was damaged an average of 50 percent along this entire stretch. To the north of Cape Lookout, the damage was relatively light. Storm surges of 16.6 feet above NGVD were observed at Holden Beach Bridge and Calabash, North Carolina. The highest tide of record was observed during Hurricane Hazel, when ocean tide levels reached approximately 10 feet NGVD at Wrightsville Beach and 11 feet NGVD at Carolina Beach. The lowest recorded barometric pressure of the storm was 938 millibars (mb), reported at Little River Inlet on the North Carolina/South Carolina border. Maximum wind speeds were 83 miles per hour (mph), with gusts recorded at 98 mph at Wilmington, North Carolina, 106 mph at Myrtle Beach, South Carolina, and an estimated 150 mph at Cape Fear. The storm continued inland through North Carolina, causing widespread damage due to high winds and record rainfalls. Nineteen people were killed and 200 injured during this storm.

Table 5, "Historic Flood Elevations", lists selected flooding sources in Brunswick 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)
Atlantic Ocean / Hurricane Floyd	2 Clamshell Lane	*	7.3	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	1314 St. Joseph Street	*	8.1	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	202 South Channel Drive	*	8.1	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	217 Kilnary Road	*	8.1	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	4 Seagull Street	*	8.1	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	Bridge Tender Marina	*	8.1	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	Great Mistakes Clothing Store – Harper Street	*	8.1	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	1318 North Carolina Beach Avenue	*	8.2	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	209 Water Street	*	8.2	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	316 Waynick Boulevard	*	8.6	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	Fort Fisher Recreational Building	*	9.1	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	Masonboro Boat Yard	*	9.4	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	1901 Fort Fisher Boulevard	*	13.5	9/1/1999	100
Atlantic Ocean / Hurricane Floyd	Town Creek at NC HWY 133	21300	5.1	9/30/1999	*
Atlantic Ocean / Hurricane Floyd	Town Creek at NC HWY 133	21500	8.0	9/30/1999	*
Atlantic Ocean / Hurricane Floyd	13 West Henderson Street	*	8.2	8/8/8888	*
Atlantic Ocean / Hurricane Floyd	202 Harper Street	*	8.2	8/8/8888	100
Atlantic Ocean / Hurricane Floyd	Carolina Yacht Marina	*	8.2	8/8/8888	*
Atlantic Ocean / Hurricane Floyd	602 Canal Drive	*	8.3	8/8/8888	*
Atlantic Ocean / Hurricane Floyd	Bradley Creek Marina	*	8.8	8/8/8888	*
Atlantic Ocean / Hurricane Floyd	1314 St Joseph Street	*	13.1	8/8/8888	100
Cherry Tree Swamp / Hurricane Floyd	211.2 feet downstream of Cherrytree Road - Railroad tie	3434	31.8	9/1/1999	100
Hood Creek / Hurricane Fran	Upstream face of Andrew Jackson Highway	37109	20.0	9/1/1996	10
Hood Creek / Hurricane Fran	Upstream face of Andrew Jackson Highway	37109	25.1	9/1/1996	100
Rice Creek / Unknown storm	0.7 mile downstream of Governors Road - Trailer	12373	13.8	9/1/1996	10
Town Creek / Hurricane Floyd	0.6 mile upstream of Rock Creek Road - Trailer	134021	18.2	9/1/1999	100
Town Creek / Hurricane Floyd	Town Creek at US HWY 17	82600	13.8	9/30/1999	*
Town Creek / Hurricane Floyd	6725 Ocean Highway East	83300	14.4	9/30/1999	*
Waccamaw River / Hurricane Floyd	Waccamaw River at NC HWY 904	534000	26.8	10/1/1999	*
Waccamaw River / Hurricane Floyd	1880 Dock Road	679000	37.9	10/1/1999	500
Waccamaw River / Hurricane Floyd	1873 Dock Road	679000	38.1	10/1/1999	500
Waccamaw River / Hurricane Floyd	Magnolia Missionary Baptist Church on Crusoe Island Road	701000	40.6	10/1/1999	500
Waccamaw River / Hurricane Floyd	1428 Crusoe Island Road	700000	40.8	10/1/1999	500

* 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" is not applicable in Brunswick County.

Table 7, "Levees" is not applicable in Brunswick County.

4.5 Scope of Study

For this map maintenance revision, a scoping meeting was held in Brunswick 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 Brunswick 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 Brunswick 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 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

Source	Riverine Sources		Affected Communities
	From	To	
Allen Creek	Confluence with Liliput Creek	Approximately 1.1 miles upstream of West Dam Road	City Of Boiling Spring Lakes
Allen Creek	The confluence with Liliput Creek	Approximately 1.1 miles upstream of West Dam Road	Brunswick County City Of Boiling Spring Lakes Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Calabash River	Approximately 2.4 miles upstream of NC Highway 179	Approximately 100 feet downstream of Angel Trace Road	Town Of Sunset Beach
Calabash River Tributary	The confluence with Calabash River	Approximately 1,300 feet upstream of Rice Mill Circle	Town Of Sunset Beach
Cape Fear River	Approximately 2.6 miles downstream of the confluence with Black River	Approximately 15.6 miles upstream of the confluence of Hood Creek	Brunswick County City Of Northwest Town Of Navassa Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Cherry Tree Prong	The confluence with Indian Creek	Approximately 1.0 mile upstream of Mount Misery Road	Brunswick County Town Of Navassa Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Doe Creek	The confluence with Lockwood Folly River	Approximately 0.8 mile upstream of the confluence with Polly Swain Branch	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Dutchman Creek (N of CP & L Canal)	The confluence with CP&L Canal	Approximately 3.0 miles upstream of confluence with CP&L Canal	Brunswick County City Of Southport Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Goose Creek	Approximately 1,200 feet downstream of Bricklanding Road Southwest	Approximately 500 feet upstream of Landing Boulevard Southwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Indian Creek	Approximately 150 feet downstream of Daniels Road	Approximately 0.6 mile upstream of Daniels Road	Town Of Navassa
Jackeys Creek	The confluence with Brunswick River	Approximately 1.1 miles upstream of U.S. Highway 17	Brunswick County Town Of Leland Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Jackeys Creek Tributary	Confluence with Jackeys Creek	Approximately 528 feet upstream of Lanvale Road NE	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Jinnys Branch	Approximately 8,000 feet downstream of Bricklanding Road Southwest	Stone's Throw Drive SW	Brunswick County Town Of Ocean Isle Beach Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Liliput Creek	The confluence with Cape Fear River	The confluence of Allen Creek	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Lockwoods Folly River	Approximately 1.1 miles upstream of Southport-Supply Road Southeast	Approximately 1,800 feet upstream of U.S. Highway 17 BYP	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station

Table 8 - Flooding Sources Studied by Detailed Methods

Source	Riverine Sources		Affected Communities
	From	To	
Lookout Creek	The confluence with Shallotte River	Approximately 1,700 feet upstream of Whiteville Road	Brunswick County Town Of Shallotte Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Mallory Creek	Approximately 50 feet upstream of River Road	Approximately 2.0 miles upstream of the confluence with Mallory Creek Tributary	Town Of Leland
Mallory Creek Tributary	The confluence with Mallory Creek	Approximately 1.0 mile upstream of the confluence with Mallory Creek	Town Of Leland
Mercers Mill Pond	The confluence with Mill Creek	Approximately 1.1 miles downstream of Southport-Supply Road Southeast	Brunswick County Town Of Oak Island Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Mulberry Branch	The confluence with Shallotte River	Approximately 1,800 feet upstream of North Mulberry Road Northwest	Brunswick County Town Of Shallotte Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Nucitt Branch	The confluence with Lockwoods Folly River	Approximately 3,700 feet downstream of Clemmons Road Southeast	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Pamlico Creek	The confluence with Lockwoods Folly River	Approximately 200 feet downstream of Stanley Road Southwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Pinch Gut Creek	The confluence with Lockwoods Folly River	Approximately 1.6 miles upstream of Galloway Road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Polly Swain Branch	The confluence with Doe Creek	Approximately 1,375 feet upstream of the confluence with Doe Creek	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Scott Branch	The confluence with Lockwoods Folly River	Approximately 100 feet downstream of Southport-Supply Road Southeast	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Shallotte Creek	Approximately 1.0 mile downstream of NC Highway 130	Approximately 0.9 mile upstream of NC Highway 130	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Shallotte Creek Tributary	Approximately 125 feet downstream of Kirby Road	Approximately 1.0 mile upstream of Holden Beach Road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Shallotte River	Approximately 7,000 feet downstream of U.S. Highway 17	Approximately 2.3 miles upstream of Ocean Isle Beach Road Southwest	Brunswick County Town Of Shallotte Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Sharron Creek	The confluence with Shallotte River	Approximately 1.0 mile upstream of the confluence of Williams Branch	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Sturgeon Creek	Approximately 100 feet downstream of U.S. Highway 74	Approximately 150 feet upstream of Lanvale Road	Brunswick County Town Of Leland Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
The Mill Pond	The confluence with Shallotte River	Village Point Road Southwest	Town Of Shallotte
Waccamaw River	The North Carolina/South Carolina boundary	Approximately 3.5 miles upstream of the Brunswick/Columbus County boundary	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Williams Branch	Confluence with Sharron Creek	Approximately 100 feet upstream of Lula Trail Southwest	Brunswick County Town Of Shallotte Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Williams Branch	The confluence with Sharron Creek	Approximately 100 feet upstream of Lula Trail Southwest	Brunswick County Town Of Shallotte Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station

Table 9, "Flooding Sources Studied by Detailed Methods: Redelineated" is not applicable in Brunswick 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 Communities
	From	To	
Alligator Branch	Confluence with Hood Creek	Approximately 580.8 feet upstream of an unnamed road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Alligator Swamp	Confluence with Juniper Creek	Approximately 3.7 miles upstream of Alligator Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Batarora Branch	Confluence with Hood Creek	Confluence of Batarora Branch Tributary	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Batarora Branch Tributary	Confluence with Batarora Branch	Approximately 475.2 feet upstream of an unnamed road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Bay Branch	Confluence with Alligator Swamp	Approximately 0.5 mile upstream of Exum Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Bear Branch	The confluence with Waccamaw River	Approximately 0.5 mile upstream of Project Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Bear Pen Island Swamp	Confluence with Juniper Creek	Green Swamp Road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Beaverdam Creek (Near Henrytown)	Confluence with Town Creek	Approximately 0.4 mile upstream of unnamed road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Beaverdam Creek (Near Southport)	Approximately 1.2 miles downstream of Players Club Drive	Approximately 528 feet upstream of Players Club Drive	Town Of Saint James
Beaverdam Swamp	Approximately 1.4 miles downstream of Southport – Supply Road	Approximately 0.4 mile upstream of Committee Drive	Brunswick County Town Of Saint James Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Beaverdam Swamp	Confluence with Royal Oak Swamp	Approximately 1.5 miles upstream of Land Fill Road Northeast	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Beaverdam Swamp Tributary	Confluence with Beaverdam Swamp	Approximately 1.7 miles upstream of Middle River Road Northeast	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Bell Swamp	Confluence with Alligator Swamp	Approximately 700 feet upstream of Myrtlehead Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Big Bay Branch	Confluence with Middle Swamp	Approximately 2,000 feet upstream of Danford Road Southeast	Brunswick County Town Of Bolivia Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Big Bay Branch Tributary	Confluence with Big Bay Branch	Approximately 1,600 feet upstream of Old Ocean Highway	Town Of Bolivia
Bishop Branch	The confluence with Morgan Creek	Approximately 0.3 mile upstream of Pinecliff Drive NE	Brunswick County Town Of Leland Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Boggy Branch	Confluence with Red Run	Approximately 1.5 miles upstream of the confluence with Red Run	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Camp Branch	Confluence with Alligator Swamp	Approximately 1,300 feet upstream of Myrtlehead Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Camp Branch	Confluence with Honey Island Swamp	Approximately 2,100 feet upstream of Camp Branch Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Cawcaw Swamp	The confluence with Waccamaw Riverr	Approximately 3.5 miles upstream of Russtown Road Northwest	Brunswick County Town Of Carolina Shores Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Cherry Tree Swamp	Confluence with Bell Swamp	Approximately 1.4 miles upstream of Cherrytree Road NE	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Clark Branch	The confluence with Lockwoods Folly River	Approximately 500 feet upstream of U.S. Highway 17 BYP	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Clear Branch	Approximately 0.7 mile downstream of Green Swamp Road	Approximately 1.3 miles upstream of Green Swamp Road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Clear Pond	The confluence with Allen Creek	Approximately 0.8 mile upstream of East Boiling Spring Road	City Of Boiling Spring Lakes
Cottage Creek	Approximately 0.2 mile downstream of W. 9th Street	Approximately 422 feet upstream of W. 11th Street	City Of Southport
Daw's Creek	The confluence with Town Creek	Approximately 0.9 mile upstream of Daws Creek Road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Fall Swamp	Confluence with Royal Oak Swamp	Approximately 0.9 mile upstream of Makatoka Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station

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

Source	Riverine Sources		Affected Communities
	From	To	
Gapway Creek	Brunswick/Columbus County Boundary	Approximately 2.7 miles upstream of the Brunswick/Columbus County Boundary	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Harris Swamp	Confluence with Mill Creek (near Winnabow)	Approximately 2.5 miles upstream of NC Highway 87	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Honey Island Swamp	Confluence with Juniper Creek	Approximately 1.3 miles upstream of Green Swamp Road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Hood Creek	Confluence with the Cape Fear River	Approximately 0.2 mile upstream of an unnamed road	Brunswick County City Of Northwest Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Hood Creek	The confluence with Cape Fear River	Approximately 0.2 mile upstream of an unnamed road	Brunswick County City Of Northwest Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Hood Creek Tributary	Confluence with Hood Creek	Approximately 211.2 feet upstream of Malmo Loop Road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Jinnys Branch Tributary	The confluence with Jinnys Branch	Approximately 0.7 mile from confluence of Jinnys Branch	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Juniper Creek	The confluence with Waccamaw River	Approximately 0.3 mile upstream of Camp Branch Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Leonard Branch	Confluence with Juniper Creek	Approximately 0.6 mile upstream of Exum Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Lewis Branch	Confluence with Lewis Swamp	Approximately 1.6 miles upstream of Lewis Swamp Road NE	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Lewis Swamp	Confluence with Town Creek	Approximately 2.8 miles upstream of Beetree Farm Trail	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Lewis Swamp Tributary	Confluence with Lewis Swamp	Approximately 0.3 mile upstream of an unnamed road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Little Cawcaw Swamp	Confluence with Cawcaw Swamp	Approximately 2,200 feet upstream of US HWY 17	Brunswick County Town Of Carolina Shores Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Little Mallory Creek	Approximately 0.2 mile downstream of River Road Southeast	Approximately 1.7 miles upstream of River Road Southeast	Brunswick County Town Of Leland Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Little Muddy Branch			Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Livingston Creek	Confluence with Cape Fear River	Approximately 100 feet downstream from the Columbus/Brunswick County Boundary	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Livingston Creek	The confluence with Cape Fear River	Approximately 100 feet downstream from the Columbus/Brunswick County Boundary	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
McKinzie Creek	The confluence with Allen Creek	Approximately 686 feet upstream of Funston Road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Middle River	Confluence with Fall Swamp	Approximately 1.8 miles upstream of Little Macedonia Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Middle Swamp	At confluence with Midway Branch	Approximately 0.6 mile upstream of Green Lewis Road Southeast	Brunswick County Town Of Bolivia Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Middle Swamp	The confluence with Midway Branch	Approximately 0.6 mile upstream of Green Lewis Road Southeast	Brunswick County Town Of Bolivia Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Middle Swamp Tributary	Confluence with Middle Swamp	Approximately 0.6 mile upstream of Knox Street	Town Of Bolivia
Midway Branch	The confluence with Lockwoods Folly River	Approximately 3.7 miles upstream of Midway Road Southeast	Brunswick County Town Of Oak Island Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Mill Branch	Confluence with Wet Ash Swamp	Approximately 0.8 mile upstream of Big Neck Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Mill Branch	The confluence with Juniper Creek	Approximately 0.5 mile upstream of Myrtlehead Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station

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

Source	Riverine Sources		Affected Communities
	From	To	
Mill Creek (near Winnabow)	Approximately 2.4 miles upstream of Funston Road	Approximately 1.8 miles upstream of Old Mill Creek Road SE	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Morgan Creek	Approximately 2.0 miles downstream of U.S. Highway 17	Approximately 0.9 mile upstream of U.S. Highway 17	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Mulberry Branch	Approximately 1,800 feet upstream of North Mulberry Road Northwest	Approximately 1.2 miles upstream of Mulberry Road Northwest	Brunswick County Town Of Shallotte Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Mulberry Branch	Approximately 1.2 miles upstream of Mulberry Road	Approximately 2.7 miles upstream of Mulberry Road	Brunswick County Town Of Shallotte Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Nigis Creek	The confluence with Walden Creek	Approximately 0.3 mile upstream of an unnamed truck access road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Orton Creek	Approximately 528 feet downstream of Orton Road	Approximately 1.5 miles upstream of NC Highway 87	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Prices Creek	Approximately 0.2 mile downstream of Moore Street	Approximately 0.3 mile upstream of E. Leonard Street	City Of Southport
Rattlesnake Branch	The confluence with Hood Creek	Approximately 528 feet upstream of Saw Mill Road	Brunswick County City Of Northwest Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Read Branch	The confluence with Mill Branch	Approximately 1.5 miles upstream of Myrtlehead Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Red Run	Confluence with Lockwoods Folly River	Approximately 1.0 mile upstream of Galloway Road Northeast	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Rice Creek	Approximately 1.9 miles downstream of Governors Road SE	Approximately 1.7 miles upstream of Governors Road SE	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
River Swamp	Confluence with Midway Branch	Approximately 2.0 miles upstream of the confluence with Midway Branch	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Royal Oak Swamp	The confluence with Lockwoods Folly River	Approximately 1.2 miles upstream of Royal Oak Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Russells Creek	Confluence with Town Creek	Approximately 0.2 mile upstream of NC-1409	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Sand Hill Creek	Approximately 1.6 miles downstream of River Road	Approximately 739 feet upstream of River Road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Scippio Swamp	The confluence with Waccamaw River	Approximately 0.5 mile upstream of Russtown Road Northwest	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Shingletree Swamp	Approximately 125 feet downstream of Kirby Road	Approximately 0.6 mile upstream of Thomasboro Road	Brunswick County Town Of Carolina Shores Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Shingletree Swamp Tributary	The confluence with Shingletree Swamp	Approximately 1,400 feet upstream of Persimmon Road	Town Of Calabash Town Of Carolina Shores
South Prong	Confluence with Wet Ash Swamp	Approximately 1.1 miles upstream of Big Neck Road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Spring Lake	The confluence with Clear Pond	Approximately 0.6 mile upstream of Pine Road	City Of Boiling Spring Lakes
Town Creek	Approximately 1.9 miles downstream of Rock Creek Road	Approximately 1.2 miles upstream of an unnamed road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Turkey Branch	Confluence with Town Creek	Approximately 264 feet upstream of an unnamed road	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station
Wet Ash Swamp	The confluence with Waccamaw River	Approximately 0.8 mile upstream of NC Highway 130	Brunswick County Us Army Sunny Point Supply Port Us Coast Guard Sunny Point Station

Table 11, "Stream Name Changes" is not applicable in Brunswick County.

Table 12, "Letters of Map Revision" is not applicable in Brunswick 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-year, 25-year, 50-year, 100-year, or 500-year period (recurrence interval in years) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-year, 25-year, 50-year, 100-year, 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
Allen Creek					
Approximately 0.2 mile upstream of confluence with Liliput Creek	17.77	1100	1940	2390	3650
Approximately 400 feet upstream of confluence of McKinzie Creek	15.01	994	1760	2170	3330
Approximately 1.8 miles downstream of Alton Lennon Drive	13.22	741	1360	1940	2690
Approximately 1.3 miles downstream of Alton Lennon Drive	11.79	590	1080	1690	2150
Approximately 0.7 mile downstream of Alton Lennon Drive	10.40	455	816	1010	1570
Approximately 528 feet downstream of Alton Lennon Drive	9.82	2000	3150	3550	4730
Approximately 0.5 mile upstream of Alton Lennon Drive	7.28	1660	2660	3020	4050
At NC Highway 87	4.63	1250	2070	2550	3200
Approximately 0.3 mile upstream of West Drive Road	1.00	481	879	1020	1440
Alligator Branch					
Confluence with Hood Creek	3.86	*	*	1010	*
Approximately 0.8 mile upstream of confluence with Hood Creek	2.23	*	*	736	*
Approximately 2.3 miles upstream of confluence with Hood Creek	1.22	*	*	524	*
Alligator Swamp					
Approximately 3.0 miles downstream of Myrtlehead Road Northwest	16.68	*	*	2180	*
Approximately 0.7 mile downstream of Myrtlehead Road Northwest	12.94	*	*	1890	*
Approximately 600 feet upstream of Little Prong Road Northwest	8.08	*	*	1440	*
Approximately 0.9 mile upstream of Alligator Road Northwest	4.38	*	*	1010	*
Approximately 1.8 miles upstream of Alligator Road Northwest	2.82	*	*	790	*
Approximately 2.9 miles upstream of Alligator Road Northwest	1.43	*	*	530	*
Approximately 3.7 miles upstream of Alligator Road Northwest	0.27	*	*	210	*

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
Batarora Branch					
Confluence with Hood Creek	8.76	*	*	1600	*
Batarora Branch Tributary					
Approximately 2.2 miles upstream of Maco Road	4.07	*	*	1040	*
Bay Branch					
Approximately 0.8 mile downstream of Exum Road Northwest	3.87	*	*	950	*
Approximately 0.9 mile upstream of Exum Road Northwest	2.44	*	*	720	*
Bear Branch					
Approximately 0.8 mile downstream of NC HWY 130	8.29	*	*	1460	*
Approximately 1,800 feet upstream of NC HWY 130	5.98	*	*	1210	*
Approximately 1.0 mile downstream of Simmons Road Northwest	5.12	*	*	1110	*
Approximately 0.6 mile downstream of Simmons Road Northwest	3.98	*	*	960	*
Approximately 1,000 feet upstream of Simmons Road Northwest	3.08	*	*	830	*
Approximately 200 feet downstream of Project Road Northwest	2.06	*	*	660	*
Approximately 0.7 mile upstream of Project Road Northwest	0.95	*	*	420	*
Bear Pen Island Swamp					
Approximately 4.6 miles downstream of Green Swamp Road	18.39	*	*	2310	*
Approximately 1.6 miles downstream of Green Swamp Road	15.17	*	*	2070	*
Approximately 300 feet upstream of Green Swamp Road	10.98	*	*	1720	*
Beaverdam Swamp					
Approximately 1.3 miles downstream of Land Fill Road Northeast	7.24	*	*	1350	*
Approximately 0.5 mile downstream of Land Fill Road Northeast	7.02	*	*	1330	*
Approximately 528 feet upstream of Players Club Drive	4.58	*	*	1107	*
Approximately 0.7 mile upstream of Players Club Drive	3.39	*	*	935	*
At Southport Supply Road	2.58	*	*	800	*
Approximately 1,800 feet downstream of Land Fill Road Northeast	2.04	*	*	660	*
Just upstream of Land Fill Road Northeast	1.93	*	*	640	*
Approximately 900 feet upstream of Land Fill Road Northeast	1.87	*	*	630	*
Approximately 2,200 feet upstream of Land Fill Road Northeast	1.64	*	*	580	*
Approximately 0.8 mile upstream of Land Fill Road Northeast	1.41	*	*	530	*
Approximately 1.3 miles upstream of Land Fill Road Northeast	1.18	*	*	480	*
Approximately 0.6 mile upstream of Southport Supply Road	1.17	*	*	512	*
Approximately 1.5 miles upstream of Land Fill Road Northeast	0.95	*	*	430	*
Beaverdam Swamp Tributary					
Approximately 1.7 miles downstream of Middle River Road Northeast	4.48	*	*	1030	*
Approximately 1.1 miles downstream of Middle River Road Northeast	4.03	*	*	970	*
Approximately 1,900 feet downstream of Middle River Road Northeast	3.53	*	*	900	*
Approximately 250 feet upstream of Middle River Road Northeast	3.42	*	*	890	*
Approximately 2,100 feet upstream of Middle River Road Northeast	3.30	*	*	870	*
Approximately 1.0 mile upstream of Middle River Road Northeast	3.01	*	*	820	*
Approximately 1.2 miles upstream of Middle River Road Northeast	2.68	*	*	770	*
Approximately 1.3 miles upstream of Middle River Road Northeast	2.15	*	*	680	*
Approximately 1.6 miles upstream of Middle River Road Northeast	2.07	*	*	660	*
Approximately 1.7 miles upstream of Middle River Road Northeast	1.26	*	*	500	*

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
Bell Swamp					
Approximately 0.7 mile upstream of confluence with Mill Creek (near Winnabow)	15.78	*	*	2230	*
Approximately 0.7 mile downstream of US Highway 17	14.96	*	*	2164	*
Bell Swamp					
Approximately 500 feet upstream of US Highway 17	13.96	*	*	2081	*
Approximately 1.2 miles downstream of Bell Swamp Connection	13.07	*	*	2005	*
At Bell Swamp Connection	11.39	*	*	1854	*
Approximately 0.2 mile upstream of confluence of Cherry Tree Swamp	8.66	*	*	1588	*
Approximately 1.5 miles downstream of Bell Swamp Road	7.89	*	*	1507	*
Approximately 0.5 mile downstream of Bell Swamp Road	5.43	*	*	1220	*
At Bell Swamp Road	3.70	*	*	981	*
Approximately 0.7 mile upstream of Bell Swamp Road	2.67	*	*	816	*
Approximately 1.3 miles upstream of Bell Swamp Road	1.16	*	*	508	*
Approximately 0.6 mile downstream of Myrtle Head Road Northwest	0.55	*	*	340	*
Big Bay Branch					
Approximately 1,500 feet downstream of Green Lewis Road Southeast	3.16	*	*	850	*
Approximately 200 feet downstream of Green Lewis Road Southeast	3.06	*	*	830	*
Approximately 700 feet upstream of Green Lewis Road Southeast	2.19	*	*	690	*
Just upstream of Danford Road Southeast (first crossing)	1.82	*	*	620	*
Approximately 1,800 feet downstream of Danford Road Southeast	1.58	*	*	570	*
Just upstream of Danford Road Southeast (second crossing)	1.45	*	*	540	*
Approximately 1,600 feet upstream of Danford Road Southeast	1.37	*	*	530	*
Big Bay Branch Tributary					
Approximately 1,100 feet downstream of Danford Road Southeast	0.84	*	*	400	*
Approximately 400 feet upstream of Danford Road Southeast	0.74	*	*	370	*
Approximately 800 feet downstream of US HWY 17 BYP	0.53	*	*	310	*
Approximately 500 feet upstream of US HWY 17 BYP	0.35	*	*	240	*
Bishop Branch					
Approximately 600 feet upstream of confluence with Morgan Creek	1.65	*	*	622	*
Approximately 0.4 mile upstream of US Highway 17	1.10	*	*	493	*
Approximately 0.9 mile upstream of Ocean Highway	0.46	*	*	301	*
Boggy Branch					
Confluence with Red Run	1.97	*	*	640	*
Approximately 1,400 feet upstream of the confluence with Red Run	1.73	*	*	600	*
Approximately 0.6 mile upstream of the confluence with Red Run	1.65	*	*	580	*
Approximately 0.7 mile upstream of the confluence with Red Run	1.33	*	*	510	*
Approximately 1.3 miles upstream of the confluence with Red Run	1.19	*	*	480	*
Approximately 1.5 miles upstream of the confluence with Red Run	0.92	*	*	420	*
Bonnetts Creek					
Approximately 490 feet upstream of Moore Street	0.33	228	453	534	783
Approximately 385 feet upstream of Brown Street	0.11	132	273	323	474
Bonnetts Creek Tributary					
Just upstream of confluence with Bonnetts Creek	0.18	150	313	373	557

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
Calabash River					
Approximately 1.2 miles upstream of Pearl Boulevard Southwest	4.54	450	830	1040	1660
Just upstream of Angel Trace Road	2.90	340	640	800	1300
Calabash River Tributary					
Approximately 1,100 feet downstream of Rice Mill Circle	1.25	200	388	495	821
Approximately 1,300 feet upstream of Rice Mill Circle	1.07	182	354	453	755
Cape Fear River					
Approximately 9.8 miles downstream of Pender/Brunswick/New Hanover conty boundaries	7065.03	71590	107550	130280	193740
8.9 miles downstream of Black River	7055.00	*	*	123000	*
Downstream of Black River	7055.00	71800	108000	131000	195000
Cawcaw Swamp					
Approximately 1.9 miles downstream of Ash-Little River Road	35.57	*	*	3370	*
Approximately 2,500 feet upstream of Ash-Little River Road Northwest	32.89	*	*	3220	*
Approximately 1.0 mile downstream of Number 5 School Road Northwest	25.00	*	*	2750	*
Approximately 1.3 miles upstream of Number 5 School Road Northwest	12.68	*	*	1870	*
Approximately 1.1 miles downstream of Longwood Road Northwest	10.21	*	*	1650	*
Approximately 900 feet upstream of Longwood Road Northwest	6.66	*	*	1290	*
Approximately 1.5 miles upstream of Russtown Road Northwest	3.63	*	*	910	*
Approximately 3.5 miles upstream of Russtown Road Northwest	1.10	*	*	460	*
Cherry Tree Prong					
Just upstream of confluence with Indian Creek	1.69	240	423	519	746
Approximately 230 feet upstream of Mt Misery Road	1.42	216	382	469	675
Approximately 3,075 feet upstream of Mt Misery Road	0.93	166	295	363	525
Cherry Tree Swamp					
Approximately 500 feet upstream of confluence with Bell Swamp	1.90	*	*	672	*
Approximately 1.4 miles upstream of confluence with Bell Swamp	0.69	*	*	378	*
Clark Branch					
Approximately 1,700 feet downstream of US HWY 17 BUS	2.10	*	*	670	*
Just upstream of US HWY 17 BUS	1.87	*	*	650	*
Approximately 0.6 mile downstream of US HWY 17 BYP	1.63	*	*	590	*
Approximately 400 feet downstream of US HWY 17 BYP	1.40	*	*	530	*
Just upstream of US HWY 17 BYP	1.20	*	*	490	*
Approximately 300 feet upstream of US HWY 17 BYP	0.74	*	*	370	*
Clear Branch					
Approximately 0.55 mile upstream of confluence with Honey Island Swamp	2.94	*	*	721	*
Approximately 0.8 mile upstream of NC Highway 211/ Green Swamp Road	2.34	*	*	629	*
At confluence with Honey Island Swamp	0.60	338	590	721	1030
Clear Pond					
At cnfluence with Boiling Spring Lake	2.00	267	469	574	824
Approximately 560 feet downstream of Boiling Spring Road	1.90	256	450	552	792
Just upstream of confluence with Spring Lake	1.20	195	347	426	614
Just upstream of Drayton Road	0.90	166	296	364	526

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
Cottage Creek					
Approximately 0.2 mile downstream of 9th Street	0.34	*	*	255	*
Daw's Creek					
Approximately 528 feet upstream of confluence with Town Creek	6.24	*	*	1319	*
Approximately 0.6 mile downstream of Lee Buck Road	5.80	*	*	1265	*
Approximately 900 feet upstream of Lee Buck Road	4.31	*	*	1071	*
Approximately 900 feet upstream of State Road 1518	3.48	*	*	947	*
Approximately 0.7 mile upstream of State Road 1518	2.72	*	*	824	*
Doe Creek					
At Stone Chimney Road	2.90	335	585	715	1022
Just downstream of confluence of Polly Swain Branch	1.73	244	429	526	756
Approximately 1,700 feet upstream of confluence with Polly Swain Branch	1.33	207	367	451	650
Approximately 2,680 feet downstream of Mt Pisgah Road	0.90	163	290	357	516
Dutchman Creek (N of CP & L Canal)					
Confluence with CP&L Canal	4.88	498	919	1148	1816
Approximately 0.9 mile upstream of Southport Supply Road	3.80	428	795	997	1588
Fall Swamp					
At the confluence with Little Marsh Swamp	3.43	*	*	890	*
Approximately 1.4 miles downstream of Little Macedonia Road Northwest	2.22	*	*	690	*
Approximately 0.6 mile downstream of Little Macedonia Road Northwest	1.93	*	*	640	*
Approximately 2,300 feet downstream of Little Macedonia Road Northwest	1.71	*	*	600	*
Approximately 300 feet upstream of Little Macedonia Road Northwest	1.53	*	*	560	*
Approximately 1,600 feet upstream of Little Macedonia Road Northwest	1.33	*	*	520	*
Approximately 2,300 feet upstream of Little Macedonia Road Northwest	0.96	*	*	430	*
Gapway Creek					
Approximately 280 feet upstream of confluence with Livingston Creek	7.80	*	*	1498	*
Approximately 0.5 mile upstream of confluence with Livingston Creek	7.10	*	*	1422	*
Approximately 0.6 mile upstream of confluence with Livingston Creek	3.30	*	*	921	*
Approximately 1.3 miles upstream of confluence with Livingston Creek	2.90	*	*	847	*
Approximately 1.5 miles upstream of confluence with Livingston Creek	2.00	*	*	689	*
Approximately 2.0 miles upstream of confluence with Livingston Creek	1.60	*	*	621	*
Approximately 2.3 miles upstream of confluence with Livingston Creek	0.50	*	*	327	*
Goose Creek					
Approximately 1,200 feet downstream of Bricklanding Road Southwest	0.67	89	181	235	404
Approximately 500 feet upstream of Landing Boulevard Southwest	0.34	136	269	346	585
Harris Swamp					
Confluence with Mill Creek (near Winnabow)	4.50	*	*	1097	*
Approximately 0.9 mile upstream of confluence with Mill Creek (near Winnabow)	3.82	*	*	1000	*
Approximately 2.3 miles upstream of confluence with Mill Creek (near Winnabow)	2.99	*	*	870	*
Honey Island Swamp					
Approximately 3.3 miles downstream of Tram Road	30.90	*	*	3110	*
Approximately 1900 feet downstream of Tram Road	25.70	*	*	2790	*

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
Honey Island Swamp					
Approximately 7,050 feet upstream of Tram Road	22.80	*	*	2610	*
Approximately 7,150 feet upstream of Tram Road	19.50	*	*	2380	*
Just upstream of Green Swamp Road Northwest	17.40	*	*	2230	*
Approximately 6,200 feet upstream of Green Swamp Road Northwest	12.10	*	*	1810	*
Approximately 7,150 feet upstream of Green Swamp Road Northwest	10.00	*	*	1630	*
Approximately 7,250 feet upstream of Green Swamp Road Northwest	8.92	*	*	1520	*
Hood Creek					
Confluence with Cape Fear River	44.13	*	*	4810	*
Approximately 1.9 miles upstream of confluence with Cape Fear River	41.78	*	*	4780	*
Approximately 0.7 mile upstream of Mount Misery Road	37.52	*	*	4710	*
Confluence of Rattlesnake Branch	30.29	*	*	4500	*
Approximately 0.9 mile upstream of confluence of Rattlesnake Branch	29.45	*	*	4460	*
Hood Creek					
Approximately 1.5 miles upstream of confluence of Rattlesnake Branch	28.44	*	*	4420	*
Confluence of Alligator Branch	24.07	*	*	4190	*
At US Highways 74 and 76	23.59	*	*	4160	*
Approximately 1.0 mile upstream of US Highways 74 and 76	22.36	*	*	3900	*
Approximately 1.5 miles upstream of US Highways 74 and 76	20.76	*	*	3570	*
Confluence of Hood Creek Tributary	16.07	*	*	2650	*
Confluence of Batarora Branch	7.08	*	*	1420	*
Approximately 0.9 mile upstream of Maco Road	6.35	*	*	1330	*
At Maco Road	3.90	*	*	1010	*
Approximately 0.5 mile upstream of Maco Road	3.01	*	*	874	*
Approximately 1.2 miles upstream of Maco Road	1.76	*	*	645	*
Hood Creek Tributary					
Confluence with Hood Creek	3.20	*	*	905	*
Approximately 0.4 mile downstream of Malmo Loop Road	2.20	*	*	732	*
At Malmo Loop Road	1.41	*	*	568	*
Indian Creek					
Approximately 0.9 mile downstream of Daniels Road	6.34	543	936	1139	1613
Approximately 360 feet downstream of Daniels Road	5.70	509	878	1069	1516
Jackeys Creek					
Approximately 0.2 mile downstream of River Road	10.00	775	1392	1723	2674
Approximately 1.9 miles upstream of River Road	8.95	724	1306	1618	2519
Approximately 1.3 miles downstream of US Highway 17	5.23	520	956	1194	1886
Approximately 0.7 mile downstream of US Highway 17	3.45	403	752	943	1506
Confluence of Jackeys Creek Tributary	1.36	227	438	557	912
Jackeys Creek Tributary					
Confluence with Jackeys Creek	1.30	221	428	544	892
Jinnys Branch					
Approximately 8,900 feet downstream of Bricklanding Road Southwest	6.98	580	1060	1320	2090
Approximately 1,400 feet upstream of Bricklanding Road Southwest	4.87	470	860	1080	1720

Table 13 - Summary of Discharges

Flooding Source / Location	Drainage Area (square miles)	Discharges (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Jinnys Branch					
Approximately 1,800 feet upstream of Ocean Isle Beach Road Southwest	1.87	240	450	570	930
Approximately 1.0 mile upstream of Ocean Isle Beach Road Southwest	1.04	180	350	450	740
Juniper Branch					
Approximately 1.9 miles downstream of Juniper Creek Road	173.00	*	*	8340	*
Just downstream of Juniper Creek Road	172.00	*	*	8300	*
Just upstream of Mill Branch	163.00	*	*	8040	*
Approximately 1.5 miles upstream of Juniper Creek Road	160.00	*	*	7980	*
Just downstream of Little Swamp	148.00	*	*	7620	*
Just upstream of Little Swamp	130.00	*	*	7060	*
Just downstream of Alligator Swamp	127.00	*	*	6990	*
Just upstream of Alligator Swamp	111.00	*	*	6460	*
Just downstream of Honey Island Swamp	110.00	*	*	6440	*
Just upstream of Honey Island Swamp	108.00	*	*	6370	*
Just downstream of Leonard Branch	75.60	*	*	5190	*
Just upstream of Leonard Branch	72.90	*	*	5080	*
Just upstream of First Cross Swamp	71.14	*	*	6400	*
Just downstream of First Cross Swamp	67.60	*	*	4870	*
Juniper Branch					
Approximately 300 feet upstream of Camp Branch Road Northwest	66.90	*	*	4830	*
Just downstream of Muddy Branch	48.30	*	*	4010	*
Just upstream of Muddy Branch	2.06	*	*	660	*
Approximately 1.1 miles upstream of Camp Branch Road Northwest	1.35	*	*	520	*
Leonard Branch					
Approximately 0.81 mile downstream of Exum Road Northwest	2.67	*	*	760	*
Approximately 0.6 mile upstream of Exum Road Northwest	1.10	*	*	460	*
Lewis Branch					
Confluence with Lewis Swamp	6.31	*	*	1328	*
Approximately 0.8 mile upstream of confluence with Lewis Swamp	5.31	*	*	1204	*
0.6 mile downstream of Lewis Swamp Road	4.00	*	*	1026	*
500 feet upstream of Lewis Swamp Road	2.80	*	*	838	*
1.1 miles upstream of Lewis Swamp Road	1.35	*	*	556	*
Lewis Swamp					
Confluence with Town Creek	20.37	*	*	2577	*
Approximately 1.4 miles upstream of confluence with Town Creek	19.20	*	*	2492	*
Approximately 2.4 miles upstream of confluence with Town Creek	12.16	*	*	1924	*
Approximately 1,000 feet downstream of confluence of Lewis Swamp Tributary	9.15	*	*	1639	*
At confluence of Lewis Swamp Tributary	5.37	*	*	1212	*
Approximately 1.2 miles upstream of confluence of Lewis Swamp Tributary	4.50	*	*	1097	*
Approximately 2.4 miles upstream of confluence of Lewis Swamp Tributary	3.76	*	*	990	*
Lewis Swamp Tributary					
Approximately 700 feet upstream of confluence with Lewis Swamp	3.30	*	*	920	*
Approximately 1.2 miles upstream of confluence with Lewis Swamp	1.99	*	*	690	*

Table 13 - Summary of Discharges

Flooding Source / Location	Drainage Area (square miles)	Discharges (cfs) 10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Liliput Creek					
At NC Highway 133	21.61	1245	2175	2665	4051
Approximately 1.1 miles upstream of NC Highway 133	20.25	1196	2095	2569	3912
Approximately 1.7 miles upstream of NC Highway 133	19.42	1165	2044	2508	3824
Approximately 3.0 miles upstream of NC Highway 133	18.70	1139	2000	2455	3747
Little Mallory Creek					
Approximately 528 feet downstream of NC Highway 133	1.83	*	*	659	*
Approximately 1.2 miles upstream of NC Highway 133	0.74	*	*	395	*
Lookout Creek					
At confluence with Shallotte River	2.23	285	500	612	877
Approximately 2,560 feet upstream of confluence with Shallotte River	2.09	274	481	590	845
Approximately 200 feet downstream of Ocean Highway	1.99	266	468	573	822
Approximately 715 feet downstream of Whiteville Road	0.75	145	259	319	463
Approximately 780 feet upstream of Whiteville Road	0.68	137	245	303	439
Mallory Creek					
Confluence with the Cape Fear River	8.47	680	1420	1850	2880
About 4,000 feet upstream of confluence with the Cape Fear River	5.83	540	1160	1530	2420
Approximately 1,950 feet downstream of River Road	5.16	478	827	1008	1431
Approximately 750 feet upstream of River Road	4.85	460	797	971	1379
Just upstream of confluence with Mallory Creek Tributary	3.32	365	635	776	1107
Approximately 0.6 mile upstream of confluence with Mallory Creek Tributary	2.61	314	549	671	960
Mallory Creek					
Approximately 1.3 miles upstream of confluence with Mallory Creek Tributary	1.40	214	378	464	668
Approximately 1.6 miles upstream of confluence with Mallory Creek Tributary	1.21	195	346	426	614
Approximately 2 miles upstream of confluence with Mallory Creek Tributary	1.05	179	318	391	565
Mallory Creek Tributary					
Just upstream of confluence with Mallory Creek	1.22	196	347	427	616
Approximately 0.2 mile upstream of confluence with Mallory Creek	0.85	158	281	346	501
Approximately 0.65 mile upstream of confluence with Mallory Creek	0.57	123	220	272	395
At Wire Road	0.16	60	160	240	440
McKinzie Creek					
Confluence with Allen Creek	2.45	*	*	777	*
Approximately 0.8 mile upstream of confluence with Allen Creek	0.85	*	*	427	*
Mercers Mill Pond					
Approximately 3.0 miles downstream of Southport-Supply Road Southeast	6.84	580	1050	1310	2070
Approximately 2.5 miles downstream of Southport-Supply Road Southeast	6.29	550	1000	1250	1980
Approximately 2.0 miles downstream of Southport-Supply Road Southeast	6.05	530	980	1220	1940
Approximately 1.5 miles downstream of Southport-Supply Road Southeast	3.00	350	680	820	1320
Approximately 1.5 miles downstream of Southport-Supply Road Southeast	1.88	260	490	630	1030
Approximately 1.1 miles downstream of Southport-Supply Road Southeast	1.68	240	460	590	960
Middle River					
Approximately 700 feet downstream of Little Macedonia Road Northwest	3.18	*	*	850	*
Just upstream of Little Macedonia Road Northwest	2.90	*	*	810	*

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
Middle River					
Approximately 2,200 feet upstream of Little Macedonia Road Northwest	2.81	*	*	790	*
Approximately 0.5 mile upstream of Little Macedonia Road Northwest	1.98	*	*	650	*
Approximately 1.0 mile upstream of Little Macedonia Road Northwest	1.82	*	*	620	*
Approximately 1.1 miles upstream of Little Macedonia Road Northwest	1.40	*	*	530	*
Approximately 1.3 miles upstream of Little Macedonia Road Northwest	1.27	*	*	500	*
Approximately 1.5 miles upstream of Little Macedonia Road Northwest	1.19	*	*	490	*
Approximately 1.8 miles + upstream of Little Macedonia Road Northwest	0.99	*	*	440	*
Middle Swamp					
Approximately 2.7 miles downstream of Midway Road Southeast	11.31	*	*	1750	*
Approximately 2.0 miles downstream of Midway Road Southeast	11.12	*	*	1730	*
Approximately 1.6 miles downstream of Midway Road Southeast	10.46	*	*	1670	*
Approximately 0.7 mile upstream of Midway Road Southeast	7.35	*	*	1370	*
Approximately0.9 mile upstream of Midway Road Southeast	6.34	*	*	1250	*
Approximately 0.8 mile downstream of Green Lewis Road Southeast	3.34	*	*	870	*
Approximately 0.6 mile downstream of Green Lewis Road Southeast	2.92	*	*	810	*
Approximately 0.5 mile downstream of Green Lewis Road Southeast	2.68	*	*	770	*
Approximately 600 feet downstream of Green Lewis Road Southeast	2.24	*	*	700	*
Approximately 600 feet upstream of Green Lewis Road Southeast	1.66	*	*	590	*
Approximately 1,900 feet upstream of Green Lewis Road Southeast	1.19	*	*	490	*
Approximately 0.6 mile upstream of Green Lewis Road Southeast	0.88	*	*	410	*
Middle Swamp Tributary					
Approximately 1,700 feet downstream of Old Ocean Highway	0.96	*	*	430	*
Approximately 500 feet upstream of Old Ocean Highway	0.74	*	*	370	*
Approximately 600 feet upstream of Knox Street Northeast	0.42	*	*	270	*
Approximately 0.6 mile upstream of Knox Street Northeast	0.37	*	*	250	*
Midway Branch					
Approximately 2.6 miles downstream of Midway Road Southeast	20.13	*	*	2430	*
Approximately 2,200 feet upstream of Midway Road Southeast	15.10	*	*	2060	*
Approximately 6,900 feet upstream of Midway Road Southeast	7.10	*	*	1340	*
Approximately 6,900 feet upstream of Midway Road Southeast	6.08	*	*	1220	*
Approximately 1.9 miles upstream of Midway Road Southeast	5.49	*	*	1150	*
Approximately 2.2 miles upstream of Midway Road Southeast	4.55	*	*	1040	*
Approximately 2.8 miles upstream of Midway Road Southeast	4.25	*	*	1000	*
Approximately 3.1 miles upstream of Midway Road Southeast	3.61	*	*	910	*
Approximately 3.1 miles upstream of Midway Road Southeast	2.45	*	*	730	*
Approximately 3.7 miles upstream of Midway Road Southeast	2.16	*	*	680	*
Mill Creek (near Leland)					
Approximately 1.6 miles downstream of Old Mill Road	5.85	*	*	1021	*
Approximately 200 feet upstream of Old Mill Road	4.39	*	*	865	*
Mill Creek (near Winnabow)					
Confluence with Rice Creek	36.04	*	*	2924	*
Confluence of Bell Swamp	19.87	*	*	2072	*

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
Mill Creek (near Winnabow)					
Approximately 0.9 mile downstream from Funston Road	14.65	*	*	1737	*
At Funston Road	13.44	*	*	1652	*
Approximately 0.3 mile upstream from Old Mill Creek Road	12.01	*	*	1548	*
Approximately 0.6 mile upstream from Old Mill Creek Road	11.21	*	*	1487	*
Approximately 0.9 mile upstream from Old Mill Creek Road	5.54	*	*	989	*
Morgan Creek					
Confluence with Town Creek	8.04	*	*	1523	*
Approximately 300 feet upstream of confluence of Bishop Branch	5.90	*	*	1278	*
Approximately 0.5 mile downstream from Ocean Highway	4.67	*	*	1120	*
At Goodman Road	2.58	*	*	800	*
Mulberry Branch					
Approximately 0.4 mile upstream of Mulberry Road	1.89	257	453	555	796
Approximately 1.15 miles upstream of Mulberry Road	1.42	216	382	469	675
Approximately 1.2 miles upstream of Mulberry Road Northwest	0.97	*	*	430	*
Approximately 1.7 miles upstream of Mulberry Road	0.97	171	304	374	541
Approximately 2.25 miles upstream of Mulberry Road	0.30	83	150	186	272
Nigis Creek					
Confluence with Walden Creek	1.72	*	*	637	*
Approximately 1.8 miles upstream of confluence with Walden Creek	0.71	*	*	387	*
Nucitt Branch					
Approximately 1.7 miles downstream of Clemmons Road Southeast	2.44	300	570	730	1180
Approximately 1.4 miles downstream of Clemmons Road Southeast	2.27	290	550	700	1140
Approximately 1.2 miles downstream of Clemmons Road Southeast	2.06	270	520	660	1080
Approximately 0.7 mile downstream of Clemmons Road Southeast	1.73	250	470	600	980
Orton Creek					
Approximately 600 feet upstream of Plantation Road	19.33	*	*	2502	*
Approximately 0.7 miles upstream of Plantation Road	18.46	*	*	2438	*
Approximately 1.7 miles upstream of Plantation Road	16.80	*	*	2311	*
Approximately 2.0 miles upstream of Plantation Road	14.66	*	*	2139	*
Orton Creek					
Approximately 3.0 miles upstream of Plantation Road	12.73	*	*	1975	*
Approximately 1.2 mile downstream of NC Highway 87	10.89	*	*	1808	*
Approximately 1.0 mile downstream of NC Highway 87	8.15	*	*	1534	*
Approximately 0.4 mile downstream of NC Highway 87	7.71	*	*	1487	*
Approximately 850 feet downstream of NC Highway 87	6.68	*	*	1371	*
At NC Highway 87	5.05	*	*	1171	*
Approximately 1.1 miles upstream of NC Highway 87	1.66	*	*	624	*
Pamlico Creek					
Approximately 0.8 mile downstream of Stanley Road Southwest	1.34	210	400	510	850
Approximately 0.8 mile downstream of Stanley Road Southwest	1.18	190	380	480	780
Approximately 0.7 mile downstream of Stanley Road Southwest	1.02	180	340	440	740
Approximately 0.5 mile downstream of Stanley Road Southwest	0.93	170	330	420	700

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
Pamlico Creek					
Approximately 2,300 feet downstream of Stanley Road Southwest	0.78	150	290	380	640
Approximately 1,900 feet downstream of Stanley Road Southwest	0.62	130	260	330	560
Approximately 1,200 feet downstream of Stanley Road Southwest	0.51	110	230	300	500
Approximately 500 feet downstream of Stanley Road Southwest	0.48	110	220	290	490
Just upstream of Stanley Road Southwest	0.31	80	170	220	380
Pinch Gut Creek					
Approximately 0.65 mile downstream of Galloway Road	2.79	327	571	699	999
Approximately 400 feet upstream of Galloway Road	2.08	273	480	588	843
Approximately 0.65 mile upstream of Galloway Road	1.85	254	447	548	787
Approximately 0.78 mile upstream of Galloway Road	1.35	209	371	455	656
Approximately 1.1 miles upstream of Galloway Road	1.17	192	340	418	603
Approximately 1.35 miles upstream of Galloway Road	0.79	150	267	329	477
Polly Swain Branch					
Just upstream of confluence with Doe Creek	0.93	166	296	364	526
Prices Creek					
Approximately 0.2 mile downstream of Moore Street	1.05	*	*	482	*
Rattlesnake Branch					
Confluence with Hood Creek	5.37	*	*	1210	*
Approximately 1.2 miles upstream of confluence with Hood Creek	4.73	*	*	1130	*
Approximately 900 feet upstream of Saw Mill Road	1.17	*	*	513	*
Red Run					
Galloway Road Northeast	1.92	*	*	640	*
Approximately 2,500 feet upstream of Galloway Road Northeast	1.81	*	*	620	*
Approximately 0.7 mile upstream of Galloway Road Northeast	1.76	*	*	610	*
Approximately 0.9 mile upstream of Galloway Road Northeast	0.95	*	*	430	*
Approximately 1.0 mile upstream of Galloway Road Northeast	0.93	*	*	420	*
Rice Creek					
Approximately 1.1 miles upstream of confluence with Town Creek	43.94	*	*	3982	*
Approximately 2.3 miles upstream of confluence with Town Creek	42.60	*	*	3913	*
Approximately 0.4 mile upstream of Governors Road	41.12	*	*	3836	*
Approximately 1.2 miles upstream of Governors Road	39.26	*	*	3736	*
Approximately 1.7 miles upstream of Governors Road	38.58	*	*	3700	*
River Swamp					
Confluence with Midway Branch	4.82	*	*	1070	*
Approximately 7,500 feet upstream of the confluence with Midway Branch	4.12	*	*	980	*
Approximately 7,500 feet upstream of the confluence with Midway Branch	2.91	*	*	800	*
Approximately 2.0 miles upstream of the confluence with Midway Branch	2.74	*	*	780	*
Royal Oak Swamp					
US HWY 17	26.02	*	*	2820	*
Approximately 1.3 miles downstream of NC 211	25.52	*	*	2790	*

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
Royal Oak Swamp					
Approximately 0.6 mile downstream of NC HWY 211	17.49	*	*	2240	*
Just upstream of NC 211	17.17	*	*	2220	*
Approximately 0.8 mile upstream of NC HWY 211	16.20	*	*	2150	*
Approximately 0.5 mile upstream of Royal Oak Road Northwest	14.69	*	*	2030	*
Just upstream of Makatoka Road Northwest	8.12	*	*	1450	*
Approximately 1,100 feet upstream of Makatoka Road Northwest	7.21	*	*	1350	*
Just upstream of Royal Oak Road Northwest	5.77	*	*	1190	*
Approximately 1,700 feet upstream of Royal Oak Road Northwest	2.37	*	*	710	*
Approximately 0.5 mile upstream of Royal Oak Road Northwest	1.49	*	*	550	*
Approximately 1.2 miles upstream of Royal Oak Road Northwest	1.24	*	*	500	*
Russells Creek					
Approximately 1,000 feet upstream of confluence with Town Creek	2.06	*	*	705	*
Approximately 200 feet upstream of State Road 1409	0.92	*	*	447	*
Sand Hill Creek					
Approximately 1.6 miles downstream of River Road	3.43	*	*	940	*
Approximately 0.5 mile downstream of River Road	2.49	*	*	785	*
Approximately 800 feet upstream of River Road	1.50	*	*	590	*
Scippio Swamp					
Approximately 1.5 miles downstream of Ash-Little River Road Northwest	8.73	*	*	1510	*
Approximately 200 feet upstream of Ash-Little River Road Northwest	7.89	*	*	1420	*
Approximately 0.7 mile downstream of NC 904	6.50	*	*	1270	*
Approximately 200 feet upstream of NC 904	5.46	*	*	1150	*
Approximately 1,900 feet upstream of NC 904	4.37	*	*	1010	*
Approximately 800 feet downstream of Russtown Road Northwest (Just downstream of unnamed tributary)	3.53	*	*	900	*
Approximately 800 feet downstream of Russtown Road Northwest (Just upstream of unnamed tributary)	1.27	*	*	500	*
Approximately 0.5 mile upstream of Russtown Road Northwest	0.90	*	*	410	*
Scott Branch					
Approximately 1,000 feet downstream of Old Lennon Road Southeast	1.50	220	430	550	910
Approximately 100 feet upstream of Old Lennon Road Southeast	1.44	220	420	540	890
Approximately 1,200 feet upstream of Old Lennon Road Southeast	1.12	190	390	460	770
Approximately 1,500 feet downstream of Southport-Supply Road Southeast	0.97	170	330	430	720
Approximately 800 feet downstream of Southport-Supply Road Southeast	0.91	160	320	410	690
Approximately 200 feet downstream of Southport-Supply Road Southeast	0.76	150	290	370	630
Shallotte Creek					
At mouth	13.00	870	1800	2320	3540
Approximately 0.66 mile downstream of Holden Beach Road	2.27	289	506	619	887
Approximately 0.38 mile downstream of Holden Beach Road	1.77	248	436	535	768
Shallotte Creek					
Approximately 840 feet upstream of Holden Beach Road	1.29	203	360	442	637
Approximately 7500 feet upstream of NC 130	1.21	210	490	670	1150

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
Shallotte Creek Tributary					
Approximately 0.75 mile upstream of confluence with Shallotte Creek	2.97	340	594	726	1037
Approximately 2,240 feet upstream of Kirby Road	2.47	304	532	651	932
Approximately 2,220 feet upstream of Holden Beach Road	1.49	222	393	482	693
Shingletree Swamp					
Just upstream of confluence with Cawcaw Swamp	9.31	689	1179	1431	2018
Approximately 780 feet upstream of confluence with Cawcaw Swamp	8.82	666	1141	1385	1955
Approximately 980 feet upstream of Hickman Road	7.41	598	1028	1249	1767
Approximately 2,975 feet upstream of Hickman Road	6.75	565	972	1182	1673
Approximately 0.8 mile upstream of Hickman Road	6.30	541	932	1134	1606
Approximately 0.6 mile downstream of Shingletree Road	6.20	536	923	1124	1592
Approximately 275 feet downstream of Shingletree Road	5.01	470	813	990	1406
Just upstream of confluence with Shingletree Swamp Tributary	1.88	257	451	553	794
Approximately 0.7 mile downstream of Thomasboro Road	1.62	234	413	507	729
Approximately 1,050 feet upstream of Thomasboro Road	0.70	140	250	308	447
Approximately 1.2 miles upstream of Thomasboro Road	0.56	122	218	269	392
Shingletree Swamp Tributary					
Just upstream of confluence with Shingletree Swamp	2.89	638	1183	1397	2049
Approximately 350 feet upstream of confluence with Shingletree Swamp	1.96	480	923	1098	1638
South Prong					
Approximately 2.7 miles downstream of Big Neck Road	5.67	*	*	1180	*
Approximately 1.5 miles downstream of Big Neck Road	4.44	*	*	1020	*
Approximately 2,500 feet downstream of Big Neck Road	3.37	*	*	870	*
Approximately 2,000 feet upstream of Big Neck Road	1.96	*	*	640	*
Approximately 1.1 miles upstream of Big Neck Road	0.88	*	*	410	*
Spring Lake					
Just upstream of confluence with North Lake	0.50	117	210	259	377
Sturgeon Creek					
Confluence with the Brunswick River	14.85	940	1930	2480	3760
At Village Road	7.70	640	1350	1760	2700
Just downstream of Andrew Jackson Highway	5.09	474	821	1000	1420
Approximately 560 feet upstream of Andrew Jackson Highway	3.79	395	687	839	1195
Approximately 1,980 feet upstream of Old Fayetteville Road	3.26	360	627	766	1094
Approximately 2,500 feet downstream of Lanvale Road	2.64	316	554	677	968
At Lanvale Road	1.11	200	470	640	1100
Approximately 1,590 feet downstream of Lanvale Road	0.36	93	168	207	303
The Mill Pond					
Approximately 0.7 mile upstream of Copas Road Southwest	1.89	260	490	630	1030
Just upstream of Village Point Road Southwest	0.49	110	220	290	490
Town Creek					
Approximately 1.0 mile downstream of Rock Creek Road	44.73	*	*	4023	*
At Rock Creek Road	43.48	*	*	3958	*
Approximately 1.3 miles downstream of Town Creek Road (first crossing)	40.35	*	*	3794	*

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
Town Creek					
Approximately 525 feet downstream of Town Creek Road (first crossing)	18.93	*	*	2472	*
Approximately 0.5 mile upstream of Town Creek Road (first crossing)	12.07	*	*	1916	*
Approximately 2.0 miles upstream of Town Creek Road (first crossing)	11.07	*	*	1825	*
Approximately 2.6 miles downstream of Town Creek Road (second crossing)	9.67	*	*	1690	*
Approximately 2.0 miles downstream of Town Creek Road (second crossing)	8.77	*	*	1599	*
Approximately 1.6 miles downstream of Town Creek Road (second crossing)	6.43	*	*	1342	*
Approximately 0.7 mile downstream of Town Creek Road (second crossing)	6.00	*	*	1290	*
Approximately 0.6 mile downstream of Town Creek Road (second crossing)	4.47	*	*	1093	*
Approximately 1.1 miles upstream of Town Creek Road (second crossing)	2.92	*	*	858	*
Approximately 2.3 miles upstream of Town Creek Road (second crossing)	1.62	*	*	615	*
Turkey Branch					
Confluence with Town Creek	6.53	*	*	1354	*
Approximately 1.2 miles upstream of confluence with Town Creek	5.53	*	*	1232	*
Approximately 1.9 miles upstream of confluence with Town Creek	4.21	*	*	1055	*
Approximately 2.4 miles upstream of confluence with Town Creek	3.54	*	*	957	*
Approximately 3.2 miles upstream of confluence with Town Creek	2.08	*	*	709	*
Unnamed Tributary to Juniper Creek					
At the Brunswick/ Columbus County boundary	29.76	*	*	2853	*
Waccamaw River					
Approximately 1,200 feet upstream of North Carolina/ South Carolina boundary	1031.11	11880	18633	21827	29554
Approximately 0.98 mile upstream of North Carolina/ South Carolina boundary	983.27	11604	18230	21377	28925
Approximately 1.25 miles upstream of NC Highway 904	787.38	9873	16312	19504	27483
Approximately 5 miles downstream of NC Highway 130	716.60	9128	15274	18329	26177
Just upstream of NC Highway 130	706.88	9025	15130	18165	25991
Approximately 3.6 miles downstream of Dock Road	514.14	7832	12816	15290	21224
Wet Ash Swamp					
Approximately 0.6 mile downstream of Ash-Little River Road Northwest	22.42	*	*	2590	*
Approximately 0.6 mile downstream of Longwood Road Northwest	19.00	*	*	2350	*
Approximately 0.5 mile downstream of Whiteville Road Northwest	16.12	*	*	2140	*
Approximately 2.4 miles downstream of Big Neck Road Northwest	8.30	*	*	1460	*
Approximately 1.0 mile downstream of Big Neck Road Northwest	6.51	*	*	1270	*
Approximately 1,500 feet downstream of Big Neck Road Northwest	4.79	*	*	1070	*
Approximately 0.8 mile upstream of Big Neck Road Northwest	3.62	*	*	910	*
Williams Branch					
Approximately 900 feet downstream of Holden Beach Road	4.66	455	840	1050	1680
Approximately 2,400 feet upstream of Holden Beach Road	4.41	440	815	1020	1630
Approximately 100 feet upstream of Lula Trail Southwest	1.70	245	465	590	970

*Data Not Available

Table 14, "Summary of Stillwater Elevations" is not applicable in Brunswick County.

Table 15, "Gage Information", lists the stream gages located in Brunswick 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
)2105769	Cape Fear River	CAPE FEAR R AT LOCK 31 NR KELLY, N.C.	5250.00	1970	Present
02105900	Hood Creek	HOOD CREEK NEAR LELAND, N.C.	21.60	1953	2003
02109500	Waccamaw River	WACCAMAW RIVER AT FREELAND, NC	680.00	1939	Present
02109640	Wet Ash Swamp	WET ASH SWAMP NEAR ASH, NC	16.00	1953	1971

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"
Allen Creek	0.035 to 0.050	0.035 to 0.200
Alligator Branch	0.045	0.140 to 0.160
Alligator Swamp	0.050 to 0.060	0.060 to 0.120
Batarora Branch	0.045	0.160
Batarora Branch Tributary	0.045	0.080 to 0.150
Bay Branch	0.050 to 0.060	0.080 to 0.150
Bear Pen Island Swamp	0.060	0.080
Beaverdam Creek (Near Henrytown)	0.025 to 0.045	0.140
Beaverdam Creek (Near Southport)	0.022 to 0.050	0.090 to 0.150
Beaverdam Swamp	0.025 to 0.050	0.130 to 0.150
Beaverdam Swamp Tributary	0.065	0.135
Bell Swamp	0.013 to 0.045	0.140
Big Bay Branch	0.060	0.080 to 0.120

Table 16 - Roughness Coefficients

Stream	Channel "n"	Overbank "n"
Big Bay Branch Tributary	0.060	0.120
Big Branch	0.045 to 0.050	0.140 to 0.150
Bishop Branch	0.013 to 0.045	0.130
Boggy Branch	0.050 to 0.065	0.110 to 0.150
Bonnetts Creek	0.030 to 0.100	0.040 to 0.150
Bonnetts Creek Tributary	0.030 to 0.100	0.040 to 0.150
Calabash River	0.025 to 0.120	0.025 to 0.150
Calabash River Tributary	0.045	0.065
Cape Fear River	0.030 to 0.059	0.050 to 0.666
Cawcaw Swamp	0.060	0.080 to 0.120
Cherry Tree Prong	0.025 to 0.120	0.025 to 0.150
Cherry Tree Swamp	0.025 to 0.038	0.100
Clark Branch	0.055	0.125
Clear Branch	0.045	0.070 to 0.150
Clear Pond	0.030 to 0.050	0.150
Cottage Creek	0.025 to 0.045	0.090 to 0.140
Daw's Creek	0.013 to 0.045	0.160
Doe Creek	0.025 to 0.120	0.025 to 0.150
Dutchman Creek (N of CP & L Canal)	0.024 to 0.030	0.060 to 0.200
Fall Swamp	0.065	0.135
Gapway Creek	0.045 to 0.050	0.140 to 0.150
Goose Creek	0.035 to 0.120	0.040 to 0.120
Harris Swamp	0.013 to 0.045	0.160
Honey Island Swamp	0.060	0.100
Hood Creek	0.013 to 0.045	0.110 to 0.150
Hood Creek Tributary	0.045	0.160
Indian Creek	0.025 to 0.120	0.025 to 0.150
Jackeys Creek	0.040 to 0.046	0.068 to 0.225
Jackeys Creek Tributary	0.011 to 0.040	0.100 to 0.200
Jinnys Branch	0.040 to 0.065	0.050 to 0.130
Jinnys Branch Tributary	0.040 to 0.065	0.050 to 0.130
Leonard Branch	0.060	0.100 to 0.120
Lewis Branch	0.025 to 0.045	0.150 to 0.160
Lewis Swamp	0.013 to 0.045	0.130 to 0.160
Lewis Swamp Tributary	0.025 to 0.045	0.160
Liliput Creek	0.045	0.035 to 0.200
Little Cawcaw Swamp	0.060	0.100 to 0.120
Little Mallory Creek	0.013 to 0.045	0.140
Livingston Creek	0.040 to 0.050	0.100 to 0.200
Lockwoods Folly River	0.025 to 0.120	0.025 to 0.150
Lookout Creek	0.025 to 0.120	0.025 to 0.150
Mallory Creek	0.025 to 0.120	0.025 to 0.150
Mallory Creek Tributary	0.025 to 0.120	0.025 to 0.150
McKinzie Creek	0.013 to 0.045	0.160
Mercers Mill Pond	0.040	0.120
Middle River	0.065	0.135
Middle Swamp	0.045 to 0.060	0.095 to 0.120
Middle Swamp Tributary	0.045	0.120
Midway Branch	0.055	0.125
Mill Creek (near Winnabow)	0.045	0.160
Morgan Creek	0.013 to 0.045	0.130
Muddy Branch	0.060	0.120
Mulberry Branch	0.048 to 0.055	0.070 to 0.140
Nigis Creek	0.013 to 0.040	0.080 to 0.150
Nucitt Branch	0.060	0.100
Orton Creek	0.012 to 0.045	0.120
Pamlico Creek	0.050 to 0.065	0.120
Pinch Gut Creek	0.025 to 0.120	0.025 to 0.150
Polly Swain Branch	0.025 to 0.120	0.025 to 0.150
Prices Creek	0.025 to 0.045	0.080 to 0.150
Read Branch	0.060	0.080 to 0.120
Red Run	0.065	0.130
Rice Creek	0.065	0.179
River Swamp	0.060	0.120

Table 16 - Roughness Coefficients

Stream	Channel "n"	Overbank "n"
Royal Oak Swamp	0.065	0.135
Russells Creek	0.013 to 0.045	0.140
Sand Hill Creek	0.025 to 0.050	0.070 to 0.150
Scippio Swamp	0.060	0.120
Scott Branch	0.065	0.100
Shallotte Creek	0.025 to 0.120	0.025 to 0.150
Shallotte Creek Tributary	0.025 to 0.120	0.025 to 0.150
Shallotte River	0.025 to 0.120	0.025 to 0.150
Sharron Creek	0.045 to 0.060	0.090 to 0.110
Shingletree Swamp	0.043 to 0.048	0.035 to 0.150
Shingletree Swamp Tributary	0.043	0.035 to 0.150
South Prong	0.060	0.120
Spring Lake	0.035 to 0.050	0.150
Sturgeon Creek	0.025 to 0.120	0.025 to 0.150
The Mill Pond	0.040	0.040 to 0.120
Town Creek	0.013 to 0.120	0.025 to 0.180
Turkey Branch	0.025 to 0.045	0.120 to 0.140
Waccamaw River	0.025 to 0.120	0.025 to 0.150
Wet Ash Swamp	0.060	0.120
Williams Branch	0.035 to 0.065	0.075 to 0.120

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
Alligator Branch				
003	269.7	1005.0	18.9[1]	24.0 / 103.0
008	793.2	1005.0	18.9[1]	29.0 / 167.0
014	1443.8	1005.0	18.9[1]	14.0 / 202.0
020	1988.0	1005.0	20.0	50.0 / 53.0
025	2508.2	1005.0	21.2	23.0 / 51.0
030	3036.4	1005.0	22.5	54.0 / 27.0
035	3540.1	1005.0	23.3	79.0 / 119.0
041	4110.5	736.0	24.1	59.0 / 94.0
046	4579.1	736.0	25.5	95.0 / 50.0
051	5094.0	736.0	27.1	17.0 / 91.0
056	5579.1	736.0	28.8	166.0 / 12.0
061	6107.2	736.0	30.6	19.0 / 94.0
066	6560.0	736.0	32.5	18.0 / 114.0
070	7022.9	736.0	34.5	86.0 / 23.0
076	7611.3	736.0	37.0	83.0 / 17.0
082	8151.4	736.0	38.2	105.0 / 37.0
086	8588.2	736.0	39.1	79.0 / 62.0
091	9084.1	736.0	41.6	17.0 / 32.0
096	9591.3	736.0	44.7	21.0 / 196.0
101	10094.8	736.0	47.1	13.0 / 71.0
104	10407.1	736.0	48.4	68.0 / 178.0
105	10462.1	736.0	50.1	68.0 / 178.0
106	10622.6	736.0	50.2	131.0 / 217.0
111	11103.7	736.0	50.5	94.0 / 121.0
116	11581.9	736.0	50.9	139.0 / 22.0
122	12160.2	524.0	52.6	90.0 / 50.0
126	12576.6	524.0	54.2	21.0 / 125.0
131	13094.3	524.0	55.0	56.0 / 150.0
136	13578.9	524.0	55.7	101.0 / 85.0
139	13946.7	524.0	57.4	18.0 / 39.0
140	14001.7	524.0	59.6	18.0 / 39.0
146	14594.3	524.0	60.0	124.0 / 33.0
Alligator Swamp				
065	6505.0	2180.0	40.0[2]	625.0 / 988.0
072	7225.0	1890.0	40.0[2]	510.0 / 890.0
075	7542.0	1890.0	40.1[2]	549.0 / 757.0
081	8056.0	1890.0	40.2[2]	623.0 / 699.0
085	8519.0	1890.0	40.2[2]	593.0 / 827.0
091	9068.0	1890.0	40.3[2]	637.0 / 815.0
100	9966.0	1890.0	40.3[1]	610.0 / 539.0
105	10526.0	1890.0	40.3[1]	549.0 / 458.0
110	10997.0	1890.0	40.4	477.0 / 174.0
115	11466.0	1890.0	40.6	340.0 / 338.0

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
Alligator Swamp				
122	12237.0	1890.0	41.0	448.0 / 697.0
125	12542.0	1890.0	41.1	385.0 / 615.0
133	13344.0	1890.0	41.2	632.0 / 252.0
140	14013.0	1890.0	41.3	512.0 / 355.0
149	14939.0	1890.0	41.5	765.0 / 21.0
158	15760.0	1890.0	41.6	267.0 / 180.0
167	16691.0	1440.0	42.1	405.0 / 14.0
175	17548.0	1440.0	42.5	388.0 / 62.0
186	18589.0	1440.0	42.6	452.0 / 15.0
194	19427.0	1440.0	42.7	620.0 / 23.0
195	19539.0	1440.0	42.7	588.0 / 20.0
196	19618.0	1440.0	43.3	548.0 / 60.0
200	20042.0	1440.0	43.3	477.0 / 11.0
204	20443.0	1440.0	43.4	388.0 / 67.0
212	21221.0	1440.0	43.9	210.0 / 92.0
219	21940.0	1440.0	44.4	137.0 / 123.0
220	22030.0	1440.0	46.6	195.0 / 65.0
225	22491.0	1440.0	46.6	195.0 / 205.0
234	23424.0	1010.0	46.7	122.0 / 288.0
242	24250.0	1010.0	46.7	218.0 / 151.0
244	24428.0	1010.0	46.7	72.0 / 128.0
245	24500.0	1010.0	47.0	71.0 / 129.0
251	25061.0	1010.0	47.0	102.0 / 259.0
257	25697.0	1010.0	47.1	141.0 / 186.0
264	26353.0	1010.0	47.3	180.0 / 94.0
273	27301.0	1010.0	47.8	213.0 / 48.0
282	28226.0	1010.0	48.2	346.0 / 39.0
288	28777.0	1010.0	48.4	264.0 / 33.0
293	29276.0	1010.0	48.8	11.0 / 152.0
298	29846.0	790.0	49.1	35.0 / 260.0
306	30635.0	790.0	49.3	234.0 / 166.0
313	31344.0	790.0	49.6	80.0 / 233.0
321	32063.0	790.0	50.0	169.0 / 184.0
330	32963.0	790.0	50.9	218.0 / 40.0
338	33794.0	790.0	52.1	21.0 / 253.0
343	34349.0	530.0	52.6	12.0 / 214.0
348	34800.0	530.0	52.9	27.0 / 25.0
349	34927.0	530.0	53.5	27.0 / 26.0
358	35761.0	530.0	53.8	178.0 / 243.0
363	36348.0	530.0	53.9	394.0 / 106.0
372	37222.0	530.0	54.1	123.0 / 377.0
376	37647.0	530.0	54.2	269.0 / 231.0
381	38057.0	530.0	54.3	332.0 / 168.0
385	38512.0	530.0	54.5	164.0 / 336.0

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
Alligator Swamp				
390	39003.0	530.0	54.7	116.0 / 384.0
397	39702.0	530.0	54.9	223.0 / 277.0
405	40495.0	210.0	55.2	21.0 / 169.0
412	41207.0	210.0	55.5	10.0 / 95.0
421	42100.0	210.0	56.1	104.0 / 24.0
431	43059.0	210.0	56.6	82.0 / 112.0
436	43618.0	210.0	56.8	113.0 / 46.0
441	44109.0	210.0	57.0	116.0 / 72.0
Batarora Branch				
002	182.6	1599.0	31.1[1]	179.0 / 320.0
010	994.6	1599.0	31.1[1]	257.0 / 225.0
015	1494.7	1599.0	31.8	299.0 / 70.0
020	1962.1	1599.0	32.6	331.0 / 118.0
025	2518.9	1599.0	33.3	147.0 / 194.0
030	3037.9	1599.0	33.8	378.0 / 23.0
035	3532.4	1599.0	34.3	234.0 / 50.0
040	3975.4	1599.0	34.8	366.0 / 72.0
044	4430.2	1599.0	35.1	54.0 / 52.0
045	4481.2	1599.0	36.0	54.0 / 52.0
)48	4773.1	1599.0	36.2	320.0 / 164.0
Batarora Branch Tributary				
006	583.3	1036.0	36.2	200.0 / 100.0
007	746.5	1036.0	37.1	26.0 / 65.0
008	796.5	1036.0	38.3	26.0 / 65.0
011	1061.1	1036.0	38.8	170.0 / 70.0
015	1533.2	1036.0	39.6	250.0 / 100.0
021	2080.6	1036.0	40.5	153.0 / 200.0
026	2599.4	1036.0	42.7	33.0 / 114.0
030	2957.0	1036.0	43.8	27.0 / 101.0
035	3502.1	1036.0	46.0	88.0 / 24.0
040	4014.6	1036.0	48.4	44.0 / 35.0
045	4479.2	1036.0	50.8	22.0 / 88.0
050	5024.5	1036.0	52.8	84.0 / 12.0
055	5526.0	1036.0	54.8	83.0 / 23.0
059	5935.3	1036.0	56.4	100.0 / 100.0
067	6692.4	1036.0	58.3	45.0 / 65.0
067	6743.4	1036.0	58.4	45.0 / 65.0
071	7067.0	1036.0	59.4	50.0 / 250.0
Bay Branch				
000	7.0	950.0	42.5[1]	418.0 / 355.0
)06	618.0	800.0	42.5[1]	73.0 / 22.0
)12	1201.0	800.0	42.5	264.0 / 19.0
020	1968.0	800.0	43.1	30.0 / 417.0
024	2424.0	800.0	43.3	24.0 / 449.0

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
Bay Branch				
029	2921.0	800.0	43.6	33.0 / 341.0
035	3513.0	800.0	44.4	31.0 / 412.0
039	3921.0	720.0	45.3	147.0 / 27.0
041	4090.0	720.0	45.7	32.0 / 28.0
041	4144.0	720.0	45.9	30.0 / 30.0
045	4455.0	720.0	46.9	25.0 / 25.0
048	4836.0	720.0	47.9	10.0 / 98.0
053	5274.0	720.0	48.0	199.0 / 84.0
055	5547.0	720.0	48.1	205.0 / 33.0
060	6020.0	720.0	48.5	90.0 / 97.0
064	6387.0	720.0	48.9	64.0 / 68.0
066	6581.0	720.0	49.3	89.0 / 60.0
068	6784.0	720.0	49.6	102.0 / 68.0
Bear Branch				
000	16.0	1460.0	30.4[1]	137.0 / 263.0
004	427.0	1460.0	30.4[1]	36.0 / 394.0
008	849.0	1460.0	30.4[1]	376.0 / 84.0
014	1350.0	1460.0	30.4[1]	340.0 / 250.0
017	1742.0	1460.0	30.4[1]	269.0 / 302.0
)25	2506.0	1210.0	30.4[1]	111.0 / 316.0
)36	3556.0	1210.0	30.4[1]	129.0 / 181.0
044	4378.0	1210.0	30.4[1]	233.0 / 210.0
051	5065.0	1210.0	30.4[1]	139.0 / 189.0
057	5661.0	1210.0	30.4[1]	21.0 / 21.0
057	5746.0	1210.0	30.4[1]	21.0 / 21.0
066	6561.0	1210.0	31.3	167.0 / 179.0
074	7370.0	1210.0	31.9	316.0 / 63.0
085	8470.0	1110.0	32.4	57.0 / 328.0
097	9663.0	1110.0	33.1	16.0 / 264.0
Bear Pen Island Swamp				
030	3041.0	2310.0	45.1[1]	* [3]
038	3756.0	2180.0	45.1[1]	* [3]
044	4358.0	2180.0	45.1[1]	* [3]
050	5014.0	2180.0	45.2	* [3]
056	5579.0	2180.0	45.5	* [3]
066	6550.0	2180.0	46.2	* [3]
073	7284.0	2180.0	46.7	* [3]
084	8373.0	2180.0	47.2	* [3]
)90	9034.0	2180.0	47.7	* [3]
100	9962.0	2180.0	48.3	* [3]
108	10791.0	2070.0	48.7	* [3]

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
Bear Pen Island Swamp				
116	11601.0	2070.0	49.2	* [3]
124	12376.0	2070.0	49.7	* [3]
130	12965.0	2070.0	50.0	* [3]
139	13877.0	2070.0	50.7	* [3]
148	14799.0	2070.0	51.0	* [3]
154	15392.0	2070.0	51.1	* [3]
162	16165.0	2070.0	51.4	* [3]
174	17413.0	1860.0	52.1	* [3]
183	18287.0	1860.0	52.7	* [3]
191	19103.0	1860.0	53.4	* [3]
201	20083.0	1860.0	53.9	* [3]
213	21258.0	1720.0	54.8	* [3]
223	22291.0	1720.0	56.5	* [3]
232	23208.0	1720.0	57.8	* [3]
239	23894.0	1720.0	58.7	* [3]
244	24441.0	1720.0	60.0	* [3]
245	24502.0	1720.0	61.1	* [3]
Beaverdam Creek (Near Henrytown)				
005	502.7	771.0	11.5[1]	51.0 / 82.0
010	1014.3	771.0	11.5[1]	33.0 / 177.0
015	1516.5	771.0	11.5[1]	58.0 / 100.0
019	1943.4	771.0	11.5[1]	97.0 / 89.0
025	2471.8	771.0	12.6	62.0 / 58.0
029	2904.4	771.0	13.8	78.0 / 80.0
035	3540.2	771.0	15.4	64.0 / 42.0
040	3957.1	771.0	16.6	99.0 / 100.0
044	4398.7	771.0	17.8	35.0 / 80.0
045	4481.2	771.0	21.1	35.0 / 80.0
046	4625.2	771.0	21.2	175.0 / 165.0
050	4970.4	771.0	21.4	130.0 / 135.0
055	5459.0	771.0	22.0	160.0 / 140.0
060	5983.6	771.0	23.2	50.0 / 100.0
065	6545.7	771.0	26.8	58.0 / 28.0
070	6959.6	771.0	31.1	69.0 / 18.0
075	7519.6	603.0	32.4	33.0 / 74.0
080	8013.4	603.0	33.4	12.0 / 62.0
085	8481.9	603.0	37.4	36.0 / 28.0
091	9085.5	603.0	44.2	54.0 / 12.0
096	9582.6	603.0	50.5	53.0 / 59.0
100	10039.7	603.0	52.7	45.0 / 45.0

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
Beaverdam Creek (Near Henrytown)				
101	10100.7	603.0	52.8	45.0 / 45.0
104	10425.7	603.0	56.1	50.0 / 192.0
107	10720.3	603.0	58.4	50.0 / 99.0
112	11226.5	603.0	63.4	52.0 / 50.0
115	11547.6	603.0	65.2	50.0 / 372.0
119	11915.9	603.0	65.7	303.0 / 114.0
123	12339.9	353.0	66.2	78.0 / 50.0
Beaverdam Creek (Near Southport)				
121	12133.0	1238.0	11.8	40.0 / 50.0
Beaverdam Swamp				
006	560.1	1107.0	14.9	109.0 / 75.0
010	1018.7	1107.0	16.1	50.0 / 25.0
016	1642.1	1107.0	18.6	50.0 / 210.0
022	2189.5	1107.0	19.0	48.0 / 97.0
027	2692.5	1107.0	19.7	45.0 / 21.0
032	3206.6	935.0	21.6	37.0 / 47.0
037	3739.9	935.0	22.9	67.0 / 23.0
042	4210.7	935.0	24.9	18.0 / 15.0
047	4689.5	935.0	29.1	89.0 / 66.0
)52	5207.6	935.0	30.0	37.0 / 42.0
)57	5704.8	935.0	30.6	20.0 / 120.0
062	6208.0	935.0	31.1	20.0 / 74.0
067	6706.5	935.0	32.5	88.0 / 20.0
072	7207.6	935.0	33.6	57.0 / 55.0
074	7397.2	935.0	33.8	30.0 / 30.0
074	7446.7	800.0	34.1	30.0 / 30.0
077	7696.9	800.0	35.2	19.0 / 21.0
083	8338.9	800.0	43.5	50.0 / 60.0
084	8400.4	800.0	43.7	50.0 / 60.0
100	10005.2	800.0	45.8	50.0 / 700.0
104	10403.8	800.0	46.0	100.0 / 700.0
Beaverdam Swamp				
000	15.0	1350.0	11.7[1]	9.0 / 390.0
004	382.0	1350.0	11.7[1]	85.0 / 286.0
008	836.0	1350.0	11.7[1]	87.0 / 267.0
013	1312.0	1350.0	11.7[1]	34.0 / 95.0
019	1922.0	1330.0	11.7[1]	60.0 / 63.0
026	2615.0	1330.0	11.7[1]	124.0 / 17.0
030	2981.0	1330.0	11.7[1]	39.0 / 42.0
034	3393.0	1330.0	11.7[1]	60.0 / 77.0
)41	4106.0	1330.0	11.7[1]	35.0 / 126.0
)46	4578.0	660.0	11.7[1]	68.0 / 94.0
051	5114.0	660.0	11.7[1]	18.0 / 112.0
060	5979.0	640.0	11.7[1]	33.0 / 33.0

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
Beaverdam Swamp				
065	6452.0	640.0	12.0	68.0 / 23.0
067	6688.0	640.0	12.2	49.0 / 43.0
069	6919.0	640.0	12.5	19.0 / 19.0
070	7009.0	640.0	13.3	20.0 / 18.0
071	7132.0	640.0	13.5	29.0 / 105.0
073	7297.0	630.0	13.6	18.0 / 18.0
079	7944.0	630.0	15.7	30.0 / 22.0
086	8638.0	580.0	16.3	27.0 / 40.0
092	9216.0	580.0	16.7	14.0 / 79.0
098	9789.0	530.0	17.9	16.0 / 16.0
104	10404.0	530.0	20.0	18.0 / 46.0
109	10863.0	530.0	20.8	58.0 / 24.0
113	11315.0	530.0	22.6	24.0 / 24.0
117	11709.0	480.0	24.2	78.0 / 13.0
121	12102.0	480.0	25.3	28.0 / 28.0
127	12695.0	480.0	28.3	26.0 / 26.0
130	13009.0	480.0	30.2	13.0 / 13.0
138	13768.0	480.0	33.5	65.0 / 13.0
144	14437.0	430.0	34.2	42.0 / 39.0
149	14944.0	430.0	35.2	15.0 / 15.0
Beaverdam Swamp Tributary				
001	79.8	1030.0	11.7[1]	203.0 / 10.0
005	478.7	1030.0	11.7[1]	49.0 / 105.0
010	1036.1	970.0	11.7[1]	76.0 / 143.0
017	1733.9	970.0	11.7[1]	93.0 / 13.0
024	2415.4	970.0	11.7[1]	42.0 / 116.0
032	3182.3	970.0	12.2	113.0 / 11.0
041	4113.6	900.0	13.2	77.0 / 42.0
054	5366.9	900.0	13.9	116.0 / 31.0
066	6592.8	900.0	15.3	32.0 / 116.0
071	7068.8	900.0	16.1	28.0 / 57.0
075	7471.6	890.0	16.6	99.0 / 80.0
083	8274.3	890.0	17.9	50.0 / 32.0
085	8456.9	890.0	19.0	45.0 / 16.0
088	8807.1	890.0	20.3	112.0 / 11.0
089	8875.3	890.0	21.0	110.0 / 13.0
091	9129.3	890.0	22.1	29.0 / 25.0
101	10052.6	870.0	23.2	118.0 / 12.0
108	10806.9	870.0	23.8	193.0 / 10.0
110	10995.5	870.0	24.2	131.0 / 12.0
114	11433.1	820.0	24.5	278.0 / 14.0
120	11980.7	820.0	24.9	14.0 / 180.0
122	12226.7	820.0	25.3	137.0 / 13.0
125	12491.2	820.0	26.3	21.0 / 53.0

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
Beaverdam Swamp Tributary				
128	12822.4	820.0	27.5	64.0 / 17.0
131	13108.7	820.0	28.1	16.0 / 122.0
135	13530.3	820.0	28.9	115.0 / 10.0
144	14390.9	820.0	31.2	64.0 / 14.0
147	14709.6	770.0	32.4	10.0 / 64.0
154	15387.3	770.0	33.9	49.0 / 140.0
159	15883.7	680.0	34.8	64.0 / 12.0
163	16256.5	660.0	35.7	84.0 / 86.0
167	16690.7	660.0	36.0	137.0 / 11.0
174	17399.8	660.0	37.5	71.0 / 13.0
180	17964.9	500.0	39.9	30.0 / 45.0
Bell Swamp				
021	2124.3	2230.0	10.2[1]	200.0 / 531.0
036	3615.3	2230.0	10.2[1]	162.0 / 176.0
046	4581.0	2230.0	10.2[1]	258.0 / 186.0
056	5593.8	2230.0	10.2[1]	311.0 / 29.0
063	6347.9	2164.0	10.2[1]	278.0 / 211.0
076	7616.3	2164.0	10.2[1]	562.0 / 28.0
082	8245.6	2164.0	10.2	216.0 / 83.0
094	9364.9	2164.0	12.1	68.0 / 396.0
103	10270.4	2164.0	12.1	33.0 / 35.0
105	10462.4	2164.0	14.1	33.0 / 35.0
114	11415.2	2081.0	14.5	115.0 / 636.0
128	12750.4	2081.0	14.8	307.0 / 125.0
137	13730.4	2081.0	15.2	256.0 / 262.0
143	14280.0	2081.0	15.5	310.0 / 28.0
157	15688.8	2081.0	16.5	435.0 / 28.0
166	16583.9	2081.0	17.0	439.0 / 28.0
173	17276.0	2081.0	17.8	52.0 / 135.0
180	17965.0	2005.0	18.8	327.0 / 111.0
186	18640.0	2005.0	19.2	507.0 / 39.0
195	19456.3	2005.0	19.7	430.0 / 137.0
202	20176.0	2005.0	20.3	95.0 / 95.0
202	20225.0	2005.0	20.9	95.0 / 95.0
208	20779.0	2005.0	21.6	350.0 / 590.0
216	21621.2	2005.0	22.2	640.0 / 57.0
226	22648.6	2005.0	22.9	146.0 / 478.0
235	23545.9	2005.0	23.3	46.0 / 45.0
236	23594.9	1854.0	23.8	46.0 / 45.0
244	24388.7	1854.0	24.9	100.0 / 46.0
253	25317.2	1854.0	26.8	140.0 / 636.0
262	26151.2	1854.0	27.2	327.0 / 174.0
269	26859.3	1854.0	27.4	247.0 / 336.0
284	28438.1	1588.0	28.2	237.0 / 190.0

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
Bell Swamp				
289	28925.2	1588.0	28.5	229.0 / 187.0
297	29686.0	1588.0	29.1	425.0 / 415.0
305	30533.2	1588.0	29.8	439.0 / 292.0
314	31350.3	1588.0	30.2	183.0 / 275.0
324	32409.9	1588.0	30.8	92.0 / 119.0
336	33619.4	1507.0	32.2	357.0 / 150.0
344	34441.9	1507.0	32.9	98.0 / 115.0
355	35534.5	1507.0	33.7	215.0 / 161.0
365	36523.2	1507.0	34.1	52.0 / 509.0
375	37524.3	1507.0	34.5	87.0 / 390.0
391	39129.4	1220.0	35.3	230.0 / 274.0
401	40058.1	1220.0	36.0	170.0 / 220.0
411	41100.3	981.0	37.1	332.0 / 22.0
417	41709.2	981.0	37.7	70.0 / 70.0
418	41790.7	981.0	39.7	70.0 / 70.0
421	42108.2	981.0	39.9	400.0 / 59.0
426	42645.9	981.0	40.1	76.0 / 238.0
431	43082.9	981.0	40.5	43.0 / 148.0
435	43527.9	981.0	41.3	165.0 / 20.0
441	44079.2	816.0	42.2	102.0 / 92.0
446	44560.6	816.0	42.7	82.0 / 135.0
450	44995.6	816.0	43.1	102.0 / 169.0
455	45505.7	816.0	43.7	100.0 / 123.0
460	45951.6	816.0	44.0	55.0 / 75.0
460	46002.6	816.0	45.8	55.0 / 75.0
463	46318.6	816.0	45.9	249.0 / 225.0
468	46823.2	816.0	46.1	301.0 / 99.0
473	47315.6	508.0	46.4	361.0 / 18.0
479	47881.8	508.0	46.7	420.0 / 130.0
484	48359.8	508.0	47.3	260.0 / 520.0
488	48796.5	508.0	48.0	110.0 / 53.0
492	49197.9	508.0	48.7	360.0 / 204.0
497	49715.8	508.0	49.1	18.0 / 1070.0
502	50155.0	508.0	49.2	90.0 / 39.0
502	50216.0	508.0	49.8	90.0 / 39.0
507	50748.8	508.0	50.0	499.0 / 801.0
513	51267.3	508.0	50.4	300.0 / 768.0
517	51729.1	508.0	50.8	344.0 / 13.0
522	52200.3	508.0	52.3	18.0 / 83.0
Bell Swamp				
001	53.3	340.0	39.51	* 3
005	478.8	330.0	39.51	* 3
010	975.3	330.0	39.51	* 3

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
Bell Swamp				
016	1600.2	330.0	39.51	* 3
020	2046.3	330.0	39.51	* 3
021	2118.1	330.0	39.51	* 3
024	2439.3	330.0	39.51	* 3
031	3057.5	330.0	39.6	* 3
039	3943.4	330.0	39.6	* 3
042	4201.2	330.0	39.7	* 3
043	4256.9	330.0	41.1	* 3
049	4929.0	330.0	41.4	* 3
Big Bay Branch				
000	28.9	850.0	24.8	25.0 / 202.0
005	483.0	850.0	25.3	50.0 / 93.0
008	761.0	830.0	25.7	137.0 / 46.0
010	1025.0	830.0	26.0	61.0 / 78.0
013	1335.0	830.0	26.3	128.0 / 81.0
015	1537.0	830.0	26.5	26.0 / 26.0
016	1607.0	830.0	27.0	26.0 / 26.0
017	1665.0	690.0	27.3	28.0 / 28.0
018	1815.0	690.0	27.4	163.0 / 28.0
020	2021.0	690.0	27.5	65.0 / 82.0
023	2278.0	690.0	27.6	64.0 / 31.0
025	2496.0	610.0	27.9	49.0 / 49.0
028	2819.0	610.0	28.3	89.0 / 25.0
032	3161.0	610.0	28.9	34.0 / 25.0
036	3606.0	610.0	30.2	28.0 / 28.0
040	4037.0	610.0	31.4	34.0 / 39.0
044	4373.0	610.0	32.4	38.0 / 30.0
048	4755.0	610.0	33.2	29.0 / 78.0
053	5260.0	610.0	34.3	32.0 / 32.0
054	5433.0	610.0	34.8	30.0 / 30.0
055	5538.0	610.0	35.1	31.0 / 31.0
056	5616.0	610.0	35.2	22.0 / 22.0
057	5668.0	610.0	36.9	21.0 / 23.0
057	5731.0	610.0	37.2	28.0 / 34.0
058	5777.0	610.0	37.3	63.0 / 25.0
061	6094.0	570.0	37.9	23.0 / 23.0
063	6312.0	570.0	38.6	38.0 / 38.0
066	6617.0	570.0	39.2	58.0 / 42.0
069	6915.0	540.0	39.7	62.0 / 37.0
073	7302.0	540.0	40.3	59.0 / 37.0
078	7803.0	540.0	40.9	86.0 / 45.0
081	8110.0	540.0	41.0	173.0 / 28.0

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
Big Bay Branch				
083	8253.0	540.0	41.1	180.0 / 25.0
083	8339.0	540.0	41.2	57.0 / 22.0
084	8431.0	540.0	42.3	55.0 / 23.0
086	8604.0	540.0	42.4	148.0 / 62.0
088	8789.0	530.0	42.4	202.0 / 32.0
091	9071.0	530.0	42.4	183.0 / 105.0
094	9394.0	530.0	42.5	119.0 / 198.0
097	9664.0	530.0	42.6	38.0 / 71.0
099	9935.0	530.0	42.9	70.0 / 118.0
104	10424.0	410.0	43.0	123.0 / 139.0
Big Bay Branch Tributary				
000	29.0	400.0	27.6[1]	41.0 / 39.0
003	291.0	400.0	27.6[1]	25.0 / 25.0
005	483.0	400.0	27.8	18.0 / 17.0
008	753.0	370.0	29.0	19.0 / 19.0
012	1150.0	370.0	30.9	19.0 / 19.0
014	1387.0	370.0	32.1	14.0 / 14.0
015	1527.0	370.0	32.6	14.0 / 14.0
016	1577.0	370.0	33.7	14.0 / 14.0
016	1629.0	370.0	34.0	10.0 / 10.0
017	1731.0	370.0	34.0	19.0 / 16.0
021	2060.0	370.0	34.3	30.0 / 30.0
025	2482.0	310.0	35.7	16.0 / 16.0
027	2734.0	310.0	36.9	15.0 / 15.0
031	3078.0	310.0	38.2	15.0 / 15.0
037	3689.0	310.0	40.5	19.0 / 16.0
040	3952.0	240.0	41.0	22.0 / 21.0
041	4107.0	240.0	41.1	22.0 / 22.0
042	4164.0	240.0	41.3	22.0 / 22.0
042	4239.0	240.0	41.3	30.0 / 30.0
045	4509.0	240.0	42.0	8.0 / 8.0
048	4813.0	240.0	43.2	19.0 / 19.0
049	4928.0	240.0	43.4	10.0 / 10.0
051	5060.0	240.0	43.7	20.0 / 20.0
051	5092.0	240.0	44.3	20.0 / 20.0
051	5136.0	240.0	44.4	10.0 / 10.0
053	5290.0	240.0	45.4	12.0 / 12.0
057	5734.0	240.0	47.2	13.0 / 17.0
Bishop Branch				
046	4626.8	622.0	10.2	25.0 / 23.0
049	4856.2	622.0	10.2	20.0 / 20.0
049	4935.2	622.0	11.7	20.0 / 20.0
052	5243.8	622.0	12.2	38.0 / 78.0
056	5578.8	622.0	14.1	77.0 / 30.0

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
Bishop Branch				
060	6014.6	622.0	16.3	78.0 / 28.0
066	6639.0	493.0	17.8	12.0 / 113.0
072	7197.8	493.0	18.7	49.0 / 81.0
076	7606.9	493.0	19.9	39.0 / 136.0
080	8032.6	493.0	21.0	35.0 / 63.0
085	8527.8	493.0	21.9	50.0 / 48.0
091	9081.3	301.0	24.4	12.0 / 12.0
096	9553.1	301.0	26.8	42.0 / 32.0
101	10068.6	301.0	28.4	12.0 / 13.0
105	10509.6	301.0	36.1	12.0 / 13.0
110	11005.3	301.0	39.8	12.0 / 16.0
116	11556.9	301.0	44.1	12.0 / 12.0
119	11873.2	301.0	46.5	34.0 / 15.0
120	11961.1	301.0	46.9	29.0 / 29.0
120	12022.1	301.0	47.9	29.0 / 29.0
126	12570.3	301.0	51.8	12.0 / 50.0
131	13100.3	301.0	54.8	47.0 / 17.0
137	13718.1	301.0	58.9	46.0 / 12.0
141	14143.3	301.0	63.5	49.0 / 12.0
Boggy Branch				
000	4.0	640.0	30.2[1]	212.0 / 49.0
004	386.0	640.0	30.2[1]	80.0 / 29.0
008	779.0	600.0	30.2[1]	23.0 / 97.0
012	1163.0	600.0	30.2[1]	126.0 / 9.0
014	1425.0	600.0	30.2[1]	163.0 / 10.0
016	1643.0	580.0	30.4	116.0 / 10.0
021	2108.0	580.0	31.7	97.0 / 10.0
024	2353.0	580.0	32.9	11.0 / 51.0
025	2478.0	580.0	33.3	15.0 / 25.0
025	2509.0	580.0	33.5	15.0 / 25.0
026	2553.0	580.0	33.7	9.0 / 57.0
028	2801.0	580.0	34.3	10.0 / 107.0
031	3078.0	580.0	34.7	26.0 / 52.0
033	3336.0	510.0	35.2	10.0 / 88.0
036	3575.0	510.0	35.6	38.0 / 26.0
037	3707.0	510.0	35.9	35.0 / 19.0
041	4052.0	480.0	36.8	10.0 / 59.0
043	4279.0	480.0	37.3	33.0 / 28.0
045	4479.0	480.0	37.8	10.0 / 47.0
048	4841.0	480.0	38.9	9.0 / 47.0
050	4970.0	480.0	39.3	24.0 / 53.0
052	5229.0	480.0	39.9	6.0 / 49.0
053	5346.0	480.0	40.2	12.0 / 34.0
055	5517.0	480.0	40.5	10.0 / 17.0

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
Boggy Branch				
057	5686.0	480.0	41.0	15.0 / 15.0
059	5924.0	480.0	41.6	10.0 / 10.0
060	6005.0	480.0	42.0	11.0 / 11.0
061	6142.0	480.0	43.0	6.0 / 69.0
065	6523.0	480.0	43.9	17.0 / 15.0
069	6871.0	480.0	44.4	10.0 / 10.0
071	7127.0	420.0	45.8	12.0 / 12.0
074	7368.0	420.0	46.1	31.0 / 31.0
077	7743.0	420.0	46.3	10.0 / 37.0
Camp Branch				
000	17.0	350.0	39.5[1]	25.0 / 216.0
004	391.0	350.0	39.5[1]	48.0 / 221.0
008	833.0	350.0	39.5[1]	19.0 / 19.0
010	1015.0	350.0	39.5[1]	20.0 / 21.0
011	1076.0	350.0	39.5[1]	21.0 / 20.0
011	1136.0	350.0	39.5[1]	16.0 / 16.0
014	1398.0	350.0	39.5[1]	15.0 / 147.0
018	1775.0	350.0	39.5[1]	8.0 / 450.0
024	2409.0	350.0	39.5[1]	10.0 / 503.0
)30	2977.0	350.0	39.5[1]	388.0 / 215.0
)35	3502.0	350.0	39.5[1]	257.0 / 113.0
040	3987.0	350.0	39.5[1]	179.0 / 15.0
047	4739.0	350.0	39.5[1]	19.0 / 19.0
053	5295.0	350.0	40.2	32.0 / 55.0
055	5475.0	350.0	40.3	21.0 / 21.0
055	5535.0	350.0	40.4	20.0 / 21.0
056	5595.0	350.0	40.4	34.0 / 139.0
058	5813.0	350.0	40.5	13.0 / 197.0
063	6278.0	350.0	40.6	150.0 / 9.0
068	6795.0	350.0	41.0	79.0 / 61.0
Camp Branch				
006	607.0	640.0	54.2	222.0 / 331.0
011	1138.0	640.0	54.5	151.0 / 275.0
016	1592.0	640.0	54.8	113.0 / 199.0
024	2435.0	500.0	55.3	140.0 / 77.0
030	3027.0	500.0	55.5	88.0 / 86.0
036	3583.0	500.0	56.0	25.0 / 52.0
040	3985.0	500.0	56.2	35.0 / 35.0
041	4073.0	500.0	56.2	35.0 / 35.0
042	4192.0	500.0	56.3	21.0 / 21.0
045	4474.0	500.0	57.1	68.0 / 23.0
)49	4922.0	420.0	57.7	67.0 / 26.0
054	5364.0	420.0	58.1	103.0 / 19.0
060	6021.0	420.0	58.6	58.0 / 42.0
062	6196.0	420.0	58.9	28.0 / 19.0

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
Cawcaw Swamp				
000	21.0	3370.0	25.0[4]	1146.0 / 3759.0
005	474.0	3370.0	25.0[4]	1230.0 / 3200.0
009	923.0	3370.0	25.0[4]	1330.0 / 2670.0
014	1407.0	3370.0	25.0[4]	1474.0 / 2056.0
020	1971.0	3220.0	25.0[4]	1410.0 / 1496.0
025	2459.0	3220.0	25.0[4]	1378.0 / 1344.0
029	2919.0	3220.0	25.0[4]	1040.0 / 1430.0
035	3494.0	3220.0	25.0[4]	725.0 / 1665.0
039	3895.0	3220.0	25.0[4]	963.0 / 1677.0
045	4463.0	3220.0	25.0[4]	1073.0 / 1497.0
050	5045.0	3220.0	25.0[4]	1618.0 / 1142.0
055	5453.0	3220.0	25.0[4]	1710.0 / 960.0
058	5827.0	3220.0	25.0[4]	1708.0 / 718.0
062	6190.0	3220.0	25.0[4]	1736.0 / 553.0
066	6579.0	3220.0	25.0[4]	1714.0 / 439.0
072	7221.0	3220.0	25.0[4]	1603.0 / 567.0
079	7872.0	3220.0	25.0[4]	973.0 / 656.0
085	8493.0	3220.0	25.0[1]	770.0 / 659.0
090	9040.0	3220.0	25.0[1]	718.0 / 435.0
)97	9700.0	3220.0	25.0[1]	593.0 / 435.0
101	10096.0	3220.0	25.0[1]	458.0 / 403.0
106	10577.0	3220.0	25.0[1]	240.0 / 357.0
109	10885.0	3220.0	25.0[1]	211.0 / 286.0
113	11265.0	3220.0	25.0[1]	84.0 / 37.0
114	11360.0	3220.0	26.3	46.0 / 75.0
115	11497.0	3220.0	26.8	232.0 / 108.0
120	11972.0	3220.0	26.9	732.0 / 57.0
123	12343.0	3220.0	26.9	1137.0 / 77.0
126	12565.0	3220.0	26.9	1310.0 / 120.0
130	13027.0	3220.0	26.9	1234.0 / 22.0
138	13814.0	2820.0	27.0	895.0 / 291.0
149	14880.0	2750.0	27.0	909.0 / 320.0
156	15563.0	2750.0	27.0	926.0 / 386.0
163	16259.0	2750.0	27.0	850.0 / 460.0
168	16820.0	2750.0	27.1	862.0 / 462.0
175	17536.0	2750.0	27.1	754.0 / 506.0
182	18173.0	2170.0	27.2	206.0 / 710.0
188	18827.0	1860.0	27.3	202.0 / 655.0
195	19511.0	1860.0	27.5	89.0 / 649.0
202	20206.0	1860.0	27.6	376.0 / 474.0
!09	20896.0	1860.0	27.7	556.0 / 241.0
214	21435.0	1860.0	27.8	627.0 / 117.0
219	21905.0	1860.0	28.0	422.0 / 148.0
223	22312.0	1860.0	28.2	213.0 / 162.0

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
Cawcaw Swamp				
228	22790.0	1860.0	28.8	95.0 / 224.0
232	23245.0	1860.0	29.3	39.0 / 184.0
233	23314.0	1860.0	29.4	48.0 / 48.0
234	23443.0	1860.0	30.3	48.0 / 48.0
236	23592.0	1860.0	30.5	36.0 / 34.0
237	23706.0	1860.0	30.6	226.0 / 142.0
244	24381.0	1860.0	30.7	175.0 / 572.0
249	24947.0	1860.0	30.8	170.0 / 585.0
255	25462.0	1860.0	30.8	176.0 / 530.0
263	26262.0	1860.0	30.9	226.0 / 608.0
270	27018.0	1860.0	31.0	291.0 / 792.0
278	27806.0	1860.0	31.1	573.0 / 264.0
286	28582.0	1860.0	31.2	349.0 / 467.0
290	29028.0	1860.0	31.3	59.0 / 585.0
298	29818.0	1860.0	31.6	240.0 / 472.0
303	30283.0	1860.0	31.8	751.0 / 172.0
308	30813.0	1730.0	31.9	891.0 / 25.0
316	31632.0	1650.0	32.3	471.0 / 112.0
325	32457.0	1650.0	33.4	24.0 / 444.0
334	33442.0	1650.0	34.2	367.0 / 115.0
340	33963.0	1650.0	34.4	152.0 / 432.0
346	34610.0	1650.0	34.5	459.0 / 367.0
354	35365.0	1650.0	34.7	283.0 / 205.0
357	35684.0	1650.0	35.3	60.0 / 75.0
358	35788.0	1650.0	35.6	68.0 / 67.0
365	36489.0	1650.0	36.1	344.0 / 223.0
371	37141.0	1490.0	36.3	80.0 / 250.0
378	37777.0	1290.0	36.6	40.0 / 423.0
384	38388.0	1290.0	36.7	197.0 / 148.0
390	38975.0	1290.0	36.9	305.0 / 62.0
395	39542.0	1290.0	37.5	152.0 / 67.0
401	40121.0	1290.0	38.1	152.0 / 59.0
407	40680.0	1290.0	38.7	230.0 / 66.0
413	41341.0	1290.0	39.3	317.0 / 24.0
419	41888.0	1290.0	39.8	280.0 / 85.0
425	42522.0	1290.0	40.3	27.0 / 27.0
425	42522.0	1290.0	40.3	27.0 / 27.0
426	42619.0	1290.0	41.6	34.0 / 34.0
427	42669.0	1290.0	41.7	32.0 / 32.0
435	43522.0	1290.0	42.1	407.0 / 173.0
441	44113.0	1160.0	42.1	820.0 / 18.0
449	44875.0	910.0	42.2	687.0 / 20.0
456	45565.0	910.0	42.4	32.0 / 262.0
461	46120.0	910.0	42.9	15.0 / 142.0

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
Cawcaw Swamp				
469	46892.0	910.0	44.1	199.0 / 16.0
475	47472.0	910.0	44.6	153.0 / 155.0
477	47692.0	910.0	44.8	28.0 / 27.0
478	47792.0	910.0	45.2	23.0 / 32.0
485	48491.0	910.0	45.9	139.0 / 340.0
492	49198.0	910.0	46.3	356.0 / 336.0
498	49848.0	910.0	46.6	202.0 / 353.0
504	50408.0	910.0	47.0	107.0 / 359.0
511	51091.0	910.0	48.0	492.0 / 13.0
516	51592.0	910.0	48.5	482.0 / 24.0
523	52334.0	910.0	49.2	317.0 / 198.0
529	52908.0	910.0	49.5	189.0 / 563.0
534	53357.0	910.0	49.7	249.0 / 694.0
543	54294.0	910.0	50.2	148.0 / 214.0
548	54840.0	910.0	51.0	206.0 / 113.0
554	55421.0	910.0	52.0	75.0 / 191.0
564	56376.0	740.0	52.9	222.0 / 15.0
575	57534.0	460.0	53.4	174.0 / 17.0
583	58319.0	460.0	54.1	303.0 / 8.0
591	59080.0	460.0	54.5	40.0 / 34.0
596	59634.0	460.0	54.9	46.0 / 14.0
599	59949.0	460.0	55.1	103.0 / 9.0
602	60153.0	460.0	55.2	21.0 / 25.0
603	60255.0	460.0	56.2	29.0 / 17.0
610	60950.0	460.0	57.3	17.0 / 11.0
617	61734.0	460.0	58.1	97.0 / 9.0
624	62410.0	460.0	58.5	44.0 / 34.0
633	63339.0	460.0	59.9	10.0 / 10.0
643	64260.0	460.0	60.6	36.0 / 24.0
653	65333.0	460.0	61.2	109.0 / 9.0
661	66064.0	460.0	61.5	497.0 / 154.0
Cherry Tree Swamp				
005	546.7	672.0	27.4[1]	96.0 / 35.0
010	1038.8	672.0	27.7	38.0 / 104.0
019	1889.6	672.0	29.2	54.0 / 71.0
022	2172.9	672.0	29.6	167.0 / 18.0
027	2734.0	672.0	30.5	115.0 / 18.0
034	3433.6	672.0	32.3	35.0 / 35.0
035	3505.6	672.0	36.1	35.0 / 35.0
039	3895.4	672.0	36.1	283.0 / 45.0
046	4601.2	672.0	36.3	39.0 / 80.0
052	5185.1	672.0	38.6	18.0 / 154.0
056	5646.5	672.0	39.7	53.0 / 93.0
063	6260.5	672.0	41.2	33.0 / 119.0

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
Cherry Tree Swamp				
067	6728.9	672.0	41.8	279.0 / 50.0
073	7268.5	378.0	42.4	217.0 / 27.0
081	8127.4	378.0	45.3	27.0 / 89.0
092	9152.8	378.0	50.5	27.0 / 136.0
096	9648.3	378.0	51.6	547.0 / 27.0
101	10133.2	378.0	52.9	228.0 / 27.0
107	10694.2	378.0	57.0	27.0 / 70.0
116	11624.1	378.0	62.4	62.0 / 38.0
Clark Branch				
000	18.0	670.0	9.8[5]	12.0 / 205.0
005	489.0	670.0	9.8[5]	10.0 / 93.0
010	954.0	670.0	9.8[5]	127.0 / 9.0
019	1935.0	670.0	9.8[5]	106.0 / 10.0
024	2395.0	670.0	10.1	51.0 / 24.0
027	2735.0	670.0	11.1	12.0 / 75.0
032	3175.0	670.0	12.2	51.0 / 40.0
034	3384.0	670.0	12.6	15.0 / 54.0
036	3580.0	670.0	13.2	15.0 / 15.0
037	3650.0	670.0	14.4	15.0 / 15.0
037	3700.0	670.0	14.9	15.0 / 15.0
)38	3840.0	650.0	15.0	25.0 / 35.0
040	3992.0	590.0	15.0	13.0 / 144.0
043	4322.0	590.0	15.2	41.0 / 107.0
046	4586.0	590.0	15.4	111.0 / 21.0
049	4886.0	590.0	15.7	20.0 / 20.0
051	5128.0	590.0	16.1	20.0 / 74.0
054	5407.0	530.0	16.7	22.0 / 22.0
058	5836.0	530.0	18.3	17.0 / 51.0
060	6035.0	530.0	18.9	10.0 / 77.0
065	6515.0	530.0	19.7	15.0 / 103.0
070	7023.0	530.0	20.2	148.0 / 19.0
072	7173.0	530.0	20.4	110.0 / 12.0
073	7319.0	530.0	20.7	11.0 / 26.0
074	7436.0	530.0	21.2	15.0 / 62.0
075	7526.0	530.0	21.3	9.0 / 9.0
078	7766.0	530.0	23.0	34.0 / 16.0
080	7968.0	530.0	23.3	14.0 / 14.0
082	8175.0	530.0	23.8	12.0 / 12.0
084	8390.0	530.0	24.8	16.0 / 16.0
085	8511.0	530.0	25.0	36.0 / 36.0
086	8640.0	530.0	25.2	63.0 / 10.0
)88	8773.0	370.0	25.4	11.0 / 11.0
Clear Branch				
005	482.2	721.0	53.0	180.0 / 270.0
006	640.2	721.0	53.1	219.0 / 231.0

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
Clear Branch				
009	925.3	721.0	53.5	218.0 / 129.0
012	1202.2	721.0	54.0	122.0 / 131.0
015	1505.6	721.0	54.6	54.0 / 123.0
018	1759.6	721.0	55.2	43.0 / 182.0
018	1791.2	721.0	55.2	43.0 / 182.0
018	1826.9	721.0	55.2	43.0 / 182.0
020	2048.9	721.0	55.7	114.0 / 159.0
025	2468.5	721.0	56.1	298.0 / 27.0
028	2757.1	721.0	56.2	323.0 / 65.0
031	3068.4	629.0	56.4	247.0 / 35.0
035	3464.9	629.0	56.6	268.0 / 111.0
039	3892.9	629.0	56.9	208.0 / 100.0
041	4129.7	629.0	57.0	154.0 / 19.0
042	4174.5	629.0	58.9	180.0 / 40.0
042	4225.8	629.0	58.9	180.0 / 40.0
049	4913.7	629.0	58.9	380.0 / 40.0
055	5543.9	629.0	59.0	219.0 / 114.0
056	5585.9	629.0	59.1	219.0 / 114.0
056	5639.0	629.0	59.1	219.0 / 114.0
)62	6231.1	629.0	59.2	190.0 / 253.0
Clear Pond				
028	2800.0	574.0	34.0[1]	143.0 / 102.0
034	3425.0	552.0	34.0[1]	207.0 / 182.0
039	3885.0	552.0	34.0[1]	193.4 / 172.0
040	3955.0	552.0	39.0	193.4 / 172.0
040	4013.0	552.0	39.0	236.2 / 250.0
050	5003.0	426.0	39.0	370.1 / 181.9
054	5417.0	426.0	39.0	225.3 / 203.7
057	5668.0	426.0	39.0	155.9 / 227.2
060	5995.0	426.0	39.0	124.8 / 216.8
064	6400.0	426.0	39.0	103.0 / 105.0
066	6644.0	426.0	39.0	59.8 / 28.1
068	6800.0	426.0	39.3	99.6 / 12.0
072	7200.0	426.0	41.0	19.6 / 42.1
076	7571.0	426.0	43.3	26.1 / 50.7
080	7959.0	426.0	45.7	64.3 / 12.0
Cottage Creek				
084	8420.6	255.0	11.7	49.0 / 48.0
087	8691.2	255.0	13.9	25.0 / 25.0
088	8759.2	255.0	17.9	25.0 / 25.0
)92	9174.6	255.0	19.6	25.0 / 100.0
Daw's Creek				
131	13122.8	1071.0	9.3	143.0 / 65.0
136	13599.1	947.0	9.7	131.0 / 128.0

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
Daw's Creek				
140	14029.6	947.0	9.9	79.0 / 171.0
146	14646.7	947.0	10.5	53.0 / 151.0
150	15032.7	947.0	10.6	30.0 / 30.0
151	15106.7	947.0	12.4	30.0 / 30.0
157	15672.5	824.0	12.6	123.0 / 81.0
160	15960.7	824.0	13.9	173.0 / 24.0
165	16461.7	824.0	15.0	37.0 / 162.0
169	16876.6	824.0	15.7	24.0 / 135.0
Fall Swamp				
001	71.0	1180.0	17.4[1]	17.0 / 410.0
009	949.0	1180.0	17.8	36.0 / 217.0
016	1592.0	1180.0	18.3	185.0 / 56.0
026	2618.0	690.0	19.5	12.0 / 138.0
030	3027.0	640.0	20.1	55.0 / 67.0
036	3605.0	640.0	20.8	86.0 / 15.0
041	4051.0	640.0	21.7	47.0 / 22.0
046	4648.0	640.0	23.0	11.0 / 97.0
052	5201.0	640.0	24.5	25.0 / 25.0
057	5730.0	640.0	26.2	90.0 / 23.0
)63	6253.0	600.0	27.4	23.0 / 23.0
)68	6759.0	600.0	27.9	157.0 / 20.0
073	7331.0	560.0	28.1	87.0 / 23.0
079	7871.0	560.0	29.1	43.0 / 18.0
082	8224.0	560.0	30.0	92.0 / 39.0
086	8619.0	560.0	30.8	50.0 / 12.0
088	8834.0	560.0	31.5	18.0 / 18.0
089	8883.0	560.0	33.1	17.0 / 19.0
089	8939.0	560.0	33.3	23.0 / 30.0
093	9254.0	560.0	33.7	42.0 / 46.0
099	9871.0	520.0	34.7	23.0 / 71.0
106	10556.0	520.0	36.3	49.0 / 10.0
110	10982.0	430.0	37.5	70.0 / 11.0
114	11398.0	430.0	39.3	10.0 / 10.0
119	11869.0	430.0	42.3	45.0 / 11.0
123	12263.0	430.0	43.3	10.0 / 10.0
128	12766.0	430.0	45.0	37.0 / 33.0
133	13263.0	430.0	45.8	25.0 / 44.0
137	13736.0	430.0	47.9	11.0 / 36.0
142	14224.0	430.0	50.3	60.0 / 10.0
146	14647.0	430.0	50.8	129.0 / 13.0
52	15174.0	430.0	51.0	101.0 / 125.0
,57	15691.0	430.0	51.4	16.0 / 13.0
162	16156.0	430.0	53.4	124.0 / 54.0
166	16596.0	430.0	54.2	106.0 / 12.0

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
Fall Swamp				
171	17071.0	430.0	54.7	286.0 / 119.0
175	17514.0	430.0	54.9	336.0 / 10.0
Gapway Creek				
003	281.8	1498.0	44.9[1]	179.0 / 292.0
010	960.0	1498.0	45.4	307.0 / 260.0
015	1482.2	1498.0	45.9	117.0 / 392.0
020	1959.3	1498.0	46.6	19.0 / 452.0
027	2707.7	1422.0	47.6	44.0 / 371.0
030	3010.4	1422.0	48.1	14.0 / 190.0
031	3052.4	1422.0	48.4	14.0 / 190.0
034	3404.6	921.0	48.8	108.0 / 287.0
038	3770.8	921.0	49.0	130.0 / 80.0
042	4198.4	921.0	49.3	210.0 / 28.0
043	4250.4	921.0	50.2	210.0 / 28.0
049	4880.5	921.0	50.4	114.0 / 163.0
055	5500.0	921.0	50.9	96.0 / 141.0
061	6052.3	921.0	51.7	30.0 / 179.0
066	6591.2	921.0	52.9	15.0 / 194.0
070	7018.9	847.0	53.8	173.0 / 41.0
)73	7345.8	847.0	54.0	120.0 / 141.0
J74	7397.8	847.0	56.4	120.0 / 141.0
081	8066.4	689.0	56.5	338.0 / 30.0
085	8500.0	689.0	56.6	506.0 / 10.0
091	9062.1	689.0	56.9	196.0 / 15.0
095	9500.0	689.0	58.2	311.0 / 16.0
101	10053.2	689.0	59.3	20.0 / 178.0
105	10500.0	621.0	60.2	30.0 / 289.0
110	11009.2	621.0	61.1	40.0 / 97.0
111	11056.2	621.0	61.5	40.0 / 97.0
115	11500.0	621.0	62.5	1735.0 / 200.0
122	12193.8	327.0	62.7	1691.0 / 300.0
130	13000.0	327.0	62.9	700.0 / 350.0
140	14000.0	327.0	63.7	500.0 / 500.0
Harris Swamp				
005	502.6	1097.0	11.7[1]	180.0 / 56.0
013	1317.9	1097.0	11.7[1]	249.0 / 16.0
016	1643.8	1097.0	11.7[1]	122.0 / 84.0
018	1837.3	1097.0	11.7[1]	25.0 / 24.0
019	1914.3	1097.0	11.7[1]	25.0 / 24.0
023	2317.4	1097.0	11.7[1]	115.0 / 111.0
)30	2998.7	1097.0	11.7[1]	58.0 / 88.0
J35	3469.5	1097.0	11.7[1]	165.0 / 45.0
040	3991.8	1097.0	11.7[1]	80.0 / 150.0
045	4515.7	1000.0	12.4	17.0 / 129.0

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
Harris Swamp				
051	5146.5	1000.0	13.7	57.0 / 61.0
056	5573.4	1000.0	14.4	89.0 / 85.0
062	6226.7	1000.0	15.5	143.0 / 15.0
066	6618.7	1000.0	15.9	256.0 / 32.0
072	7173.1	1000.0	16.2	106.0 / 198.0
076	7599.7	1000.0	16.5	72.0 / 185.0
082	8180.1	1000.0	17.5	95.0 / 28.0
089	8851.6	1000.0	18.3	227.0 / 78.0
093	9283.1	1000.0	18.6	41.0 / 110.0
097	9716.8	1000.0	19.1	214.0 / 218.0
103	10303.6	1000.0	19.6	85.0 / 141.0
108	10795.2	1000.0	20.0	239.0 / 50.0
113	11270.5	1000.0	20.5	190.0 / 11.0
118	11754.6	1000.0	21.1	154.0 / 66.0
122	12223.9	1000.0	21.8	164.0 / 83.0
126	12638.6	870.0	22.3	196.0 / 63.0
134	13376.5	870.0	23.0	113.0 / 144.0
135	13508.3	870.0	23.2	81.0 / 143.0
140	14031.7	870.0	24.2	117.0 / 120.0
149	14878.5	870.0	26.0	74.0 / 65.0
154	15373.7	870.0	26.8	58.0 / 140.0
Honey Island Swamp				
000	31.0	3110.0	42.5[6]	874.0 / 1886.0
008	774.0	3020.0	42.5[6]	333.0 / 2137.0
013	1279.0	3020.0	42.5[6]	14.0 / 2183.0
017	1715.0	3020.0	42.6[6]	19.0 / 1951.0
022	2190.0	3020.0	42.6[6]	114.0 / 1708.0
027	2678.0	3020.0	42.6[6]	352.0 / 1348.0
032	3249.0	3020.0	42.6[6]	567.0 / 1063.0
037	3715.0	3020.0	42.6[6]	444.0 / 1136.0
043	4255.0	3020.0	42.7[6]	537.0 / 923.0
047	4719.0	3020.0	42.7[6]	910.0 / 924.0
052	5221.0	3020.0	42.7[6]	1565.0 / 12.0
057	5678.0	3020.0	42.7[6]	1753.0 / 12.0
062	6187.0	3020.0	42.9	2089.0 / 11.0
067	6714.0	3020.0	43.0	1996.0 / 314.0
072	7188.0	3020.0	43.2	2203.0 / 314.0
076	7633.0	2830.0	43.3	2363.0 / 349.0
080	8044.0	2790.0	43.4	2276.0 / 499.0
089	8929.0	2790.0	43.7	2223.0 / 810.0
100	10017.0	2790.0	44.1	2412.0 / 588.0
110	10967.0	2790.0	44.4	2243.0 / 687.0
120	12026.0	2790.0	44.6	2006.0 / 874.0
131	13080.0	2790.0	44.7	2021.0 / 819.0

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
Honey Island Swamp				
141	14095.0	2790.0	44.8	1768.0 / 1002.0
148	14786.0	2790.0	45.0	1754.0 / 467.0
154	15399.0	2790.0	45.6	1839.0 / 148.0
169	16856.0	2610.0	47.6	1219.0 / 8.0
173	17259.0	2610.0	48.3	1042.0 / 75.0
174	17420.0	2610.0	48.9	1053.0 / 89.0
184	18403.0	2610.0	49.3	832.0 / 328.0
191	19103.0	2610.0	49.6	1176.0 / 6.0
198	19808.0	2610.0	49.9	1430.0 / 13.0
206	20561.0	2610.0	50.1	1908.0 / 10.0
213	21252.0	2610.0	50.2	1640.0 / 223.0
221	22067.0	2610.0	50.4	1418.0 / 362.0
227	22739.0	2610.0	50.5	1228.0 / 432.0
235	23461.0	2610.0	50.8	1006.0 / 334.0
242	24201.0	2610.0	51.3	805.0 / 736.0
252	25171.0	2380.0	51.7	224.0 / 1071.0
262	26156.0	2370.0	52.1	343.0 / 1154.0
274	27447.0	2370.0	53.1	989.0 / 10.0
284	28424.0	2370.0	54.2	942.0 / 15.0
292	29189.0	2230.0	54.9	973.0 / 10.0
297	29700.0	2230.0	55.1	925.0 / 11.0
307	30680.0	2230.0	55.9	176.0 / 320.0
312	31248.0	2230.0	56.9	23.0 / 67.0
313	31310.0	2230.0	57.6	70.0 / 20.0
317	31682.0	2230.0	58.2	158.0 / 285.0
324	32428.0	1810.0	58.3	646.0 / 738.0
334	33397.0	1810.0	58.3	729.0 / 1128.0
343	34264.0	1810.0	58.4	831.0 / 997.0
349	34877.0	1810.0	58.4	779.0 / 1004.0
357	35721.0	1810.0	58.5	637.0 / 646.0
368	36848.0	1810.0	58.7	725.0 / 635.0
375	37485.0	1630.0	58.8	723.0 / 693.0
381	38139.0	1520.0	58.8	1028.0 / 323.0
385	38527.0	1520.0	58.8	1117.0 / 11.0
Hood Creek				
007	686.2	4810.0	15.8[7]	840.0 / 568.0
011	1129.5	4810.0	15.8[7]	653.0 / 300.0
016	1622.8	4810.0	15.8[7]	824.0 / 57.0
021	2137.8	4810.0	15.8[7]	1248.0 / 176.0
026	2627.3	4810.0	15.8[7]	749.0 / 123.0
031	3100.2	4810.0	15.8[1]	797.0 / 57.0
036	3578.6	4810.0	15.8[1]	741.0 / 595.0
042	4173.8	4810.0	15.8[1]	858.0 / 435.0
046	4625.4	4810.0	15.8[1]	727.0 / 484.0

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
Hood Creek				
051	5127.8	4810.0	15.8[1]	387.0 / 444.0
056	5595.6	4810.0	15.8[1]	546.0 / 374.0
061	6061.2	4810.0	15.8[1]	516.0 / 706.0
066	6603.0	4810.0	15.8[1]	454.0 / 387.0
071	7140.6	4810.0	15.8[1]	440.0 / 460.0
076	7635.9	4810.0	15.8[1]	330.0 / 300.0
081	8107.0	4810.0	15.8[1]	318.0 / 550.0
086	8646.5	4810.0	15.8[1]	517.0 / 478.0
091	9126.8	4810.0	15.8[1]	468.0 / 253.0
096	9625.9	4810.0	15.8[1]	369.0 / 351.0
101	10138.1	4780.0	15.8[1]	286.0 / 638.0
106	10612.0	4780.0	15.8[1]	472.0 / 317.0
112	11208.2	4780.0	15.8[1]	675.0 / 253.0
117	11672.0	4780.0	15.8[1]	439.0 / 178.0
122	12211.4	4780.0	15.8[1]	487.0 / 362.0
128	12756.6	4780.0	15.8[1]	520.0 / 270.0
132	13222.7	4780.0	15.8[1]	903.0 / 37.0
137	13742.1	4780.0	15.8[1]	466.0 / 210.0
143	14266.5	4780.0	15.8[1]	639.0 / 306.0
147	14706.1	4780.0	15.8[1]	528.0 / 236.0
152	15214.6	4780.0	15.8[1]	508.0 / 148.0
158	15761.5	4780.0	15.8[1]	302.0 / 304.0
162	16183.6	4780.0	15.8[1]	293.0 / 224.0
167	16664.0	4780.0	15.8[1]	447.0 / 378.0
172	17217.4	4710.0	15.8[1]	299.0 / 349.0
176	17647.5	4710.0	15.8[1]	158.0 / 725.0
182	18208.5	4710.0	15.8[1]	538.0 / 591.0
187	18683.7	4710.0	15.8[1]	613.0 / 460.0
192	19222.5	4710.0	15.8[1]	231.0 / 752.0
197	19706.3	4710.0	15.8[1]	35.0 / 947.0
202	20237.7	4710.0	15.8[1]	47.0 / 776.0
208	20758.4	4710.0	15.8[1]	80.0 / 80.0
208	20812.4	4710.0	15.8[1]	80.0 / 80.0
212	21202.9	4710.0	15.8[1]	168.0 / 532.0
217	21728.9	4710.0	15.8[1]	50.0 / 1105.0
223	22328.9	4500.0	15.8[1]	110.0 / 892.0
227	22739.9	4500.0	15.8[1]	615.0 / 447.0
232	23169.4	4500.0	15.8[1]	765.0 / 162.0
237	23713.3	4500.0	15.8[1]	288.0 / 233.0
242	24240.8	4500.0	15.8[1]	264.0 / 210.0
247	24728.2	4500.0	15.8[1]	220.0 / 240.0
252	25216.8	4500.0	15.8[1]	295.0 / 323.0
257	25714.2	4500.0	15.8[1]	155.0 / 376.0
262	26242.3	4500.0	15.8[1]	92.0 / 531.0

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
Hood Creek				
267	26693.5	4460.0	15.8[1]	150.0 / 81.0
269	26936.9	4460.0	15.8[1]	100.0 / 100.0
270	26990.9	4460.0	16.3	100.0 / 100.0
277	27666.8	4460.0	17.0	154.0 / 459.0
282	28160.5	4460.0	17.1	84.0 / 544.0
287	28732.8	4460.0	17.3	86.0 / 499.0
292	29224.3	4460.0	17.5	182.0 / 452.0
297	29720.8	4420.0	17.7	150.0 / 209.0
302	30215.7	4420.0	18.1	150.0 / 156.0
307	30735.8	4420.0	18.4	182.0 / 417.0
312	31212.7	4420.0	18.5	249.0 / 210.0
317	31704.0	4420.0	18.6	537.0 / 100.0
322	32194.5	4420.0	18.7	570.0 / 30.0
328	32809.4	4190.0	18.9	258.0 / 168.0
332	33219.3	4190.0	19.0	350.0 / 137.0
337	33736.8	4190.0	19.2	632.0 / 73.0
342	34230.1	4190.0	19.3	284.0 / 28.0
347	34661.0	4190.0	19.9	344.0 / 148.0
352	35194.8	4190.0	20.3	320.0 / 377.0
357	35730.2	4190.0	20.5	108.0 / 360.0
362	36203.4	4190.0	20.9	63.0 / 275.0
367	36668.0	4190.0	21.5	188.0 / 169.0
370	36990.8	4190.0	22.1	68.0 / 68.0
370	37044.8	4190.0	22.6	68.0 / 68.0
371	37057.2	4190.0	22.6	66.0 / 66.0
371	37119.2	4190.0	23.1	66.0 / 66.0
376	37648.4	4160.0	23.9	379.0 / 149.0
386	38642.4	4160.0	24.4	67.0 / 66.0
387	38704.4	4160.0	25.3	67.0 / 66.0
392	39172.0	4160.0	26.1	152.0 / 567.0
396	39620.8	4160.0	26.2	340.0 / 312.0
403	40252.6	4160.0	26.4	404.0 / 293.0
412	41204.4	4160.0	26.6	532.0 / 184.0
417	41694.7	4160.0	26.7	525.0 / 138.0
423	42256.5	3900.0	26.8	283.0 / 341.0
427	42684.2	3900.0	26.9	505.0 / 167.0
433	43277.7	3900.0	27.0	824.0 / 41.0
437	43700.2	3900.0	27.1	415.0 / 278.0
442	44221.9	3900.0	27.2	329.0 / 516.0
447	44723.2	3900.0	27.3	492.0 / 180.0
452	45166.2	3570.0	27.4	758.0 / 27.0
458	45756.3	3570.0	27.5	369.0 / 389.0
463	46316.9	3570.0	27.6	752.0 / 130.0
467	46735.4	3570.0	27.7	339.0 / 429.0

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
Hood Creek				
474	47360.3	3570.0	27.8	341.0 / 243.0
477	47707.3	3570.0	27.9	322.0 / 628.0
482	48228.3	3570.0	28.0	443.0 / 245.0
487	48685.7	3570.0	28.2	307.0 / 505.0
493	49281.2	3570.0	28.3	359.0 / 436.0
497	49728.6	3570.0	28.4	624.0 / 190.0
503	50250.2	3570.0	28.6	611.0 / 128.0
507	50733.1	2650.0	28.8	615.0 / 652.0
512	51218.9	2650.0	28.9	436.0 / 318.0
519	51893.4	2650.0	29.0	130.0 / 150.0
519	51941.4	2650.0	30.6	130.0 / 150.0
523	52292.1	2650.0	30.7	230.0 / 307.0
527	52683.8	2650.0	30.8	136.0 / 337.0
532	53203.5	2650.0	30.9	311.0 / 206.0
537	53672.2	2650.0	31.0	156.0 / 352.0
544	54360.2	1420.0	31.1	516.0 / 106.0
550	55014.6	1420.0	31.3	437.0 / 19.0
555	55471.2	1420.0	31.6	146.0 / 150.0
560	55961.5	1420.0	31.9	436.0 / 53.0
566	56616.2	1420.0	32.1	256.0 / 209.0
573	57285.8	1420.0	32.3	442.0 / 178.0
577	57702.8	1420.0	32.3	611.0 / 260.0
586	58632.3	1420.0	32.6	323.0 / 34.0
589	58915.1	1330.0	32.7	331.0 / 17.0
596	59639.1	1330.0	33.1	174.0 / 228.0
602	60210.8	1330.0	33.3	489.0 / 38.0
609	60882.3	1330.0	33.6	450.0 / 17.0
616	61640.9	1330.0	34.1	169.0 / 491.0
623	62278.0	1330.0	34.6	150.0 / 139.0
628	62830.3	1330.0	35.8	250.0 / 43.0
631	63122.8	1010.0	36.4	40.0 / 40.0
632	63172.8	1010.0	37.7	40.0 / 40.0
637	63689.0	1010.0	38.6	90.0 / 160.0
642	64167.3	1010.0	39.1	73.0 / 50.0
648	64804.5	1010.0	39.9	34.0 / 197.0
653	65252.1	1010.0	40.6	122.0 / 20.0
658	65833.1	874.0	42.0	150.0 / 63.0
664	66427.2	874.0	42.6	150.0 / 49.0
670	66965.3	874.0	43.7	50.0 / 61.0
673	67320.2	874.0	44.9	130.0 / 72.0
682	68218.5	874.0	47.3	70.0 / 310.0
691	69065.8	874.0	49.0	78.0 / 39.0
696	69599.2	645.0	49.5	103.0 / 26.0
701	70138.3	645.0	50.2	83.0 / 26.0

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
Hood Creek				
706	70604.6	645.0	51.2	76.0 / 61.0
712	71153.9	645.0	52.5	50.0 / 22.0
718	71824.8	645.0	54.4	50.0 / 120.0
724	72397.0	645.0	55.2	50.0 / 244.0
729	72899.7	645.0	56.0	21.0 / 89.0
731	73136.4	645.0	56.6	165.0 / 175.0
732	73199.4	645.0	59.3	165.0 / 175.0
735	73474.3	645.0	59.4	15.0 / 85.0
742	74248.4	645.0	60.6	77.0 / 117.0
Hood Creek Tributary				
009	948.6	905.0	28.8[1]	206.0 / 155.0
015	1499.1	905.0	28.8[1]	24.0 / 238.0
020	2011.9	905.0	28.8[1]	196.0 / 72.0
026	2576.9	905.0	29.7	33.0 / 191.0
032	3176.9	905.0	30.4	96.0 / 260.0
037	3746.8	905.0	31.0	38.0 / 274.0
045	4529.6	905.0	32.5	60.0 / 252.0
052	5194.6	905.0	33.7	67.0 / 184.0
058	5755.0	905.0	34.4	126.0 / 145.0
063	6318.5	905.0	35.4	156.0 / 28.0
069	6852.1	732.0	36.8	36.0 / 155.0
076	7640.6	732.0	38.2	23.0 / 202.0
081	8127.5	732.0	39.5	152.0 / 23.0
086	8566.9	732.0	40.9	147.0 / 23.0
089	8917.4	732.0	43.3	10.0 / 228.0
090	8972.4	732.0	45.5	10.0 / 228.0
093	9280.9	732.0	45.6	133.0 / 153.0
096	9640.7	732.0	45.8	248.0 / 13.0
101	10136.0	732.0	46.4	93.0 / 56.0
106	10605.4	732.0	47.7	54.0 / 123.0
110	11045.0	732.0	49.1	49.0 / 32.0
115	11470.2	732.0	51.4	150.0 / 34.0
121	12136.6	732.0	53.1	139.0 / 105.0
122	12213.1	568.0	55.3	139.0 / 105.0
124	12392.2	568.0	55.4	70.0 / 306.0
Juniper Creek				
004	353.0	8340.0	34.2[4]	* [3]
015	1544.0	8300.0	34.2[4]	* [3]
025	2509.0	8300.0	34.2[4]	* [3]
035	3458.0	8300.0	34.2[1]	* [3]
042	4172.0	8300.0	34.2[1]	* [3]
061	6063.0	8300.0	34.2[1]	* [3]

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
Juniper Creek				
070	7008.0	8300.0	34.2[1]	* [3]
079	7882.0	8300.0	34.2[1]	* [3]
088	8778.0	8300.0	34.2[1]	* [3]
100	10023.0	8300.0	34.3	* [3]
104	10357.0	8300.0	34.5	* [3]
105	10462.0	8300.0	34.6	* [3]
116	11560.0	8040.0	34.9	* [3]
125	12481.0	7980.0	35.1	* [3]
133	13348.0	7980.0	35.2	* [3]
142	14187.0	7980.0	35.3	* [3]
149	14884.0	7980.0	35.4	* [3]
157	15688.0	7980.0	35.6	* [3]
167	16709.0	7980.0	35.8	* [3]
176	17623.0	7980.0	35.9	* [3]
184	18408.0	7980.0	36.1	* [3]
196	19613.0	7650.0	36.3	* [3]
202	20197.0	7620.0	36.5	* [3]
213	21256.0	7620.0	36.7	* [3]
220	21994.0	7620.0	36.8	* [3]
227	22702.0	7620.0	36.9	* [3]
233	23294.0	7620.0	37.1	* [3]
242	24217.0	7620.0	37.3	* [3]
250	25025.0	7620.0	37.4	* [3]
258	25793.0	7620.0	37.7	* [3]
266	26641.0	7620.0	38.0	* [3]
275	27505.0	7620.0	38.2	* [3]
283	28332.0	7060.0	38.4	* [3]
292	29249.0	6990.0	38.7	* [3]
301	30082.0	6990.0	38.9	* [3]
308	30810.0	6990.0	39.0	* [3]
320	32033.0	6990.0	39.2	* [3]
329	32934.0	6990.0	39.3	* [3]
338	33824.0	6990.0	39.4	* [3]
347	34735.0	6990.0	39.6	* [3]
358	35826.0	6990.0	39.7	* [3]
371	37054.0	6460.0	39.8	* [3]

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
Juniper Creek				
380	37977.0	6440.0	40.0	* 3
390	38978.0	6440.0	40.2	* 3
399	39938.0	6440.0	40.3	* 3
408	40782.0	6440.0	40.4	* 3
417	41666.0	6440.0	40.6	* 3
425	42541.0	6440.0	40.7	* 3
433	43295.0	6440.0	40.8	* 3
442	44150.0	6370.0	40.9	* 3
451	45102.0	6370.0	41.0	* 3
460	45966.0	6370.0	41.2	* 3
474	47360.0	6370.0	41.4	* 3
484	48421.0	6370.0	41.6	* 3
488	48841.0	6370.0	41.6	* 3
499	49905.0	6370.0	41.8	* 3
509	50879.0	6370.0	42.0	* 3
518	51842.0	6370.0	42.1	* 3
524	52412.0	6370.0	42.2	* 3
531	53142.0	6370.0	42.3	* 3
538	53789.0	6370.0	42.4	* 3
545	54507.0	5190.0	42.5	* 3
552	55219.0	5190.0	42.6	* 3
558	55849.0	5190.0	42.7	* 3
565	56490.0	5080.0	42.7	* 3
573	57345.0	5060.0	42.8	* 3
581	58063.0	5060.0	42.9	* 3
589	58899.0	5060.0	42.9	* 3
595	59469.0	5060.0	43.0	* 3
602	60159.0	5060.0	43.1	* 3
609	60902.0	5060.0	43.2	* 3
618	61833.0	4870.0	43.3	* 3
628	62786.0	4830.0	43.5	* 3
638	63769.0	4830.0	43.8	* 3
648	64792.0	4830.0	44.0	* 3
657	65702.0	4830.0	44.3	* 3
666	66591.0	4830.0	44.6	* 3
668	66757.0	4830.0	44.7	* 3

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
Juniper Creek				
669	66857.0	4830.0	44.8	* [3]
675	67468.0	4010.0	45.0	* [3]
687	68671.0	660.0	45.1	* [3]
Leonard Branch				
000	10.0	760.0	42.7[1]	11.0 / 757.0
007	670.0	590.0	42.7[1]	289.0 / 228.0
018	1826.0	590.0	42.7[1]	335.0 / 113.0
023	2325.0	590.0	42.7[1]	136.0 / 68.0
034	3413.0	590.0	42.7[1]	140.0 / 14.0
043	4288.0	590.0	43.0	17.0 / 18.0
043	4330.0	590.0	43.0	17.0 / 17.0
044	4401.0	590.0	43.9	17.0 / 17.0
044	4421.0	590.0	43.9	13.0 / 13.0
056	5624.0	460.0	44.2	85.0 / 205.0
062	6247.0	460.0	44.2	70.0 / 117.0
071	7076.0	460.0	44.5	80.0 / 61.0
078	7762.0	460.0	45.2	53.0 / 16.0
Lewis Branch				
005	486.0	1328.0	20.3[1]	276.0 / 13.0
008	762.4	1328.0	20.3[1]	190.0 / 34.0
011	1075.7	1328.0	20.3[1]	29.0 / 27.0
011	1149.7	1328.0	21.6	29.0 / 27.0
016	1564.7	1328.0	21.9	176.0 / 228.0
020	2008.1	1328.0	22.2	339.0 / 13.0
025	2529.3	1328.0	23.2	271.0 / 29.0
030	3025.7	1328.0	24.4	278.0 / 39.0
035	3471.3	1328.0	25.0	264.0 / 13.0
040	3967.9	1328.0	25.5	33.0 / 188.0
044	4437.7	1204.0	25.9	212.0 / 28.0
049	4923.7	1204.0	26.2	158.0 / 148.0
055	5471.6	1204.0	26.5	135.0 / 115.0
060	5975.0	1204.0	26.8	241.0 / 44.0
065	6459.8	1204.0	27.1	125.0 / 100.0
069	6892.8	1204.0	27.6	28.0 / 194.0
074	7359.7	1204.0	28.2	163.0 / 23.0
078	7817.8	1204.0	29.1	112.0 / 60.0
082	8191.1	1204.0	29.7	188.0 / 12.0
087	8740.4	1204.0	30.8	83.0 / 132.0
090	9039.7	1204.0	31.3	63.0 / 124.0
095	9547.2	1204.0	32.5	132.0 / 64.0
101	10051.7	1204.0	33.3	297.0 / 12.0
106	10605.0	1204.0	33.6	217.0 / 253.0
111	11148.6	1204.0	33.8	160.0 / 23.0

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
Lewis Branch				
116	11567.2	1204.0	34.2	202.0 / 88.0
120	12010.3	1204.0	34.5	167.0 / 90.0
122	12213.1	1204.0	34.5	20.0 / 20.0
123	12250.1	1204.0	37.4	20.0 / 20.0
125	12530.5	1204.0	38.1	70.0 / 261.0
130	12981.9	1026.0	38.3	201.0 / 100.0
135	13509.9	1026.0	38.4	246.0 / 47.0
140	13962.7	1026.0	38.5	196.0 / 124.0
145	14528.2	1026.0	38.7	85.0 / 204.0
150	15025.1	1026.0	39.0	73.0 / 99.0
155	15536.2	1026.0	39.6	25.0 / 180.0
159	15913.7	1026.0	40.3	14.0 / 137.0
160	15992.2	1026.0	40.3	30.0 / 30.0
160	16029.2	1026.0	43.2	30.0 / 30.0
165	16532.5	838.0	44.0	103.0 / 81.0
171	17061.7	838.0	44.2	140.0 / 87.0
175	17523.6	838.0	44.6	136.0 / 47.0
181	18107.7	838.0	45.8	9.0 / 143.0
187	18711.6	838.0	47.1	335.0 / 9.0
193	19285.7	838.0	48.8	66.0 / 67.0
197	19731.4	838.0	51.5	59.0 / 57.0
203	20255.7	838.0	53.7	59.0 / 68.0
208	20799.1	838.0	54.8	159.0 / 128.0
212	21242.7	838.0	55.5	29.0 / 116.0
217	21706.6	556.0	56.8	151.0 / 23.0
222	22184.7	556.0	57.7	61.0 / 10.0
228	22777.3	556.0	59.7	46.0 / 11.0
235	23464.9	556.0	61.1	137.0 / 9.0
240	23962.0	556.0	61.7	44.0 / 86.0
246	24560.4	556.0	62.3	129.0 / 74.0
Lewis Swamp				
005	527.1	2577.0	13.6[1]	580.0 / 32.0
011	1117.4	2577.0	13.6[1]	401.0 / 32.0
014	1413.0	2577.0	13.6[1]	533.0 / 32.0
018	1842.4	2577.0	13.6[1]	541.0 / 31.0
024	2396.6	2577.0	13.6[1]	238.0 / 32.0
029	2893.3	2577.0	13.8	337.0 / 32.0
034	3375.3	2577.0	14.2	235.0 / 106.0
038	3757.8	2577.0	14.5	262.0 / 31.0
044	4386.3	2577.0	15.3	36.0 / 186.0
054	5387.0	2577.0	16.2	648.0 / 31.0
058	5806.7	2577.0	16.4	324.0 / 157.0
064	6376.2	2577.0	16.6	370.0 / 186.0
068	6835.1	2577.0	16.9	289.0 / 131.0

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
Lewis Swamp				
072	7237.0	2492.0	17.2	483.0 / 77.0
079	7922.5	2492.0	17.6	241.0 / 381.0
083	8341.1	2492.0	17.8	402.0 / 143.0
088	8750.4	2492.0	18.0	352.0 / 31.0
093	9310.3	2492.0	18.4	496.0 / 31.0
098	9833.0	2492.0	18.6	446.0 / 31.0
103	10345.0	2492.0	18.9	342.0 / 96.0
108	10849.1	2492.0	19.2	306.0 / 296.0
112	11196.8	2492.0	19.4	142.0 / 206.0
119	11859.6	2492.0	19.8	405.0 / 139.0
127	12678.5	1924.0	20.3	231.0 / 208.0
133	13309.7	1924.0	21.0	251.0 / 26.0
138	13845.6	1924.0	21.8	284.0 / 128.0
143	14334.7	1924.0	22.6	319.0 / 89.0
148	14771.2	1924.0	23.3	393.0 / 156.0
153	15263.9	1924.0	23.6	290.0 / 323.0
159	15900.0	1924.0	24.1	182.0 / 148.0
165	16478.1	1924.0	24.7	85.0 / 359.0
169	16894.7	1924.0	25.1	86.0 / 313.0
175	17503.1	1639.0	25.6	343.0 / 180.0
178	17776.3	1639.0	25.8	266.0 / 204.0
183	18299.1	1639.0	26.5	261.0 / 84.0
185	18452.2	1639.0	26.6	60.0 / 60.0
185	18525.2	1639.0	28.0	60.0 / 60.0
189	18894.0	1639.0	28.6	500.0 / 100.0
193	19337.4	1639.0	29.0	186.0 / 156.0
199	19895.2	1639.0	29.4	210.0 / 155.0
204	20375.8	1639.0	29.7	178.0 / 195.0
209	20867.5	1639.0	30.1	195.0 / 198.0
214	21375.3	1639.0	30.5	158.0 / 175.0
219	21906.4	1639.0	31.0	407.0 / 72.0
226	22587.4	1212.0	31.7	252.0 / 22.0
229	22888.9	1212.0	32.5	108.0 / 88.0
233	23288.4	1212.0	33.9	52.0 / 151.0
239	23871.7	1212.0	34.6	107.0 / 133.0
244	24351.3	1212.0	35.3	108.0 / 32.0
249	24896.4	1212.0	36.4	106.0 / 121.0
254	25360.5	1212.0	37.3	169.0 / 22.0
259	25852.4	1212.0	38.2	98.0 / 117.0
264	26404.2	1212.0	39.2	231.0 / 22.0
269	26883.6	1212.0	39.9	260.0 / 73.0
274	27380.2	1212.0	40.4	101.0 / 135.0
279	27903.7	1212.0	41.3	186.0 / 75.0
284	28381.7	1097.0	42.1	112.0 / 170.0

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
Lewis Swamp				
289	28870.3	1097.0	43.0	120.0 / 56.0
294	29364.8	1097.0	44.1	94.0 / 107.0
299	29899.0	1097.0	45.2	194.0 / 21.0
305	30509.2	1097.0	46.8	64.0 / 87.0
309	30945.7	1097.0	48.0	82.0 / 148.0
314	31442.9	1097.0	48.9	103.0 / 82.0
319	31898.2	1097.0	49.8	66.0 / 70.0
324	32439.6	1097.0	50.6	125.0 / 122.0
330	32967.5	1097.0	51.5	58.0 / 77.0
334	33420.9	1097.0	53.1	106.0 / 21.0
339	33910.5	1097.0	54.4	74.0 / 64.0
345	34470.8	990.0	56.0	125.0 / 32.0
349	34938.5	990.0	57.6	113.0 / 63.0
355	35489.5	990.0	59.8	20.0 / 50.0
360	36009.8	990.0	62.1	50.0 / 151.0
365	36501.2	990.0	63.0	23.0 / 153.0
370	36975.9	990.0	64.4	177.0 / 50.0
376	37617.3	990.0	65.1	519.0 / 162.0
Lewis Swamp Tributary				
)08	750.8	920.0	31.7[1]	100.0 / 100.0
)11	1128.4	920.0	32.3	100.0 / 100.0
012	1152.6	920.0	32.4	100.0 / 100.0
014	1370.1	920.0	33.6	163.0 / 24.0
015	1508.3	920.0	33.9	91.0 / 59.0
019	1938.7	920.0	35.1	158.0 / 39.0
025	2546.7	920.0	36.5	114.0 / 60.0
031	3067.7	920.0	37.3	66.0 / 65.0
031	3129.7	920.0	37.3	66.0 / 65.0
035	3529.7	920.0	38.0	183.0 / 105.0
040	4013.6	920.0	38.6	232.0 / 15.0
045	4509.2	920.0	39.6	15.0 / 177.0
050	5000.5	920.0	40.7	178.0 / 70.0
055	5545.9	920.0	41.7	88.0 / 218.0
060	6023.4	920.0	42.7	134.0 / 15.0
065	6508.9	690.0	44.6	55.0 / 85.0
068	6777.9	690.0	45.7	101.0 / 10.0
069	6895.4	690.0	47.0	43.0 / 43.0
069	6947.4	690.0	48.4	43.0 / 43.0
075	7549.9	690.0	49.8	51.0 / 101.0
080	7967.9	690.0	51.0	28.0 / 92.0
)83	8265.8	690.0	52.4	21.0 / 105.0
Little Cawcaw Swamp				
006	587.9	1480.0	27.5	192.0 / 523.0
016	1594.3	1480.0	27.8	182.0 / 43.0

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
Little Cawcaw Swamp				
022	2187.0	1480.0	28.2	53.0 / 53.0
030	3039.7	1480.0	28.8	50.0 / 50.0
038	3838.5	1480.0	29.5	35.0 / 35.0
045	4499.9	1480.0	30.3	27.0 / 35.0
053	5250.2	1480.0	30.9	22.0 / 257.0
061	6071.3	1480.0	31.2	67.0 / 336.0
068	6801.3	1480.0	31.3	138.0 / 138.0
071	7117.9	1480.0	31.3	177.0 / 151.0
074	7443.7	1480.0	31.3	205.0 / 220.0
076	7621.5	1480.0	31.4	114.0 / 111.0
077	7716.5	1480.0	31.9	117.0 / 108.0
078	7756.1	1480.0	31.9	93.0 / 107.0
081	8059.0	1480.0	31.9	11.0 / 252.0
085	8509.3	1480.0	32.1	180.0 / 105.0
087	8726.2	1480.0	32.1	39.0 / 29.0
091	9067.9	1290.0	34.1	37.0 / 31.0
095	9533.8	900.0	34.1	33.0 / 100.0
104	10362.6	900.0	34.1	29.0 / 295.0
110	11032.1	900.0	34.2	36.0 / 291.0
Little Mallory Creek				
071	7133.0	659.0	10.3	153.0 / 89.0
076	7647.3	659.0	10.5	161.0 / 103.0
081	8121.1	659.0	10.7	158.0 / 100.0
083	8346.7	659.0	10.9	124.0 / 13.0
086	8641.6	659.0	11.4	106.0 / 63.0
090	9020.5	659.0	12.1	13.0 / 77.0
097	9736.4	395.0	14.1	24.0 / 27.0
102	10189.7	395.0	14.7	36.0 / 64.0
107	10660.6	395.0	16.5	21.0 / 17.0
112	11235.0	395.0	20.2	12.0 / 196.0
116	11624.6	395.0	20.7	12.0 / 324.0
119	11874.1	395.0	20.9	12.0 / 61.0
Little Muddy Branch				
000	36.0	570.0	42.8	88.0 / 580.0
003	286.0	570.0	42.9	163.0 / 503.0
006	603.0	570.0	43.0	209.0 / 115.0
007	662.0	390.0	43.0	30.0 / 30.0
007	732.0	390.0	43.2	28.0 / 32.0
008	795.0	390.0	43.2	266.0 / 134.0
012	1227.0	390.0	43.3	336.0 / 61.0
015	1535.0	390.0	43.3	312.0 / 18.0
019	1942.0	390.0	43.4	354.0 / 52.0
024	2359.0	390.0	43.5	239.0 / 61.0
028	2790.0	390.0	43.6	166.0 / 199.0

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
Little Muddy Branch				
032	3203.0	390.0	43.7	16.0 / 330.0
039	3861.0	390.0	43.9	38.0 / 198.0
047	4695.0	390.0	44.6	22.0 / 22.0
Livingston Creek				
1128	112791.7	1267.0	52.2	169.0 / 202.0
1139	113872.9	1267.0	53.0	178.0 / 172.0
1184	118420.6	1276.0	57.8	191.0 / 102.0
1189	118947.0	1014.0	58.5	194.0 / 107.0
McKinzie Creek				
005	495.5	777.0	9.4[1]	80.0 / 100.0
015	1499.1	777.0	9.4[1]	98.0 / 313.0
025	2490.9	777.0	9.4[1]	60.0 / 86.0
035	3465.7	777.0	9.4[1]	43.0 / 21.0
044	4359.8	427.0	10.6	15.0 / 114.0
048	4836.7	427.0	11.0	53.0 / 33.0
053	5337.6	427.0	14.7	17.0 / 14.0
059	5859.6	427.0	18.4	21.0 / 26.0
064	6361.5	427.0	19.8	18.0 / 31.0
068	6827.9	427.0	21.0	121.0 / 41.0
)70	6966.6	427.0	21.0	48.0 / 35.0
)70	7029.6	427.0	23.9	48.0 / 35.0
074	7350.3	427.0	24.1	27.0 / 19.0
077	7743.6	427.0	24.5	94.0 / 59.0
Middle River				
000	28.0	890.0	18.9	125.0 / 274.0
004	388.0	890.0	19.0	169.0 / 116.0
013	1311.0	850.0	19.4	146.0 / 88.0
018	1839.0	850.0	20.0	100.0 / 33.0
022	2219.0	850.0	20.3	190.0 / 102.0
027	2651.0	850.0	20.5	163.0 / 80.0
030	2978.0	850.0	20.9	76.0 / 100.0
034	3395.0	850.0	21.8	15.0 / 70.0
038	3767.0	850.0	23.2	52.0 / 17.0
041	4115.0	810.0	24.2	95.0 / 53.0
043	4323.0	810.0	25.0	14.0 / 20.0
045	4526.0	810.0	26.2	77.0 / 15.0
046	4606.0	810.0	27.6	73.0 / 19.0
047	4717.0	810.0	27.6	58.0 / 94.0
050	4972.0	790.0	27.7	95.0 / 72.0
051	5146.0	790.0	27.7	30.0 / 149.0
)54	5447.0	790.0	27.8	97.0 / 31.0
)58	5805.0	790.0	28.1	27.0 / 51.0
064	6416.0	790.0	28.5	13.0 / 139.0
068	6849.0	790.0	28.8	128.0 / 8.0

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
Middle River				
072	7241.0	650.0	29.4	41.0 / 33.0
076	7595.0	620.0	29.8	123.0 / 17.0
082	8179.0	620.0	30.5	154.0 / 55.0
088	8754.0	620.0	31.7	128.0 / 11.0
092	9169.0	620.0	32.5	73.0 / 45.0
099	9937.0	620.0	33.8	47.0 / 21.0
103	10323.0	530.0	35.0	76.0 / 40.0
112	11231.0	500.0	37.2	44.0 / 28.0
115	11494.0	500.0	37.8	46.0 / 30.0
117	11695.0	500.0	38.3	10.0 / 10.0
118	11755.0	500.0	39.7	10.0 / 9.0
118	11834.0	500.0	39.8	66.0 / 11.0
121	12060.0	490.0	40.2	76.0 / 9.0
126	12616.0	490.0	41.5	56.0 / 29.0
134	13428.0	440.0	43.4	43.0 / 11.0
142	14182.0	440.0	47.6	14.0 / 9.0
Middle Swamp				
005	488.0	1730.0	11.7[1]	617.0 / 24.0
010	1015.0	1730.0	11.7[1]	340.0 / 19.0
015	1486.0	1730.0	11.7[1]	251.0 / 20.0
020	2011.0	1730.0	12.3	40.0 / 187.0
025	2494.0	1730.0	12.8	279.0 / 90.0
029	2851.0	1730.0	12.9	263.0 / 151.0
034	3395.0	1730.0	13.1	363.0 / 46.0
039	3927.0	1730.0	13.2	253.0 / 76.0
047	4693.0	1730.0	13.6	112.0 / 303.0
057	5666.0	1670.0	14.0	24.0 / 333.0
063	6324.0	1670.0	14.3	23.0 / 351.0
068	6798.0	1630.0	14.6	262.0 / 57.0
075	7484.0	1630.0	15.5	76.0 / 63.0
083	8279.0	1630.0	17.0	24.0 / 130.0
091	9129.0	1500.0	17.6	29.0 / 325.0
096	9603.0	1500.0	17.9	26.0 / 222.0
101	10142.0	1410.0	18.4	69.0 / 188.0
107	10670.0	1410.0	18.6	184.0 / 27.0
112	11234.0	1410.0	18.8	195.0 / 225.0
117	11717.0	1410.0	19.0	81.0 / 175.0
121	12128.0	1410.0	19.4	293.0 / 22.0
129	12875.0	1410.0	19.8	80.0 / 294.0
136	13633.0	1410.0	20.2	113.0 / 78.0
140	14034.0	1410.0	20.5	78.0 / 152.0
143	14254.0	1410.0	20.6	29.0 / 26.0
144	14363.0	1410.0	21.6	28.0 / 27.0
144	14424.0	1410.0	21.9	90.0 / 21.0

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
Middle Swamp				
147	14678.0	1410.0	22.2	134.0 / 86.0
154	15432.0	1370.0	22.5	184.0 / 118.0
161	16063.0	1370.0	22.7	226.0 / 155.0
165	16516.0	1370.0	22.8	161.0 / 200.0
171	17052.0	1370.0	23.0	260.0 / 52.0
174	17374.0	1370.0	23.2	20.0 / 287.0
178	17760.0	1370.0	23.4	181.0 / 51.0
180	18035.0	1370.0	23.6	103.0 / 176.0
184	18402.0	1250.0	23.9	291.0 / 31.0
188	18807.0	1250.0	24.1	270.0 / 29.0
192	19232.0	1250.0	24.5	136.0 / 101.0
194	19445.0	1250.0	24.8	89.0 / 190.0
197	19653.0	870.0	25.1	63.0 / 197.0
200	19977.0	870.0	25.3	28.0 / 158.0
202	20202.0	870.0	25.5	62.0 / 90.0
206	20615.0	870.0	25.9	111.0 / 27.0
209	20856.0	870.0	26.1	130.0 / 24.0
211	21110.0	810.0	26.3	178.0 / 21.0
216	21601.0	810.0	26.5	50.0 / 140.0
222	22165.0	770.0	26.8	56.0 / 148.0
225	22468.0	770.0	26.9	83.0 / 144.0
227	22731.0	770.0	27.0	42.0 / 119.0
230	23025.0	770.0	27.3	21.0 / 117.0
234	23391.0	770.0	27.7	20.0 / 124.0
238	23794.0	770.0	28.0	56.0 / 138.0
241	24051.0	770.0	28.2	133.0 / 20.0
243	24338.0	770.0	28.5	19.0 / 121.0
246	24624.0	770.0	28.8	64.0 / 52.0
250	25013.0	770.0	29.3	30.0 / 52.0
254	25359.0	700.0	29.8	36.0 / 40.0
256	25624.0	700.0	30.2	21.0 / 46.0
260	25978.0	700.0	30.9	162.0 / 103.0
262	26244.0	700.0	31.0	22.0 / 206.0
265	26530.0	700.0	31.2	33.0 / 72.0
270	26968.0	700.0	32.1	55.0 / 40.0
274	27370.0	700.0	32.9	24.0 / 24.0
276	27620.0	590.0	33.6	22.0 / 44.0
277	27689.0	590.0	33.6	42.0 / 29.0
279	27860.0	590.0	33.7	19.0 / 19.0
279	27940.0	590.0	34.6	18.0 / 18.0
280	27990.0	590.0	34.7	51.0 / 65.0
281	28092.0	590.0	34.7	42.0 / 87.0
286	28557.0	590.0	35.0	113.0 / 168.0
289	28910.0	490.0	35.4	28.0 / 28.0

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
Middle Swamp				
292	29218.0	490.0	36.6	22.0 / 22.0
294	29442.0	490.0	37.3	24.0 / 62.0
299	29850.0	490.0	37.8	46.0 / 20.0
306	30600.0	410.0	38.6	28.0 / 47.0
311	31072.0	410.0	39.1	23.0 / 23.0
314	31371.0	410.0	40.5	18.0 / 18.0
Middle Swamp Tributary				
000	11.0	430.0	24.1[1]	43.0 / 98.0
002	249.0	430.0	24.1[1]	22.0 / 38.0
005	508.0	430.0	24.7	48.0 / 27.0
009	886.0	370.0	25.1	21.0 / 21.0
012	1163.0	370.0	25.4	13.0 / 13.0
014	1360.0	370.0	26.9	13.0 / 13.0
016	1633.0	370.0	28.2	13.0 / 13.0
019	1889.0	370.0	28.8	13.0 / 13.0
021	2107.0	370.0	29.9	17.0 / 15.0
022	2182.0	370.0	30.4	18.0 / 18.0
022	2242.0	370.0	31.2	17.0 / 19.0
023	2325.0	370.0	31.6	15.0 / 15.0
)26	2650.0	370.0	32.6	13.0 / 11.0
)30	2966.0	270.0	34.0	16.0 / 15.0
033	3316.0	270.0	34.8	16.0 / 16.0
034	3403.0	270.0	35.2	10.0 / 10.0
036	3557.0	270.0	36.5	6.0 / 6.0
036	3627.0	270.0	38.0	8.0 / 8.0
037	3678.0	270.0	38.2	10.0 / 10.0
038	3777.0	270.0	38.3	10.0 / 10.0
042	4210.0	270.0	38.6	17.0 / 16.0
046	4644.0	250.0	39.2	28.0 / 25.0
049	4918.0	250.0	39.6	46.0 / 24.0
052	5162.0	250.0	39.9	11.0 / 11.0
056	5587.0	250.0	40.8	19.0 / 35.0
058	5844.0	250.0	41.2	10.0 / 18.0
062	6193.0	250.0	41.6	16.0 / 16.0
065	6509.0	250.0	42.2	12.0 / 12.0
069	6892.0	250.0	44.0	14.0 / 14.0
Midway Branch				
030	2958.0	2440.0	11.7[1]	351.0 / 268.0
039	3865.0	2440.0	11.7[1]	177.0 / 324.0
046	4578.0	2440.0	11.7[1]	139.0 / 325.0
)52	5217.0	2440.0	12.1	267.0 / 251.0
)59	5886.0	2440.0	12.8	150.0 / 312.0
065	6476.0	2440.0	13.4	310.0 / 118.0
069	6871.0	2430.0	13.8	327.0 / 11.0

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
Midway Branch				
079	7898.0	2250.0	14.4	136.0 / 335.0
084	8415.0	2250.0	14.6	254.0 / 247.0
090	8962.0	2250.0	14.9	202.0 / 89.0
095	9481.0	2250.0	15.1	69.0 / 487.0
104	10404.0	2250.0	15.3	455.0 / 9.0
112	11156.0	2200.0	15.6	49.0 / 381.0
115	11480.0	2200.0	15.8	244.0 / 168.0
123	12344.0	2200.0	16.1	238.0 / 236.0
131	13124.0	2200.0	16.5	366.0 / 10.0
140	13985.0	2200.0	17.2	11.0 / 363.0
145	14502.0	2200.0	17.7	312.0 / 12.0
153	15293.0	2200.0	18.3	420.0 / 110.0
160	15951.0	2200.0	18.7	227.0 / 160.0
161	16113.0	2170.0	18.8	124.0 / 274.0
163	16318.0	2170.0	18.9	235.0 / 352.0
165	16483.0	2170.0	18.9	103.0 / 458.0
170	17008.0	2170.0	19.1	203.0 / 200.0
176	17565.0	2170.0	19.4	470.0 / 177.0
183	18268.0	2170.0	19.7	9.0 / 512.0
191	19099.0	2170.0	20.3	164.0 / 11.0
194	19391.0	2170.0	21.1	41.0 / 40.0
195	19471.0	2170.0	21.4	40.0 / 41.0
196	19551.0	2170.0	21.7	106.0 / 43.0
201	20107.0	2060.0	22.2	174.0 / 160.0
205	20473.0	2060.0	22.3	188.0 / 213.0
217	21652.0	2060.0	22.7	193.0 / 228.0
225	22493.0	1940.0	23.1	12.0 / 290.0
229	22885.0	1340.0	23.2	231.0 / 218.0
236	23621.0	1340.0	23.4	324.0 / 43.0
240	23972.0	1340.0	23.8	11.0 / 125.0
244	24389.0	1340.0	25.1	44.0 / 104.0
248	24753.0	1340.0	25.5	238.0 / 21.0
254	25386.0	1340.0	26.0	11.0 / 173.0
258	25801.0	1340.0	26.3	117.0 / 115.0
262	26152.0	1340.0	26.5	23.0 / 134.0
263	26343.0	1220.0	26.7	122.0 / 85.0
271	27085.0	1150.0	27.1	22.0 / 174.0
276	27616.0	1150.0	27.5	27.0 / 125.0
282	28195.0	1150.0	27.9	120.0 / 66.0
287	28660.0	1150.0	28.4	82.0 / 68.0
293	29293.0	1150.0	29.3	74.0 / 98.0
300	29973.0	1040.0	29.9	218.0 / 25.0
303	30329.0	1040.0	30.2	154.0 / 50.0
307	30697.0	1040.0	30.6	11.0 / 240.0

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
Midway Branch				
312	31211.0	1040.0	31.3	35.0 / 40.0
314	31409.0	1000.0	31.8	12.0 / 104.0
315	31511.0	1000.0	31.9	57.0 / 53.0
316	31569.0	1000.0	32.0	57.0 / 53.0
316	31623.0	1000.0	32.0	44.0 / 91.0
318	31768.0	1000.0	32.2	46.0 / 164.0
320	32013.0	1000.0	32.3	10.0 / 138.0
324	32448.0	1000.0	32.6	100.0 / 101.0
329	32886.0	1000.0	32.8	128.0 / 72.0
334	33374.0	1000.0	33.2	54.0 / 131.0
342	34183.0	1000.0	33.8	16.0 / 128.0
349	34868.0	910.0	35.0	110.0 / 14.0
354	35440.0	910.0	36.8	76.0 / 32.0
357	35658.0	910.0	37.2	49.0 / 61.0
357	35718.0	910.0	37.6	47.0 / 63.0
358	35778.0	730.0	37.7	20.0 / 20.0
360	35966.0	730.0	38.7	15.0 / 15.0
364	36360.0	680.0	40.7	146.0 / 10.0
366	36627.0	680.0	41.0	179.0 / 10.0
372	37236.0	680.0	41.3	141.0 / 53.0
378	37808.0	680.0	41.6	11.0 / 109.0
380	38019.0	680.0	41.8	65.0 / 15.0
381	38079.0	680.0	41.9	65.0 / 15.0
381	38129.0	680.0	41.9	11.0 / 99.0
384	38426.0	680.0	42.5	40.0 / 21.0
391	39052.0	680.0	43.9	236.0 / 58.0
398	39768.0	640.0	45.3	103.0 / 10.0
Mill Branch				
000	19.0	1550.0	35.4[1]	840.0 / 21.0
006	583.0	1550.0	35.4[1]	736.0 / 39.0
013	1281.0	1470.0	35.4[1]	889.0 / 25.0
022	2239.0	1470.0	35.4[1]	73.0 / 644.0
028	2778.0	1470.0	35.4[1]	334.0 / 448.0
032	3163.0	1470.0	35.4[1]	250.0 / 250.0
035	3458.0	1470.0	35.4[1]	35.0 / 35.0
035	3518.0	1470.0	35.7	35.0 / 35.0
036	3617.0	1470.0	36.2	146.0 / 201.0
040	4027.0	1000.0	36.2	152.0 / 348.0
051	5097.0	860.0	36.3	231.0 / 228.0
062	6188.0	860.0	36.5	17.0 / 206.0
064	6395.0	860.0	36.7	26.0 / 24.0
065	6465.0	860.0	37.0	25.0 / 25.0
065	6522.0	860.0	37.2	27.0 / 86.0
068	6841.0	860.0	37.6	29.0 / 198.0

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
Mill Branch				
071	7082.0	860.0	37.8	28.0 / 286.0
074	7370.0	860.0	37.9	16.0 / 219.0
077	7665.0	860.0	38.0	32.0 / 98.0
077	7735.0	860.0	39.1	33.0 / 97.0
079	7904.0	860.0	39.1	340.0 / 151.0
087	8705.0	860.0	39.3	631.0 / 19.0
097	9653.0	860.0	39.5	440.0 / 22.0
106	10563.0	680.0	39.7	177.0 / 286.0
Mill Branch into Wet Ash Swamp				
011	1143.0	1270.0	40.1	* 3
020	1996.0	1270.0	40.3	* 3
029	2902.0	1270.0	40.6	* 3
030	2972.0	1270.0	43.5	* 3
037	3749.0	1270.0	43.5	* 3
045	4520.0	1270.0	43.6	* 3
053	5345.0	1270.0	43.6	* 3
065	6485.0	1270.0	43.9	* 3
)73	7349.0	1270.0	44.2	* 3
)83	8287.0	1070.0	44.9	* 3
093	9335.0	1070.0	45.9	* 3
104	10398.0	1070.0	46.6	* 3
110	11040.0	1070.0	47.9	* 3
117	11661.0	910.0	50.0	* 3
126	12574.0	910.0	51.5	* 3
127	12657.0	910.0	53.0	* 3
131	13098.0	910.0	53.4	* 3
139	13897.0	910.0	54.4	* 3
151	15106.0	910.0	56.0	* 3
159	15949.0	910.0	56.2	* 3
169	16873.0	910.0	56.3	* 3
Mill Creek (near Leland)				
133	13322.9	1272.0	9.2	76.0 / 75.0
135	13469.7	1082.0	9.3	100.0 / 100.0
Mill Creek (near Winnabow)				
019	1909.5	3560.0	10.2	1400.0 / 190.0
044	4375.9	3560.0	10.4	451.0 / 104.0
)64	6413.7	2541.0	11.0	181.0 / 842.0
080	8036.7	2541.0	11.3	74.0 / 367.0
100	10024.6	2139.0	11.7	407.0 / 114.0
119	11939.0	2139.0	12.2	190.0 / 351.0

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
Mill Creek (near Winnabow)				
128	12766.3	2139.0	12.3	146.0 / 146.0
128	12816.8	2139.0	12.7	146.0 / 146.0
134	13402.1	2037.0	12.9	134.0 / 279.0
149	14881.0	2037.0	13.5	369.0 / 12.0
169	16881.7	2037.0	14.7	116.0 / 116.0
169	16933.2	2037.0	15.1	116.0 / 116.0
185	18519.5	1893.0	16.3	203.0 / 60.0
203	20269.0	1838.0	18.1	93.0 / 195.0
219	21883.9	1233.0	19.2	148.0 / 116.0
236	23628.6	1233.0	20.3	85.0 / 84.0
237	23664.1	1233.0	20.6	85.0 / 84.0
247	24741.5	1233.0	22.3	200.0 / 40.0
264	26356.7	1233.0	23.7	230.0 / 124.0
Morgan Creek				
090	8962.4	1120.0	9.4	44.0 / 30.0
094	9437.7	1120.0	10.4	133.0 / 60.0
097	9733.2	1120.0	10.7	16.0 / 201.0
103	10265.8	1120.0	11.3	43.0 / 79.0
108	10815.7	1120.0	18.2	72.0 / 73.0
111	11101.3	1120.0	18.3	40.0 / 40.0
112	11175.3	1120.0	18.3	40.0 / 40.0
115	11514.2	800.0	18.4	178.0 / 482.0
120	12015.6	800.0	18.4	68.0 / 174.0
125	12531.6	800.0	18.5	116.0 / 108.0
130	12991.0	800.0	18.6	94.0 / 212.0
135	13484.9	800.0	19.0	137.0 / 191.0
142	14156.7	800.0	19.5	55.0 / 112.0
145	14543.9	800.0	19.7	85.0 / 158.0
150	15009.6	800.0	19.9	106.0 / 51.0
155	15547.2	800.0	20.7	75.0 / 47.0
Muddy Branch				
001	127.0	3850.0	45.1[1]	* [3]
007	663.0	3850.0	45.1[1]	* [3]
013	1299.0	3850.0	45.1[1]	* [3]
024	2376.0	3850.0	45.1	* [3]
033	3258.0	3850.0	45.3	* [3]
042	4215.0	3680.0	45.5	* [3]
051	5106.0	3680.0	45.6	* [3]
058	5842.0	3680.0	45.7	* [3]
066	6628.0	3680.0	45.8	* [3]
075	7495.0	3680.0	46.0	* [3]
084	8420.0	3680.0	46.3	* [3]

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
Muddy Branch				
093	9284.0	3680.0	46.5	* 3
102	10160.0	3680.0	46.8	* 3
110	10976.0	2690.0	46.9	* 3
112	11246.0	2690.0	47.0	* 3
113	11315.0	2690.0	47.3	* 3
114	11419.0	2690.0	47.3	* 3
122	12181.0	2020.0	47.4	* 3
130	12965.0	2020.0	47.4	* 3
139	13925.0	2020.0	47.7	* 3
147	14713.0	2020.0	47.9	* 3
156	15563.0	2020.0	48.2	* 3
162	16199.0	2020.0	48.5	* 3
167	16729.0	2020.0	48.7	* 3
Mulberry Branch				
134	13404.0	582.0	18.7	2.0 / 139.0
138	13817.0	582.0	19.3	61.0 / 195.0
141	14135.0	582.0	19.8	1.0 / 68.0
146	14576.0	497.0	22.0	77.0 / 29.0
148	14847.0	497.0	22.8	35.0 / 54.0
152	15222.0	497.0	25.2	35.0 / 19.0
155	15490.0	497.0	25.6	126.0 / 89.0
157	15691.0	497.0	25.7	151.0 / 74.0
159	15941.0	497.0	26.3	81.0 / 11.0
162	16182.0	427.0	27.0	136.0 / 5.0
165	16509.0	427.0	27.9	15.0 / 91.0
168	16750.0	427.0	28.9	10.0 / 120.0
168	16825.0	427.0	29.1	5.0 / 79.0
169	16873.0	427.0	29.2	7.0 / 123.0
171	17093.0	427.0	29.7	68.0 / 3.0
175	17450.0	427.0	30.3	5.0 / 104.0
177	17690.0	427.0	30.9	65.6 / 55.0
181	18090.0	427.0	32.9	50.0 / 30.0
186	18566.0	427.0	35.6	30.0 / 30.0
188	18832.0	427.0	36.1	100.0 / 7.0
192	19202.0	427.0	36.4	61.8 / 7.0
197	19690.0	427.0	37.4	70.0 / 7.0
201	20090.0	427.0	39.3	86.1 / 13.8
205	20491.0	374.0	40.4	50.0 / 7.0
209	20890.0	374.0	43.1	34.3 / 28.0
213	21271.0	374.0	43.9	50.0 / 54.1
216	21579.0	374.0	44.3	80.0 / 41.4

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
Mulberry Branch				
220	22041.0	374.0	45.1	32.5 / 30.0
224	22397.0	374.0	46.1	64.7 / 19.8
235	23485.0	186.0	49.4	70.0 / 20.0
237	23670.0	186.0	50.7	5.7 / 50.0
240	23976.0	186.0	50.9	80.0 / 4.5
242	24219.0	186.0	51.1	50.0 / 4.5
245	24490.0	186.0	53.2	34.6 / 4.5
251	25122.0	186.0	56.0	32.5 / 10.8
Nigis Creek				
088	8792.7	637.0	9.5	75.0 / 225.0
096	9569.5	387.0	11.9	17.0 / 17.0
097	9709.0	387.0	12.4	26.0 / 31.0
098	9824.0	387.0	19.1	26.0 / 31.0
100	10022.5	387.0	19.2	38.0 / 72.0
103	10254.6	387.0	20.5	30.0 / 50.0
103	10304.8	387.0	20.6	35.0 / 52.0
108	10797.5	387.0	20.7	13.0 / 31.0
113	11314.9	387.0	22.1	12.0 / 12.0
118	11801.3	387.0	25.8	94.0 / 19.0
)rton Creek				
385	38483.2	1534.0	10.2	19.0 / 23.0
395	39490.0	1534.0	11.3	111.0 / 181.0
405	40522.7	1534.0	11.5	95.0 / 222.0
411	41138.8	1534.0	11.6	61.0 / 179.0
417	41712.4	1487.0	11.8	34.0 / 83.0
418	41763.9	1487.0	12.2	34.0 / 83.0
425	42478.6	1487.0	12.7	88.0 / 53.0
430	42995.0	1487.0	13.1	170.0 / 110.0
438	43823.9	1371.0	13.9	87.0 / 85.0
439	43875.4	1371.0	14.2	87.0 / 85.0
445	44489.2	1371.0	15.1	180.0 / 74.0
450	45006.6	1371.0	15.6	119.0 / 48.0
455	45491.3	1371.0	16.2	18.0 / 161.0
460	45982.7	1371.0	16.9	18.0 / 103.0
465	46508.3	1371.0	17.8	26.0 / 74.0
470	46999.7	1371.0	18.5	123.0 / 29.0
475	47502.5	1371.0	18.8	18.0 / 18.0
480	47989.6	1371.0	20.9	18.0 / 70.0
485	48548.7	1371.0	21.8	31.0 / 37.0
486	48600.2	1371.0	22.4	31.0 / 37.0
490	48981.2	1171.0	23.8	17.0 / 17.0
497	49683.6	1171.0	25.4	202.0 / 17.0
502	50215.5	1171.0	25.5	17.0 / 101.0
509	50859.7	1171.0	26.1	17.0 / 20.0

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
Orton Creek				
513	51282.4	1171.0	27.8	17.0 / 30.0
517	51747.4	1171.0	28.8	24.0 / 67.0
523	52290.9	1171.0	29.4	69.0 / 17.0
527	52652.2	1171.0	32.0	2.0 / 55.0
539	53858.9	1171.0	35.0	17.0 / 315.0
545	54470.0	624.0	36.1	13.0 / 61.0
550	54995.2	624.0	39.4	34.0 / 23.0
555	55495.6	624.0	41.0	21.0 / 53.0
563	56269.1	624.0	42.4	74.0 / 74.0
563	56331.1	624.0	42.7	74.0 / 33.0
565	56504.4	624.0	44.9	12.0 / 46.0
Prices Creek				
130	12994.2	482.0	12.7	17.0 / 94.0
Rattlesnake Branch				
005	497.9	1212.0	15.8[1]	51.0 / 133.0
010	967.2	1212.0	15.8[1]	42.0 / 46.0
015	1509.4	1212.0	15.8[1]	120.0 / 52.0
020	1969.0	1212.0	15.8[1]	52.0 / 61.0
025	2470.4	1212.0	15.8[1]	124.0 / 25.0
)29	2944.4	1212.0	15.8[1]	61.0 / 75.0
)35	3486.4	1212.0	15.8[1]	43.0 / 92.0
041	4067.3	1212.0	15.8[1]	36.0 / 133.0
044	4399.8	1212.0	16.2	58.0 / 57.0
045	4454.8	1212.0	16.6	58.0 / 57.0
050	5019.9	1212.0	17.8	64.0 / 92.0
055	5451.6	1212.0	18.5	74.0 / 142.0
060	5996.2	1127.0	19.5	40.0 / 89.0
065	6480.6	1127.0	20.4	102.0 / 80.0
070	7022.5	1127.0	20.9	95.0 / 90.0
075	7499.0	1127.0	21.4	152.0 / 42.0
080	8018.8	1127.0	22.1	103.0 / 21.0
085	8537.9	1127.0	23.2	82.0 / 106.0
091	9070.3	1127.0	24.6	84.0 / 65.0
096	9605.4	1127.0	26.4	96.0 / 86.0
100	9992.5	1127.0	27.1	20.0 / 100.0
101	10066.5	1127.0	29.6	20.0 / 100.0
104	10415.8	1127.0	29.7	189.0 / 118.0
110	10978.5	1127.0	29.8	130.0 / 28.0
116	11557.1	1127.0	31.8	127.0 / 68.0
121	12111.1	513.0	32.3	92.0 / 90.0
127	12709.7	513.0	32.6	67.0 / 67.0
129	12893.6	513.0	32.9	14.0 / 14.0
130	12967.6	513.0	35.8	14.0 / 14.0
134	13445.8	513.0	36.0	125.0 / 145.0

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
Read Branch				
001	138.0	980.0	36.8[1]	215.0 / 157.0
005	495.0	840.0	36.8[1]	85.0 / 51.0
005	533.0	840.0	36.8[1]	59.0 / 26.0
006	586.0	840.0	36.8[1]	40.0 / 45.0
006	624.0	840.0	36.8[1]	76.0 / 66.0
015	1549.0	840.0	36.8[1]	239.0 / 79.0
025	2524.0	840.0	37.0	228.0 / 187.0
033	3321.0	840.0	37.1	87.0 / 236.0
040	4025.0	840.0	37.6	58.0 / 107.0
049	4875.0	840.0	38.4	232.0 / 22.0
055	5473.0	840.0	38.8	26.0 / 211.0
064	6363.0	840.0	39.6	210.0 / 27.0
069	6879.0	840.0	40.1	31.0 / 209.0
074	7430.0	840.0	40.5	119.0 / 45.0
084	8372.0	840.0	41.1	72.0 / 143.0
089	8934.0	840.0	41.3	255.0 / 22.0
Red Run				
007	673.0	1080.0	25.8[1]	1204.0 / 1337.0
015	1489.0	1080.0	25.8[1]	690.0 / 798.0
)20	2030.0	1080.0	26.5	570.0 / 681.0
J27	2726.0	1080.0	28.2	871.0 / 923.0
028	2812.0	1080.0	28.7	871.0 / 923.0
030	2971.0	1080.0	29.2	426.0 / 811.0
035	3491.0	640.0	29.4	702.0 / 976.0
040	3982.0	620.0	29.5	757.0 / 886.0
044	4409.0	620.0	29.8	521.0 / 708.0
048	4797.0	620.0	30.2	296.0 / 417.0
050	4982.0	620.0	30.5	300.0 / 421.0
052	5152.0	620.0	30.9	258.0 / 405.0
053	5323.0	620.0	31.2	369.0 / 546.0
056	5561.0	620.0	31.7	391.0 / 501.0
058	5777.0	610.0	32.1	366.0 / 487.0
060	6023.0	610.0	32.5	379.0 / 543.0
063	6285.0	610.0	32.8	366.0 / 485.0
065	6489.0	610.0	33.2	283.0 / 419.0
067	6708.0	610.0	34.3	232.0 / 328.0
069	6879.0	610.0	34.8	335.0 / 455.0
075	7463.0	430.0	36.4	338.0 / 412.0
078	7772.0	420.0	37.5	390.0 / 452.0
080	8034.0	420.0	38.1	403.0 / 478.0
Rice Creek				
,59	15875.0	3913.0	9.5	56.0 / 56.0
179	17940.9	3836.0	9.9	849.0 / 965.0
201	20094.0	3836.0	10.0	960.0 / 67.0

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
Rice Creek				
220	22040.4	3736.0	10.1	781.0 / 471.0
236	23637.4	3736.0	10.1	1290.0 / 124.0
247	24696.3	3700.0	10.2	858.0 / 800.0
River Swamp				
000	2.0	1070.0	23.4[1]	214.0 / 216.0
005	511.0	980.0	23.4[1]	73.0 / 84.0
010	994.0	980.0	23.4[1]	133.0 / 37.0
015	1500.0	980.0	24.0	27.0 / 122.0
020	1994.0	980.0	24.6	71.0 / 110.0
026	2608.0	980.0	25.2	275.0 / 10.0
030	2975.0	980.0	25.6	187.0 / 24.0
034	3379.0	980.0	26.3	238.0 / 10.0
039	3896.0	980.0	27.4	220.0 / 10.0
044	4397.0	980.0	28.1	178.0 / 33.0
049	4889.0	980.0	28.8	191.0 / 39.0
054	5365.0	980.0	29.8	130.0 / 99.0
059	5890.0	980.0	30.6	148.0 / 39.0
064	6385.0	980.0	31.5	69.0 / 114.0
069	6893.0	980.0	32.6	138.0 / 110.0
074	7391.0	980.0	33.5	129.0 / 61.0
079	7900.0	800.0	34.6	10.0 / 90.0
084	8408.0	780.0	36.7	10.0 / 83.0
090	8956.0	780.0	38.3	21.0 / 78.0
090	8989.0	780.0	38.4	23.0 / 76.0
094	9413.0	780.0	39.8	49.0 / 22.0
099	9906.0	780.0	42.0	10.0 / 78.0
104	10410.0	780.0	43.4	11.0 / 79.0
Royal Oak Swamp				
081	8125.0	2820.0	8.4	23.0 / 246.0
086	8576.0	2820.0	8.6	60.0 / 280.0
092	9158.0	2820.0	8.8	200.0 / 129.0
097	9660.0	2820.0	8.9	551.0 / 67.0
102	10182.0	2820.0	8.9	540.0 / 20.0
109	10864.0	2820.0	9.1	134.0 / 81.0
110	11037.0	2820.0	9.2	59.0 / 59.0
112	11207.0	2820.0	10.6	60.0 / 60.0
114	11350.0	2790.0	10.8	326.0 / 80.0
122	12162.0	2790.0	10.9	126.0 / 365.0
126	12574.0	2790.0	10.9	138.0 / 192.0
130	13012.0	2790.0	11.0	229.0 / 75.0
136	13626.0	2790.0	11.1	200.0 / 49.0
143	14282.0	2790.0	11.2	159.0 / 145.0
148	14812.0	2790.0	11.3	76.0 / 217.0
154	15407.0	2300.0	11.4	135.0 / 83.0

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
Royal Oak Swamp				
159	15915.0	2240.0	11.5	55.0 / 68.0
167	16702.0	2240.0	11.7	41.0 / 194.0
171	17069.0	2240.0	11.7	78.0 / 194.0
174	17386.0	2240.0	11.8	59.0 / 74.0
175	17514.0	2240.0	11.9	56.0 / 172.0
181	18099.0	2240.0	12.0	123.0 / 124.0
186	18617.0	2220.0	12.1	148.0 / 114.0
190	18994.0	2220.0	12.2	169.0 / 133.0
198	19849.0	2220.0	12.3	175.0 / 97.0
203	20344.0	2220.0	12.4	169.0 / 105.0
208	20840.0	2220.0	12.5	205.0 / 50.0
213	21335.0	2220.0	12.7	63.0 / 63.0
214	21409.0	2220.0	13.1	67.0 / 67.0
215	21533.0	2220.0	13.2	173.0 / 109.0
223	22328.0	2220.0	13.3	250.0 / 46.0
230	22950.0	2150.0	13.5	213.0 / 32.0
238	23751.0	2150.0	13.7	104.0 / 182.0
242	24247.0	2150.0	13.8	140.0 / 135.0
251	25051.0	2150.0	14.0	199.0 / 92.0
257	25683.0	2150.0	14.2	134.0 / 146.0
264	26365.0	2030.0	14.5	80.0 / 186.0
268	26751.0	2030.0	14.7	145.0 / 184.0
274	27356.0	2030.0	15.0	83.0 / 189.0
280	28007.0	2030.0	15.4	65.0 / 187.0
293	29277.0	2030.0	16.3	64.0 / 192.0
300	30019.0	2030.0	16.9	202.0 / 102.0
307	30741.0	2030.0	17.3	78.0 / 219.0
313	31336.0	2030.0	17.8	113.0 / 119.0
323	32320.0	1540.0	18.6	168.0 / 105.0
328	32835.0	1450.0	19.5	169.0 / 70.0
334	33396.0	1450.0	20.6	100.0 / 105.0
342	34177.0	1450.0	21.5	175.0 / 30.0
350	35043.0	1450.0	22.2	89.0 / 113.0
360	35955.0	1450.0	22.8	117.0 / 58.0
364	36441.0	1450.0	23.1	47.0 / 103.0
365	36539.0	1450.0	23.7	52.0 / 98.0
367	36715.0	1350.0	23.8	49.0 / 175.0
373	37268.0	1350.0	24.0	65.0 / 158.0
376	37556.0	1350.0	24.1	106.0 / 125.0
380	37991.0	1260.0	24.2	160.0 / 76.0
388	38786.0	1190.0	24.5	75.0 / 75.0
395	39540.0	1190.0	25.0	93.0 / 83.0
401	40079.0	1190.0	26.0	139.0 / 64.0
410	41005.0	1190.0	28.9	31.0 / 31.0

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
Royal Oak Swamp				
419	41921.0	1190.0	30.8	150.0 / 35.0
424	42443.0	1190.0	31.4	33.0 / 33.0
427	42718.0	1190.0	32.4	29.0 / 29.0
428	42810.0	1190.0	33.9	39.0 / 39.0
429	42940.0	710.0	34.1	21.0 / 21.0
437	43669.0	710.0	34.6	41.0 / 40.0
445	44499.0	560.0	35.6	61.0 / 28.0
455	45522.0	550.0	37.3	55.0 / 43.0
461	46085.0	500.0	37.9	49.0 / 34.0
466	46571.0	500.0	38.6	36.0 / 36.0
472	47187.0	500.0	41.2	49.0 / 63.0
480	47964.0	500.0	44.1	20.0 / 23.0
485	48495.0	500.0	45.9	24.0 / 56.0
489	48934.0	360.0	46.4	40.0 / 40.0
Russells Creek				
012	1161.6	888.0	9.3[1]	194.0 / 14.0
016	1589.6	888.0	9.3[1]	25.0 / 131.0
020	1957.3	888.0	9.3[1]	192.0 / 24.0
030	2980.6	888.0	9.3[1]	264.0 / 19.0
037	3714.1	888.0	9.3[1]	116.0 / 118.0
042	4220.0	888.0	9.3[1]	14.0 / 152.0
049	4910.0	888.0	10.4	96.0 / 65.0
054	5399.7	888.0	11.3	53.0 / 40.0
056	5566.6	888.0	11.4	127.0 / 126.0
056	5639.6	888.0	13.7	127.0 / 126.0
060	5969.9	888.0	13.8	84.0 / 153.0
064	6368.1	888.0	14.0	51.0 / 131.0
069	6923.4	888.0	14.4	118.0 / 99.0
074	7396.2	888.0	15.4	14.0 / 151.0
079	7879.6	705.0	18.0	35.0 / 153.0
084	8400.9	705.0	18.5	75.0 / 88.0
089	8885.9	705.0	18.9	13.0 / 172.0
094	9404.6	705.0	19.9	62.0 / 82.0
098	9847.9	705.0	22.2	39.0 / 35.0
104	10422.8	705.0	23.7	79.0 / 82.0
112	11175.0	705.0	25.0	52.0 / 33.0
120	11974.9	705.0	28.5	50.0 / 53.0
124	12433.5	705.0	30.7	30.0 / 57.0
130	12998.7	705.0	33.0	30.0 / 92.0
134	13418.3	705.0	34.6	26.0 / 66.0
139	13923.9	705.0	36.3	24.0 / 131.0
142	14187.0	705.0	38.4	96.0 / 35.0
143	14258.0	705.0	40.6	96.0 / 35.0
144	14419.4	447.0	40.8	193.0 / 14.0

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
Russells Creek				
148	14761.5	447.0	41.0	7.0 / 111.0
151	15137.2	447.0	44.1	50.0 / 40.0
155	15457.7	447.0	46.8	50.0 / 102.0
Sand Hill Creek				
131	13050.9	940.0	9.2	166.0 / 184.0
136	13585.6	940.0	9.5	79.0 / 255.0
141	14143.2	940.0	9.6	104.0 / 255.0
146	14607.5	940.0	9.8	32.0 / 85.0
151	15143.4	940.0	11.0	20.0 / 137.0
156	15615.5	940.0	11.3	163.0 / 415.0
161	16106.8	940.0	11.4	40.0 / 254.0
166	16572.8	940.0	11.5	227.0 / 108.0
171	17081.3	785.0	11.6	294.0 / 170.0
176	17603.8	785.0	11.6	78.0 / 295.0
181	18110.3	785.0	11.7	83.0 / 162.0
187	18676.9	785.0	11.8	265.0 / 127.0
189	18896.2	785.0	11.8	35.0 / 35.0
190	18964.2	785.0	11.8	35.0 / 35.0
192	19219.0	785.0	11.8	128.0 / 335.0
97	19694.0	785.0	11.8	100.0 / 150.0
Scippio Swamp				
154	15444.0	1510.0	26.1[1]	* [9]
164	16430.0	1420.0	26.1[1]	* [9]
171	17085.0	1420.0	26.1[1]	* [9]
179	17932.0	1420.0	26.1[1]	* [9]
188	18838.0	1420.0	26.1[1]	* [9]
194	19450.0	1420.0	26.1[1]	* [9]
200	20004.0	1420.0	26.1	* [9]
205	20486.0	1420.0	26.8	* [9]
212	21164.0	1420.0	27.4	* [9]
220	21970.0	1420.0	27.9	* [9]
228	22845.0	1420.0	28.6	* [9]
233	23254.0	1420.0	28.8	* [9]
235	23462.0	1420.0	29.0	* [9]
235	23545.0	1420.0	29.9	* [9]
236	23612.0	1420.0	29.9	* [9]
245	24488.0	1420.0	30.0	* [9]
52	25203.0	1270.0	30.1	* [9]
260	26014.0	1270.0	30.2	* [9]
268	26820.0	1270.0	30.3	* [9]

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
Scippio Swamp				
275	27499.0	1270.0	30.5	* 9
281	28094.0	1270.0	30.8	* 9
288	28768.0	1270.0	31.6	* 9
295	29512.0	1270.0	32.3	* 9
303	30336.0	1270.0	32.7	* 9
311	31120.0	1270.0	33.0	* 9
320	32023.0	1150.0	33.3	* 9
326	32648.0	1150.0	33.5	* 9
334	33398.0	1150.0	33.8	* 9
342	34153.0	1150.0	34.2	* 9
347	34689.0	1150.0	34.4	* 9
353	35266.0	1150.0	34.6	* 9
353	35317.0	1150.0	35.0	* 9
354	35398.0	1150.0	35.5	* 9
354	35418.0	1150.0	35.6	* 9
364	36389.0	1010.0	38.0	* 9
371	37113.0	1010.0	38.5	* 9
377	37739.0	900.0	38.8	* 9
384	38374.0	900.0	39.0	* 9
392	39210.0	900.0	39.2	* 9
401	40058.0	900.0	39.4	* 9
409	40908.0	900.0	39.8	* 9
418	41750.0	900.0	40.2	* 9
422	42165.0	900.0	40.5	* 9
428	42820.0	500.0	41.4	* 9
431	43079.0	410.0	41.8	* 9
433	43303.0	410.0	42.0	* 9
434	43385.0	410.0	42.2	* 9
434	43426.0	410.0	42.3	* 9
442	44245.0	410.0	43.4	* 9
450	45038.0	410.0	44.2	* 9
456	45571.0	410.0	44.9	* 9
462	46165.0	410.0	45.4	* 9
Shingletree Swamp				
017	1670.0	1385.0	27.0[1]	202.8 / 489.0
019	1927.0	1385.0	27.0[1]	204.0 / 477.5
023	2326.0	1385.0	27.0[1]	200.0 / 450.0

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
Shingletree Swamp				
027	2736.0	1385.0	27.0[1]	200.0 / 430.0
030	3000.0	1385.0	27.0[1]	200.0 / 408.9
034	3371.0	1385.0	27.0[1]	220.0 / 120.0
037	3707.0	1385.0	27.0[1]	32.1 / 44.4
038	3759.0	1385.0	27.0[1]	33.5 / 33.5
038	3808.0	1385.0	27.0[1]	33.5 / 33.5
039	3941.0	1385.0	27.0[1]	80.0 / 50.0
041	4118.0	1385.0	27.0[1]	200.0 / 50.0
041	4129.0	1385.0	27.0[1]	200.0 / 50.0
041	4142.0	1385.0	27.0[1]	200.0 / 50.0
045	4500.0	1385.0	27.0[1]	350.0 / 40.0
050	5000.0	1249.0	27.0[1]	320.0 / 100.0
055	5500.0	1249.0	27.0[1]	85.0 / 235.0
057	5736.0	1249.0	27.0[1]	55.0 / 335.0
058	5780.0	1249.0	27.0[1]	40.0 / 335.0
058	5820.0	1249.0	27.0[1]	40.0 / 335.0
061	6083.0	1249.0	27.0[1]	34.6 / 256.0
065	6500.0	1249.0	27.0[1]	50.0 / 50.0
070	6969.0	1182.0	27.0[1]	28.0 / 50.0
072	7161.0	1182.0	27.0[1]	25.0 / 133.1
072	7174.0	1182.0	27.0	25.0 / 133.1
072	7189.0	1182.0	27.0	25.0 / 133.1
075	7539.0	1182.0	27.4	76.6 / 42.2
080	8000.0	1182.0	28.7	38.7 / 150.0
086	8628.0	1134.0	29.4	242.6 / 53.4
091	9067.0	1124.0	29.9	130.5 / 243.9
096	9571.0	1124.0	30.2	112.3 / 164.2
100	10047.0	1124.0	30.7	98.6 / 149.4
105	10500.0	1124.0	31.0	259.9 / 9.7
110	11000.0	1124.0	31.3	307.3 / 9.7
115	11470.0	1124.0	31.7	163.6 / 11.2
119	11866.0	1124.0	32.1	110.0 / 13.6
121	12110.0	990.0	32.3	40.0 / 35.0
122	12161.0	990.0	32.5	38.0 / 33.0
122	12210.0	990.0	32.5	38.0 / 33.0
125	12457.0	990.0	32.5	40.0 / 14.8
127	12662.0	990.0	32.8	68.0 / 68.0
128	12802.0	990.0	34.0	57.0 / 57.0
129	12931.0	990.0	34.0	57.0 / 57.0
131	13080.0	990.0	34.1	97.5 / 65.0
134	13377.0	553.0	34.2	49.0 / 49.0
134	13437.0	553.0	34.3	38.0 / 38.0
135	13486.0	553.0	34.3	38.0 / 38.0
138	13754.0	553.0	34.4	76.9 / 75.0

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
Shingletree Swamp				
141	14109.0	553.0	34.4	95.1 / 124.9
146	14558.0	553.0	34.6	9.5 / 191.1
150	15000.0	553.0	34.8	9.5 / 128.3
154	15431.0	553.0	35.1	9.3 / 79.0
159	15852.0	553.0	35.3	17.7 / 38.8
159	15895.0	553.0	36.0	75.0 / 17.8
159	15945.0	553.0	36.0	75.0 / 17.8
163	16346.0	507.0	36.2	9.5 / 170.0
170	16953.0	507.0	36.3	67.0 / 115.0
170	16997.0	507.0	36.4	100.0 / 99.0
170	17040.0	507.0	36.4	100.0 / 99.0
175	17500.0	507.0	36.8	70.0 / 50.0
180	18000.0	507.0	37.4	65.0 / 9.5
185	18500.0	507.0	38.1	52.1 / 13.0
190	19000.0	507.0	38.7	9.5 / 30.6
194	19423.0	507.0	39.2	35.0 / 43.3
197	19745.0	507.0	39.4	50.0 / 68.0
198	19781.0	507.0	41.2	100.0 / 68.0
198	19819.0	507.0	41.2	100.0 / 68.0
202	20219.0	507.0	41.2	250.0 / 50.0
207	20660.0	507.0	41.3	422.7 / 9.5
210	21000.0	308.0	41.4	455.8 / 10.0
219	21888.0	308.0	41.6	500.0 / 9.5
223	22344.0	308.0	41.7	530.6 / 9.5
227	22740.0	308.0	41.8	500.0 / 9.5
230	23037.0	308.0	41.9	556.0 / 9.5
Shingletree Swamp Tributary				
003	271.0	1397.0	34.2[1]	53.9 / 115.3
005	459.0	1397.0	34.2[1]	7.2 / 115.0
008	795.0	1098.0	34.7	59.9 / 192.9
011	1096.0	1098.0	34.9	134.7 / 172.0
015	1502.0	1098.0	35.1	242.7 / 99.3
020	2000.0	1098.0	35.3	154.6 / 130.5
024	2400.0	1098.0	35.6	144.3 / 6.6
027	2661.0	1098.0	36.1	175.0 / 6.6
031	3055.0	1098.0	36.6	200.0 / 15.5
031	3129.0	1098.0	38.7	200.0 / 15.5
032	3203.0	1098.0	38.7	200.0 / 15.5
034	3426.0	1098.0	38.9	63.6 / 12.3
036	3600.0	1098.0	39.5	84.1 / 29.1
039	3858.0	1098.0	40.0	18.5 / 70.0
042	4150.0	1098.0	40.2	57.9 / 70.0
044	4364.0	1098.0	40.2	90.0 / 70.0
046	4577.0	1098.0	40.2	100.0 / 70.0

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
South Prong				
000	10.0	1180.0	40.1[1]	200.0 / 331.0
001	110.0	1180.0	40.1[1]	195.0 / 263.0
004	416.0	1020.0	40.1[1]	301.0 / 22.0
010	1042.0	1020.0	40.1[1]	216.0 / 227.0
018	1840.0	1020.0	40.1[1]	652.0 / 20.0
026	2554.0	1020.0	40.1[1]	194.0 / 20.0
034	3384.0	1020.0	40.1[1]	133.0 / 157.0
042	4185.0	1020.0	40.5	347.0 / 16.0
051	5124.0	1020.0	41.1	160.0 / 21.0
061	6097.0	1020.0	41.9	194.0 / 73.0
071	7095.0	1020.0	42.5	353.0 / 29.0
078	7754.0	870.0	42.6	287.0 / 161.0
086	8597.0	870.0	42.7	154.0 / 282.0
092	9247.0	870.0	42.8	74.0 / 318.0
098	9774.0	870.0	42.9	219.0 / 29.0
103	10347.0	870.0	43.1	21.0 / 235.0
109	10897.0	870.0	43.4	188.0 / 23.0
117	11742.0	870.0	43.9	29.0 / 168.0
122	12206.0	870.0	44.3	173.0 / 19.0
28	12768.0	640.0	44.6	73.0 / 124.0
33	13301.0	640.0	44.9	28.0 / 116.0
141	14128.0	640.0	45.8	64.0 / 49.0
144	14372.0	640.0	46.2	19.0 / 19.0
145	14452.0	640.0	47.0	19.0 / 19.0
145	14512.0	640.0	47.1	30.0 / 30.0
153	15280.0	640.0	47.6	138.0 / 14.0
160	15976.0	640.0	48.2	75.0 / 24.0
167	16670.0	410.0	48.6	24.0 / 193.0
173	17326.0	410.0	48.9	147.0 / 12.0
179	17883.0	410.0	49.7	15.0 / 70.0
184	18362.0	410.0	51.4	11.0 / 11.0
193	19265.0	410.0	54.1	22.0 / 22.0
200	20007.0	410.0	55.6	14.0 / 34.0
Spring Lake				
008	800.0	259.0	39.0[1]	137.7 / 109.1
012	1200.0	259.0	39.0[1]	120.0 / 42.8
017	1703.0	259.0	39.0[1]	300.0 / 300.0
018	1773.0	259.0	39.0[1]	300.0 / 300.0
018	1821.0	259.0	39.0[1]	300.0 / 300.0
021	2090.0	259.0	39.0[1]	296.4 / 295.9
24	2400.0	259.0	39.0[1]	504.2 / 154.9
028	2800.0	259.0	39.0[1]	364.8 / 151.2
033	3267.0	259.0	39.0[1]	193.4 / 157.2
040	4000.0	259.0	39.0[1]	129.9 / 46.5

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
Spring Lake				
044	4400.0	259.0	39.4	164.5 / 179.3
046	4579.0	259.0	39.7	120.0 / 110.0
048	4790.0	259.0	43.7	24.2 / 5.0
Town Creek				
1249	124883.4	4023.0	9.3	95.0 / 387.0
1263	126328.7	4023.0	9.6	514.0 / 503.0
1273	127337.8	4023.0	9.8	37.0 / 854.0
1281	128105.4	4023.0	9.8	28.0 / 1086.0
1293	129252.3	4023.0	10.0	117.0 / 636.0
1303	130279.8	4023.0	10.3	178.0 / 397.0
1307	130666.2	4023.0	10.3	279.0 / 539.0
1307	130730.2	3958.0	10.3	279.0 / 539.0
1316	131583.5	3958.0	11.1	379.0 / 779.0
1320	132013.5	3958.0	11.2	317.0 / 736.0
1331	133132.2	3958.0	11.5	522.0 / 912.0
1340	134021.6	3794.0	11.7	809.0 / 367.0
1352	135213.6	3794.0	12.2	320.0 / 358.0
1361	136065.5	3794.0	12.6	621.0 / 244.0
1371	137107.8	3794.0	13.0	227.0 / 229.0
381	138056.8	3794.0	13.4	1232.0 / 26.0
389	138909.5	3794.0	13.6	1666.0 / 253.0
1403	140287.2	2472.0	13.9	78.0 / 410.0
1409	140874.7	2472.0	14.5	57.0 / 56.0
1409	140934.2	2472.0	14.8	57.0 / 56.0
1414	141417.3	2472.0	15.2	437.0 / 198.0
1425	142462.1	2472.0	15.7	399.0 / 153.0
1435	143546.5	1916.0	16.4	203.0 / 193.0
1445	144457.7	1916.0	16.8	323.0 / 250.0
1455	145493.7	1916.0	17.3	185.0 / 374.0
1464	146428.4	1916.0	18.0	233.0 / 21.0
1477	147669.6	1916.0	19.6	210.0 / 55.0
1487	148688.1	1916.0	20.1	213.0 / 297.0
1496	149625.4	1916.0	20.4	187.0 / 501.0
1502	150170.3	1916.0	20.5	289.0 / 386.0
1506	150618.8	1916.0	20.7	332.0 / 205.0
1512	151219.3	1916.0	21.4	324.0 / 128.0
1516	151599.5	1825.0	21.9	412.0 / 97.0
1519	151941.9	1825.0	22.2	178.0 / 277.0
1525	152526.2	1825.0	22.7	357.0 / 123.0
1530	152978.3	1825.0	23.0	497.0 / 77.0
536	153588.1	1825.0	23.7	75.0 / 254.0
541	154144.1	1825.0	24.9	112.0 / 98.0
1547	154656.4	1825.0	25.6	175.0 / 166.0
1551	155093.9	1825.0	25.9	215.0 / 167.0

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
Town Creek				
1554	155444.9	1825.0	26.2	207.0 / 126.0
1561	156140.6	1825.0	26.7	400.0 / 30.0
1564	156423.7	1690.0	26.9	284.0 / 125.0
1572	157224.0	1690.0	27.4	168.0 / 370.0
1576	157631.1	1690.0	27.9	142.0 / 91.0
1581	158054.6	1690.0	28.6	166.0 / 243.0
1587	158715.6	1690.0	29.2	182.0 / 147.0
1591	159117.0	1690.0	29.7	235.0 / 87.0
1596	159578.7	1599.0	30.2	135.0 / 268.0
1603	160291.7	1599.0	31.1	20.0 / 331.0
1607	160680.5	1599.0	31.9	236.0 / 19.0
1613	161255.1	1342.0	32.5	78.0 / 356.0
1617	161738.9	1342.0	32.7	212.0 / 65.0
1621	162115.8	1342.0	33.0	198.0 / 133.0
1626	162622.5	1342.0	33.3	250.0 / 16.0
1631	163080.1	1342.0	33.7	201.0 / 18.0
1635	163544.5	1342.0	34.3	64.0 / 196.0
1641	164062.1	1342.0	34.8	115.0 / 112.0
1646	164648.9	1342.0	35.3	40.0 / 327.0
651	165103.8	1342.0	35.6	206.0 / 236.0
656	165621.8	1342.0	36.0	70.0 / 260.0
1660	166049.2	1342.0	36.4	42.0 / 170.0
1664	166436.4	1290.0	37.2	18.0 / 150.0
1670	167009.7	1093.0	38.1	202.0 / 78.0
1674	167443.7	1093.0	38.4	244.0 / 273.0
1681	168068.1	1093.0	38.7	218.0 / 61.0
1686	168566.2	1093.0	39.4	129.0 / 49.0
1690	169037.6	1093.0	40.5	83.0 / 152.0
1696	169577.1	1093.0	41.5	153.0 / 16.0
1698	169844.2	1093.0	41.5	31.0 / 30.0
1699	169920.2	1093.0	41.8	31.0 / 30.0
1701	170110.7	1093.0	42.1	133.0 / 115.0
1706	170579.4	1093.0	42.6	97.0 / 133.0
1711	171123.7	1093.0	43.0	51.0 / 261.0
1716	171632.7	1093.0	43.3	316.0 / 16.0
1720	172007.1	1093.0	43.6	161.0 / 76.0
1725	172544.3	1093.0	44.2	247.0 / 16.0
1731	173076.2	1093.0	44.8	119.0 / 93.0
1735	173544.3	1093.0	45.4	174.0 / 16.0
1741	174096.1	1093.0	46.4	149.0 / 29.0
745	174544.7	1093.0	47.1	115.0 / 62.0
1752	175163.1	1093.0	48.2	190.0 / 16.0
1757	175668.9	858.0	49.3	97.0 / 36.0
1762	176185.7	858.0	50.4	72.0 / 122.0

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
Town Creek				
1767	176689.8	858.0	51.6	103.0 / 24.0
1770	176953.4	858.0	52.4	147.0 / 53.0
1771	177099.8	858.0	52.7	43.0 / 43.0
1771	177132.8	858.0	53.2	43.0 / 43.0
1777	177669.6	858.0	55.6	133.0 / 14.0
1782	178247.1	858.0	56.6	110.0 / 74.0
1789	178880.8	858.0	57.3	162.0 / 20.0
1793	179345.0	858.0	57.7	63.0 / 101.0
1799	179938.2	858.0	58.1	153.0 / 36.0
1804	180416.4	858.0	58.5	133.0 / 14.0
1809	180902.0	858.0	59.0	57.0 / 149.0
1815	181456.7	858.0	59.7	150.0 / 26.0
1819	181910.6	615.0	60.3	111.0 / 45.0
1824	182421.0	615.0	61.1	16.0 / 73.0
1830	182962.0	615.0	62.1	83.0 / 23.0
1834	183416.1	615.0	62.5	288.0 / 10.0
Turkey Branch				
005	527.8	1354.0	16.4[1]	132.0 / 173.0
009	852.1	1354.0	16.4[1]	18.0 / 113.0
015	1490.9	1354.0	16.8	142.0 / 64.0
020	1962.3	1354.0	17.3	18.0 / 280.0
025	2538.5	1354.0	18.2	18.0 / 233.0
030	3016.5	1354.0	19.5	42.0 / 95.0
035	3483.1	1354.0	20.4	111.0 / 68.0
039	3949.1	1354.0	21.0	129.0 / 73.0
045	4496.5	1354.0	21.6	18.0 / 189.0
050	5045.4	1354.0	22.0	107.0 / 168.0
055	5468.7	1354.0	22.4	18.0 / 149.0
059	5940.5	1354.0	23.1	99.0 / 162.0
064	6440.8	1232.0	23.6	155.0 / 66.0
070	7019.0	1232.0	24.4	219.0 / 101.0
074	7437.6	1232.0	24.7	271.0 / 18.0
083	8281.1	1232.0	25.6	32.0 / 312.0
090	9002.3	1232.0	26.4	184.0 / 222.0
096	9553.6	1232.0	27.2	102.0 / 99.0
100	10045.5	1055.0	28.2	148.0 / 66.0
105	10476.7	1055.0	28.8	156.0 / 72.0
110	10977.8	1055.0	29.7	16.0 / 214.0
115	11523.2	1055.0	30.6	116.0 / 106.0
120	12002.0	1055.0	31.1	136.0 / 195.0
126	12597.1	957.0	31.8	103.0 / 68.0
131	13066.0	957.0	32.8	36.0 / 180.0
136	13625.0	957.0	34.0	162.0 / 15.0
141	14124.4	957.0	35.4	50.0 / 93.0

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
Turkey Branch				
146	14588.9	957.0	36.7	60.0 / 76.0
152	15151.7	957.0	37.9	77.0 / 93.0
156	15615.5	957.0	38.9	110.0 / 15.0
159	15880.7	957.0	39.2	54.0 / 54.0
159	15944.7	957.0	41.7	54.0 / 54.0
162	16155.3	957.0	42.1	48.0 / 108.0
167	16652.1	709.0	42.8	24.0 / 73.0
171	17111.0	709.0	43.9	66.0 / 56.0
177	17660.3	709.0	45.6	64.0 / 67.0
182	18197.7	709.0	48.3	34.0 / 16.0
186	18559.5	709.0	50.7	32.0 / 16.0
187	18730.1	709.0	51.5	46.0 / 45.0
188	18787.1	709.0	56.1	46.0 / 45.0
193	19328.6	709.0	56.4	142.0 / 24.0
198	19784.7	709.0	56.4	22.0 / 16.0
203	20288.1	709.0	57.2	16.0 / 16.0
209	20911.2	709.0	58.6	16.0 / 16.0
210	21031.8	709.0	59.4	68.0 / 67.0
211	21092.8	709.0	61.0	68.0 / 67.0
213	21313.6	709.0	61.0	35.0 / 16.0
Wet Ash Swamp				
021	2065.0	2590.0	29.2[1]	* [9]
030	3025.0	2590.0	29.2[1]	* [9]
043	4321.0	2590.0	29.2[1]	* [9]
052	5247.0	2350.0	29.2[1]	* [9]
057	5705.0	2350.0	29.2[1]	* [9]
066	6554.0	2350.0	29.2[1]	* [9]
072	7181.0	2350.0	29.2[1]	* [9]
073	7271.0	2350.0	29.2[1]	* [9]
074	7396.0	2350.0	29.2[1]	* [9]
079	7919.0	2350.0	29.2[1]	* [9]
086	8582.0	2350.0	29.2[1]	* [9]
095	9499.0	2350.0	29.3	* [9]
104	10446.0	2350.0	29.7	* [9]
114	11376.0	2350.0	30.1	* [9]
119	11908.0	2350.0	30.3	* [9]
124	12355.0	2350.0	30.5	* [9]
129	12948.0	2350.0	30.6	* [9]
138	13785.0	2350.0	30.8	* [9]
147	14710.0	2350.0	31.0	* [9]

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
Wet Ash Swamp				
152	15245.0	2350.0	31.2	* [9]
160	16020.0	2350.0	31.6	* [9]
169	16932.0	2350.0	31.9	* [9]
180	18047.0	2350.0	32.2	* [9]
189	18874.0	2140.0	32.6	* [9]
197	19697.0	2140.0	33.4	* [9]
200	20035.0	2140.0	33.9	* [9]
202	20156.0	2140.0	34.4	* [9]
203	20255.0	2140.0	34.7	* [9]
210	20950.0	2140.0	35.0	* [9]
217	21742.0	2140.0	35.2	* [9]
225	22456.0	2140.0	35.8	* [9]
234	23361.0	2140.0	36.1	* [9]
242	24204.0	2140.0	36.3	* [9]
247	24738.0	2140.0	36.5	* [9]
255	25528.0	2140.0	36.7	* [9]
263	26336.0	1970.0	36.9	* [9]
267	26708.0	1970.0	37.0	* [9]
275	27452.0	1970.0	37.2	* [9]
280	27986.0	1970.0	38.0	* [9]
281	28076.0	1970.0	38.5	* [9]
283	28316.0	1970.0	39.0	* [9]
290	29006.0	1970.0	39.1	* [9]
298	29773.0	1970.0	39.3	* [9]
303	30282.0	1970.0	39.5	* [9]
309	30898.0	1970.0	39.7	* [9]
314	31371.0	1970.0	39.9	* [9]
324	32450.0	1460.0	40.1	* [9]

[1]Elevation includes backwater effects

[2]Flooding controlled by Juniper Branch

[3]Non-encroachment width not computed

[4]Elevation includes flooding controlled by Waccamaw River

[5]Elevation includes flooding controlled by Lockwoods Folly River

[6]Flooding controlled by Juniper Swamp

[7]Elevation includes flooding controlled by Cape Fear River

[8]Elevation includes combined probability effects

[9]Floodway not computed

5.3 Coastal Analyses

For the areas of Brunswick County that are impacted by coastal flooding processes, coastal flood hazard analyses were performed to provide estimates of coastal BFEs. Coastal BFEs reflect the increase in water levels during a flood event due to extreme tides and storm surge as well as overland wave effects.

The following subsections provide summaries of how each coastal process was considered for the FIS Report. Greater detail (including assumptions, analysis, and results) is available in the archived project documentation. Table 15 summarizes the methods and/or models used for each of the coastal analyses. Refer to Section 2.5.1 for descriptions of the terms used in this section.

Table 18, "Summary of Coastal Analyses"

Table 18 - Summary of Coastal Analyses

Flooding Source	Study Limits From	Study Limits To	Hazard Evaluated	Model or Method Used	Date Analysis Was Completed
Atlantic Ocean	From Brunswick / Columbus county boundary	The Pender/ NewHanover/ Brunswick county boundaries	*	ADCIRC	1/22/2013
Atlantic Ocean	From Brunswick / Columbus county boundary	The Pender/ NewHanover/ Brunswick county boundaries	*	CHAMP / RUNUP 2.0 (2007)	12/10/2013
Atlantic Ocean	From Brunswick / Columbus county boundary	The Pender/ NewHanover/ Brunswick county boundaries	*	CHAMP 2.0	12/10/2013
Atlantic Ocean	From Brunswick / Columbus county boundary	The Pender/ NewHanover/ Brunswick county boundaries	*	removal/ retreat	12/10/2013
Atlantic Ocean	From Brunswick / Columbus county boundary	The Pender/ NewHanover/ Brunswick county boundaries	*	WHAFIS 4.0	12/10/2013
Atlantic Ocean	Middle Island	Middle Island	*	ADCIRC	1/22/2013
Atlantic Ocean	Middle Island	Middle Island	*	CHAMP / RUNUP 2.0 (2007)	6/21/2016
Atlantic Ocean	Middle Island	Middle Island	*	CHAMP 2.0	6/21/2016
Atlantic Ocean	Middle Island	Middle Island	*	removal/ retreat	6/21/2016
Atlantic Ocean	Middle Island	Middle Island	*	WHAFIS 4.0	6/21/2016
Atlantic Ocean	Ocean Isle Beach	Ocean Isle Beach	*	ADCIRC	1/22/2013
Atlantic Ocean	Ocean Isle Beach	Ocean Isle Beach	*	CHAMP / RUNUP 2.0 (2007)	12/10/2013
Atlantic Ocean	Ocean Isle Beach	Ocean Isle Beach	*	CHAMP 2.0	12/10/2013
Atlantic Ocean	Ocean Isle Beach	Ocean Isle Beach	*	removal/ retreat	7/18/2016
Atlantic Ocean	Ocean Isle Beach	Ocean Isle Beach	*	WHAFIS 4.0	7/8/2016

5.3.1 Total Stillwater Elevations

The total stillwater elevations (stillwater including storm surge plus wave setup) for the 1% annual chance flood were determined for areas subject to coastal flooding. The models and methods that were used to determine storm surge and wave setup are listed in Table 18. The stillwater elevation that was used for each transect in coastal analyses is shown in Table 20, "Coastal Transect Parameters."

Astronomical Tide

Astronomical tidal statistics were generated directly from local tidal constituents by sampling the predicted tide at random times throughout the tidal epoch.

Storm Surge Statistics

Storm surge is modeled based on characteristics of actual storms responsible for significant coastal flooding. The characteristics of these storms are typically determined by statistical study of the regional historical record of storms or by statistical study of tidal gages.

When historic records are used to calculate storm surge, characteristics such as the strength, size, track, etc., of storms are identified by site. Storm data was used in conjunction with numerical hydrodynamic models to determine the corresponding storm surge levels. An extreme value analysis was performed on the storm surge modeling results to determine a stillwater elevation for the 1% annual chance event.

Tidal gages can be used instead of historic records of storms when the available tidal gage record for the area represents both the astronomical tide component and the storm surge component. Table 16 provides the gage name, managing agency, gage type, gage identifier, start date, end date, and statistical methodology applied to each gage used to determine the stillwater elevations. For areas between gages, peak stillwater elevations for selected recurrence intervals were estimated by combining interpolation between gages and observed high water marks during major storms. A regionalized statistical approach was applied to the gage data so that stillwater elevations in areas between gages could be identified.

Table 19, "Tide Gage Analysis Specifics" is not applicable in Brunswick County.

Combined Riverine and Tidal Effects

Riverine and surge rates for the lower reaches of the Inundation River were combined by developing curves for rate of occurrence vs. flood level for each flood source.

Wave Setup Analysis

Wave setup was computed during the storm surge modeling through the methods and models listed in Table 15 and included in the frequency analysis for the determination of the total stillwater elevations. The oscillating component of wave setup, dynamic wave setup, was calculated for areas subject to wave runup hazards.

5.3.2 Waves

A coastal wave model (Coastal State University 2007) was used to calculate the nearshore wave fields required for the addition of wave setup effects. Three nested grids were used to obtain sufficient nearshore resolution to represent the radiation stress gradients required as ADCIRC inputs. Radiation stress fields output from the inner grids are used by ADCIRC to estimate the contribution of breaking waves (wave setup effects) to the total stillwater elevation.

5.3.3 Coastal Erosion

A single storm episode can cause extensive erosion in coastal areas. Storm-induced erosion was evaluated to determine the modification to existing topography that is expected to be associated with flooding events. Erosion was evaluated using the methods listed in Table 15. The post-event eroded profile was used for the subsequent transect-based onshore wave hazard analyses.

5.3.4 Wave Hazard Analyses

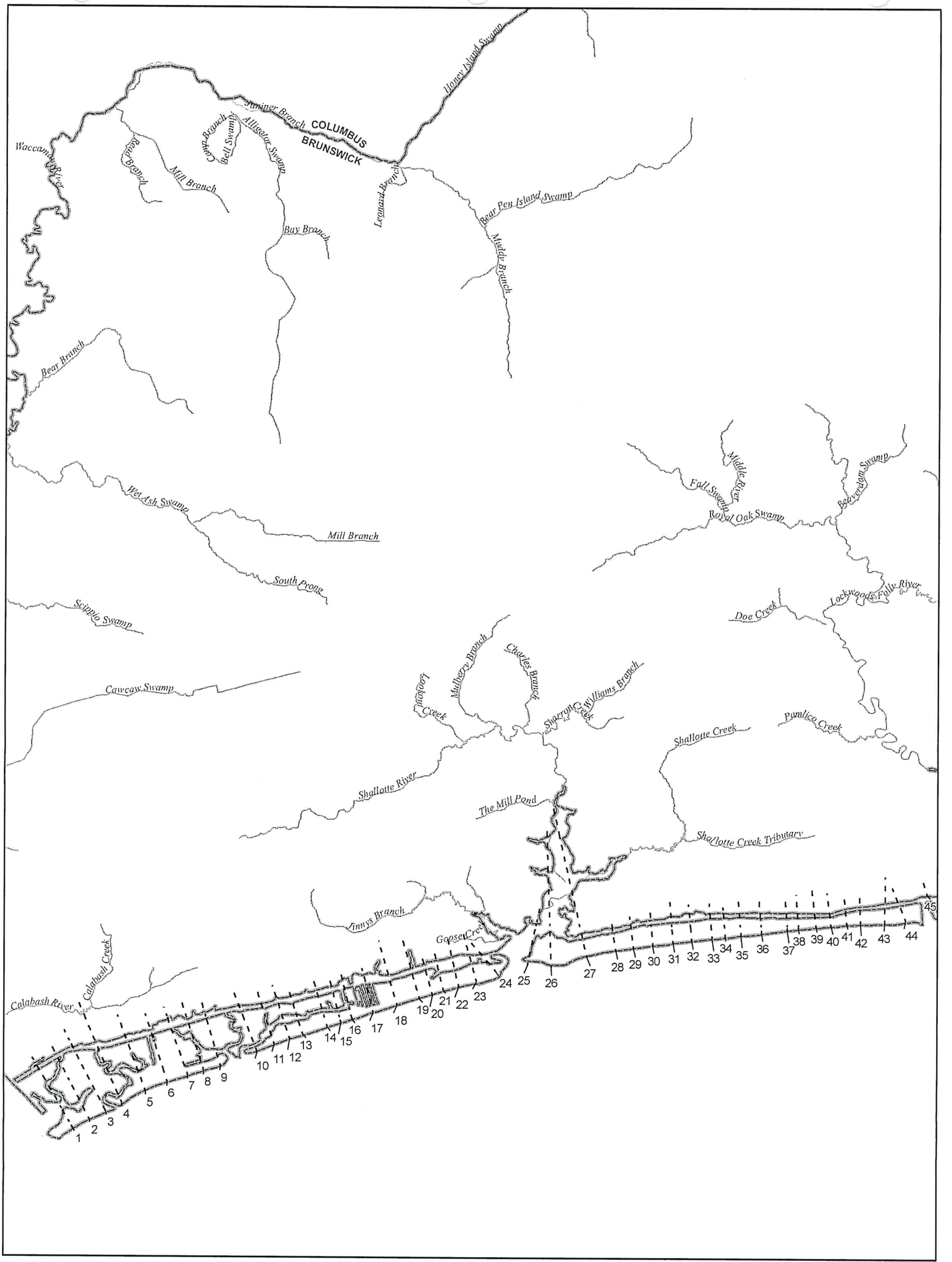
Overland wave hazards were evaluated to determine the combined effects of ground elevation, vegetation, and physical features on overland wave propagation and wave runup. These analyses were performed at representative transects along all shorelines for which waves were expected to be present during the floods of the selected recurrence intervals. The results of these analyses were used to determine elevations for the 1% annual chance flood.

Transect locations were chosen with consideration given to the physical land characteristics as well as development type and density so that they would closely represent conditions in their locality. Additional consideration was given to changes in the total stillwater elevation. Transects were spaced close together in areas of complex topography and dense development or where total stillwater elevations varied. In areas having more uniform characteristics, transects were spaced at larger intervals. Transects shown in Figure 9, "Transect Location Map," are also depicted on the FIRM. Table 17 provides the location, stillwater elevations, and starting wave conditions for each transect evaluated for overland wave hazards. In this table, "starting" indicates the parameter value at the beginning of the transect.

Wave Height Analysis

Wave height analyses were performed to determine wave heights and corresponding wave crest elevations for the areas inundated by coastal flooding and subject to overland wave propagation hazards. Refer to Figure 6 for a schematic of a coastal transect evaluated for overland wave propagation hazards.

Wave heights and wave crest elevations were modeled using the methods and models listed in Table 18, "Summary of Coastal Analyses".



1 in = 2 miles

N

0 0.375 0.75 1.5 2.25 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

COUNTY LOCATOR

NATIONAL FLOOD INSURANCE PROGRAM

TRANSECT LOCATOR MAP

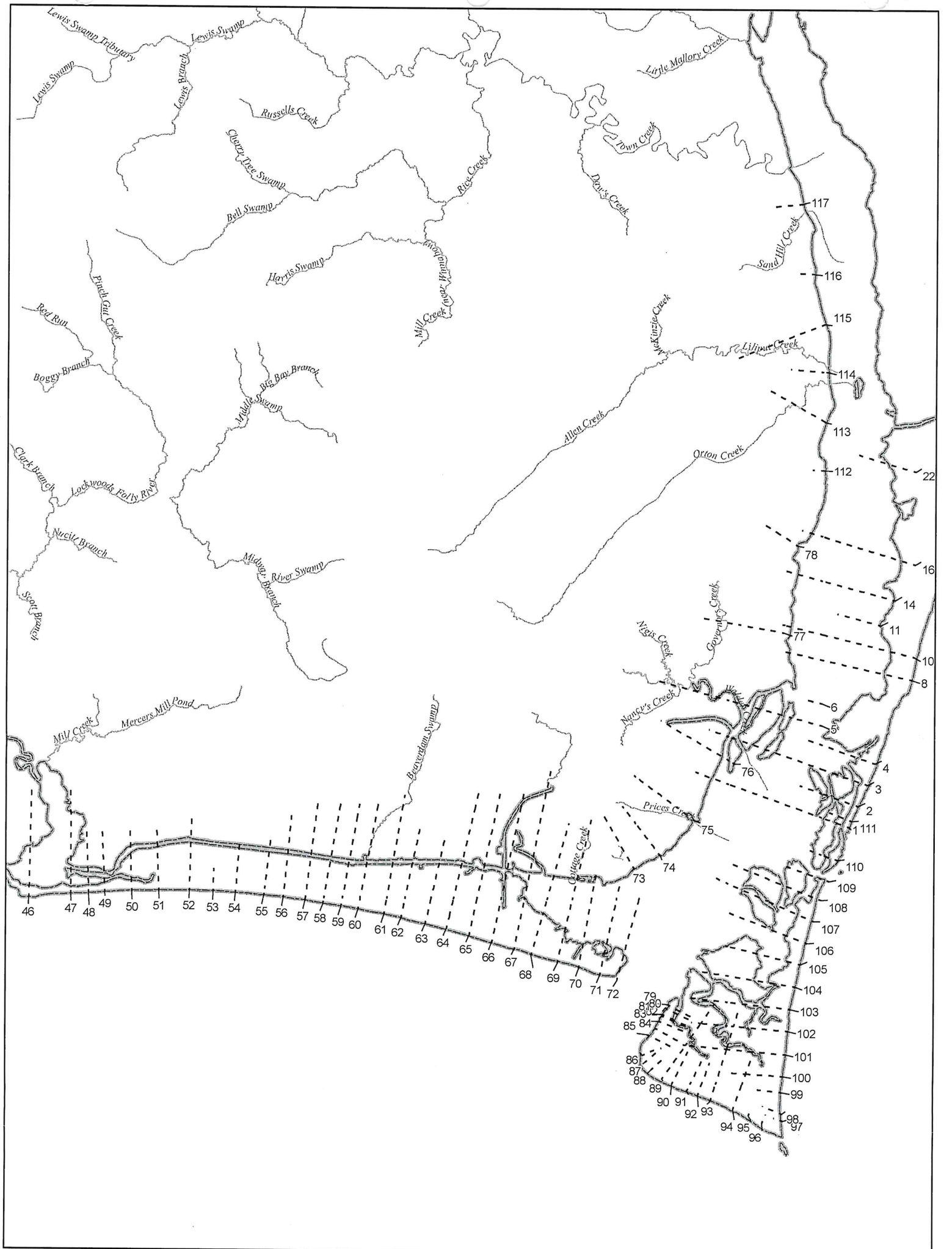
BRUNSWICK COUNTY, NORTH CAROLINA

PANELS WITH TRANSECTS:

3113, 3123, 3112, 3122, 3111, 3121, 3110, 3120, 3009, 3019, 3029, 3008, 3018, 3028, 1097, 2037, 2067, 2077, 2087, 2097, 3007, 3017, 3027, 1086, 1096, 2006, 2016, 2026, 2036, 2046, 2056, 2066, 2076, 2086, 2096, 3006, 3016, 3026, 1045, 1055, 1065, 1075, 1085, 1095, 2005, 2015, 2065, 2075, 2085, 2095, 3005, 3015, 1034, 1044, 1054, 1064, 1074, 3004, 3014, 3013, 1033, 1043, 3003

FEMA

Figure 5: Transect Location Map



1 in = 2 miles

0 0.375 0.75 1.5 2.25 Miles

Map Projection:
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TRANSECT LOCATOR MAP

BRUNSWICK COUNTY, NORTH CAROLINA

PANELS WITH TRANSECTS:

3113, 3123, 3112, 3122, 3111, 3121, 3110, 3120, 3009, 3019, 3029, 3008, 3018, 3028, 1097, 2037, 2067, 2077, 2087, 2097, 3007, 3017, 3027, 1086, 1096, 2006, 2016, 2026, 2036, 2046, 2056, 2066, 2076, 2086, 2096, 3006, 3016, 3026, 1045, 1055, 1065, 1075, 1085, 1095, 2005, 2015, 2065, 2075, 2085, 2095, 3005, 3015, 1034, 1044, 1054, 1064, 1074, 3004, 3014, 3013, 1033, 1043, 3003

FEMA

Figure 5: Transect Location Map

'Wave Runup Analysis

Wave runup analyses were performed to determine the height and extent of runup beyond the limit of stillwater inundation for the 1% annual chance flood. Wave runup elevations were modeled using the methods and models listed in Table 15.

Table 20, "Coastal Transect Parameters"

Table 20: Coastal Transect Parameters

Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
	Significant Wave Height Hs (ft)	Peak Wave Period Tp (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	.2% Annual Chance
Atlantic Ocean		**From Brunswick / Columbus county boundary**			**To The Pender/ NewHanover/ Brunswick county boundaries**		
1	17.3	15.5	*	*	*	11.4	15.6
			*	*	*	11.4 - 12.1	15.6 - 16.5
3	17.3	15.5	*	*	*	11.4	15.6
			*	*	*	11.3 - 12.0	15.5 - 16.5
5	17.3	15.5	*	*	*	11.2	15.5
			*	*	*	11.1 - 11.9	15.4 - 16.4
7	17.3	15.5	*	*	*	11.3	15.6
			*	*	*	11.2 - 12.0	15.5 - 16.4
9	17.3	15.5	*	*	*	11.2	15.6
			*	*	*	11.2 - 11.9	15.5 - 16.5
14	17.3	15.5	*	*	*	11.1	15.5
			*	*	*	11.0 - 11.5	15.4 - 16.1
16	17.2	13.7	*	*	*	11.0	15.3
			*	*	*	11.0 - 11.5	15.3 - 16.0
18	17.2	13.7	*	*	*	11.1	15.4
			*	*	*	11.0 - 11.4	15.3 - 15.9
20	17.2	13.7	*	*	*	11.0	15.3
			*	*	*	11.0 - 11.4	15.3 - 16.0
22	17.2	13.7	*	*	*	10.9	15.2
			*	*	*	10.9 - 11.4	15.2 - 15.9
24	17.2	13.7	*	*	*	11.1	15.4
			*	*	*	11.1 - 11.5	15.4 - 15.9
26	17.2	13.7	*	*	*	11.1	15.3
			*	*	*	11.0 - 12.0	15.3 - 16.8
28	17.2	13.7	*	*	*	10.8	15.1
			*	*	*	10.8 - 11.1	15.1 - 15.6
30	17.2	13.7	*	*	*	10.7	15.0
			*	*	*	10.7 - 11.1	14.9 - 15.6
32	17.2	13.7	*	*	*	10.7	15.0
			*	*	*	10.7 - 11.1	14.9 - 15.5
34	17.3	15.4	*	*	*	10.7	14.9
			*	*	*	10.6 - 11.0	14.9 - 15.4
36	17.3	15.4	*	*	*	10.6	14.8
			*	*	*	10.6 - 11.0	14.8 - 15.5
38	17.3	15.4	*	*	*	10.5	14.8
			*	*	*	10.5 - 10.8	14.8 - 15.2
40	17.3	15.4	*	*	*	10.5	14.7
			*	*	*	10.5 - 10.6	14.7 - 14.9
42	17.3	15.4	*	*	*	10.5	14.8
			*	*	*	10.5 - 10.8	14.7 - 15.0
44	17.5	12.6	*	*	*	10.7	14.8
			*	*	*	10.7 - 10.9	14.8 - 15.1
46	17.5	12.6	*	*	*	10.6	14.7
			*	*	*	10.6 - 11.4	14.7 - 15.7
48	17.5	12.6	*	*	*	10.3	14.3
			*	*	*	10.3 - 10.8	14.3 - 15.1
50	17.5	12.6	*	*	*	10.2	14.3
			*	*	*	10.2 - 10.6	14.2 - 14.8

Table 20: Coastal Transect Parameters

Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
	Significant Wave Height Hs (ft)	Peak Wave Period Tp (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	.2% Annual Chance
52	16.8	15.5	*	*	*	10.1	14.1
			*	*	*	10.1 - 10.6	14.0 - 14.8
Atlantic Ocean		**From Brunswick / Columbus county boundary**			**To The Pender/ NewHanover/ Brunswick county boundaries**		
54	16.8	15.5	*	*	*	10.0	13.9
			*	*	*	10.0 - 11.1	13.9 - 15.2
56	16.8	15.5	*	*	*	9.9	13.7
			*	*	*	9.8 - 11.2	13.7 - 15.2
58	16.0	13.0	*	*	*	9.8	13.7
			*	*	*	9.8 - 11.4	13.7 - 15.3
60	14.8	17.3	*	*	*	9.7	13.6
			*	*	*	9.7 - 11.4	13.5 - 15.3
62	14.8	17.3	*	*	*	9.7	13.4
			*	*	*	9.7 - 11.0	13.4 - 14.7
64	14.8	17.3	*	*	*	9.5	13.2
			*	*	*	9.5 - 10.7	13.2 - 14.3
66	16.2	13.8	*	*	*	9.4	13.1
			*	*	*	9.4 - 10.8	13.1 - 14.7
68	16.2	13.8	*	*	*	9.4	13.0
			*	*	*	9.4 - 10.0	12.9 - 13.6
70	16.2	13.8	*	*	*	9.3	12.8
			*	*	*	9.1 - 9.6	12.5 - 13.1
72	16.2	13.8	*	*	*	8.9	12.3
			*	*	*	8.9 - 9.2	12.2 - 12.6
74	3.7	3.4	*	*	*	9.2	12.5
			*	*	*	9.2 - 9.3	12.5 - 12.5
76	3.7	3.4	*	*	*	9.2	12.3
			*	*	*	9.2 - 9.4	12.3 - 12.6
78	3.7	3.4	*	*	*	9.1	12.1
			*	*	*	9.1 - 9.1	12.1 - 12.1
80	5.4	14.5	*	*	*	8.7	11.9
			*	*	*	8.5 - 8.7	11.6 - 11.9
82	5.4	14.5	*	*	*	8.7	12.0
			*	*	*	8.5 - 8.7	11.6 - 12.0
84	5.4	14.5	*	*	*	8.7	12.0
			*	*	*	8.6 - 8.7	11.8 - 12.0
86	16.5	13.8	*	*	*	8.8	12.1
			*	*	*	8.8 - 8.9	12.0 - 12.2
88	16.5	13.8	*	*	*	8.9	12.1
			*	*	*	8.9 - 8.9	12.1 - 12.2
90	16.5	13.8	*	*	*	8.8	12.0
			*	*	*	8.6 - 8.9	11.8 - 12.0
			*	*	*	8.5 - 8.7	11.4 - 11.9
95	16.5	13.8	*	*	*	8.5	11.5
			*	*	*	8.5 - 8.5	11.5 - 11.5
97	18.1	10.7	*	*	*	9.9	12.8
			*	*	*	9.9 - 9.9	12.7 - 12.8
99	18.1	10.7	*	*	*	9.8	12.7
			*	*	*	8.6 - 9.9	11.6 - 12.8
102	18.1	10.7	*	*	*	9.9	13.2
			*	*	*	8.1 - 10.1	11.0 - 13.2
104	18.1	10.7	*	*	*	10.3	13.2
			*	*	*	8.1 - 10.3	11.0 - 13.2
106	18.1	10.7	*	*	*	9.4	12.3
			*	*	*	8.5 - 10.3	11.3 - 13.3
108	18.1	10.7	*	*	*	10.1	13.2
			*	*	*	8.6 - 11.4	11.4 - 13.2
110	18.1	10.7	*	*	*	10.4	13.4
			*	*	*	8.7 - 10.4	11.4 - 13.5

Table 20: Coastal Transect Parameters

Coastal Transect	Starting Wave Conditions for the 1% Annual Chance		Starting Stillwater Elevations (ft NAVD88) Range of Stillwater Elevations (ft NAVD88)				
	Significant Wave Height Hs (ft)	Peak Wave Period Tp (sec)	10% Annual Chance	4% Annual Chance	2% Annual Chance	1% Annual Chance	.2% Annual Chance
112	2.3	2.7	*	*	*	9.1	12.0
			*	*	*	9.1 - 9.1	12.0 - 12.0
114	2.3	2.7	*	*	*	9.1	11.8
			*	*	*	9.0 - 9.1	11.8 - 11.9
Atlantic Ocean		**From Brunswick / Columbus county boundary**			**To The Pender/ NewHanover/ Brunswick county boundaries**		
116	2.3	2.7	*	*	*	9.0	11.7
			*	*	*	9.0 - 9.0	11.7 - 11.7
Atlantic Ocean		**From Middle Island**			**To Middle Island**		
93	16.5	13.8	*	*	*	8.6	11.7
			*	*	*	8.1 - 8.6	10.9 - 11.7
Atlantic Ocean		**From Ocean Isle Beach**			**To Ocean Isle Beach**		
11	17.3	15.5	*	*	*	11.1	15.5
			*	*	*	11.1 - 11.7	15.5 - 16.3
13	17.3	15.5	*	*	*	11.1	15.4
			*	*	*	11.1 - 11.6	15.4 - 16.2

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 Brunswick 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 Brunswick 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)
34.25	-78.12	-1.03
34.25	-78.00	-1.01
34.13	-78.50	-1.06
34.13	-78.37	-1.07
34.13	-78.25	-1.08
34.12	-78.12	-1.08
34.13	-78.00	-1.06
34.00	-78.62	-1.08
34.00	-78.50	-1.05
34.00	-78.37	-1.07
34.00	-78.25	-1.09
34.00	-78.12	-1.08
34.00	-78.00	-1.07
33.88	-78.63	-1.05
33.88	-78.50	-1.05
33.88	-78.38	-1.07
33.88	-78.25	-1.08
33.88	-78.13	-1.10
33.88	-78.00	-1.09
Average conversion in Brunswick County from NGVD 29 to NAVD 88 = -1.07 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 Brunswick 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.

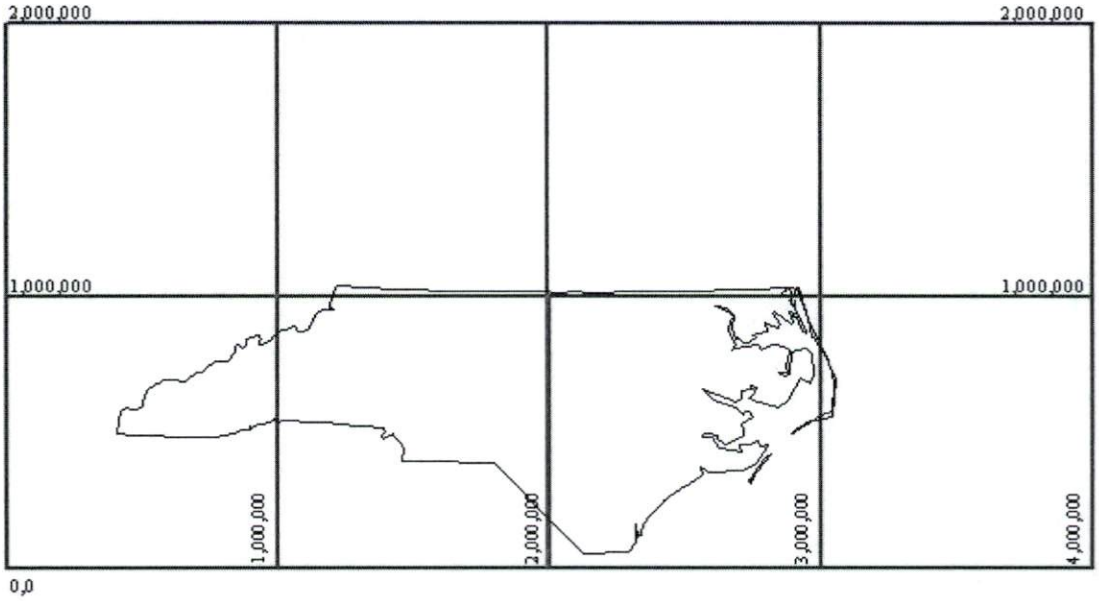

Figure 6 - North Carolina's State Plane Coordinate System

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).

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.

For coastal floodplains, after analyzing wave heights along each transect, wave elevations were interpolated between transects. Various source data were used in the interpolation, including topographic data described above. Controlling features affecting the elevations were identified and considered in relation to their positions at particular transect and their variation between transects.

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
Allen Creek								
000	10	1168.0	9260.0	0.3	9.4[1]	7.6	8.5	0.9
010	1,006	682.0	6339.0	0.4	9.4[1]	7.6	8.5	0.9
018	1,810	519.0	4628.0	0.5	9.4[1]	7.6	8.6	1.0
023	2,341	485.0	4377.0	0.6	9.4[1]	7.7	8.6	0.9
030	2,967	502.0	4234.0	0.6	9.4[1]	7.7	8.6	0.9
038	3,786	404.0	3378.0	0.7	9.4[1]	7.7	8.6	0.9
043	4,341	570.0	4576.0	0.4	9.4[1]	7.7	8.7	1.0
052	5,173	505.0	3995.0	0.5	9.4[1]	7.8	8.7	0.9
)57	5,665	778.0	5783.0	0.3	9.4[1]	7.8	8.7	0.9
)63	6,321	464.0	3355.0	0.6	9.4[1]	7.8	8.7	0.9
068	6,835	455.0	3738.0	0.5	9.4[1]	7.9	8.8	0.9
074	7,415	412.0	3562.0	0.5	9.5[1]	7.9	8.8	0.9

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
Allen Creek								
079	7,949	481.0	3460.0	0.6	9.5[1]	7.9	8.9	1.0
090	9,020	365.0	3088.0	0.6	9.5[1]	8.0	9.0	1.0
100	10,028	378.0	2731.0	0.7	9.5[1]	8.2	9.1	0.9
110	10,963	407.0	3160.0	0.6	9.6[1]	8.3	9.2	0.9
119	11,879	417.0	3085.0	0.5	9.6[1]	8.3	9.3	1.0
129	12,901	471.0	3664.0	0.4	9.7[1]	8.4	9.3	0.9
139	13,876	540.0	3827.0	0.4	9.7[1]	8.5	9.4	0.9
148	14,767	459.0	3144.0	0.4	9.7[1]	8.6	9.5	0.9
154	15,416	654.0	3682.0	0.4	9.8[1]	8.6	9.5	0.9
163	16,284	409.0	2063.0	0.6	9.8[1]	8.7	9.6	0.9
170	17,013	409.0	2015.0	0.6	9.8[1]	8.8	9.7	0.9
180	17,955	459.0	2109.0	0.5	9.8[1]	8.9	9.8	0.9
187	18,733	322.0	1590.0	0.6	9.9[1]	9.1	10.0	0.9
193	19,323	361.0	1102.0	0.9	10.1[1]	9.4	10.2	0.8
200	19,997	295.0	884.0	1.1	10.7[1]	10.3	10.8	0.5
211	21,114	144.0	404.0	2.5	12.2[1]	12.1	12.5	0.4
219	21,871	1234.0	11701.0	0.3	33.9	33.9	34.9	1.0
226	22,558	1025.0	9369.0	0.4	33.9	33.9	34.9	1.0
232	23,186	1132.0	11025.0	0.3	34.0	34.0	34.9	0.9
242	24,167	767.0	7936.0	0.4	34.0	34.0	35.0	1.0
252	25,212	831.0	7280.0	0.4	34.0	34.0	35.0	1.0
263	26,270	643.0	5083.0	0.6	34.0	34.0	35.0	1.0
273	27,338	664.0	6586.0	0.5	34.0	34.0	35.0	1.0
284	28,394	681.0	7400.0	0.4	34.0	34.0	35.0	1.0
294	29,421	612.0	6048.0	0.5	34.0	34.0	35.0	1.0
304	30,433	804.0	7370.0	0.4	34.0	34.0	35.0	1.0
312	31,205	473.0	4350.0	0.7	34.0	34.0	35.0	1.0
321	32,084	495.0	2838.0	1.1	34.0	34.0	35.0	1.0
336	33,565	458.0	3876.0	0.6	34.4	34.4	35.2	0.8
344	34,437	578.0	5628.0	0.4	39.3	39.3	39.4	0.1
350	35,019	602.0	5027.0	0.5	39.3	39.3	39.4	0.1
365	36,490	668.0	3522.0	0.7	41.7	41.7	41.8	0.1
376	37,594	480.0	2251.0	1.1	41.8	41.8	41.8	0.0
381	38,069	69.0	518.0	4.6	41.7	41.7	41.8	0.1
386	38,626	277.0	984.0	2.4	42.6	42.6	42.6	0.0
392	39,171	173.0	416.0	5.7	46.1	46.1	46.2	0.1
396	39,629	150.0	714.0	3.3	49.1	49.1	49.1	0.0
401	40,095	180.0	1003.0	1.0	49.6	49.6	49.9	0.3
406	40,612	140.0	455.0	2.2	49.6	49.6	50.1	0.5
411	41,085	100.0	427.0	2.4	49.8	49.8	50.7	0.9
Bonnetts Creek								
019	1,878	54.0	81.0	6.6	9.3[1]	4.8	4.8	0.0
023	2,329	23.0	109.0	3.0	9.7[1]	9.2	10.1	0.9

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
Bonnetts Creek								
025	2,515	34.0	173.0	1.9	10.2[1]	9.8	10.8	1.0
027	2,724	23.0	104.0	3.1	10.5[1]	10.1	11.0	0.9
029	2,900	19.0	65.0	5.0	11.2[1]	11.0	11.7	0.7
Bonnetts Creek Tributary								
001	68	40.0	131.0	2.9	9.6[1]	7.9	8.8	0.9
003	259	40.0	164.0	2.3	10.1	10.1	10.9	0.8
005	451	70.0	240.0	1.6	11.1	11.1	12.1	1.0
007	772	20.0	59.0	6.3	13.6	13.6	14.5	0.9
Calabash River								
236	23,613	436.0	1837.0	1.2	12.6[1]	12.0	12.0	0.0
238	23,828	347.0	2782.0	0.8	12.7[1]	12.0	12.0	0.0
242	24,168	305.0	1985.0	1.1	12.7[1]	12.0	12.0	0.0
246	24,581	406.0	893.0	2.1	12.7[1]	12.1	12.1	0.0
249	24,905	315.0	1059.0	1.8	12.7[1]	12.2	12.2	0.0
250	25,043	254.0	734.0	2.6	12.7[1]	12.1	12.2	0.1
254	25,443	52.0	474.0	4.0	12.8[1]	12.4	12.4	0.0
256	25,640	79.0	530.0	3.6	12.8[1]	12.4	12.6	0.2
261	26,090	110.0	703.0	2.7	12.8[1]	12.6	13.1	0.5
265	26,468	151.0	1117.0	1.5	12.9[1]	12.8	13.3	0.5
269	26,896	63.0	316.0	5.2	12.9[1]	12.8	13.2	0.4
275	27,467	112.0	421.0	3.9	14.7[1]	14.6	15.4	0.8
279	27,944	110.0	398.0	4.2	16.3[1]	16.3	17.4	1.1
Calabash River Tributary								
007	651	105.0	931.0	1.1	12.7[2]	11.8	12.6	0.8
011	1,092	100.0	315.0	3.3	12.7[2]	11.6	12.6	1.0
012	1,191	100.0	566.0	1.9	14.7	14.7	15.6	0.9
015	1,539	145.0	1130.0	0.9	14.7	14.7	15.7	1.0
018	1,827	110.0	487.0	2.2	15.1	15.1	16.0	0.9
021	2,083	16.0	103.0	10.2	15.3	15.3	15.6	0.3
024	2,432	61.0	319.0	3.3	17.0	17.0	17.8	0.8
Cape Fear River								
2014	201,429	4550.0	32577.0	4.0	8.1[1]	6.7	6.8	0.1
2053	205,291	4400.0	39130.0	3.3	9.5[1]	9.2	9.5	0.3
2098	209,758	5970.0	68080.0	1.9	12.6[1]	12.6	13.1	0.5
2146	214,635	7402.0	100789.0	1.3	14.6[1]	14.6	15.3	0.7
2173	217,280	9750.0	145485.0	0.9	15.4[1]	15.4	16.1	0.7
2203	220,350	11018.0	163374.0	0.8	15.7	15.7	16.4	0.7
2250	225,030	13000.0	194696.0	0.7	15.9	15.9	16.7	0.8
2277	227,726	12450.0	189274.0	0.7	16.2	16.2	17.0	0.8
2307	230,716	13350.0	207215.0	0.6	16.4	16.4	17.3	0.9
2364	236,426	14300.0	210693.0	0.6	16.8	16.8	17.7	0.9
2398	239,795	14650.0	228202.0	0.6	17.0	17.0	17.9	0.9
2447	244,703	9650.0	146302.0	0.9	17.4	17.4	18.4	1.0

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
ross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Cape Fear River								
2474	247,353	9400.0	138300.0	0.9	17.7	17.7	18.7	1.0
2503	250,344	11019.0	162227.0	0.8	18.2	18.2	19.1	0.9
2532	253,224	11450.0	163472.0	0.8	18.5	18.5	19.4	0.9
2575	257,474	14409.0	201467.0	0.6	18.8	18.8	19.7	0.9
Cherry Tree Prong								
000	0	279.0	989.0	1.1	9.4[1]	9.2	10.0	0.8
005	496	72.0	260.0	2.0	9.9[1]	9.7	10.6	0.9
010	987	87.0	334.0	1.6	10.8[1]	10.8	11.7	0.9
014	1,436	45.0	155.0	3.4	11.8[1]	11.8	12.6	0.8
019	1,887	40.0	168.0	3.1	13.3[1]	13.3	14.2	0.9
027	2,667	90.0	545.0	0.9	17.8	17.8	18.3	0.5
031	3,107	98.0	422.0	1.1	17.9	17.9	18.4	0.5
035	3,506	93.0	311.0	1.5	18.0	18.0	18.6	0.6
041	4,111	69.0	107.0	4.4	20.5	20.5	20.9	0.4
045	4,484	93.0	286.0	1.6	21.8	21.8	22.7	0.9
049	4,920	68.0	252.0	1.9	22.3	22.3	23.3	1.0
054	5,369	66.0	257.0	1.8	22.8	22.8	23.8	1.0
059	5,942	42.0	135.0	2.7	23.8	23.8	24.7	0.9
65	6,490	42.0	121.0	3.0	26.0	26.0	26.8	0.8
70	7,032	30.0	91.0	4.0	29.9	29.9	30.3	0.4
074	7,386	34.0	138.0	2.6	31.5	31.5	32.3	0.8
077	7,676	34.0	133.0	2.7	32.3	32.3	33.2	0.9
Doe Creek								
078	7,810	116.0	508.0	1.4	9.1[1]	7.5	8.4	0.9
080	8,047	104.0	429.0	1.7	9.1[1]	7.9	8.9	1.0
084	8,365	94.0	375.0	1.4	9.3[1]	8.4	9.4	1.0
086	8,584	81.0	319.0	1.7	9.5[1]	8.8	9.8	1.0
089	8,873	112.0	449.0	1.2	9.8[1]	9.2	10.2	1.0
091	9,148	100.0	355.0	1.5	10.0[1]	9.6	10.6	1.0
095	9,458	86.0	327.0	1.6	10.4[1]	10.1	11.1	1.0
100	9,962	120.0	438.0	1.2	11.1[1]	11.0	12.0	1.0
104	10,402	93.0	279.0	1.9	11.9[1]	11.8	12.8	1.0
109	10,898	100.0	258.0	1.4	13.3[1]	13.3	14.3	1.0
113	11,331	78.0	213.0	1.7	14.7[1]	14.6	15.4	0.8
116	11,572	100.0	249.0	1.4	15.4[1]	15.4	16.1	0.7
118	11,805	67.0	171.0	2.1	16.1[1]	16.1	16.9	0.8
121	12,083	58.0	120.0	3.0	17.8[1]	17.8	18.5	0.7
124	12,354	60.0	186.0	1.9	19.4[1]	19.4	19.9	0.5
126	12,611	70.0	227.0	1.6	20.0[1]	20.0	20.5	0.5
Dutchman Creek (N of CP & L Canal)								
43	4,266	217.0	897.0	1.3	11.0[1]	8.6	9.4	0.8
047	4,677	190.0	884.0	1.3	11.1[1]	9.2	9.8	0.6
053	5,265	190.0	765.0	1.5	11.4[1]	10.1	10.7	0.6

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
Dutchman Creek (N of CP & L Canal)								
058	5,828	168.0	711.0	1.6	11.8[1]	11.1	11.8	0.7
062	6,203	200.0	798.0	1.4	12.2[1]	11.7	12.7	1.0
067	6,744	201.0	728.0	1.6	13.6[1]	13.4	13.9	0.5
074	7,354	286.0	1189.0	1.0	14.4[1]	14.3	15.2	0.9
079	7,909	282.0	1086.0	1.1	15.0[1]	14.9	15.8	0.9
083	8,306	180.0	622.0	1.9	15.9[1]	15.8	16.6	0.8
086	8,579	151.0	632.0	1.8	16.8[1]	16.8	17.7	0.9
092	9,234	94.0	380.0	1.7	18.0[1]	18.0	18.7	0.7
097	9,733	80.0	227.0	2.8	18.3[1]	18.3	19.0	0.7
103	10,268	80.0	116.0	5.4	21.5[1]	21.5	21.7	0.2
107	10,721	81.0	178.0	3.5	24.0[1]	24.0	24.7	0.7
126	12,602	105.0	515.0	1.2	29.7	29.7	30.6	0.9
130	13,046	58.0	270.0	2.3	29.8	29.8	30.7	0.9
136	13,579	50.0	238.0	2.6	30.3	30.3	31.0	0.7
139	13,900	70.0	245.0	2.6	30.6	30.6	31.2	0.6
145	14,495	55.0	89.0	7.0	31.9	31.9	32.0	0.1
Goose Creek								
077	7,654	33.0	186.0	3.8	11.9[1]	11.5	12.2	0.7
080	8,030	60.0	232.0	2.5	12.3[1]	12.0	12.8	0.8
082	8,156	60.0	370.0	1.6	14.2[1]	14.2	15.1	0.9
082	8,227	73.0	452.0	1.3	14.3[1]	14.2	15.2	1.0
083	8,291	81.0	616.0	0.9	14.3[1]	14.2	15.2	1.0
083	8,310	60.0	402.0	1.4	14.3[1]	14.2	15.2	1.0
083	8,345	60.0	354.0	1.6	14.8[1]	14.7	15.4	0.7
084	8,402	96.0	628.0	0.9	14.8[1]	14.8	15.4	0.6
085	8,465	65.0	357.0	1.6	14.8[1]	14.8	15.4	0.6
085	8,542	65.0	240.0	2.4	14.8[1]	14.8	15.5	0.7
088	8,799	73.0	387.0	1.5	14.9[1]	14.9	15.7	0.8
091	9,074	47.0	206.0	2.8	14.9[1]	14.9	15.7	0.8
095	9,465	79.0	468.0	1.2	15.1[1]	15.1	15.9	0.8
096	9,588	41.0	244.0	2.4	17.2[1]	17.2	17.3	0.1
097	9,708	42.0	239.0	2.4	17.3[1]	17.3	17.3	0.0
099	9,873	43.0	241.0	2.4	17.3[1]	17.3	17.4	0.1
099	9,933	43.0	273.0	2.1	17.3[1]	17.3	18.2	0.9
100	10,037	268.0	1763.0	0.3	17.3[1]	17.3	18.3	1.0
Indian Creek								
195	19,540	226.0	1034.0	1.0	8.6[1]	7.7	8.3	0.6
200	20,043	236.0	1067.0	1.0	8.6[1]	7.9	8.6	0.7
205	20,459	256.0	1219.0	0.9	8.7[1]	8.1	8.8	0.7
209	20,885	304.0	1482.0	0.7	8.8[1]	8.3	9.1	0.8
215	21,452	250.0	1077.0	1.0	9.0[1]	8.6	9.4	0.8
218	21,844	314.0	1310.0	0.8	9.2[1]	8.9	9.7	0.8
222	22,236	279.0	989.0	1.1	9.4[1]	9.2	10.0	0.8

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
Jackeys Creek								
220	22,001	359.0	1887.0	0.5	10.2[1]	9.4	10.2	0.8
226	22,562	403.0	1918.0	0.5	10.3[1]	9.6	10.3	0.7
235	23,517	131.0	464.0	2.0	10.6[1]	10.1	10.7	0.6
243	24,289	152.0	864.0	1.1	15.4[1]	15.4	15.5	0.1
247	24,701	163.0	809.0	1.2	15.6	15.6	15.7	0.1
253	25,268	168.0	847.0	1.1	15.8	15.8	16.1	0.3
261	26,106	47.0	304.0	1.8	16.4	16.4	16.8	0.4
267	26,654	81.0	379.0	1.5	16.7	16.7	17.2	0.5
271	27,119	98.0	419.0	1.3	16.9	16.9	17.5	0.6
276	27,588	55.0	234.0	2.4	17.2	17.2	17.8	0.6
281	28,128	38.0	165.0	3.4	17.9	17.9	18.6	0.7
286	28,636	38.0	178.0	3.1	19.0	19.0	19.6	0.6
291	29,127	49.0	162.0	3.4	20.1	20.1	20.6	0.5
296	29,621	125.0	354.0	1.6	20.9	20.9	21.7	0.8
Jackeys Creek Tributary								
005	485	60.0	291.0	1.9	16.4[2]	15.8	16.8	1.0
010	1,002	70.0	350.0	1.6	16.9	16.9	17.9	1.0
015	1,539	50.0	233.0	2.3	18.0	18.0	19.0	1.0
020	2,016	40.0	162.0	3.4	20.1	20.1	21.0	0.9
025	2,503	75.0	297.0	1.8	22.4	22.4	23.4	1.0
032	3,236	162.0	189.0	2.9	24.9	24.9	25.0	0.1
042	4,198	120.0	167.0	3.3	27.5	27.5	27.7	0.2
052	5,250	200.0	460.0	1.2	30.6	30.6	30.6	0.0
057	5,699	60.0	225.0	2.4	31.6	31.6	32.4	0.8
062	6,220	55.0	196.0	2.8	33.3	33.3	34.3	1.0
067	6,722	44.0	247.0	2.2	34.4	34.4	35.3	0.9
072	7,226	100.0	446.0	1.2	35.7	35.7	36.6	0.9
081	8,100	180.0	759.0	0.7	39.1	39.1	40.1	1.0
Jinnys Branch								
165	16,502	235.0	1268.0	0.8	11.5[1]	7.9	8.5	0.6
169	16,922	225.0	1233.0	0.7	11.5[1]	8.0	8.6	0.6
174	17,412	244.0	1359.0	0.7	11.5[1]	8.0	8.6	0.6
179	17,859	266.0	1384.0	0.6	11.5[1]	8.1	8.7	0.6
181	18,074	275.0	1414.0	0.6	11.6[1]	8.1	8.7	0.6
182	18,243	233.0	1160.0	0.7	11.6[1]	8.1	8.7	0.6
187	18,738	222.0	1084.0	0.8	11.6[1]	8.2	8.8	0.6
189	18,916	179.0	832.0	1.0	11.6[1]	8.2	8.8	0.6
193	19,275	89.0	511.0	1.6	11.6[1]	8.3	8.9	0.6
194	19,350	54.0	410.0	2.0	11.6[1]	8.3	8.9	0.6
194	19,389	54.0	416.0	2.0	11.6[1]	8.3	9.0	0.7
194	19,445	54.0	391.0	2.1	11.6[1]	8.4	9.0	0.6
201	20,132	100.0	585.0	1.4	11.6[1]	8.5	9.2	0.7
207	20,745	100.0	550.0	1.4	11.7[1]	8.6	9.3	0.7

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
Jinnys Branch								
212	21,231	109.0	519.0	1.4	11.7[1]	8.7	9.4	0.7
220	22,014	125.0	384.0	2.0	11.7[1]	9.0	9.7	0.7
224	22,438	125.0	342.0	2.1	11.7[1]	9.5	10.1	0.6
225	22,506	125.0	436.0	1.6	11.7[1]	9.5	10.2	0.7
227	22,714	118.0	302.0	2.3	11.7[1]	9.5	10.2	0.7
233	23,335	59.0	328.0	2.1	11.8[1]	9.9	10.5	0.6
238	23,832	32.0	195.0	3.3	11.8[1]	10.2	10.8	0.6
241	24,110	49.0	329.0	2.0	11.9[1]	10.5	11.0	0.5
246	24,612	90.0	573.0	1.1	12.0[1]	10.6	11.1	0.5
249	24,947	62.0	340.0	1.8	12.0[1]	10.6	11.1	0.5
250	24,992	75.0	202.0	3.0	12.0[1]	10.6	11.1	0.5
251	25,094	75.0	652.0	0.9	16.8[1]	16.7	16.7	0.0
252	25,160	126.0	909.0	0.7	16.8[1]	16.7	16.7	0.0
253	25,315	125.0	856.0	0.7	16.9[1]	16.7	16.8	0.1
258	25,788	125.0	776.0	0.8	16.9[1]	16.8	16.9	0.1
261	26,119	125.0	808.0	0.7	16.9[1]	16.8	16.9	0.1
266	26,550	124.0	697.0	0.8	16.9[1]	16.8	17.0	0.2
268	26,830	129.0	492.0	1.2	17.0[1]	16.8	17.1	0.3
269	26,897	126.0	547.0	1.0	17.0[1]	16.8	17.2	0.4
270	26,970	126.0	474.0	1.1	17.0[1]	16.8	17.2	0.4
270	27,018	174.0	559.0	1.0	17.0[1]	16.9	17.3	0.4
273	27,336	175.0	502.0	1.1	17.1[1]	17.0	17.6	0.6
275	27,547	151.0	449.0	1.2	17.2[1]	17.1	17.9	0.8
278	27,823	150.0	447.0	1.2	17.6[1]	17.4	18.4	1.0
280	28,030	150.0	388.0	1.4	18.0[1]	18.0	18.9	0.9
283	28,342	97.0	206.0	2.3	19.3[1]	19.2	19.9	0.7
285	28,506	67.0	179.0	2.7	20.0[1]	20.0	20.6	0.6
287	28,723	93.0	287.0	1.7	20.8[1]	20.8	21.5	0.7
291	29,135	21.0	104.0	4.6	22.2[1]	22.2	22.9	0.7
293	29,306	35.0	181.0	2.5	23.1[1]	23.0	23.7	0.7
295	29,530	42.0	204.0	2.2	23.5[1]	23.5	24.1	0.6
299	29,878	22.0	116.0	3.9	24.2	24.2	24.8	0.6
302	30,160	34.0	187.0	2.4	25.1	25.1	25.6	0.5
305	30,499	24.0	127.0	3.2	25.7	25.7	26.3	0.6
Liliput Creek								
187	18,675	1108.0	7409.0	0.3	9.2[1]	7.2	8.1	0.9
196	19,605	1292.0	9141.0	0.3	9.2[1]	7.2	8.1	0.9
203	20,258	1165.0	7717.0	0.3	9.3[1]	7.2	8.2	1.0
210	20,959	908.0	6201.0	0.4	9.3[1]	7.3	8.2	0.9
219	21,855	1030.0	7326.0	0.3	9.3[1]	7.3	8.3	1.0
226	22,626	658.0	4971.0	0.5	9.3[1]	7.4	8.3	0.9
230	23,019	1087.0	8573.0	0.3	9.3[1]	7.4	8.4	1.0
240	23,998	993.0	7552.0	0.3	9.3[1]	7.5	8.4	0.9

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
ross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Liliput Creek								
250	25,003	698.0	6073.0	0.4	9.3[1]	7.5	8.4	0.9
256	25,650	950.0	7628.0	0.3	9.3[1]	7.6	8.5	0.9
260	26,038	928.0	7003.0	0.4	9.4[1]	7.6	8.5	0.9
268	26,818	986.0	8056.0	0.3	9.4[1]	7.6	8.5	0.9
276	27,605	841.0	6525.0	0.4	9.4[1]	7.6	8.5	0.9
284	28,405	1168.0	9499.0	0.3	9.4[1]	7.6	8.5	0.9
Lockwoods Folly River								
674	67,358	1495.0	13105.0	0.4	9.1[1]	8.5	9.5	1.0
678	67,832	1526.0	13245.0	0.4	9.1[1]	8.5	9.5	1.0
682	68,225	1674.0	14759.0	0.3	9.1[1]	8.5	9.5	1.0
698	69,752	1884.0	16332.0	0.3	9.1[1]	8.5	9.5	1.0
706	70,649	1502.0	13188.0	0.4	9.1[1]	8.5	9.5	1.0
711	71,134	1373.0	12132.0	0.4	9.1[1]	8.5	9.5	1.0
715	71,486	1344.0	11851.0	0.4	9.1[1]	8.5	9.5	1.0
719	71,870	1334.0	11500.0	0.4	9.1[1]	8.5	9.5	1.0
726	72,550	1070.0	9525.0	0.5	9.1[1]	8.5	9.5	1.0
730	73,049	1071.0	9439.0	0.5	9.1[1]	8.5	9.5	1.0
734	73,418	1135.0	9719.0	0.5	9.1[1]	8.5	9.5	1.0
39	73,925	1151.0	10326.0	0.5	9.1[1]	8.5	9.5	1.0
44	74,370	1216.0	11050.0	0.4	9.1[1]	8.5	9.5	1.0
747	74,683	1017.0	9324.0	0.5	9.1[1]	8.5	9.5	1.0
754	75,409	1072.0	9984.0	0.5	9.1[1]	8.5	9.5	1.0
760	76,047	1131.0	10551.0	0.5	9.1[1]	8.5	9.5	1.0
765	76,543	1112.0	9915.0	0.5	9.1[1]	8.5	9.6	1.1
767	76,674	1217.0	10737.0	0.4	9.1[1]	8.5	9.6	1.1
772	77,244	1522.0	13365.0	0.4	9.1[1]	8.6	9.6	1.0
777	77,704	1415.0	11754.0	0.4	9.1[1]	8.6	9.6	1.0
784	78,404	1224.0	9537.0	0.5	9.1[1]	8.6	9.6	1.0
789	78,946	1200.0	8274.0	0.6	9.2[1]	8.6	9.6	1.0
793	79,287	1312.0	7864.0	0.6	9.2[1]	8.7	9.7	1.0
797	79,675	1362.0	7201.0	0.7	9.2[1]	8.7	9.7	1.0
801	80,136	1339.0	8939.0	0.5	9.3[1]	8.8	9.8	1.0
807	80,695	1121.0	7341.0	0.7	9.3[1]	8.8	9.8	1.0
811	81,071	1047.0	6401.0	0.8	9.3[1]	8.9	9.9	1.0
813	81,264	752.0	5008.0	1.0	9.4[1]	8.9	9.9	1.0
813	81,344	128.0	1210.0	3.9	9.4[1]	8.9	9.8	0.9
814	81,394	129.0	1296.0	3.7	9.5[1]	8.9	9.9	1.0
815	81,452	773.0	3359.0	1.4	9.7[1]	9.2	10.1	0.9
815	81,547	920.0	4792.0	1.0	9.7[1]	9.2	10.2	1.0
18	81,769	942.0	4828.0	1.0	9.7[1]	9.3	10.2	0.9
23	82,269	1423.0	7046.0	0.7	9.7[1]	9.3	10.2	0.9
825	82,488	1595.0	8934.0	0.5	9.7[1]	9.3	10.3	1.0
853	85,258	1251.0	7165.0	0.6	9.9[1]	9.5	10.4	0.9

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
ross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Lockwoods Folly River								
857	85,742	746.0	4895.0	0.9	9.9[1]	9.5	10.5	1.0
861	86,145	937.0	6699.0	0.7	9.9[1]	9.6	10.6	1.0
863	86,338	863.0	6994.0	0.7	10.0[1]	9.6	10.6	1.0
866	86,589	829.0	6693.0	0.7	10.0[1]	9.6	10.6	1.0
868	86,834	929.0	7278.0	0.6	10.0[1]	9.6	10.6	1.0
873	87,267	946.0	6849.0	0.7	10.0[1]	9.7	10.7	1.0
878	87,817	1048.0	8185.0	0.6	10.0[1]	9.7	10.7	1.0
884	88,372	1067.0	7684.0	0.6	10.1[1]	9.8	10.8	1.0
887	88,701	1171.0	9297.0	0.5	10.1[1]	9.8	10.8	1.0
891	89,073	1124.0	8155.0	0.6	10.2[1]	9.8	10.8	1.0
896	89,583	1012.0	7560.0	0.6	10.2[1]	9.9	10.9	1.0
899	89,863	975.0	7099.0	0.7	10.2[1]	9.9	10.9	1.0
903	90,346	867.0	5818.0	0.8	10.3[1]	10.0	11.0	1.0
906	90,618	829.0	5453.0	0.9	10.3[1]	10.1	11.1	1.0
911	91,088	645.0	4643.0	1.0	10.4[1]	10.2	11.2	1.0
915	91,545	637.0	4743.0	1.0	10.5[1]	10.3	11.3	1.0
922	92,154	751.0	5104.0	0.9	10.6[1]	10.4	11.4	1.0
925	92,526	636.0	4095.0	1.1	10.7[1]	10.5	11.5	1.0
29	92,925	577.0	3779.0	1.2	10.8[1]	10.6	11.6	1.0
34	93,372	487.0	2962.0	1.6	10.9[1]	10.7	11.8	1.1
937	93,725	503.0	2887.0	1.6	11.2[1]	11.0	12.0	1.0
942	94,153	597.0	3879.0	0.7	11.3[1]	11.2	12.2	1.0
947	94,707	650.0	5076.0	0.5	11.4[1]	11.3	12.3	1.0
952	95,175	617.0	5011.0	0.5	11.4[1]	11.3	12.3	1.0
956	95,604	525.0	3954.0	0.7	11.5[1]	11.3	12.3	1.0
962	96,159	487.0	3589.0	0.7	11.5[1]	11.4	12.4	1.0
966	96,612	607.0	4473.0	0.6	11.6[1]	11.5	12.5	1.0
970	97,010	624.0	4649.0	0.6	11.6[1]	11.5	12.5	1.0
982	98,179	813.0	5591.0	0.5	11.7[1]	11.6	12.6	1.0
987	98,692	611.0	3976.0	0.7	11.8[1]	11.7	12.6	0.9
991	99,117	613.0	4012.0	0.7	11.8[1]	11.7	12.7	1.0
992	99,249	596.0	3928.0	0.7	11.8[1]	11.7	12.7	1.0
995	99,488	522.0	3254.0	0.8	11.9[1]	11.8	12.8	1.0
997	99,654	393.0	2624.0	1.0	12.0[1]	11.9	12.8	0.9
999	99,900	407.0	2722.0	1.0	12.1[1]	12.0	12.9	0.9
1002	100,241	434.0	2930.0	0.9	12.2[1]	12.1	13.1	1.0
1004	100,430	475.0	3125.0	0.9	12.2[1]	12.1	13.1	1.0
1008	100,799	510.0	3102.0	0.9	12.3[1]	12.3	13.3	1.0
1012	101,209	492.0	2737.0	1.0	12.5[1]	12.4	13.4	1.0
015	101,523	418.0	2264.0	1.2	12.6[1]	12.6	13.6	1.0
.021	102,110	445.0	2456.0	1.1	12.9[1]	12.9	13.9	1.0
1024	102,436	462.0	2441.0	1.1	13.1[1]	13.1	14.0	0.9
1027	102,730	385.0	1635.0	1.6	13.3[1]	13.3	14.3	1.0

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
ross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Lockwoods Folly River								
1029	102,868	400.0	1707.0	1.6	13.5[1]	13.5	14.5	1.0
1030	102,996	435.0	1994.0	1.3	13.7[1]	13.6	14.7	1.1
1033	103,271	378.0	1717.0	1.6	13.8[1]	13.8	14.8	1.0
1037	103,681	492.0	2416.0	1.1	14.3[1]	14.2	15.2	1.0
1041	104,089	437.0	2165.0	1.2	14.6[1]	14.5	15.5	1.0
1045	104,472	420.0	2118.0	1.3	14.9[1]	14.9	15.9	1.0
1047	104,743	101.0	796.0	3.3	15.2	15.2	16.1	0.9
1048	104,783	101.0	854.0	3.1	16.4	16.4	17.3	0.9
1049	104,915	665.0	4865.0	0.5	16.7	16.7	17.5	0.8
1051	105,101	655.0	4585.0	0.6	16.7	16.7	17.6	0.9
1053	105,278	580.0	3872.0	0.7	16.7	16.7	17.6	0.9
1057	105,736	520.0	3309.0	0.8	16.8	16.8	17.7	0.9
1061	106,062	613.0	3711.0	0.7	16.8	16.8	17.7	0.9
1069	106,927	489.0	2891.0	0.9	17.0	17.0	17.9	0.9
1076	107,575	426.0	2554.0	1.0	17.2	17.2	18.1	0.9
1081	108,086	463.0	2761.0	0.9	17.4	17.4	18.3	0.9
1083	108,330	479.0	2814.0	0.9	17.5	17.5	18.4	0.9
1086	108,586	594.0	3303.0	0.8	17.6	17.6	18.5	0.9
092	109,210	486.0	2598.0	1.0	17.9	17.9	18.8	0.9
098	109,796	382.0	1993.0	1.3	18.3	18.3	19.2	0.9
1102	110,238	254.0	1421.0	1.8	18.7	18.7	19.6	0.9
1105	110,498	292.0	1715.0	1.5	19.0	19.0	19.9	0.9
1107	110,747	313.0	1660.0	1.5	19.3	19.3	20.2	0.9
1114	111,369	291.0	1709.0	1.5	19.9	19.9	20.8	0.9
1120	111,977	307.0	1826.0	1.4	20.3	20.3	21.3	1.0
1126	112,635	335.0	1764.0	1.3	20.8	20.8	21.8	1.0
1129	112,879	238.0	1357.0	1.6	21.0	21.0	21.9	0.9
1131	113,130	219.0	1248.0	1.8	21.2	21.2	22.2	1.0
1138	113,814	339.0	1796.0	1.2	21.8	21.8	22.7	0.9
1139	113,933	343.0	1723.0	1.3	21.9	21.9	22.8	0.9
1141	114,067	322.0	1571.0	1.4	22.0	22.0	22.9	0.9
1143	114,275	365.0	1555.0	1.4	22.3	22.3	23.2	0.9
1149	114,922	450.0	1909.0	1.2	22.7	22.7	23.7	1.0
1152	115,188	450.0	2599.0	0.9	25.1	25.1	25.4	0.3
1153	115,297	140.0	956.0	2.3	25.1	25.1	25.4	0.3
1155	115,503	200.0	1275.0	1.7	25.3	25.3	25.7	0.4
1158	115,761	200.0	1233.0	1.8	25.4	25.4	25.9	0.5
1161	116,059	279.0	1688.0	1.3	25.5	25.5	26.2	0.7
1164	116,396	293.0	1784.0	1.2	25.7	25.7	26.4	0.7
1166	116,621	377.0	2239.0	1.0	25.8	25.8	26.5	0.7
168	116,842	341.0	1966.0	1.1	25.9	25.9	26.6	0.7
ookout Creek								
028	2,843	118.0	674.0	0.9	13.5[1]	12.6	12.6	0.0
031	3,134	100.0	524.0	1.1	13.5[1]	12.6	12.6	0.0

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
Lookout Creek								
037	3,730	88.0	314.0	1.9	13.6[1]	12.7	12.9	0.2
045	4,540	69.0	116.0	4.9	14.0[1]	13.2	13.2	0.0
047	4,725	102.0	294.0	2.0	14.7[1]	14.3	15.0	0.7
050	5,020	109.0	288.0	2.0	15.3[1]	15.0	15.7	0.7
053	5,284	53.0	176.0	3.3	15.9[1]	15.8	16.4	0.6
054	5,378	59.0	162.0	3.6	16.3[1]	16.2	16.8	0.6
055	5,527	89.0	117.0	4.9	18.0[1]	17.9	17.9	0.0
059	5,885	95.0	437.0	1.3	19.5[1]	19.5	19.6	0.1
061	6,075	113.0	412.0	1.4	19.6[1]	19.6	19.8	0.2
064	6,380	98.0	399.0	1.4	19.8[1]	19.8	20.2	0.4
067	6,694	27.0	74.0	7.8	20.2[1]	20.2	20.4	0.2
070	6,989	71.0	386.0	1.5	21.8[1]	21.8	22.2	0.4
073	7,280	90.0	383.0	1.5	22.0[1]	22.0	22.5	0.5
077	7,680	64.0	206.0	2.8	22.1[1]	22.1	23.1	1.0
079	7,923	25.0	83.0	6.9	23.7[1]	23.7	24.0	0.3
081	8,135	48.0	167.0	3.4	25.8[1]	25.8	25.9	0.1
084	8,430	85.0	400.0	1.4	26.5	26.5	26.9	0.4
087	8,711	83.0	269.0	1.2	26.7	26.7	27.2	0.5
089	8,933	67.0	75.0	4.3	27.6	27.6	27.6	0.0
091	9,085	26.0	62.0	5.2	29.9	29.9	29.9	0.0
097	9,661	61.0	369.0	0.9	34.8	34.8	35.8	1.0
098	9,827	35.0	149.0	2.1	34.9	34.9	35.8	0.9
102	10,180	62.0	191.0	1.7	35.5	35.5	36.3	0.8
104	10,359	58.0	223.0	1.4	35.7	35.7	36.6	0.9
107	10,654	58.0	278.0	1.1	35.9	35.9	36.8	0.9
109	10,901	46.0	165.0	1.8	36.0	36.0	36.9	0.9
111	11,132	26.0	99.0	3.1	36.3	36.3	37.2	0.9
Mallory Creek								
129	12,876	240.0	718.0	1.1	9.5[1]	8.7	9.5	0.8
135	13,499	245.0	679.0	1.1	10.4[1]	10.2	10.6	0.4
140	13,973	250.0	716.0	1.1	11.0[1]	10.9	11.4	0.5
144	14,430	204.0	728.0	0.9	11.3[1]	11.2	11.9	0.7
150	14,954	164.0	624.0	1.1	11.6[1]	11.5	12.2	0.7
155	15,459	133.0	494.0	1.4	11.7[1]	11.6	12.5	0.9
160	15,962	143.0	443.0	1.5	12.0[1]	11.9	12.8	0.9
166	16,615	778.0	2955.0	0.2	12.3[1]	12.2	12.9	0.7
170	17,010	580.0	2203.0	0.3	12.3[1]	12.2	12.9	0.7
174	17,401	470.0	1870.0	0.4	12.4[1]	12.3	13.0	0.7
180	18,010	341.0	1259.0	0.4	12.4[1]	12.3	13.0	0.7
184	18,428	280.0	898.0	0.5	12.4[1]	12.3	13.0	0.7
188	18,758	170.0	631.0	0.7	12.4[1]	12.4	13.0	0.6
194	19,430	82.0	270.0	1.7	12.7[1]	12.6	13.2	0.6
200	20,039	82.0	178.0	2.4	13.6[1]	13.6	13.9	0.3

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
ross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Mallory Creek								
204	20,370	83.0	172.0	2.5	14.9[1]	14.9	15.1	0.2
209	20,893	123.0	277.0	1.5	16.6	16.6	17.1	0.5
213	21,306	138.0	262.0	1.6	17.1	17.1	17.9	0.8
219	21,921	25.0	149.0	2.6	21.5	21.5	22.0	0.5
Mallory Creek Tributary								
002	161	314.0	817.0	0.5	9.3[1]	5.6	6.6	1.0
005	468	219.0	451.0	1.0	9.3[1]	5.9	6.8	0.9
009	936	218.0	418.0	1.0	9.3[1]	6.8	7.7	0.9
015	1,493	170.0	416.0	0.8	9.3[1]	7.5	8.5	1.0
017	1,722	120.0	342.0	1.0	9.3[1]	7.8	8.8	1.0
020	2,014	113.0	378.0	0.9	9.3[1]	8.1	9.1	1.0
025	2,504	99.0	342.0	1.0	9.3[1]	8.5	9.5	1.0
028	2,848	108.0	360.0	1.0	9.3[1]	8.8	9.8	1.0
033	3,273	70.0	238.0	1.5	9.3[1]	9.3	10.2	0.9
036	3,607	88.0	228.0	1.2	9.9[1]	9.9	10.8	0.9
039	3,850	84.0	271.0	1.0	10.0[1]	10.0	11.0	1.0
040	3,985	17.0	49.0	5.5	10.1[1]	10.1	10.9	0.8
041	4,093	17.0	49.0	5.6	11.9	11.9	11.9	0.0
42	4,221	33.0	115.0	2.4	12.7	12.7	12.9	0.2
44	4,434	74.0	230.0	1.2	12.8	12.8	13.3	0.5
047	4,712	58.0	193.0	1.4	12.9	12.9	13.5	0.6
050	5,000	30.0	111.0	2.5	13.2	13.2	13.9	0.7
052	5,221	36.0	125.0	2.2	13.6	13.6	14.4	0.8
053	5,308	40.0	68.0	4.0	14.1	14.1	14.5	0.4
Mercers Mill Pond								
114	11,388	138.0	845.0	1.4	11.5[1]	7.9	8.8	0.9
116	11,616	165.0	962.0	1.3	11.5[1]	8.1	9.0	0.9
118	11,842	173.0	1064.0	1.2	11.5[1]	8.2	9.1	0.9
120	11,987	180.0	1064.0	1.2	11.5[1]	8.2	9.2	1.0
125	12,474	101.0	518.0	1.7	11.5[1]	8.5	9.4	0.9
127	12,698	36.0	191.0	4.3	11.5[1]	8.6	9.5	0.9
129	12,866	34.0	185.0	4.4	11.5[1]	8.9	9.8	0.9
130	13,016	34.0	194.0	4.2	11.6[1]	9.3	10.1	0.8
132	13,178	52.0	274.0	3.0	11.7[1]	9.7	10.4	0.7
134	13,365	32.0	157.0	5.2	11.7[1]	9.9	10.6	0.7
135	13,522	32.0	181.0	4.5	11.8[1]	10.3	11.3	1.0
137	13,662	100.0	546.0	1.5	12.1[1]	10.8	11.7	0.9
138	13,761	57.0	307.0	2.7	12.2[1]	10.8	11.7	0.9
141	14,050	73.0	359.0	2.3	12.3[1]	11.1	12.0	0.9
43	14,303	151.0	640.0	1.3	12.4[1]	11.4	12.3	0.9
46	14,639	151.0	565.0	1.5	12.5[1]	11.6	12.6	1.0
148	14,828	73.0	251.0	3.3	12.6[1]	11.8	12.7	0.9
151	15,098	121.0	500.0	1.6	13.0[1]	12.5	13.5	1.0

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
ross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Mercers Mill Pond								
155	15,474	65.0	223.0	2.8	13.5[1]	13.1	14.0	0.9
158	15,763	26.0	105.0	5.6	14.2[1]	13.9	14.9	1.0
159	15,924	25.0	97.0	6.1	14.8[1]	14.6	15.6	1.0
161	16,119	28.0	114.0	5.2	16.1[1]	16.0	16.7	0.7
163	16,296	30.0	117.0	5.0	16.8[1]	16.7	17.4	0.7
165	16,544	25.0	114.0	5.2	17.5[1]	17.4	18.2	0.8
167	16,748	31.0	142.0	4.2	18.0[1]	17.9	18.9	1.0
169	16,857	24.0	97.0	6.1	18.3[1]	18.2	19.0	0.8
170	16,970	36.0	142.0	4.2	18.9[1]	18.9	19.8	0.9
Mulberry Branch								
065	6,500	44.0	94.0	7.8	12.9[1]	9.5	9.6	0.1
067	6,743	44.0	315.0	2.3	13.1[1]	10.7	11.1	0.4
069	6,944	200.0	1338.0	0.6	13.1[1]	10.7	11.3	0.6
073	7,262	200.0	1209.0	0.6	13.1[1]	10.7	11.4	0.7
076	7,629	197.0	1013.0	0.7	13.1[1]	10.8	11.4	0.6
080	8,040	184.0	711.0	1.0	13.2[1]	10.9	11.6	0.7
083	8,264	165.0	534.0	1.4	13.2[1]	11.1	11.8	0.7
085	8,496	191.0	671.0	1.1	13.2[1]	11.3	12.1	0.8
086	8,606	193.0	772.0	1.0	13.2[1]	11.4	12.2	0.8
091	9,052	187.0	632.0	1.2	13.3[1]	11.7	12.5	0.8
093	9,326	146.0	504.0	1.5	13.4[1]	12.0	12.8	0.8
096	9,599	175.0	752.0	1.0	13.5[1]	12.3	13.1	0.8
099	9,860	109.0	320.0	2.0	13.7[1]	12.6	13.3	0.7
102	10,165	107.0	375.0	1.7	14.1[1]	13.3	14.2	0.9
103	10,266	52.0	161.0	3.9	14.2[1]	13.5	14.3	0.8
103	10,348	84.0	304.0	2.1	14.6[1]	14.1	15.0	0.9
107	10,666	84.0	311.0	2.1	15.4[1]	15.0	15.9	0.9
109	10,927	29.0	168.0	3.8	16.0[1]	15.7	16.5	0.8
111	11,078	52.0	304.0	2.1	16.5[1]	16.2	17.1	0.9
112	11,155	52.0	272.0	2.3	16.7[1]	16.4	17.3	0.9
112	11,192	119.0	667.0	1.0	16.9[1]	16.6	17.5	0.9
112	11,233	130.0	730.0	0.9	16.9[1]	16.6	17.5	0.9
114	11,382	143.0	806.0	0.8	16.9[1]	16.6	17.5	0.9
116	11,588	166.0	649.0	1.0	17.0[1]	16.7	17.6	0.9
118	11,848	137.0	521.0	1.2	17.2[1]	16.9	17.7	0.8
121	12,055	113.0	407.0	1.6	17.4[1]	17.1	18.0	0.9
123	12,284	115.0	450.0	1.4	17.7[1]	17.5	18.4	0.9
124	12,442	145.0	472.0	1.4	17.9[1]	17.7	18.6	0.9
126	12,593	116.0	498.0	1.3	18.0[1]	17.9	18.7	0.8
127	12,741	176.0	530.0	1.2	18.2[1]	18.1	18.9	0.8
130	12,970	151.0	696.0	0.9	18.3[1]	18.3	19.1	0.8
Nucitt Branch								
018	1,770	158.0	514.0	1.4	9.1[2]	4.1	5.0	0.9
023	2,295	117.0	388.0	1.9	9.1[2]	5.4	6.4	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
Nucitt Branch								
027	2,733	103.0	403.0	1.8	9.1[2]	6.7	7.6	0.9
032	3,157	133.0	503.0	1.5	9.1[2]	7.1	8.0	0.9
037	3,677	153.0	589.0	1.2	9.1[2]	7.6	8.5	0.9
040	4,022	169.0	611.0	1.2	9.1[2]	7.9	8.8	0.9
044	4,404	143.0	486.0	1.4	9.1[2]	8.3	9.3	1.0
049	4,879	87.0	320.0	2.2	9.3	9.3	10.1	0.8
053	5,293	108.0	457.0	1.5	10.8	10.8	11.3	0.5
057	5,724	101.0	403.0	1.6	11.1	11.1	11.7	0.6
061	6,090	79.0	330.0	2.0	11.5	11.5	12.2	0.7
063	6,312	29.0	150.0	4.4	12.0	12.0	12.8	0.8
065	6,454	92.0	284.0	2.3	12.6	12.6	13.6	1.0
068	6,813	130.0	394.0	1.6	13.7	13.7	14.6	0.9
071	7,134	110.0	385.0	1.7	14.2	14.2	15.2	1.0
074	7,435	92.0	303.0	2.1	14.9	14.9	15.8	0.9
079	7,896	85.0	290.0	2.1	15.7	15.7	16.7	1.0
082	8,248	119.0	416.0	1.4	16.3	16.3	17.3	1.0
087	8,748	101.0	324.0	1.9	17.0	17.0	18.0	1.0
090	9,014	96.0	312.0	1.9	17.6	17.6	18.6	1.0
Pamlico Creek								
098	9,756	121.0	357.0	1.4	11.0[1]	8.2	9.2	1.0
103	10,253	132.0	402.0	1.3	11.0[1]	8.9	9.8	0.9
108	10,750	110.0	392.0	1.3	11.0[1]	9.4	10.4	1.0
112	11,219	117.0	352.0	1.5	11.0[1]	10.1	11.0	0.9
114	11,374	200.0	574.0	0.8	11.2[1]	10.3	11.2	0.9
115	11,518	214.0	669.0	0.7	11.2[1]	10.4	11.3	0.9
117	11,664	187.0	597.0	0.8	11.3[1]	10.5	11.4	0.9
117	11,733	167.0	547.0	0.9	11.3[1]	10.6	11.4	0.8
120	11,965	133.0	410.0	1.1	11.4[1]	10.8	11.6	0.8
121	12,098	121.0	311.0	1.4	11.5[1]	10.9	11.8	0.9
122	12,169	120.0	238.0	1.8	11.6[1]	11.1	11.9	0.8
122	12,226	107.0	272.0	1.5	11.7[1]	11.2	12.0	0.8
123	12,328	112.0	291.0	1.4	11.8[1]	11.4	12.2	0.8
125	12,492	123.0	342.0	1.2	12.0[1]	11.6	12.5	0.9
126	12,616	114.0	299.0	1.4	12.2[1]	11.8	12.7	0.9
127	12,705	125.0	340.0	1.2	12.3[1]	12.0	12.8	0.8
129	12,877	156.0	447.0	0.9	12.5[1]	12.2	13.0	0.8
130	12,988	126.0	268.0	1.4	12.6[1]	12.3	13.1	0.8
131	13,095	95.0	237.0	1.6	12.7[1]	12.5	13.3	0.8
132	13,179	89.0	212.0	1.8	12.9[1]	12.7	13.5	0.8
134	13,372	94.0	203.0	1.9	13.4[1]	13.2	14.1	0.9
134	13,448	80.0	168.0	2.0	13.6[1]	13.5	14.4	0.9
136	13,565	112.0	285.0	1.2	13.9[1]	13.8	14.8	1.0
137	13,714	63.0	174.0	1.9	14.2[1]	14.1	15.0	0.9

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
Pamlico Creek								
138	13,841	73.0	226.0	1.3	14.4[1]	14.3	15.3	1.0
139	13,929	67.0	191.0	1.6	14.6[1]	14.5	15.4	0.9
140	14,006	66.0	162.0	1.9	14.7[1]	14.7	15.6	0.9
141	14,064	57.0	153.0	2.0	14.9[1]	14.9	15.8	0.9
141	14,136	78.0	190.0	1.6	15.2[1]	15.1	16.0	0.9
142	14,204	68.0	188.0	1.6	15.3[1]	15.2	16.2	1.0
143	14,296	40.0	101.0	3.0	15.6[1]	15.5	16.4	0.9
144	14,352	63.0	158.0	1.9	15.8[1]	15.8	16.8	1.0
144	14,389	71.0	172.0	1.7	16.0[1]	16.0	17.0	1.0
145	14,510	58.0	176.0	1.6	16.4[1]	16.4	17.3	0.9
147	14,676	70.0	172.0	1.7	16.9[1]	16.8	17.8	1.0
149	14,856	55.0	137.0	2.1	17.5[1]	17.5	18.5	1.0
151	15,100	81.0	212.0	1.4	18.4[1]	18.4	19.4	1.0
153	15,256	110.0	278.0	0.8	18.7[1]	18.7	19.6	0.9
154	15,429	52.0	103.0	2.1	19.0[1]	19.0	19.9	0.9
Pinch Gut Creek								
000	0	390.0	2146.0	1.0	25.8	25.8	26.5	0.7
004	417	217.0	1059.0	0.7	25.9	25.9	26.7	0.8
)08	750	110.0	582.0	1.2	26.0	26.0	26.8	0.8
)12	1,245	147.0	708.0	1.0	26.2	26.2	27.1	0.9
020	1,950	227.0	888.0	0.8	26.5	26.5	27.4	0.9
028	2,819	169.0	603.0	1.2	27.0	27.0	27.9	0.9
035	3,494	90.0	329.0	2.1	27.7	27.7	28.6	0.9
044	4,386	100.0	435.0	1.6	30.3	30.3	30.8	0.5
049	4,915	113.0	434.0	1.4	30.6	30.6	31.5	0.9
055	5,491	93.0	415.0	1.4	31.1	31.1	32.0	0.9
058	5,844	89.0	373.0	1.6	31.4	31.4	32.4	1.0
061	6,138	54.0	240.0	2.5	31.8	31.8	32.7	0.9
066	6,635	71.0	270.0	2.2	32.7	32.7	33.7	1.0
069	6,923	90.0	380.0	1.6	33.3	33.3	34.3	1.0
074	7,404	101.0	392.0	1.5	33.9	33.9	34.9	1.0
077	7,705	136.0	504.0	1.1	34.2	34.2	35.2	1.0
087	8,699	63.0	233.0	2.0	35.7	35.7	36.4	0.7
091	9,116	53.0	166.0	2.8	36.3	36.3	37.1	0.8
097	9,710	46.0	163.0	2.8	38.0	38.0	38.9	0.9
101	10,114	58.0	202.0	2.3	38.9	38.9	39.9	1.0
108	10,804	51.0	166.0	2.5	40.3	40.3	41.3	1.0
111	11,072	64.0	228.0	1.8	40.9	40.9	41.9	1.0
115	11,540	51.0	108.0	3.9	42.3	42.3	43.0	0.7
119	11,930	45.0	155.0	2.1	44.3	44.3	45.2	0.9
124	12,391	87.0	371.0	0.9	46.9	46.9	47.9	1.0
Polly Swain Branch								
002	167	56.0	158.0	2.3	9.22	7.5	8.2	0.7
004	353	70.0	199.0	1.8	9.22	8.2	9.0	0.8

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
Polly Swain Branch								
005	524	52.0	146.0	2.5	9.22	8.8	9.8	1.0
007	710	72.0	174.0	2.1	10.2	10.2	11.0	0.8
009	942	74.0	224.0	1.6	11.1	11.1	12.1	1.0
012	1,190	59.0	149.0	2.5	12.3	12.3	13.3	1.0
014	1,376	41.0	112.0	3.3	13.7	13.7	14.5	0.8
Scott Branch								
008	833	158.0	439.0	1.2	9.2[2]	2.8	3.7	0.9
011	1,114	64.0	192.0	2.8	9.2[2]	3.4	4.3	0.9
015	1,543	28.0	141.0	3.8	9.2[2]	5.9	6.3	0.4
018	1,772	57.0	201.0	2.3	9.2[2]	6.6	7.4	0.8
022	2,231	28.0	150.0	3.1	9.2[2]	7.1	8.1	1.0
025	2,461	21.0	119.0	3.9	9.2[2]	8.3	9.1	0.8
027	2,703	43.0	193.0	2.4	9.3	9.3	10.1	0.8
033	3,301	90.0	473.0	0.9	9.7	9.7	10.6	0.9
039	3,875	26.0	137.0	3.1	10.0	10.0	10.8	0.8
042	4,243	114.0	461.0	0.9	10.3	10.3	11.2	0.9
047	4,682	100.0	394.0	1.1	10.5	10.5	11.4	0.9
049	4,909	75.0	282.0	1.5	10.7	10.7	11.6	0.9
053	5,344	69.0	246.0	1.9	11.2	11.2	12.1	0.9
058	5,810	48.0	164.0	2.5	11.9	11.9	12.8	0.9
060	6,019	53.0	195.0	1.9	12.5	12.5	13.5	1.0
063	6,288	45.0	161.0	2.3	13.1	13.1	14.1	1.0
066	6,643	41.0	180.0	2.1	14.7	14.7	15.6	0.9
Shallotte Creek								
346	34,558	262.0	834.0	0.8	11.6[1]	10.4	10.7	0.3
350	34,982	185.0	721.0	1.0	11.6[1]	10.6	11.0	0.4
354	35,413	210.0	750.0	0.9	11.7[1]	10.8	11.3	0.5
360	35,964	163.0	445.0	1.4	11.9[1]	11.2	11.8	0.6
365	36,516	296.0	645.0	1.0	12.4[1]	11.9	12.7	0.8
372	37,237	54.0	218.0	2.5	13.1[1]	12.8	13.7	0.9
376	37,576	88.0	325.0	1.7	13.7[1]	13.5	14.4	0.9
381	38,060	57.0	218.0	2.5	14.4[1]	14.2	15.1	0.9
385	38,516	65.0	260.0	2.1	15.2[1]	15.0	15.7	0.7
398	39,828	204.0	1154.0	0.5	23.7	23.7	23.7	0.0
405	40,546	201.0	917.0	0.5	23.8	23.8	23.8	0.0
410	41,042	138.0	418.0	1.1	23.9	23.9	24.0	0.1
415	41,503	107.0	245.0	1.8	24.2	24.2	24.5	0.3
421	42,086	33.0	136.0	3.3	25.4	25.4	26.1	0.7
426	42,576	61.0	145.0	3.1	26.8	26.8	27.3	0.5
431	43,087	69.0	199.0	2.2	29.2	29.2	29.9	0.7
435	43,516	105.0	302.0	1.5	30.4	30.4	31.4	1.0
441	44,118	98.0	189.0	2.3	33.1	33.1	33.4	0.3

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
Shallotte Creek Tributary								
062	6,211	83.0	323.0	2.2	12.3[1]	10.2	11.0	0.8
065	6,493	65.0	204.0	3.6	12.3[1]	10.6	11.5	0.9
067	6,723	95.0	332.0	2.2	12.6[1]	11.4	12.3	0.9
072	7,156	77.0	375.0	1.9	13.0[1]	12.3	13.3	1.0
073	7,318	43.0	199.0	3.7	13.0[1]	12.4	13.4	1.0
074	7,424	42.0	226.0	3.2	13.3[1]	12.8	13.7	0.9
076	7,641	29.0	183.0	4.0	13.6[1]	13.1	13.9	0.8
079	7,881	47.0	369.0	2.0	14.0[1]	13.6	14.3	0.7
083	8,309	35.0	189.0	3.5	14.1[1]	13.7	14.4	0.7
085	8,549	35.0	181.0	3.6	14.4[1]	14.1	14.7	0.6
092	9,178	30.0	174.0	3.8	15.6[1]	15.4	16.3	0.9
095	9,526	28.0	149.0	4.4	16.1[1]	16.0	16.8	0.8
097	9,744	25.0	125.0	5.2	16.7[1]	16.6	17.4	0.8
102	10,186	64.0	328.0	2.0	21.4[1]	21.3	21.8	0.5
107	10,660	48.0	160.0	4.1	21.4[1]	21.3	22.2	0.9
111	11,073	90.0	512.0	1.3	22.1[1]	22.1	22.9	0.8
116	11,620	61.0	324.0	2.0	23.8	23.8	24.5	0.7
121	12,083	44.0	88.0	7.4	26.2	26.2	26.3	0.1
25	12,527	85.0	273.0	1.8	28.3	28.3	28.7	0.4
29	12,947	152.0	363.0	1.3	28.5	28.5	29.2	0.7
135	13,499	304.0	1032.0	0.5	28.7	28.7	29.6	0.9
139	13,883	420.0	1414.0	0.3	28.7	28.7	29.6	0.9
143	14,347	520.0	1709.0	0.3	28.7	28.7	29.7	1.0
148	14,800	560.0	1439.0	0.3	28.8	28.8	29.7	0.9
154	15,353	370.0	1083.0	0.5	28.9	28.9	29.9	1.0
Shallotte River								
437	43,707	619.0	4819.0	0.5	13.6[1]	10.4	11.2	0.8
440	43,951	559.0	4007.0	0.6	13.6[1]	10.4	11.2	0.8
443	44,313	276.0	1951.0	1.3	13.6[1]	10.5	11.3	0.8
445	44,533	484.0	3162.0	0.8	13.6[1]	10.6	11.4	0.8
449	44,935	481.0	3212.0	0.8	13.6[1]	10.7	11.5	0.8
453	45,347	366.0	2319.0	1.1	13.6[1]	10.8	11.6	0.8
457	45,716	219.0	1454.0	1.7	13.6[1]	10.9	11.7	0.8
462	46,171	183.0	1387.0	1.8	13.7[1]	11.2	12.1	0.9
466	46,603	605.0	2823.0	0.9	13.8[1]	11.5	12.3	0.8
468	46,817	605.0	4814.0	0.5	13.9[1]	11.7	12.5	0.8
472	47,159	628.0	4917.0	0.5	13.9[1]	11.7	12.5	0.8
476	47,552	706.0	4892.0	0.5	13.9[1]	11.8	12.5	0.7
480	48,015	644.0	4510.0	0.6	13.9[1]	11.8	12.6	0.8
186	48,556	788.0	5447.0	0.5	13.9[1]	11.9	12.7	0.8
190	48,965	496.0	2976.0	0.8	13.9[1]	11.9	12.7	0.8
493	49,295	397.0	2239.0	1.1	14.0[1]	12.1	12.9	0.8
497	49,737	402.0	2218.0	1.1	14.1[1]	12.3	13.1	0.8

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
Shallotte River								
502	50,219	409.0	1824.0	1.4	14.2[1]	12.6	13.4	0.8
506	50,565	450.0	2644.0	0.9	14.2[1]	12.8	13.6	0.8
509	50,878	516.0	2799.0	0.8	14.2[1]	12.8	13.7	0.9
511	51,145	545.0	2738.0	0.8	14.3[1]	12.9	13.7	0.8
516	51,555	372.0	1763.0	1.3	14.3[1]	13.0	13.8	0.8
519	51,880	336.0	1718.0	1.3	14.4[1]	13.2	14.0	0.8
522	52,191	414.0	2234.0	1.0	14.4[1]	13.4	14.2	0.8
524	52,435	606.0	2986.0	0.8	14.5[1]	13.4	14.3	0.9
527	52,672	394.0	2073.0	1.1	14.5[1]	13.5	14.4	0.9
530	53,035	593.0	2795.0	0.8	14.6[1]	13.6	14.5	0.9
533	53,294	468.0	2047.0	1.1	14.7[1]	13.7	14.6	0.9
537	53,744	446.0	1865.0	1.2	14.8[1]	14.1	15.0	0.9
540	54,034	464.0	2118.0	1.1	15.0[1]	14.3	15.2	0.9
543	54,329	459.0	2250.0	1.0	15.1[1]	14.4	15.3	0.9
547	54,735	420.0	1921.0	1.2	15.2[1]	14.6	15.5	0.9
550	54,982	460.0	1882.0	1.2	15.3[1]	14.8	15.6	0.8
553	55,284	288.0	1238.0	1.8	15.5[1]	15.1	15.9	0.8
556	55,597	393.0	2074.0	1.1	15.8[1]	15.4	16.2	0.8
561	56,068	457.0	2517.0	0.9	16.0[1]	15.6	16.5	0.9
566	56,552	409.0	2066.0	1.1	16.2[1]	15.8	16.7	0.9
569	56,894	538.0	2723.0	0.8	16.4[1]	16.0	16.9	0.9
572	57,156	511.0	2692.0	0.7	16.5[1]	16.1	17.0	0.9
574	57,417	524.0	2622.0	0.8	16.5[1]	16.2	17.1	0.9
581	58,142	509.0	2363.0	0.8	16.8[1]	16.5	17.4	0.9
584	58,394	532.0	2342.0	0.8	16.9[1]	16.6	17.5	0.9
588	58,822	450.0	2079.0	0.9	17.0[1]	16.8	17.7	0.9
591	59,123	289.0	1156.0	1.7	17.2[1]	17.0	17.9	0.9
594	59,405	359.0	1606.0	1.2	17.5[1]	17.3	18.3	1.0
598	59,838	450.0	2284.0	0.9	17.7[1]	17.6	18.5	0.9
601	60,071	526.0	2497.0	0.8	17.9[1]	17.7	18.6	0.9
605	60,465	552.0	2741.0	0.7	18.0[1]	17.8	18.8	1.0
609	60,895	666.0	2864.0	0.7	18.2[1]	18.0	18.9	0.9
611	61,054	357.0	1604.0	1.2	18.3[1]	18.1	19.0	0.9
613	61,304	187.0	1192.0	1.7	18.6[1]	18.4	19.3	0.9
616	61,573	214.0	1151.0	1.7	19.0[1]	18.8	19.6	0.8
618	61,809	159.0	838.0	2.3	19.4[1]	19.2	19.9	0.7
620	61,961	159.0	934.0	2.1	19.9[1]	19.9	20.4	0.5
624	62,352	402.0	1842.0	1.1	20.3[1]	20.3	20.8	0.5
626	62,576	322.0	1766.0	1.1	20.5[1]	20.4	21.0	0.6
628	62,771	356.0	2372.0	0.8	20.5[1]	20.5	21.1	0.6
632	63,240	293.0	1942.0	1.0	20.7[1]	20.6	21.3	0.7
637	63,676	471.0	2929.0	0.7	20.8[1]	20.8	21.4	0.6
641	64,077	490.0	3030.0	0.7	20.9[1]	20.9	21.5	0.6

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
ross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Shallotte River								
644	64,446	399.0	2495.0	0.8	21.0[1]	20.9	21.6	0.7
648	64,829	252.0	1510.0	1.3	21.2[1]	21.1	21.8	0.7
651	65,149	313.0	1335.0	1.5	21.5[1]	21.5	22.2	0.7
657	65,677	304.0	2006.0	1.0	21.9[1]	21.9	22.7	0.8
662	66,204	353.0	2143.0	0.9	22.1[1]	22.1	22.9	0.8
666	66,612	457.0	2840.0	0.6	22.3[1]	22.2	23.1	0.9
671	67,076	448.0	2519.0	0.7	22.3[1]	22.3	23.2	0.9
675	67,460	333.0	1810.0	1.0	22.4	22.4	23.3	0.9
678	67,779	435.0	2697.0	0.6	22.5	22.5	23.4	0.9
681	68,143	620.0	3733.0	0.5	22.6	22.6	23.5	0.9
683	68,349	424.0	2288.0	0.8	22.6	22.6	23.5	0.9
688	68,849	423.0	2227.0	0.8	22.8	22.8	23.7	0.9
692	69,229	502.0	2524.0	0.7	22.9	22.9	23.8	0.9
696	69,631	450.0	2257.0	0.8	23.0	23.0	23.9	0.9
699	69,925	407.0	2108.0	0.8	23.1	23.1	24.1	1.0
703	70,290	447.0	2326.0	0.7	23.3	23.3	24.2	0.9
708	70,800	405.0	1928.0	0.8	23.5	23.5	24.4	0.9
713	71,259	274.0	1498.0	1.0	23.6	23.6	24.6	1.0
17	71,685	406.0	2038.0	0.7	23.8	23.8	24.7	0.9
21	72,080	255.0	1308.0	1.1	24.0	24.0	24.9	0.9
725	72,461	260.0	1338.0	1.1	24.2	24.2	25.2	1.0
730	72,969	214.0	986.0	1.5	24.5	24.5	25.5	1.0
734	73,374	256.0	1078.0	1.4	25.0	25.0	26.0	1.0
737	73,664	182.0	1001.0	1.5	25.3	25.3	26.3	1.0
740	73,960	296.0	1689.0	0.9	25.5	25.5	26.5	1.0
743	74,256	329.0	1709.0	0.9	25.7	25.7	26.7	1.0
Sturgeon Creek								
174	17,414	420.0	3568.0	0.2	12.0[1]	11.6	12.5	0.9
190	19,039	236.0	1704.0	0.5	12.3[1]	12.2	12.8	0.6
197	19,705	208.0	1409.0	0.6	12.4[1]	12.2	12.9	0.7
202	20,151	185.0	1126.0	0.7	12.4[1]	12.3	12.9	0.6
206	20,608	150.0	861.0	0.9	12.5[1]	12.4	13.1	0.7
210	20,975	125.0	610.0	1.3	12.7[1]	12.6	13.3	0.7
212	21,228	150.0	772.0	1.0	12.9[1]	12.8	13.5	0.7
216	21,552	110.0	557.0	1.4	13.1[1]	13.0	13.6	0.6
218	21,797	102.0	490.0	1.6	13.3[1]	13.2	13.9	0.7
221	22,118	88.0	375.0	2.0	13.8[1]	13.6	14.4	0.8
223	22,347	70.0	347.0	2.2	14.0[1]	14.0	14.8	0.8
225	22,528	52.0	210.0	3.7	14.4[1]	14.3	15.2	0.9
27	22,689	72.0	358.0	2.1	15.3[1]	15.2	15.7	0.5
29	22,866	116.0	618.0	1.1	15.4[1]	15.4	16.0	0.6
232	23,239	125.0	572.0	1.2	15.8[1]	15.6	16.2	0.6
237	23,651	125.0	567.0	1.2	15.9[1]	15.9	16.6	0.7

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
Sturgeon Creek								
239	23,885	134.0	496.0	1.4	16.3[1]	16.2	16.9	0.7
241	24,105	134.0	447.0	1.5	16.7[1]	16.5	17.3	0.8
243	24,337	106.0	436.0	0.5	16.9[1]	16.8	17.6	0.8
245	24,484	74.0	236.0	0.9	16.9[1]	16.8	17.7	0.9
247	24,729	46.0	134.0	1.5	17.3[1]	17.3	18.0	0.7
249	24,894	24.0	41.0	5.1	19.2	19.2	19.3	0.1
250	25,017	45.0	179.0	1.2	20.5	20.5	20.5	0.0
252	25,182	47.0	173.0	1.2	20.6	20.6	20.7	0.1
253	25,285	34.0	124.0	1.7	20.6	20.6	20.8	0.2
255	25,472	45.0	105.0	2.0	21.0	21.0	21.4	0.4
256	25,602	34.0	70.0	3.0	21.9	21.9	22.4	0.5
258	25,759	28.0	72.0	2.9	23.9	23.9	24.0	0.1
261	26,075	50.0	166.0	1.3	25.7	25.7	25.8	0.1
The Mill Pond								
080	8,004	97.0	431.0	2.3	12.2[1]	11.4	12.3	0.9
081	8,056	214.0	1067.0	0.9	12.3[1]	11.4	12.4	1.0
082	8,158	179.0	854.0	1.0	12.3[1]	11.5	12.4	0.9
083	8,319	143.0	655.0	1.3	12.4[1]	11.5	12.5	1.0
088	8,771	158.0	520.0	1.6	12.4[1]	11.8	12.7	0.9
091	9,105	64.0	168.0	5.0	15.7[1]	15.7	16.2	0.5
095	9,519	31.0	169.0	4.3	20.5[1]	20.5	21.4	0.9
099	9,884	53.0	278.0	2.6	21.8	21.8	22.6	0.8
102	10,155	85.0	413.0	1.7	22.2	22.2	23.1	0.9
Waccamaw River								
3533	353,344	10575.0	85113.0	0.3	24.7	24.7	25.5	0.8
3541	354,142	10777.0	83475.0	0.3	24.8	24.8	25.6	0.8
3551	355,142	10620.0	84012.0	0.3	24.8	24.8	25.6	0.8
3558	355,768	10412.0	82966.0	0.3	24.8	24.8	25.6	0.8
3567	356,737	10172.0	79816.0	0.3	24.8	24.8	25.6	0.8
3577	357,688	10161.0	76691.0	0.3	24.8	24.8	25.6	0.8
3597	359,656	10679.0	79053.0	0.3	24.9	24.9	25.7	0.8
3623	362,319	10616.0	81348.0	0.3	24.9	24.9	25.7	0.8
3692	369,197	11065.0	81867.0	0.3	25.0	25.0	25.8	0.8
3701	370,142	11107.0	82414.0	0.3	25.1	25.1	25.9	0.8
3711	371,142	10994.0	79683.0	0.3	25.1	25.1	25.9	0.8
3719	371,911	10869.0	76014.0	0.3	25.1	25.1	25.9	0.8
3739	373,936	10993.0	77397.0	0.3	25.1	25.1	26.0	0.9
3751	375,129	11425.0	76609.0	0.3	25.2	25.2	26.0	0.8
3761	376,142	11417.0	77428.0	0.3	25.2	25.2	26.0	0.8
3771	377,142	11027.0	68578.0	0.3	25.2	25.2	26.0	0.8
3805	380,461	10341.0	69359.0	0.3	25.3	25.3	26.1	0.8
3830	382,983	10148.0	67447.0	0.3	25.3	25.3	26.1	0.8
3837	383,731	9637.0	60363.0	0.4	25.3	25.3	26.2	0.9

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
ross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Waccamaw River								
3852	385,245	9112.0	54494.0	0.4	25.4	25.4	26.2	0.8
3864	386,377	8336.0	54705.0	0.4	25.4	25.4	26.3	0.9
3871	387,108	8004.0	48619.0	0.4	25.4	25.4	26.3	0.9
3881	388,147	7602.0	35519.0	0.6	25.5	25.5	26.3	0.8
3890	389,005	7644.0	37060.0	0.6	25.5	25.5	26.4	0.9
3905	390,540	7753.0	38923.0	0.5	25.6	25.6	26.5	0.9
3922	392,168	8250.0	40609.0	0.5	25.7	25.7	26.6	0.9
3931	393,085	8627.0	37026.0	0.6	25.8	25.8	26.7	0.9
3940	393,977	9127.0	35362.0	0.6	25.8	25.8	26.7	0.9
3947	394,736	9080.0	38638.0	0.6	25.9	25.9	26.8	0.9
3962	396,202	9286.0	39612.0	0.5	26.0	26.0	26.9	0.9
3971	397,142	8565.0	35980.0	0.6	26.1	26.1	27.0	0.9
3978	397,832	8018.0	33871.0	0.6	26.1	26.1	27.0	0.9
3986	398,554	7771.0	35075.0	0.6	26.1	26.1	27.1	1.0
3991	399,143	7180.0	34534.0	0.6	26.2	26.2	27.2	1.0
3993	399,274	7179.0	34924.0	0.6	26.2	26.2	27.2	1.0
3998	399,806	8446.0	57261.0	0.4	26.3	26.3	27.3	1.0
4013	401,279	8455.0	59266.0	0.4	26.3	26.3	27.3	1.0
024	402,377	8260.0	56884.0	0.4	26.4	26.4	27.4	1.0
042	404,201	7161.0	49518.0	0.4	26.4	26.4	27.4	1.0
4051	405,128	6283.0	41325.0	0.5	26.5	26.5	27.5	1.0
4059	405,901	6756.0	44284.0	0.5	26.5	26.5	27.5	1.0
4112	411,190	8422.0	53031.0	0.4	26.8	26.8	27.7	0.9
4159	415,875	7524.0	40887.0	0.5	26.9	26.9	27.8	0.9
4171	417,103	7372.0	40361.0	0.5	26.9	26.9	27.9	1.0
4223	422,285	6997.0	43005.0	0.5	27.1	27.1	28.0	0.9
4236	423,637	7224.0	45555.0	0.4	27.1	27.1	28.1	1.0
4251	425,142	7424.0	41640.0	0.5	27.2	27.2	28.1	0.9
4266	426,569	7334.0	40709.0	0.5	27.2	27.2	28.2	1.0
4274	427,363	7563.0	43939.0	0.4	27.3	27.3	28.2	0.9
4297	429,744	7476.0	41929.0	0.5	27.4	27.4	28.3	0.9
4329	432,894	7283.0	35106.0	0.6	27.5	27.5	28.5	1.0
4341	434,142	7082.0	36915.0	0.5	27.7	27.7	28.7	1.0
4365	436,496	6307.0	36615.0	0.5	27.9	27.9	28.9	1.0
4422	442,206	5961.0	36226.0	0.5	28.3	28.3	29.2	0.9
4434	443,368	6255.0	34203.0	0.6	28.4	28.4	29.3	0.9
4441	444,142	6082.0	31337.0	0.6	28.5	28.5	29.4	0.9
4449	444,924	6065.0	34197.0	0.6	28.6	28.6	29.5	0.9
4458	445,771	6007.0	36265.0	0.5	28.7	28.7	29.6	0.9
467	446,715	5979.0	36835.0	0.5	28.8	28.8	29.7	0.9
490	448,982	5940.0	35194.0	0.6	28.9	28.9	29.8	0.9
4517	451,659	6026.0	30789.0	0.6	29.0	29.0	30.0	1.0
4522	452,238	5348.0	27569.0	0.7	29.1	29.1	30.0	0.9

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
ross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Waccamaw River								
4531	453,142	4917.0	26829.0	0.7	29.2	29.2	30.1	0.9
4543	454,341	3944.0	23333.0	0.8	29.4	29.4	30.3	0.9
4549	454,910	3841.0	22792.0	0.8	29.4	29.4	30.4	1.0
4563	456,251	3805.0	24057.0	0.8	29.6	29.6	30.5	0.9
4571	457,142	4018.0	28356.0	0.6	29.7	29.7	30.6	0.9
4599	459,904	4526.0	29984.0	0.6	29.9	29.9	30.8	0.9
4608	460,830	4713.0	31889.0	0.6	29.9	29.9	30.9	1.0
4623	462,295	5657.0	33075.0	0.6	30.0	30.0	31.0	1.0
4631	463,142	6077.0	35245.0	0.5	30.1	30.1	31.1	1.0
4641	464,142	6172.0	33988.0	0.5	30.2	30.2	31.2	1.0
4650	465,030	6168.0	34954.0	0.5	30.3	30.3	31.2	0.9
4656	465,553	6089.0	32889.0	0.6	30.3	30.3	31.3	1.0
4721	472,142	4788.0	25508.0	0.7	30.7	30.7	31.6	0.9
4731	473,142	5258.0	24760.0	0.7	30.8	30.8	31.7	0.9
4751	475,142	6061.0	29286.0	0.6	31.1	31.1	32.0	0.9
4761	476,142	6283.0	32455.0	0.6	31.2	31.2	32.1	0.9
4772	477,202	6457.0	34163.0	0.5	31.3	31.3	32.2	0.9
4780	477,958	6578.0	35272.0	0.5	31.3	31.3	32.2	0.9
802	480,160	6713.0	32342.0	0.6	31.4	31.4	32.3	0.9
807	480,685	7750.0	34180.0	0.5	31.7	31.7	32.5	0.8
4845	484,461	8580.0	39327.0	0.5	32.0	32.0	32.8	0.8
4849	484,901	12080.0	66475.0	0.3	32.2	32.2	33.0	0.8
4850	485,021	12190.0	55303.0	0.3	32.6	32.6	33.1	0.5
4861	486,095	12464.0	58192.0	0.3	32.6	32.6	33.1	0.5
4963	496,302	11904.0	57479.0	0.3	32.7	32.7	33.2	0.5
5046	504,592	7764.0	31199.0	0.6	32.9	32.9	33.5	0.6
5054	505,446	7659.0	36040.0	0.5	33.0	33.0	33.6	0.6
5087	508,695	7902.0	38645.0	0.5	33.1	33.1	33.8	0.7
5094	509,361	8504.0	37905.0	0.5	33.2	33.2	33.9	0.7
5150	514,995	11197.0	51028.0	0.4	33.4	33.4	34.2	0.8
5173	517,257	10546.0	50920.0	0.4	33.5	33.5	34.2	0.7
5191	519,142	10052.0	42821.0	0.4	33.6	33.6	34.3	0.7
5205	520,464	10005.0	39661.0	0.5	33.6	33.6	34.4	0.8
5225	522,472	9893.0	46226.0	0.4	33.8	33.8	34.6	0.8
5232	523,161	9983.0	49081.0	0.4	33.9	33.9	34.7	0.8
5237	523,658	10066.0	53699.0	0.3	34.0	34.0	34.7	0.7
5376	537,591	9301.0	51295.0	0.4	34.2	34.2	35.0	0.8
Williams Branch								
014	1,393	55.0	263.0	3.9	13.0[2]	6.5	7.4	0.9
15	1,458	55.0	511.0	2.0	13.0[2]	10.1	10.8	0.7
21	2,128	188.0	1642.0	0.6	13.0[2]	10.2	11.0	0.8
027	2,700	286.0	2286.0	0.5	13.0[2]	10.3	11.1	0.8
029	2,899	194.0	1297.0	0.8	13.0[2]	10.3	11.1	0.8

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
ross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Williams Branch								
034	3,354	226.0	1446.0	0.7	13.0[2]	10.4	11.2	0.8
039	3,884	254.0	1157.0	0.9	13.0[2]	10.4	11.3	0.9
045	4,508	161.0	1019.0	0.6	13.0[2]	10.8	11.6	0.8
051	5,108	285.0	1470.0	0.4	13.0[2]	10.9	11.8	0.9
054	5,396	174.0	909.0	0.7	13.0[2]	11.0	11.8	0.8
056	5,601	199.0	1019.0	0.6	13.0[2]	11.0	11.8	0.8
059	5,878	67.0	266.0	2.2	13.0[2]	11.1	11.9	0.8
061	6,125	122.0	481.0	1.2	13.0[2]	11.6	12.4	0.8
064	6,429	126.0	490.0	1.2	13.0[2]	12.0	12.8	0.8
066	6,601	130.0	467.0	1.3	13.0[2]	12.2	12.9	0.7
069	6,873	104.0	446.0	1.3	13.0[2]	12.5	13.3	0.8
072	7,228	95.0	387.0	1.5	13.0	13.0	13.8	0.8
077	7,710	110.0	393.0	1.5	13.5	13.5	14.2	0.7
081	8,100	134.0	398.0	1.5	14.3	14.3	15.0	0.7
087	8,729	148.0	360.0	1.6	15.9	15.9	16.6	0.7
092	9,206	139.0	373.0	1.6	16.6	16.6	17.3	0.7
096	9,576	90.0	249.0	2.4	17.2	17.2	18.0	0.8
100	9,974	92.0	74.0	8.0	21.3	21.3	21.4	0.1

[1]Elevation includes combined probability effects

[2]Elevation includes backwater effects

* Values not computed for this station

6.4 Coastal Flood Hazard Mapping

Flood insurance zones and BFEs including the wave effects were identified on each transect based on the results from the onshore wave hazard analyses. Between transects, elevations were interpolated using topographic maps, land-use and land-cover data, and knowledge of coastal flood processes to determine the aerial extent of flooding. Sources for topographic data are shown in Table 23.

Zone VE is subdivided into elevation zones and BFEs are provided on the FIRM.

The limit of Zone VE shown on the FIRM is defined as the farthest inland extent of any of these criteria (determined for the 1% annual chance flood condition):

- *The primary frontal dune* zone is defined in 44 CFR Section 59.1 of the NFIP regulations. The primary frontal dune represents a continuous or nearly continuous mound or ridge of sand with relatively steep seaward and landward slopes that occur immediately landward and adjacent to the beach. The primary frontal dune zone is subject to erosion and overtopping from high tides and waves during major coastal storms. The inland limit of the primary frontal dune zone occurs at the point where there is a distinct change from a relatively steep slope to a relatively mild slope.
- *The wave runup zone* occurs where the (eroded) ground profile is 3.0 feet or more below the 2-percent wave runup elevation.
- *The wave overtopping splash zone* is the area landward of the crest of an overtopped barrier, in cases where the potential 2-percent wave runup exceeds the barrier crest elevation by 3.0 feet or more.
- *The breaking wave height zone* occurs where 3-foot or greater wave heights could occur (this is the area where the wave crest profile is 2.1 feet or more above the total stillwater elevation).
- *The high-velocity flow zone* is landward of the overtopping splash zone (or area on a sloping beach or other shore type), where the product of depth of flow times the flow velocity squared (hv2) is greater than or equal to 200 ft3/sec2. This zone may only be used on the Pacific Coast.

The SFHA boundary indicates the limit of SFHAs shown on the FIRM as either "V" zones or "A" zones.

Table 23: Summary of Coastal Transect Mapping Considerations

Source	Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis	Wave Height Analysis	Zone VE Limit	SFHA Boundary
			Zone Designation and BFE (ft NAVD 88)	Zone Designation and BFE (ft NAVD 88)		
Atlantic Ocean	1	X	*	AE 10 VE 12 AE 0-4 VE 10	PFD	SWEL
	2	X	VE 16	AE 0-6 VE 12 AE 0-4 VE 10	PFD	SWEL
	3	X	*	AE 1-6 VE 12 AE 0-4 VE 10	PFD	SWEL
	4	X	*	AE 0-7 VE 12 AE 0-4 VE 10	PFD	SWEL

Table 23: Summary of Coastal Transect Mapping Considerations

Source	Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis	Wave Height Analysis	Zone VE Limit	SFHA Boundary
			Zone Designation and BFE (ft NAVD 88)	Zone Designation and BFE (ft NAVD 88)		
Atlantic Ocean	5	X	*	AE 0-8 VE 12 AE 7 VE 10	PFD	SWEL
	6	X	AE 16 VE 14	AE 6 VE 12 AE 0-11 VE 11	WHAFIS	SWEL
	7	X	*	AE 1-6 VE 12	PFD	SWEL
	8	X	AE 16-16 VE 16	AE 7 VE 12 AE 0 VE 10	PFD	SWEL
	9	X	*	AE 0-6 VE 12	PFD	SWEL
	1	X	*	AE 10 VE 12 AE 0-4 VE 10	PFD	*
	2	X	VE 16	AE 0-6 VE 12 AE 0-4 VE 10	PFD	*
	3	X	*	AE 1-6 VE 12 AE 0-4 VE 10	PFD	SWEL
	4	X	*	AE 0-7 VE 12 AE 0-4 VE 10	PFD	*
	5	X	*	AE 0-8 VE 12 AE 7 VE 10	PFD	SWEL
	6	X	AE 16 VE 14	AE 6 VE 12 AE 0-11 VE 11	PFD	*
	8	X	AE 16-16 VE 16	AE 7 VE 12 AE 0 VE 10	RUNUP EXTENT	RUNUP EXTENT

Table 23: Summary of Coastal Transect Mapping Considerations

Source	Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis	Wave Height Analysis	Zone VE Limit	SFHA Boundary
			Zone Designation and BFE (ft NAVD 88)	Zone Designation and BFE (ft NAVD 88)		
tlantic Ocean	10	X	AE 13-13 VE 13	AE 0-6 VE 12 VE 10	PFD	SWEL
	11	X	AE 16-16 VE 16	AE 5 VE 2-11 VE 10	PFD	SWEL
	12	X	*	AE 0-6 VE 0-11	PFD	SWEL
	13	X	*	AE 0-6 VE 2-11	PFD	SWEL
	14	X	AE 17-17 VE 17	AE 1-6 VE 12 VE 10	PFD	SWEL
	15	X	*	AE 7 VE 12	PFD	SWEL
	16	X	VE 18	AE 0-4 VE 12 VE 7	PFD	SWEL
	17	X	*	AE 1-6 VE 12	PFD	SWEL
	18	X	*	AE 0-5 VE 12	PFD	SWEL
	19	X	*	AE 6 VE 12	PFD	SWEL
	20	X	*	AE 0-6 VE 12	PFD	SWEL
	21	X	*	AE 1-5 VE 12	PFD	SWEL
	22	X	AE 16 VE 16	AE 6 VE 12 AE 2 VE 10	PFD	SWEL
	23	X	*	AE 0-6 VE 12	PFD	SWEL
	24	X	*	AE 1-6 VE 12	PFD	SWEL
	25	X	*	AE 7 VE 12	PFD	SWEL
	26	X	*	AE 6 VE 12	PFD	SWEL
	27	X	*	AE 6 VE 12	PFD	SWEL

Table 23: Summary of Coastal Transect Mapping Considerations

Source	Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis	Wave Height Analysis	Zone VE Limit	SFHA Boundary
			Zone Designation and BFE (ft NAVD 88)	Zone Designation and BFE (ft NAVD 88)		
Atlantic Ocean	28	X	*	AE 1-6 VE 12	PFD	SWEL
	29	X	*	AE 1-5 VE 11	PFD	SWEL
	30	X	*	AE 0-5 VE 11	PFD	SWEL
	31	X	*	AE 5 VE 11	PFD	SWEL
	32	X	*	AE 3-6 VE 11	PFD	SWEL
	33	X	*	AE 0-6 VE 11	PFD	SWEL
	34	X	*	AE 0-5 VE 11	PFD	SWEL
	35	X	*	AE 1-6 VE 11	PFD	SWEL
	36	X	*	AE 1-6 VE 11	PFD	SWEL
	37	X	*	AE 0-6 VE 11	PFD	SWEL
	38	X	*	AE 6 VE 11	PFD	SWEL
	39	X	*	AE 0-6 VE 11	PFD	SWEL
	40	X	*	AE 4 VE 11	RUNUP EXTENT	SWEL
	41	X	*	AE 5 VE 11	PFD	SWEL
	42	X	*	AE 5 VE 11	PFD	SWEL
	43	X	*	AE 0-6 VE 11	PFD	SWEL
	44	X	*	AE 6 VE 11	PFD	SWEL
	45	*	*	AE 1-6 VE 12	WHAFIS	SWEL
	46	X	*	AE 6 VE 11	PFD	SWEL
	47	X	*	AE 6 VE 11	PFD	SWEL

Table 23: Summary of Coastal Transect Mapping Considerations

Source	Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis	Wave Height Analysis	Zone VE Limit	SFHA Boundary
			Zone Designation and BFE (ft NAVD 88)	Zone Designation and BFE (ft NAVD 88)		
.tlantic Ocean	48	X	*	AE 3 VE 11	PFD	SWEL
	49	X	*	AE 3 VE 11	RUNUP EXTENT	SWEL
	50	X	*	AE 0-6 VE 11	PFD	SWEL
	51	X	*	AE 5 VE 11	PFD	SWEL
	52	X	*	AE 4 VE 11	PFD	SWEL
	53	X	*	AE 0-5 VE 11	PFD	SWEL
	54	X	*	AE 5 VE 11	PFD	SWEL
	55	X	*	AE 4 VE 11	PFD	SWEL
	56	X	*	AE 5 VE 11	PFD	SWEL
	57	X	*	AE 5 VE 11	PFD	SWEL
	58	X	*	AE 5 VE 11	PFD	SWEL
	59	X	*	AE 6 VE 10	PFD	SWEL
	60	X	*	AE 5 VE 10	PFD	SWEL
	61	X	*	AE 4 VE 10	PFD	SWEL
	62	X	*	AE 4 VE 10	PFD	SWEL
	63	X	*	AE 4 VE 10	PFD	SWEL
	64	X	*	AE 4 VE 10	PFD	SWEL
	65	X	*	AE 4 VE 10	PFD	SWEL
	66	X	*	AE 5 VE 10	PFD	SWEL
	67	X	*	AE 4 VE 10	PFD	SWEL

Table 23: Summary of Coastal Transect Mapping Considerations

Source	Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis	Wave Height Analysis	Zone VE Limit	SFHA Boundary
			Zone Designation and BFE (ft NAVD 88)	Zone Designation and BFE (ft NAVD 88)		
Atlantic Ocean	68	X	*	AE 5 VE 10	PFD	SWEL
	69	X	*	AE 5 VE 10	PFD	SWEL
	70	X	*	AE 6 VE 10	PFD	SWEL
	71	X	*	AE 5 VE 10	PFD	WHAFIS
	72	X	*	AE 4 VE 10	PFD	*
	73	*	*	AE 0-4 VE 7	WHAFIS	SWEL
	74	*	*	AE 5 VE 7	WHAFIS	SWEL
	75	*	*	VE 7	WHAFIS	SWEL
	76	*	*	AE 1 VE 7	WHAFIS	SWEL
	77	*	*	AE 1 VE 7	RUNUP EXTENT	RUNUP EXTENT
	78	*	*	VE 7	WHAFIS	SWEL
	79	X	*	AE 4 VE 9	PFD	*
	80	X	*	AE 4 VE 9	PFD	*
	81	X	*	AE 0-5 VE 9	PFD	SWEL
	82	X	*	AE 0-4 VE 9	PFD	SWEL
	83	X	*	AE 4 VE 9	PFD	SWEL
	84	X	*	AE 1 VE 9	PFD	SWEL
	85	X	*	AE 3 VE 9	PFD	SWEL
	86	X	*	AE 0-4 VE 9	PFD	SWEL
	87	X	*	AE 4 VE 9	PFD	SWEL
	88	X	*	AE 4 VE 9	PFD	SWEL

Table 23: Summary of Coastal Transect Mapping Considerations

Source	Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis	Wave Height Analysis	Zone VE Limit	SFHA Boundary
			Zone Designation and BFE (ft NAVD 88)	Zone Designation and BFE (ft NAVD 88)		
.tlantic Ocean	89	X	*	AE 5 VE 9	PFD	SWEL
	90	X	*	AE 4 VE 9	PFD	SWEL
	91	X	*	AE 3 VE 9	PFD	SWEL
	92	X	*	AE 3 VE 9	PFD	SWEL
	93	X	*	AE 4 VE 9	PFD	SWEL
	94	X	*	AE 3 VE 9	PFD	SWEL
	95	X	*	AE 2 VE 9	PFD	SWEL
	96	X	*	AE 3 VE 9	PFD	SWEL
	97	X	*	AE 3 VE 10	PFD	SWEL
	98	X	*	AE 1-4 VE 10	PFD	SWEL
	99	X	*	AE 3 VE 10	PFD	*
	10	X	AE 13-13 VE 13	AE 0-6 VE 12 VE 10	PFD	PFD
	11	X	AE 16-16 VE 16	AE 5 VE 2-11 VE 10	PFD	PFD
	14	X	AE 17-17 VE 17	AE 1-6 VE 12 VE 10	PFD	PFD
	16	X	VE 18	AE 0-4 VE 12 VE 7	PFD	PFD
	22	X	AE 16 VE 16	AE 6 VE 12 AE 2 VE 10	PFD	PFD
	100	X	*	AE 5 VE 10	PFD	*
	101	X	*	AE 0-6 VE 10	PFD	*

Table 23: Summary of Coastal Transect Mapping Considerations

Source	Coastal Transect	Primary Frontal Dune (PFD) Identified	Wave Runup Analysis	Wave Height Analysis	Zone VE Limit	SFHA Boundary
			Zone Designation and BFE (ft NAVD 88)	Zone Designation and BFE (ft NAVD 88)		
.tlantic Ocean	102	X	*	AE 0-6 VE 10	PFD	*
	103	X	*	AE 1-5 VE 1-9	PFD	*
	104	X	*	AE 1-5 VE 10	PFD	*
	105	X	*	AE 2-5 VE 10	PFD	*
	106	X	*	AE 2-5 VE 9	PFD	*
	107	X	*	AE 1-5 VE 10	WHAFIS	*
	108	X	*	AE 2-5 VE 2-9	WHAFIS	*
	109	X	*	AE 2-5 VE 10	PFD	*
	110	X	*	AE 0-4 VE 10	PFD	*
	111	*	*	AE 1-6 VE 10	WHAFIS	*
Cape Fear River	112	*	*	AE 1-4 VE 4	WHAFIS	SWEL
	113	*	*	AE 2 VE 5	WHAFIS	SWEL
	114	*	*	AE 1 VE 5	WHAFIS	SWEL
	115	*	*	AE 3 VE 7	WHAFIS	SWEL
	116	*	*	AE 1-4 VE 4	WHAFIS	SWEL
	117	*	*	AE 1-4 VE 5	WHAFIS	SWEL

A LiMWA boundary has also been added in coastal areas subject to wave action for use by local communities in safe rebuilding practices. The LiMWA represents the approximate landward limit of the 1.5-foot breaking wave. In areas where the Zone VE designation is based on the presence of a primary frontal dune the LiMWA was not delineated.

7.0 Revising the FIS

.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 Brunswick 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 10/16/2008 North Carolina Statewide FIRM, which includes Brunswick County, are presented in Table 24, "Map Revision History."

Table 24 - Map Revision History

Community	Initial Identification Date	Initial FIRM Effective Date	FIRM Revision Date
BRUNSWICK COUNTY	12/9/1977	5/15/1986	06/02/2006
BRUNSWICK COUNTY	12/9/1977	5/15/1986	02/16/2007
BRUNSWICK COUNTY	12/9/1977	5/15/1986	10/16/2008
BRUNSWICK COUNTY	12/9/1977	5/15/1986	08/28/2018
BRUNSWICK COUNTY	12/9/1977	5/15/1986	12/06/2019
CITY OF BOILING SPRING LAKES	3/2/1989	3/2/1989	06/02/2006
CITY OF BOILING SPRING LAKES	3/2/1989	3/2/1989	08/28/2018
CITY OF NORTHWEST[3]	12/9/1977	5/15/1986	06/02/2006
CITY OF NORTHWEST[3]	12/9/1977	5/15/1986	02/16/2007
CITY OF NORTHWEST[3]	12/9/1977	5/15/1986	12/06/2019
CITY OF SOUTHPORT	5/24/1974	4/15/1977	06/02/2006
CITY OF SOUTHPORT	5/24/1974	4/15/1977	08/28/2018
TOWN OF BELVILLE[3]	12/9/1977	5/15/1986	06/02/2006
TOWN OF BELVILLE[3]	12/9/1977	5/15/1986	08/28/2018

Table 24 - Map Revision History

Community	Initial Identification Date	Initial FIRM Effective Date	FIRM Revision Date
TOWN OF BOLIVIA	6/10/1977	6/2/2006	N/A
TOWN OF CALABASH	6/10/1977	2/4/1988	06/02/2006
TOWN OF CALABASH	6/10/1977	2/4/1988	08/28/2018
TOWN OF CAROLINA SHORES[1]	6/10/1977	2/4/1988	06/02/2006
TOWN OF CAROLINA SHORES[1]	6/10/1977	2/4/1988	08/28/2018
TOWN OF CASWELL BEACH	7/15/1977	1/17/1986	06/02/2006
TOWN OF CASWELL BEACH	7/15/1977	1/17/1986	08/28/2018
TOWN OF HOLDEN BEACH	5/26/1972	5/26/1972	06/02/2006
TOWN OF HOLDEN BEACH	5/26/1972	5/26/1972	08/28/2018
TOWN OF LELAND[3]	12/9/1977	5/15/1986	06/02/2006
TOWN OF LELAND[3]	12/9/1977	5/15/1986	08/28/2018
TOWN OF NAVASSA[3]	12/9/1977	5/15/1986	06/02/2006
TOWN OF NAVASSA[3]	12/9/1977	5/15/1986	08/28/2018
TOWN OF NAVASSA[3]	12/9/1977	5/15/1986	12/06/2019
TOWN OF OAK ISLAND[2]	3/27/1971	3/27/1971	06/02/2006
TOWN OF OAK ISLAND[2]	3/27/1971	3/27/1971	08/28/2018
TOWN OF OCEAN ISLE BEACH	7/16/1971	11/18/1972	06/02/2006
TOWN OF OCEAN ISLE BEACH	7/16/1971	11/18/1972	08/28/2018
TOWN OF SAINT JAMES[3]	12/9/1977	5/15/1986	06/02/2006
TOWN OF SAINT JAMES[3]	12/9/1977	5/15/1986	08/28/2018
TOWN OF SANDY CREEK	6/2/2006	6/2/2006	02/16/2007
TOWN OF SANDY CREEK	6/2/2006	6/2/2006	12/06/2019
TOWN OF SHALLOTTE	5/24/1974	1/3/1986	06/02/2006
TOWN OF SHALLOTTE	5/24/1974	1/3/1986	08/28/2018
TOWN OF SUNSET BEACH	11/18/1972	11/18/1972	06/02/2006
TOWN OF SUNSET BEACH	11/18/1972	11/18/1972	08/28/2018
TOWN OF VARNAMTOWN[3]	12/9/1977	5/15/1986	06/02/2006
TOWN OF VARNAMTOWN[3]	12/9/1977	5/15/1986	08/28/2018
VILLAGE OF BALD HEAD ISLAND	12/9/1977	5/15/1986	06/02/2006
VILLAGE OF BALD HEAD ISLAND	12/9/1977	5/15/1986	10/16/2008
VILLAGE OF BALD HEAD ISLAND	12/9/1977	5/15/1986	08/28/2018

[1]This community did not have its own FIRM prior to the countywide FIS; however, it adopted the FIRM for the unincorporated areas of Brunswick County and the FIRM for the Town of Calabash. In addition, portions of the land area for the community were previously shown on the FIRM for the unincorporated areas of Brunswick County. Therefore, the map history dates associated with this community were taken from the FIRM for Brunswick County and the Town of Calabash

[2]The land area of this community consists of the former communities of the Towns of Long Beach (375354) and Yaupon Beach (370030). Therefore, the map history dates associated with this community were taken from the the FIRMs for Towns of Long Beach and Yaupon Beach.

[3]This community did not have its own FIRM prior to this countywide FIS. The land area for this community was previously shown on the FIRM for the unincorporated areas of Brunswick County but was not identified as a separate community. Therefore, the map history dates associated with this community were taken from the FIRM for Brunswick County.

8.0 Study Contracting and Community Coordination

3.1 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 Brunswick 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
BRUNSWICK COUNTY	8/28/2018	NCFMP	NCFMP	EMA-2009-CA5933	2/1/2014

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 Brunswick County were produced by NCFMP under contract with the State of North Carolina and issued on effective 8/28/2018. 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 Scoping/CCO/Public Meetings

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 Brunswick County are shown in Table 26, "Scoping Meetings." Meetings held for the map maintenance revision are also included below for Brunswick County.

Table 26- Scoping Meetings

Community	River Basin	Initial Scoping Date	Attended By	Final Scoping Date	Attended By
Brunswick County	CAPE FEAR/LUMBER	N/A	N/A	6/12/2008	Representatives from Brunswick County incorporated communities, Representatives from Brunswick County and the NCFMP

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 letailed methods. A final CCO meeting is held with representatives from FEMA, the communities, and the study contractors to review the results of the study. 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 27, "CCO and Public Participation Meetings."

Table 27 — CCO and Public Participation Meetings

Community	For FIS Dated	Meeting Location	Final CCO Meeting Date	Attended By	Public Meeting Date	Attended By
BRUNSWICK COUNTY AND INCORPORATED COMMUNITIES	08/28/2018	Bolivia, NC	09/14/2016	Representatives of Brunswick County, Representatives of Brunswick County Incorporated communities, the NCFMP	8/18/2015	The Public

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 Brunswick 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 28 — Map Repositories

Community	Address	City	State	Zip Code
Town of Caswell Beach	Town Hall, 1100 Caswell Beach Road	Caswell Beach	NC	28465
Town of Holden Beach	Town Hall, 110 Rothschild Street	Holden Beach	NC	28462
Town of Bolivia	Town Hall, 4050 Old Ocean Highway	Bolivia	NC	28422
Town of Leland	Town Hall, 102 Town Hall Drive	Leland	NC	28451
Town of Navassa	Town Hall, 334 Main Street	Navassa	NC	28451
Village of Bald Head Island	Village Hall, 106 Lighthouse Wynd	Bald Head Island	NC	28461
Town of Belville	Belville Town Hall, 497 Olde Waterford Way, Suite 205	Leland	NC	28451
City of Boiling Spring Lakes	City Hall, 9 East Boiling Spring Road	Boiling Spring Lakes	NC	28461
City of Northwest	City Hall, 4889 Vernon Road	Northwest	NC	28451
Town of Ocean Isle Beach	Town Hall, 3 West Third Street	Ocean Isle Beach	NC	28469
Town of St. James	St. James Town Hall, 4140A Southport-Supply Road	Southport	NC	28461
Brunswick County	Brunswick County Government Complex, 30 Government Center Drive NE	Bolivia	NC	28422
Town of Calabash	Town Hall, 882 Persimmon Road	Calabash	NC	28567
Town of Carolina Shores	Town Hall, 200 Persimmon Road	Carolina Shores	NC	28467
Town of Oak Island	Town Hall, 4601 East Oak Island Drive	Oak Island	NC	28465
Town of Sandy Creek	Sandy Creek Town Hall, 114 Sandy Creek Drive	Leland	NC	28451
Town of Shallotte	Town Hall, 106 Cheers Street	Shallotte	NC	28470
City of Southport	City Hall, 1029 North Howe Street	Southport	NC	28461
Town of Sunset Beach	Town Hall, 700 Sunset Boulevard North	Sunset Beach	NC	28468
Town of Varnamtown	Varnamtown Town Hall, 100 Varnamtown Road	Supply	NC	28462

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 Brunswick 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:

NC Floodplain Mapping Program
4218 Mail Service Center
Raleigh, NC 27699-4218
Phone: 919-715-5711
Fax: 919-715-0408
Email: frishelp@ncdps.gov