

PRELIMINARY FLOOD INSURANCE STUDY

FEDERAL EMERGENCY MANAGEMENT AGENCY

A Report of Flood Hazards in
**CABARRUS COUNTY, NORTH
CAROLINA AND
INCORPORATED AREAS**



Community Name	Community Number
CABARRUS COUNTY	370036
CITY OF CHARLOTTE	370159
CITY OF CONCORD	370037
CITY OF KANNAPOLIS	370469
CITY OF LOCUST	370508
TOWN OF FAIRVIEW	370024
TOWN OF HARRISBURG	370038
TOWN OF MIDLAND	370182
TOWN OF MOUNT PLEASANT	370470
TOWN OF STANFIELD	370510



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Federal Emergency Management Agency

State of North Carolina

Flood Insurance Study Number

37025CV000

www.fema.gov and www.ncfloodmaps.com



FOREWORD

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

NOTICE TO FLOOD INSURANCE STUDY USERS

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

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

Date	Reason
11/5/2008	Initial Countywide FIS Report Effective Date

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

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

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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

Flood Insurance Studies (FISs) are one of the primary means by which the NFIP administers the National Flood Insurance Act of 1968, the Flood Disaster Protection Act of 1973, and the National Flood Insurance Reform Act of 1994. FISs develop flood risk data that are used to establish actuarial flood insurance rates. The information in this FIS Report will also be used by Cabarrus County and the jurisdictions therein (hereinafter referred to collectively as Cabarrus 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 Cabarrus County, North Carolina, including the jurisdictions listed in Table 1.

Table 1 - Jurisdictions in Cabarrus County

Community	Included in this FIS	If Not Included, Location of Flood Hazard/Flood Insurance Rate Data
CABARRUS COUNTY	Yes	*
CITY OF CHARLOTTE	Yes	*
CITY OF CONCORD	Yes	*
CITY OF KANNAPOLIS	Yes	*
CITY OF LOCUST	Yes	*
TOWN OF FAIRVIEW	Yes	*
TOWN OF HARRISBURG	Yes	*
TOWN OF MIDLAND	Yes	*
TOWN OF MOUNT PLEASANT	Yes	*
TOWN OF STANFIELD	Yes	*

1.3 FIS Components

A Flood Insurance Study (FIS) is an analysis of flood hazards, typically presented as a set of Flood Insurance Rate Map (FIRM) panels and the FIS Report, which includes a set of Flood Profiles and/or Water-surface elevation rasters.

Flood Insurance Study Report

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

1.4 Considerations for Using this Flood Insurance Study Report

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

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

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

The Initial Countywide FIS Report for Cabarrus became Effective on 11/5/2008. Refer to Table XX for information about subsequent revisions to FIRMs.

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

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

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

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

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

"Mapping of Areas Protected by Levee Systems.

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

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

2.0 Floodplain Management Applications

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

2.1 Floodplains

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

2.2 Floodways

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

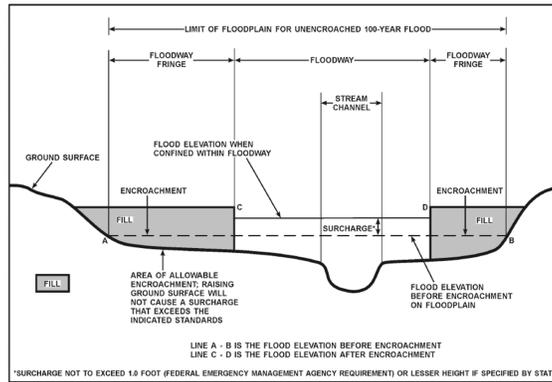


Figure 1- Floodway Schematic

2.3 Base Flood Elevations

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

2.4 Watershed Characteristics

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

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

Drainage Area

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

Soil Permeability and Infiltration

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

Soil Moisture Conditions

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

Channel and Floodplain Geometry

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

Channel and Floodplain Roughness

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

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

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

Data Validity and Reliability

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

Developmental and Topographic Changes Over Time

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

Erosion, Deposition, and Debris Flow

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

Meandering and Lateral Migration

FISs are based on the assumption that channel geometry will remain stable during normal drainage and during flood events. This assumption is valid for most streams, which flow over bedrock or between bedrock outcroppings that form non-alluvial channels. However, alluvial streams change the channel geometry with time, significantly so during flood events. Alluvial streams are subject to erosion and deposition, which may result in braided or meandering channels. Streams of this type may be characterized by lateral

migration, or channel shifting, in which the stream may change course entirely during a flood. Whenever clear evidence is available, a FIRM will identify the alluvial nature of a studied flooding source and designate wider floodways to allow for potential migration. However, these floodways are based on qualitative assessments and not on quantitative geomorphic and engineering analyses.

2.5 Coastal Flood Hazard Areas

This section is not applicable to this FIS project.

3.0 Insurance Applications

3.1 National Flood Insurance Program Insurance Zones

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

Table 2 - Flood Designations

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

3.2 Coastal Barrier Resources System

3.2 Coastal Barrier Resources System

This section is not applicable to this FIS project.

4.0 Area Studied

Cabarrus County is found in the Piedmont region of North Carolina. It is surrounded by Rowan County to the north, Stanly County to the east, Union County to the south, and Mecklenburg County to the west.

4.1 Basin Description

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

Table 3 - Basin Description

HUC-8 Sub-Basin Name	HUC-8 Sub-Basin Number	Primary Flooding Source	Description	HUC Area (square miles)
Lower Yadkin	03040103	Yadkin River	The Lower Yadkin River Basin begins in the Southeast corner of Forsyth County and drains southeast across the North Carolina Piedmont Region including significant portions of Davidson, Randolph, and Rowan Counties ending at the Upper Pee Dee River Basin.	1,190
Rocky	03040105	Rocky River	The Rocky River Basin begins in the southeast corner of Iredell County and follows Rocky River through Anson, Cabarrus, Stanly, and Union Counties before ending at the Pee Dee River.	1,417

4.2 Principal Flood Problems

Table 4, "Principal Flood Problems" is not applicable in Cabarrus County.

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 Irene all hit the coast. Bertha entered North Carolina in North Topsail Beach with 105 mph gust and a storm surge of approximately 5 feet.

Hurricane Gloria

(9/26/1985)

The landfall location of Gloria was Cape Hatteras, with 90 knot winds and a storm surge of approximately 6-8 feet.

Hurricane Diana

(9/13/1984)

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

Table 5, "Historic Flood Elevations" is not applicable in Cabarrus County.

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 Cabarrus County.

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

4.5 Scope of Study

For this map maintenance revision, a scoping meeting was held in Cabarrus 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 Cabarrus 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 Cabarrus County, North Carolina, and all jurisdictions therein. The areas studied by detailed methods were selected with priority given to all known flood hazard areas and areas of projected development and proposed construction. Limits of detailed study are indicated on the Flood Profiles and/or Water-surface elevation rasters and/or the FIRM.

Table 8P, "Scope of Revisions: Revised or New Detailed Study -Preliminary", lists flooding sources that were newly studied by detailed methods or were previously studied by detailed methods and had a change in backwater elevation due to flooding effects from a newly studied flooding source.

Table 8P - Scope of Revisions: Revised or New Detailed Study - Preliminary

Source	Riverine Sources		Affected Communities
	From	To	
Adams Creek	The confluence with Dutch Buffalo Creek	Approximately 1,500 feet upstream of NC Highway	Cabarrus County City Of Concord Town Of Mount Pleasant
Afton Run	The confluence with Coddle Creek	Approximately 1.5 miles upstream of Dogwood Boulevard	City Of Concord City Of Kannapolis
Anderson Creek	The confluence with Rocky River	Approximately 850 feet upstream of Sam Black Road (SR-1127)	Cabarrus County Town Of Midland
Anderson Creek Tributary 1	The confluence with Anderson Creek	Immediately downstream of Sam Black Road (SR-1127)	Cabarrus County
Back Creek	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	Cabarrus County City Of Charlotte City Of Concord Town Of Harrisburg
Caldwell Creek	The confluence with Reedy Creek	At the Mecklenburg/Cabarrus County boundary	Cabarrus County
Caldwell Creek Tributary	The confluence with Caldwell Creek	Approximately 2,000 feet upstream of Pioneer Mill Road (SR-1134)	Cabarrus County
Chambers Branch	The confluence with Cold Water Creek	Approximately 1,200 feet upstream of East 1st Street (SR-1706)	City Of Concord City Of Kannapolis
Clarke Creek	At the confluence with Mallard Creek	Approximately 500 ft. upstream of DeArmon Road	Cabarrus County City Of Concord
Clarke Creek	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	Cabarrus County City Of Concord
Clarke Creek Tributary	Confluence with Rocky River (Or from Cabarrus County Line)	Approximately 5750 feet upstream of Highland Creek Parkway	City Of Charlotte City Of Concord
Clarke Creek Tributary	The confluence with Clarke Creek	At the Mecklenburg/Cabarrus County boundary	City Of Concord
Clear Creek	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	Cabarrus County Town Of Fairview Town Of Midland
Coddle Creek	The confluence with Rocky River	Immediately downstream of Coddle Creek Dam	Cabarrus County City Of Concord City Of Kannapolis Town Of Harrisburg
Coddle Creek Tributary 2	The confluence with Coddle Creek	Approximately 0.25 mile upstream of Chapel Creek Road SW	Cabarrus County City Of Concord
Cold Water Creek	The confluence with Rocky River	At the Rowan/Cabarrus County boundary	Cabarrus County City Of Concord City Of Kannapolis
Common Ford Branch	The confluence with Cold Water Creek	Approximately 1.6 miles upstream of Penniger Road (SR-2113)	Cabarrus County
Davis Branch	The confluence with Rocky River	Approximately 300 feet upstream of Ruckus Road	Town Of Harrisburg
Dutch Buffalo Creek	The confluence with Rocky River	Immediately upstream of NC Highway 73	Cabarrus County Town Of Mount Pleasant
Fisher Town Branch	The confluence with Irish Buffalo Creek	At the Rowan/Cabarrus County boundary	Cabarrus County City Of Kannapolis
Fuda Creek	The confluence with Back Creek	At the Mecklenburg/Cabarrus County boundary	Cabarrus County Town Of Harrisburg
Hamby Branch	The confluence with Rocky River	Approximately 2.2 miles upstream of NC Highway 200	Cabarrus County
Hamby Branch Tributary	The confluence with Hamby Branch	Approximately 850 feet upstream of Cart Path	Cabarrus County
Hillandale Branch	The confluence with Threemile Branch	Approximately 1,300 feet upstream of Hillandale Street	City Of Concord
Horse Branch	The confluence with Rocky River	Approximately 0.4 mile upstream of Parks Lafferty Road (SR-1148)	Cabarrus County
Horton Branch	The confluence with Anderson Creek	Approximately 0.65 mile upstream of Sam Black Road (SR-1127)	Cabarrus County
Irish Buffalo Creek	The confluence with Cold Water Creek	At the Rowan/Cabarrus County boundary	Cabarrus County City Of Concord City Of Kannapolis
Jones Branch	The confluence with Rocky River	Approximately 0.3 mile upstream of Falcon Drive (SR-1269)	Cabarrus County
Little Cold Water Creek	The confluence with Cold Water Creek	Approximately 2.7 miles upstream of Sapp Road (SR 2402)	Cabarrus County City Of Concord
Little Meadow Creek	The confluence with Rocky River	Approximately 200 feet upstream of Reed Mine Road (SR-1100)	Cabarrus County City Of Locust
Mallard Creek	ie. Jordan lake	ie. At the Guilford/Alamance County boundary	City Of Charlotte Town Of Harrisburg
Mallard Creek	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	Town Of Harrisburg
Mallard Creek Tributary 1	The confluence with Mallard Creek	Approximately 0.8 mile upstream of the confluence with Mallard Creek	Town Of Harrisburg

Table 8P - Scope of Revisions: Revised or New Detailed Study - Preliminary

Source	Riverine Sources		Affected Communities
	From	To	
Mallard Creek Tributary 1A	The confluence with Mallard Creek Tributary 1	Approximately 1 mile upstream of the confluence with Mallard Creek Tributary 1	Town Of Harrisburg
Mallard Creek Tributary 1B	The confluence with Mallard Creek Tributary 1	Approximately 0.3 mile upstream of the confluence with Mallard Creek Tributary 1	Town Of Harrisburg
Mallard Creek Tributary 2	The confluence with Mallard Creek	Approximately 1,300 feet upstream of Hudspeth Road (SR-1302)	City Of Concord Town Of Harrisburg
McCachern Branch	The confluence with Rocky River	Approximately 0.2 mile upstream of the confluence with Rocky River	Town Of Harrisburg
McKee Creek	The confluence with Reedy Creek	At the Mecklenburg/Cabarrus County boundary	Cabarrus County Town Of Harrisburg
Meadow Creek	The confluence with Rocky River	Approximately 0.95 mile upstream of Reed Mine Road (SR-1100)	Cabarrus County City Of Locust
Morris Branch ¹	The confluence with Rocky River	Approximately 0.2 mile upstream of Rocky River	Town Of Harrisburg
Muddy Creek	The confluence with Rocky River	Approximately 0.95 mile upstream of Reed Mine Road (SR-1100)	Cabarrus County Town Of Midland
Muddy Creek Tributary 1	The confluence with Muddy Creek	Immediately upstream of NC Highway 24/27	Cabarrus County Town Of Midland
Overcash Branch	The confluence with Irish Buffalo Creek	Approximately 400 feet upstream of Madison Avenue	City Of Kannapolis
Patterson Branch	The confluence with Chambers Branch	Approximately 200 feet upstream of Grace Avenue	Cabarrus County City Of Kannapolis
Reedy Creek	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	Cabarrus County City Of Concord Town Of Harrisburg
Reedy Creek Tributary 1	The confluence with Reedy Creek	At the Mecklenburg/Cabarrus County boundary	Cabarrus County
Rocky River	Approximately 750 feet downstream of Garmon Mill Road (SR-1114)	Approximately 0.5 mile upstream of Shiloh Church Road (SR-1600)	Cabarrus County City Of Concord City Of Kannapolis City Of Locust Town Of Harrisburg Town Of Midland
Rocky River	At the Mecklenburg/Cabarrus County Boundary	At the Mecklenburg/Cabarrus/Iredell County boundary	Cabarrus County City Of Kannapolis
Rocky River Tributary	At Cabbarus County line	Approximately 2800 ft. upstream of Interstate 85	City Of Concord
Rocky River Tributary	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	City Of Concord
Rogers Lake Branch	The confluence with Irish Buffalo Creek	Approximately 200 feet upstream of Richard Avenue (SR 1745)	City Of Kannapolis
Shamrock Branch	The confluence with Threemile Branch	Approximately 450 feet upstream of Shamrock Street NE	City Of Concord
Shinn Branch	The confluence with Dutch Buffalo Creek	Approximately 250 feet upstream of NC Highway 200	Cabarrus County
Stricker Branch	The confluence with Irish Buffalo Creek	Immediately upstream of NC Highway 73	City Of Concord
Threemile Branch	The confluence with Cold Water Creek	Approximately 350 feet upstream of Plymouth Street	City Of Concord City Of Kannapolis
Tucker Branch	The confluence with Anderson Creek Creek	Approximately 0.66 mile upstream of the confluence with Rocky River	Cabarrus County
Unnamed Stream	The confluence with Coddle Creek	Approximately 0.9 mile upstream of Wolf Meadow Drive SW	Cabarrus County City Of Concord
Unnamed Stream	The confluence with Coddle Creek	Approximately 1,200 feet upstream of Weddington Road (SR-1431)	City Of Concord
Unnamed Stream	The confluence with Irish Buffalo Creek	Approximately 1,200 feet upstream of Poplar Tent Rd (SR-1394)	City Of Concord
Unnamed Stream	The confluence with Irish Buffalo Creek	Approximately 800 feet upstream of Glenwood Drive SW	Cabarrus County City Of Concord
Unnamed Stream	The confluence with Irish Buffalo Creek	At the Rowan/Cabarrus County boundary	Cabarrus County Town Of Mount Pleasant
Unnamed Stream	The confluence with Unnamed Tributary 1 to Coddle Creek	Approximately 1,500 feet upstream of the Cabarrus Country Club Dam	City Of Concord
Yow Branch	The confluence with Rocky River	Approximately 1,050 feet upstream of NC Highway 200	Cabarrus County Town Of Mount Pleasant

¹Revised to reflect backwater effects from new detailed study

Table 9P, "Scope of Revisions: Redelineated - Preliminary" is not applicable in Cabarrus County.

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

newly studied flooding source.

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

Source	Riverine Sources		Affected Communities
	From	To	
Coddle Creek Tributary 1 ¹	The confluence with Coddle Creek	Just upstream of Rocky River Rd.	Cabarrus County City Of Concord
Coddle Creek Tributary 3 ¹	The confluence with Coddle Creek	Approximately 60 feet downstream of Roberta Church Rd.	City Of Concord
Coddle Creek Tributary 4	The confluence with Coddle Creek at Lake Don T. Howell	Approximately 0.55 mile upstream of Windy Road (SR-1442)	Cabarrus County
Irish Buffalo Creek Tributary 1 ¹	The confluence with Irish Buffalo Creek	Approximately 1,000 feet upstream of confluence with Irish Buffalo Creek	City Of Concord
Irish Buffalo Creek Tributary 2 ¹	The confluence with Irish Buffalo Creek	Approximately 1,800 feet upstream of confluence with Irish Buffalo Creek	City Of Kannapolis
Irish Buffalo Creek Tributary 3 ¹	The confluence with Irish Buffalo Creek	Approximately 1,000 feet upstream of confluence with Irish Buffalo Creek	City Of Kannapolis
Miller Branch ¹	The confluence with Irish Buffalo Creek	Approximately 650 feet upstream of confluence with Irish Buffalo Creek	Cabarrus County City Of Kannapolis
Muddy Creek	The confluence of Muddy Creek Tributary 1	Approximately 0.55 mile upstream of Cabarrus Station Road (SR-1121)	Cabarrus County Town Of Midland
Patterson Branch Tributary ¹	The confluence with Patterson Branch	Approximately 100 feet upstream of confluence with Patterson Branch	City Of Kannapolis
Ridenhour Branch ¹	The confluence with Little Cold Water Creek	Approximately 1,000 feet upstream of confluence with Little Cold Water Creek	Cabarrus County City Of Concord
Rocky River Tributary 11 ¹	The confluence with Rocky River	Approximately 0.4 mile upstream of Rocky River	Cabarrus County
Rocky River Tributary 14 ¹	The confluence with Rocky River	Approximately 0.3 mile upstream of Rocky River	Town Of Harrisburg
Royal Oaks Branch ¹	The confluence with Cold Water Creek	Approximately 1,500 feet upstream of confluence with Cold Water Creek	Cabarrus County City Of Concord City Of Kannapolis
Unnamed Stream	The confluence with Adams Creek	Approximately 0.9 mile upstream of Barr Link Rd (SR-2520)	Cabarrus County
Unnamed Stream	The confluence with Adams Creek	Approximately 800 feet upstream of Barr Link Rd (SR-2520)	Cabarrus County Town Of Mount Pleasant
Unnamed Stream	The confluence with Dutch Buffalo Creek	Approximately 1.3 miles upstream of Bost Cutoff Road (SR 2626)	Cabarrus County
Unnamed Stream	The confluence with Reedy Creek	Approximately 1 mile upstream of the confluence with Reedy Creek	Cabarrus County
Unnamed Stream	The confluence with ReedyCreek Tributary 1	Approximately 0.8 mile upstream of confluence with Reedy Creek Tributary 1	Cabarrus County
Unnamed Stream	The confluence with ReedyCreek Tributary 1	Approximately 100 feet upstream of driveway off Midvale Terrace (SR-2340)	Cabarrus County
Unnamed Stream	The confluence with Rocky River	Approximately 0.2 mile upstream of Sudbury Road (SR-1607)	Cabarrus County City Of Kannapolis
Unnamed Stream	The confluence with Rocky River	Approximately 1.5 miles upstream of NC Hwy 73 (Davidson Highway)	Cabarrus County City Of Concord City Of Kannapolis
Unnamed Stream	The confluence with Rocky River	Approximately 1.7 miles upstream of the confluence with Rocky River	Cabarrus County City Of Kannapolis
Unnamed Stream	The confluence with Rocky River	Approximately 400 feet upstream of Christenbury Road (SR-1447)	Cabarrus County City Of Concord
Unnamed Stream	The confluence with Rogers Lake Branch	Approximately 750 feet upstream of Colony Drive	City Of Kannapolis
Unnamed Stream	The confluence with Unnamed Tributary 2 to Adams Creek	Approximately 700 feet upstream of the confluence with Unnamed Tributary 2 to Adams Creek (LDS)	Town Of Mount Pleasant
Unnamed Stream	The confluence with Unnamed Tributary to Dutch Buffalo Creek	Approximately 700 feet upstream of Barnhardt Road (SR 2621)	Cabarrus County
Unnamed Stream	The confluence with Yow Branch (LDS)	Approximately 0.8 mile upstream of the confluence with Yow Branch (LDS)	Cabarrus County Town Of Mount Pleasant
Water Creek ¹	The confluence with Little Cold Water Creek	Approximately 700 feet upstream of confluence with Little Cold Water Creek	Cabarrus County

¹Revised to reflect backwater effects from new detailed study

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

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

Source	Riverine Sources		Affected Communities
	From	To	
Adams Creek	The confluence with Dutch Buffalo Creek	Approximately 1,500 feet upstream of NC Highway	Cabarrus County City Of Concord Town Of Mount Pleasant
Afton Run	The confluence with Coddle Creek	Approximately 1.5 miles upstream of Dogwood Boulevard	City Of Concord City Of Kannapolis
Anderson Creek	The confluence with Rocky River	Approximately 850 feet upstream of Sam Black Road (SR-1127)	Cabarrus County Town Of Midland
Anderson Creek Tributary 1	The confluence with Anderson Creek	Immediately downstream of Sam Black Road (SR-1127)	Cabarrus County
Back Creek	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	Cabarrus County City Of Charlotte City Of Concord Town Of Harrisburg
Caldwell Creek	The confluence with Reedy Creek	At the Mecklenburg/Cabarrus County boundary	Cabarrus County
Caldwell Creek Tributary	The confluence with Caldwell Creek	Approximately 2,000 feet upstream of Pioneer Mill Road (SR-1134)	Cabarrus County
Chambers Branch	The confluence with Cold Water Creek	Approximately 1,200 feet upstream of East 1st Street (SR-1706)	City Of Concord City Of Kannapolis
Clarke Creek	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	Cabarrus County City Of Concord
Clarke Creek Tributary	The confluence with Clarke Creek	At the Mecklenburg/Cabarrus County boundary	City Of Concord
Clear Creek	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	Cabarrus County Town Of Fairview Town Of Midland
Coddle Creek	The confluence with Rocky River	Immediately downstream of Coddle Creek Dam	Cabarrus County City Of Concord City Of Kannapolis Town Of Harrisburg
Coddle Creek Tributary 2	The confluence with Coddle Creek	Approximately 0.25 mile upstream of Chapel Creek Road SW	Cabarrus County City Of Concord
Cold Water Creek	The confluence with Rocky River	At the Rowan/Cabarrus County boundary	Cabarrus County City Of Concord City Of Kannapolis
Common Ford Branch	The confluence with Cold Water Creek	Approximately 1.6 miles upstream of Penniger Road (SR-2113)	Cabarrus County
Davis Branch	The confluence with Rocky River	Approximately 300 feet upstream of Ruckus Road	Town Of Harrisburg
Dutch Buffalo Creek	The confluence with Rocky River	Immediately upstream of NC Highway 73	Cabarrus County Town Of Mount Pleasant
Fisher Town Branch	The confluence with Irish Buffalo Creek	At the Rowan/Cabarrus County boundary	Cabarrus County City Of Kannapolis
Fuda Creek	The confluence with Back Creek	At the Mecklenburg/Cabarrus County boundary	Cabarrus County Town Of Harrisburg
Hamby Branch	The confluence with Rocky River	Approximately 2.2 miles upstream of NC Highway 200	Cabarrus County
Hamby Branch Tributary	The confluence with Hamby Branch	Approximately 850 feet upstream of Cart Path	Cabarrus County
Hillandale Branch	The confluence with Threemile Branch	Approximately 1,300 feet upstream of Hillandale Street	City Of Concord
Horse Branch	The confluence with Rocky River	Approximately 0.4 mile upstream of Parks Lafferty Road (SR-1148)	Cabarrus County
Horton Branch	The confluence with Anderson Creek	Approximately 0.65 mile upstream of Sam Black Road (SR-1127)	Cabarrus County
Irish Buffalo Creek	The confluence with Cold Water Creek	At the Rowan/Cabarrus County boundary	Cabarrus County City Of Concord City Of Kannapolis
Jones Branch	The confluence with Rocky River	Approximately 0.3 mile upstream of Falcon Drive (SR-1269)	Cabarrus County
Little Cold Water Creek	The confluence with Cold Water Creek	Approximately 2.7 miles upstream of Sapp Road (SR 2402)	Cabarrus County City Of Concord
Little Meadow Creek	The confluence with Rocky River	Approximately 200 feet upstream of Reed Mine Road (SR-1100)	Cabarrus County City Of Locust
Mallard Creek	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	Town Of Harrisburg
Mallard Creek Tributary 1	The confluence with Mallard Creek	Approximately 0.8 mile upstream of the confluence with Mallard Creek	Town Of Harrisburg
Mallard Creek Tributary 1A	The confluence with Mallard Creek Tributary 1	Approximately 1 mile upstream of the confluence with Mallard Creek Tributary 1	Town Of Harrisburg
Mallard Creek Tributary 1B	The confluence with Mallard Creek Tributary 1	Approximately 0.3 mile upstream of the confluence with Mallard Creek Tributary 1	Town Of Harrisburg
Mallard Creek Tributary 2	The confluence with Mallard Creek	Approximately 1,300 feet upstream of Hudspeth Road (SR-1302)	City Of Concord Town Of Harrisburg

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

Source	Riverine Sources		Affected Communities
	From	To	
McAllister Creek	The confluence with Irish Buffalo Creek	At the Rowan/Cabarrus County boundary	Cabarrus County Town Of Mount Pleasant
McCachern Branch	The confluence with Rocky River	Approximately 0.2 mile upstream of the confluence with Rocky River	Town Of Harrisburg
McKee Creek	The confluence with Reedy Creek	At the Mecklenburg/Cabarrus County boundary	Cabarrus County Town Of Harrisburg
Meadow Creek	The confluence with Rocky River	Approximately 0.95 mile upstream of Reed Mine Road (SR-1100)	Cabarrus County City Of Locust
Morris Branch	The confluence with Rocky River	Approximately 1,280 feet upstream of Rocky River Crossing Road	Town Of Harrisburg
Muddy Creek	The confluence with Rocky River	Approximately 0.95 mile upstream of Reed Mine Road (SR-1100)	Cabarrus County Town Of Midland
Muddy Creek Tributary 1	The confluence with Muddy Creek	Immediately upstream of NC Highway 24/27	Cabarrus County Town Of Midland
Overcash Branch	The confluence with Irish Buffalo Creek	Approximately 400 feet upstream of Madison Avenue	City Of Kannapolis
Patterson Branch	The confluence with Chambers Branch	Approximately 200 feet upstream of Grace Avenue	Cabarrus County City Of Kannapolis
Reedy Creek	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	Cabarrus County City Of Concord Town Of Harrisburg
Reedy Creek Tributary 1	The confluence with Reedy Creek	At the Mecklenburg/Cabarrus County boundary	Cabarrus County
Rocky River	Approximately 750 feet downstream of Garmon Mill Road (SR-1114)	Approximately 0.5 mile upstream of Shiloh Church Road (SR-1600)	Cabarrus County City Of Concord City Of Kannapolis City Of Locust Town Of Harrisburg Town Of Midland
Rocky River	At the Mecklenburg/Cabarrus County Boundary	At the Mecklenburg/Cabarrus/Iredell County boundary	Cabarrus County City Of Kannapolis
Rocky River	The Cabarrus/Union/Stanly County Boundary	Approximately 0.8 mile upstream of the confluence of Muddy Creek	Cabarrus County Town Of Fairview
Rocky River Tributary	The confluence with Rocky River	At the Mecklenburg/Cabarrus County boundary	City Of Concord
Rogers Lake Branch	The confluence with Irish Buffalo Creek	Approximately 200 feet upstream of Richard Avenue (SR 1745)	City Of Kannapolis
Shamrock Branch	The confluence with Threemile Branch	Approximately 450 feet upstream of Shamrock Street NE	City Of Concord
Shinn Branch	The confluence with Dutch Buffalo Creek	Approximately 250 feet upstream of NC Highway 200	Cabarrus County
Stricker Branch	The confluence with Irish Buffalo Creek	Immediately upstream of NC Highway 73	City Of Concord
Threemile Branch	The confluence with Cold Water Creek	Approximately 350 feet upstream of Plymouth Street	City Of Concord City Of Kannapolis
Tucker Branch	The confluence with Anderson Creek Creek	Approximately 0.66 mile upstream of the confluence with Rocky River	Cabarrus County
Unnamed Tributary 1 to Coddle Creek	The confluence with Coddle Creek	Approximately 1,200 feet upstream of Weddington Road (SR-1431)	City Of Concord
Unnamed Tributary 1 to Coddle Creek Tributary	The confluence with Unnamed Tributary 1 to Coddle Creek	Approximately 1,500 feet upstream of the Cabarrus Country Club Dam	City Of Concord
Unnamed Tributary 1 to Irish Buffalo Creek	The confluence with Irish Buffalo Creek	Approximately 800 feet upstream of Glenwood Drive SW	Cabarrus County City Of Concord
Unnamed Tributary 2 to Irish Buffalo Creek	The confluence with Irish Buffalo Creek	Approximately 1,200 feet upstream of Poplar Tent Rd (SR-1394)	City Of Concord
Wolf Meadow Branch	The confluence with Coddle Creek	Approximately 0.9 mile upstream of Wolf Meadow Drive SW	Cabarrus County City Of Concord
Yow Branch	The confluence with Rocky River	Approximately 1,050 feet upstream of NC Highway 200	Cabarrus County Town Of Mount Pleasant

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

Table 9 - Flooding Sources Studied by Detailed Methods: Redelineated

Source	Riverine Sources		Affected Communities
	From	To	
Baker Branch	The confluence of Irish Buffalo Creek	Approximately 1,535 feet upstream of West A Street	City Of Kannapolis
Beaver Creek	The confluence with Cold Water Creek	Approximately 1,750 feet upstream of Milton Street	City Of Kannapolis

Table 9 - Flooding Sources Studied by Detailed Methods: Redelineated

Source	Riverine Sources		Affected Communities
	From	To	
Cold Water Creek	Approximately 310 feet upstream of Old Salisbury-Concord Road	Approximately 920 feet upstream of Lane Street	Cabarrus County City Of Concord City Of Kannapolis
Dutch Buffalo Creek	The Rowan/Cabarrus County boundary	Approximately 130 feet upstream of Rogers Road (SR 2573)	Cabarrus County
Irish Buffalo Creek	The confluence with Cold Water Creek	Approximately 100 feet upstream of Cannon Farm Road	Cabarrus County City Of Concord City Of Kannapolis

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	
Coddle Creek Tributary 1	The confluence with Coddle Creek	Approximately 1,800 feet upstream of Rocky River Road	Cabarrus County City Of Concord
Coddle Creek Tributary 3	The confluence with Coddle Creek	Approximately 1.0 mile upstream of Roberta Church Road	City Of Concord
Coddle Creek Tributary 4	The confluence with Coddle Creek at Lake Don T. Howell	Approximately 0.55 mile upstream of Windy Road (SR-1442)	Cabarrus County
Cold Water Creek	Just upstream of Moose Road (SR 1308)	Approximately 0.5 mile upstream of Moose Road (SR 1308)	Cabarrus County City Of Kannapolis
Dutch Buffalo Creek Tributary 1	The confluence with Dutch Buffalo Creek	Approximately 0.7 mile upstream of Pless Road (SR 2432)	Cabarrus County
Irish Buffalo Creek Tributary 1	The confluence with Irish Buffalo Creek	Approximately 910 feet upstream of Hanover Drive NW	City Of Concord
Irish Buffalo Creek Tributary 2	The confluence with Irish Buffalo Creek	Approximately 1,950 feet upstream of Orphanage Road	City Of Kannapolis
Irish Buffalo Creek Tributary 3	The confluence with Irish Buffalo Creek	Approximately 500 feet upstream of Mooresville Road	City Of Kannapolis
Lick Branch	The confluence with Dutch Buffalo Creek	Approximately 1,160 feet upstream of Sapp Road (SR 2443)	Cabarrus County
Little Buffalo Creek	The confluence with Dutch Buffalo Creek	Approximately 1.9 miles upstream of Drye Road	Cabarrus County
Little Meadow Creek	Approximately 100 feet upstream of Reed Mine Road (SR 1100)	Approximately 330 feet upstream of County Line Road (SR 2623)	Cabarrus County City Of Locust
Mill Creek	The confluence with Coddle Creek	Approximately 385 feet upstream of Smith Road (SR 1361)	Cabarrus County City Of Kannapolis
Miller Branch	The confluence with Irish Buffalo Creek	Approximately 0.9 mile upstream of Mooresville Road	Cabarrus County City Of Kannapolis
Muddy Creek	The confluence of Muddy Creek Tributary 1	Approximately 0.55 mile upstream of Cabarrus Station Road (SR-1121)	Cabarrus County Town Of Midland
Park Creek	The confluence with Coddle Creek	Approximately 0.5 mile upstream of Smith Road (SR 1360)	Cabarrus County
Patterson Branch Tributary	The confluence with Patterson Branch	Approximately 1,800 feet upstream of Beaumont Avenue	City Of Kannapolis
Reedy Creek Tributary 2	The confluence with Reedy Creek	Approximately 1 mile upstream of the confluence with Reedy Creek	Cabarrus County
Ridenhour Branch	The confluence with Little Cold Water Creek	Approximately 0.5 mile upstream of the confluence of Ridenhour Branch Tributary	Cabarrus County City Of Concord
Ridenhour Branch Tributary	The confluence with Ridenhour Branch	Approximately 1.2 miles upstream of Lake Lynn Road (SR 2640)	Cabarrus County
Rocky River Tributary 11	The confluence with Rocky River	Approximately 0.7 mile upstream of NC-200	Cabarrus County
Rocky River Tributary 14	The confluence with Rocky River	Approximately 1,310 feet upstream of Rocky River Crossing Road	Town Of Harrisburg
Rocky River Tributary 15	The confluence with Rocky River	Approximately 400 feet upstream of Christenbury Road (SR-1447)	Cabarrus County City Of Concord
Royal Oaks Branch	The confluence with Cold Water Creek	Approximately 650 feet upstream of Lake Concord Road	Cabarrus County City Of Concord City Of Kannapolis
Tributary to Unnamed Tributary 2 to Adams Creek	The confluence with Unnamed Tributary 2 to Adams Creek	Approximately 700 feet upstream of the confluence with Unnamed Tributary 2 to Adams Creek (LDS)	Town Of Mount Pleasant
Tributary to Unnamed Tributary Dutch Buffalo Creek	The confluence with Unnamed Tributary to Dutch Buffalo Creek	Approximately 700 feet upstream of Barnhardt Road (SR 2621)	Cabarrus County
Tributary to Rodgers Lake Branch	The confluence with Rogers Lake Branch	Approximately 750 feet upstream of Colony Drive	City Of Kannapolis

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

Source	Riverine Sources		Affected Communities
	From	To	
Unnamed Tributary 1 to Reedy Creek Tributary 1	The confluence with ReedyCreek Tributary 1	Approximately 100 feet upstream of driveway off Midvale Terrace (SR-2340)	Cabarrus County
Unnamed Tributary 1 to Rocky River	The confluence with Rocky River	Approximately 1.7 miles upstream of the confluence with Rocky River	Cabarrus County City Of Kannapolis
Unnamed Tributary 2 to Adams Creek	The confluence with Adams Creek	Approximately 800 feet upstream of Barr Link Rd (SR-2520)	Cabarrus County Town Of Mount Pleasant
Unnamed Tributary 2 to Reedy Creek Tributary 1	The confluence with ReedyCreek Tributary 1	Approximately 0.8 mile upstream of confluence with Reedy Creek Tributary 1	Cabarrus County
Unnamed Tributary 2 to Rocky River	The confluence with Rocky River	Approximately 1.5 miles upstream of NC Hwy 73 (Davidson Highway)	Cabarrus County City Of Concord City Of Kannapolis
Unnamed Tributary 3 to Rocky River	The confluence with Rocky River	Approximately 0.2 mile upstream of Sudbury Road (SR-1607)	Cabarrus County City Of Kannapolis
Unnamed Tributary to Adams Creek	The confluence with Adams Creek	Approximately 0.9 mile upstream of Barr Link Rd (SR-2520)	Cabarrus County
Unnamed Tributary to Dutch Buffalo Creek	The confluence with Dutch Buffalo Creek	Approximately 1.3 miles upstream of Bost Cutoff Road (SR 2626)	Cabarrus County
Unnamed Tributary to Yow Branch	The confluence with Yow Branch (LDS)	Approximately 0.8 mile upstream of the confluence with Yow Branch (LDS)	Cabarrus County Town Of Mount Pleasant
Water Creek	The confluence with Little Cold Water Creek	Approximately 0.7 mile upstream of Gold Hill Road	Cabarrus County

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

Table 12, "Letters of Map Revision" is not applicable in Cabarrus County.

5.0 Engineering Methods

For the flooding sources in the community, standard hydrologic and hydraulic study methods were used to determine the flood hazard data required for this study. Flood events of a magnitude that are expected to be equaled or exceeded at least once on the average during any 10-, 25-, 50-, 100-, or 500-year period (recurrence interval) have been selected as having special significance for floodplain management and for flood insurance rates. These events, commonly termed the 10-, 25-, 50-, 100-, and 500-year floods, have a 10-, 4-, 2-, 1-, and 0.2% annual chance, respectively, of being equaled or exceeded during any year. Although the recurrence interval represents the long-term, average period between floods of a specific magnitude, rare floods could occur at short intervals or even within the same year. The risk of experiencing a rare flood increases when periods greater than 1 year are considered. For example, the risk of having a flood that equals or exceeds the 100-year flood (1-percent chance of annual exceedance) during the term of a 30-year mortgage is approximately 26 percent (about 3 in 10); for any 90-year period, the risk increases to approximately 60 percent (6 in 10). The analyses reported herein reflect flooding potentials based on conditions existing in the community at the time of completion of this study. Maps and flood elevations will be amended periodically to reflect future changes.

5.1 Hydrologic Analyses

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

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

Table 13 - Summary of Discharges

Flooding Source	Discharges (cfs)				
	Location	Drainage Area (square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance
Adams Creek					
Approximately 2,600 feet upstream of the confluence with Dutch Buffalo Creek	16.40	2903	5172	6369	9781

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
Immediately upstream of Mt. Pleasant Road South (SR-1006)	16.02	2897	5157	6353	9761
Approximately 4,100 feet upstream of Mt. Pleasant Road South (SR-1006)	15.41	2873	5103	6291	9674
Immediately downstream of Mt. Pleasant Road West (SR-2637)	13.76	2716	4810	5937	9124
Approximately 4,700 feet upstream of Mt. Pleasant Road West (SR-2637)	13.43	2687	4760	5884	9059
Approximately 1.1 miles upstream of Mt. Pleasant Road West (SR-2637)	9.09	1556	2874	3590	5659
Approximately 1.7 miles upstream of Mt. Pleasant Road West (SR-2637)	8.86	1544	2849	3563	5631
Approximately 2.0 miles upstream of Mt. Pleasant Road West (SR-2637)	8.47	1521	2828	3510	5593
Immediately upstream of NC Highway 49	7.23	1281	2519	3178	5038
Approximately 1,400 feet upstream of NC Highway 49	6.73	1253	2468	3125	4970
Approximately 2,700 feet upstream of Walker Road (SR-2710)	5.27	1147	2228	2814	4498
Approximately 1.2 miles upstream of Walker Road (SR-2710)	4.03	1051	1983	2503	3923
Immediately downstream of NC Highway 73	3.22	959	1797	2226	3426
Afton Run					
Approximately 1,300 feet upstream of Village Drive	6.10	1302	2211	2636	3703
Just upstream of George W Lies Parkway	5.74	1190	2034	2426	3521
Approximately 375 feet downstream of McClenny Drive	4.33	999	1673	1988	3134
Just upstream of Davidson Highway	3.53	709	1301	1622	2651
Approximately 580 feet upstream of Davidson Highway	3.30	660	1204	1533	2528
Just downstream of Kannapolis Parkway	2.74	553	1066	1387	2308
Just upstream of Trinity Church Road	2.10	416	896	1181	1984
Just upstream of Dogwood Boulevard	1.67	372	798	1055	1722
Approximately 1,300 feet upstream of Dogwood Boulevard	1.14	321	689	874	1389
Approximately 1 mile upstream of Dogwood Boulevard	0.79	290	633	803	1262
Anderson Creek					
Approximately 0.6 mile downstream of US Highway 60	12.29	2140	3909	4787	7236
Immediately upstream of US Highway 60	11.24	2179	3957	4841	7345
Approximately 1,100 feet downstream of Jim Sossamon Road (SR-1123)	10.66	2221	3998	4886	7439
Immediately upstream of Jim Sossamon Road (SR-1123)	10.09	2202	3938	4808	7319
Approximately 0.35 mile downstream of Troutman Road (SR-1145)	9.03	2253	3959	4827	7458
Immediately upstream of Troutman Road (SR-1145)	8.57	2244	3910	4772	7434
Approximately 0.3 mile upstream of Troutman Road (SR-1145)	8.47	2251	3915	4786	7506
Approximately 0.35 mile upstream of Troutman Road (SR-1145)	5.99	1573	2714	3261	5170
Approximately 260 feet downstream of Private Crossing	3.13	884	1636	2040	3251
Approximately 0.85 mile downstream of Bethel Church Road (SR-1125)	2.95	881	1685	2116	3380
Immediately upstream of Bethel Church Road (SR-1125)	2.45	862	1673	2107	3290
Approximately 0.35 mile upstream of Bethel Church Road (SR-1125)	0.83	386	725	897	1361
Approximately 0.35 mile downstream of Sam Black Road (SR-1127)	0.63	363	661	814	1214
Approximately 1,150 feet downstream of Sam Black Road (SR-1127)	0.38	222	403	496	737
Immediately upstream of Sam Black Road (SR-1127)	0.29	195	347	420	609
Approximately 850 feet upstream of Sam Black Road (SR-1127)	0.21	159	278	336	484
Anderson Creek Tributary 1					
At the confluence with Anderson Creek	0.77	287	505	624	946
Approximately 0.55 mile downstream of Sam Black Road (SR-1127)	0.61	254	453	564	865
Immediately downstream of Sam Black Road (SR-1127)	0.55	241	436	543	828

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
Back Creek					
At the confluence with Rocky River	15.46	1980	3441	4174	6216
Just downstream of Pharr Mill Road	15.09	2008	3462	4187	6229
Just downstream of Stallings Road	13.58	2004	3395	4114	6131
Just downstream of the confluence of Fuda Creek	13.36	2023	3411	4143	6154
Just upstream of the confluence of Fuda Creek	9.80	1519	2633	3192	4727
Just upstream Hickory Ridge Road	8.90	1501	2615	3176	4707
Just downstream of Robinson Church Road	8.74	1503	2623	3186	4728
Just downstream of Caldwell Road	7.24	1418	2496	3036	4550
At the Mecklenburg/Cabarrus County boundary	6.86	1690	2963	3607	5364
Caldwell Creek					
At the confluence with Reedy Creek	8.71	1172	1902	2294	3770
Just upstream of Pine Grove Church Road	8.55	1160	1882	2284	3756
Just downstream of Sternbridge Drive	7.12	1090	1778	2239	3659
Just downstream of Pioneer Mill Road (SR-1134)	6.43	902	1716	2218	3595
Just upstream of Pioneer Mill Road (SR-1134)	4.84	690	1447	1872	3023
Just downstream of Morrison Road (SR-1135)	4.03	702	1502	1947	3082
Approximately 2,000 feet upstream of Morrison Road (SR-1135)	3.34	657	1376	1773	2802
Approximately 4,000 feet upstream of Morrison Road (SR-1135)	2.41	481	1002	1304	2235
At the Mecklenburg/Cabarrus County boundary	1.52	340	746	1004	1755
Caldwell Creek Tributary					
At the confluence with Caldwell Creek	0.61	259	487	605	928
Approximately 2,400 feet upstream of confluence with Caldwell Creek	0.53	245	466	576	877
Approximately 3,300 feet upstream of confluence with Caldwell Creek	0.43	211	390	480	733
Just downstream of Morrison Rd (SR-1135)	0.38	177	326	403	624
Approximately 1,000 feet upstream of Morrison Rd (SR-1135)	0.33	160	299	368	568
Just downstream of Pioneer Mill Road (SR-1134)	0.24	137	252	308	456
At the Private Dam/Pond	0.22	132	242	296	438
Approximately 1,100 feet upstream of Pioneer Mill Road (SR-1134)	0.18	119	218	266	392
Approximately 2,000 feet upstream of Pioneer Mill Road (SR-1134)	0.09	73	127	153	221
Chambers Branch					
Immediately upstream of the confluence with Cold Water Creek	4.90	831	1667	2142	4031
At the Lake Concord Dam	4.68	813	1636	2105	3979
Immediately upstream of Lake Concord Dam Spillway	4.68	2434	4184	5046	7291
Immediately upstream of confluence of Patterson Branch	2.43	1346	2305	2771	3988
Approximately 2,100 feet downstream of S Little Texas Road (SR-2154)	2.26	1317	2255	2711	3900
Immediately downstream of S Little Texas Road (SR-2154)	1.93	1263	2129	2546	3616
Approximately 1,050 feet downstream of Fairview Street	1.54	1251	2076	2471	3473
Immediately downstream of Fairview Street	1.22	1106	1796	2126	2963
Approximately 700 feet upstream of Fairview Street	1.06	1026	1650	1951	2715
Immediately upstream of US Highway 29	0.84	869	1395	1653	2312
Immediately upstream of E 1st Street (SR-1706)	0.57	608	972	1149	1602
Approximately 700 feet upstream of E 1st Street (SR-1706)	0.43	470	756	892	1238
Clarke Creek					

Table 13 - Summary of Discharges

Flooding Source		Discharges (cfs)			
Location	Drainage Area (square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
At the confluence with Rocky River	28.14	3669	6620	8076	11982
Just upstream of the confluence of Clarke Creek Tributary	27.60	3706	6695	8166	12116
Approximately 1.2 miles upstream of the confluence of Clarke Creek Tributary	23.52	3575	6532	7992	11874
Approximately 1,500 feet downstream of Harris Road (SR-1449)	22.42	3720	6829	8425	12545
At the Mecklenburg/Cabarrus County Boundary	21.80	2780	6948	8598	12811
Clarke Creek Tributary					
Just upstream of Millstream Ridge Drive	2.25	1042	1491	1778	3351
Clear Creek					
Immediately downstream of Black Road (SR-1118)	18.56	1720	3325	4064	6148
Immediately upstream of Black Road (SR-1118)	17.86	1671	3238	3958	5970
Approximately 0.8 mile upstream of Black Road (SR-1118)	17.09	1665	3231	3933	5881
At the Mecklenburg/Cabarrus County border	13.10	1364	2440	3028	5005
Coddle Creek					
J_CC012 Just upstream of NC-49	74.35	2737	5684	7188	11477
Approximately 1,200 feet downstream of Roberta Road (SR-1304)	72.31	3613	5881	7417	11739
Approximately 700 feet upstream of Roberta Road (SR-1304)	68.53	2789	5756	7257	11518
Approximately 0.55 mile downstream of US Hwy 29	65.59	2863	5802	7316	11668
Just upstream of Hwy 29	62.86	2806	5694	7190	11494
Just upstream of Weddington Road (SR-1431)	60.94	2813	5747	7283	11720
Just upstream of NC Hwy 73	47.74	2491	5235	6700	10923
Coddle Creek Tributary 2					
At the confluence with Coddle Creek	1.45	663	1056	1311	2030
Just downstream of railroad (Approximately 700 feet downstream of NC-49)	1.12	639	1089	1341	1993
Just downstream of NC-49	0.96	587	1024	1251	1850
Approximately 0.5 mile upstream of NC-49	0.61	483	856	1025	1481
Approximately 0.75 mile upstream of NC-49	0.44	360	633	754	1089
Approximately 0.95 mile upstream of NC-49	0.33	280	488	578	833
Approximately 0.5 mile downstream of Green Street	0.24	227	392	458	660
Approximately 0.35 mile downstream of Green Street	0.20	192	326	382	546
Approximately 725 feet downstream of Green Street	0.11	110	182	216	302
Coddle Creek Tributary 4					
At the confluence with Coddle Creek	1.54	384	720	897	1400
At the private dam approximately 1,400 feet upstream of Windy Road (SR-1442)	1.05	342	663	833	1293
Cold Water Creek					
At the confluence of Irish Buffalo Creek	109.89	8551	15304	18932	29085
Immediately upstream of the confluence of Irish Buffalo Creek	64.03	5178	9389	11680	18138
Immediately upstream of US Highway 601	63.51	5186	9381	11675	18153
Approximately 3,700 feet upstream of US Highway 601	62.69	5184	9352	11645	18134
Immediately upstream of Miami Church Road (SR-1132)	61.83	5232	9334	11635	18173
Approximately 1,400 feet upstream of Miami Church Road (SR-1132)	61.06	5268	9360	11663	18291
Immediately upstream of NC Highway 49	57.71	5279	9283	11513	18238
At the confluence of Little Cold Water Creek	57.25	5309	9310	11496	18279
Immediately upstream of Old Airport Road (SR-2635)	43.19	3739	7162	9102	14421
At the confluence of Threemile Branch	42.30	3764	7207	9180	14662

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
Immediately upstream of Corban Ave Road (NC-73)	34.49	3291	6355	8051	12752
Approximately 1,700 feet upstream of Corban Ave Road (NC-73)	34.15	3303	6384	8097	12849
Immediately upstream of Old Salisbury-Concord Road (SR-1002)	33.08	3314	6472	8243	13144
At the confluence of Cold Water Creek Trib 32	32.34	3332	6590	8431	13451
Approximately 4,500 feet upstream of the confluence of Cold Water Creek Trib 34	28.82	3222	6514	8276	13108
At the confluence of Royal Oaks Branch	28.65	3253	6640	8435	13355
Approximately 4,200 feet upstream of the confluence of Royal Oaks Branch	25.98	3206	6451	8193	12902
At the confluence of Chambers Branch	24.47	3146	6331	8050	12652
Immediately upstream of the confluence of Chambers Branch	19.57	2437	4975	6326	10061
Immediately upstream of Interstate 85	19.30	2428	4963	6313	10052
At Lake Fisher Dam	18.86	4821	9023	11115	16778
Immediately upstream of the confluence of Cold Water Creek Trib 48	18.21	4738	8872	10931	16492
Approximately 350 feet upstream of Brantley Road (SR-2000)	18.09	4723	8848	10903	16453
At the confluence of Cold Water Creek Trib 51	17.41	4637	8688	10706	16138
Immediately upstream of the confluence of Cold Water Creek Trib 51	16.82	4557	8535	10517	15836
Approximately 650 feet downstream of Lane Street (SR-2180)	16.47	4515	8465	10434	15717
Common Ford Branch					
Immediately downstream of farm access road off of Penninger Road (SR-2113)	2.46	890	1671	2092	3230
Approximately 1,500 feet upstream of farm access road off of Penninger Road (SR-2113)	2.09	809	1502	1875	2904
Approximately 500 feet downstream of Oak Trail Circle (SR-2245)	1.76	659	1233	1537	2392
Immediately upstream of Flowerfield Drive	1.58	623	1151	1426	2180
Approximately 550 feet downstream of Penninger Road (SR-2113)	1.25	553	997	1223	1830
Approximately 250 feet downstream of access road to farm	0.76	461	828	1011	1503
Approximately 1,200 feet upstream of access road to farm	0.61	420	751	911	1342
Approximately 2,800 feet upstream of access road to farm	0.43	333	567	687	1011
Approximately 4,000 feet upstream of access road to farm	0.36	276	475	582	880
Approximately 4,700 feet upstream of access road to farm	0.31	244	430	531	798
Davis Branch					
At the confluence with Rocky River	0.51	500	753	873	1177
Approximately 600 feet upstream of the confluence with Rocky River	0.35	332	499	581	790
Approximately 1,200 feet downstream of Ruckus Road	0.30	293	453	526	712
Just downstream of Ruckus Road	0.20	247	381	442	593
Dutch Buffalo Creek					
Immediately downstream of NC Highway 200	98.09	5230	9649	12013	18710
Approximately 250 feet upstream of Miami Church Road (SR-1132)	93.64	5305	9706	12092	18840
Approximately 0.65 mile downstream of Barrier Store Road (SR-2622)	91.57	5478	10117	12643	19717
Approximately 600 feet upstream of Barrier Store Road (SR-2622)	86.16	5434	10074	12541	19564
Approximately 0.9 mile upstream of Barrier Store Road (SR-2622)	84.37	5480	10200	12720	19872
Approximately 0.75 mile downstream of Bowman Barrier Road (SR-2610)	82.33	5631	10572	13237	20720
Approximately 700 feet upstream of Bowman Barrier Road (SR-2610)	65.19	4857	9011	11253	17551
Immediately upstream of NC Highway 73	64.14	4857	9065	11346	17793
Fisher Town Branch					
At the confluence with Irish Buffalo Creek	1.25	608	1128	1394	2126

Table 13 - Summary of Discharges

Flooding Source		Discharges (cfs)			
Location	Drainage Area (square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Approximately 600 feet downstream of Alder Street	0.95	622	1155	1410	2044
Approximately 1,000 feet upstream of Alder Street	0.80	613	1102	1337	1926
Approximately 1,500 feet downstream of the Rowan/Cabarrus County boundary	0.69	557	988	1197	1737
Approximately 500 feet downstream of the Rowan/Cabarrus County boundary	0.61	512	902	1090	1575
Fuda Creek					
At the confluence with Back Creek	3.56	1189	2085	2517	3691
Just downstream of Hickory Ridge Road	3.37	1199	2112	2549	3754
Approximately 2,600 feet downstream of Robinson Church Road	2.40	1156	1992	2401	3522
Just downstream of Robinson Church Road	2.15	1157	1991	2398	3540
Approximately 4,400 feet upstream of Robinson Church Road	1.31	974	1622	1927	2710
Approximately 750 feet downstream of Wellington Lane	1.12	974	1613	1909	2662
Just upstream of Piccadilly Lane	0.86	843	1363	1601	2203
Hamby Branch					
At the confluence with Rocky River	6.84	1705	3192	4032	6426
Approximately 1,650 feet upstream of NC Hwy 200	6.32	1659	3114	3925	6246
Approximately 0.85 mile upstream of NC Hwy 200	3.34	915	1792	2259	3613
Approximately 1.35 miles upstream of NC Hwy 200	3.05	883	1743	2195	3501
Approximately 2.2 miles upstream of NC Hwy 200	2.67	845	1649	2065	3265
Hamby Branch Tributary					
At the confluence with Hamby Branch	2.72	787	1488	1860	2962
Approximately 0.4 mile upstream of the confluence with Hamby Branch	2.48	753	1426	1770	2802
Approximately 1.05 miles upstream of the confluence with Hamby Branch	0.45	294	516	624	909
Hillandale Branch					
At the confluence with Threemile Branch	0.19	307	470	540	731
Immediately upstream of Norman Point NE	0.16	278	426	494	662
Approximately 600 ft downstream of Hillandale St NE	0.12	213	325	377	506
Immediately upstream of Hillandale St NE	0.05	99	151	175	235
Approximately 650 ft upstream of Hillandale St NE	0.02	43	65	74	98
Horse Branch					
Approximately 600 feet upstream of Parks Lafferty Road (SR-1148)	1.60	893	1603	1982	2960
Horton Branch					
At the confluence with Anderson Creek	2.48	772	1291	1546	2348
Immediately downstream of Robert Bost Road (SR-1187)	2.30	759	1271	1529	2341
Approximately 1,800 feet downstream of Bethel Church Road (SR-1125)	2.00	691	1213	1502	2307
Immediately upstream of Bethel Church Road (SR-1125)	1.47	598	1111	1378	2101
Approximately 1,700 feet downstream of Sam Black Road (SR-1127)	1.33	596	1104	1357	2053
Immediately upstream of Sam Black Road (SR-1127)	0.82	383	702	862	1289
Approximately 1,150 feet upstream of Sam Black Road (SR-1127)	0.69	314	579	714	1073
Approximately 0.55 mile upstream of Sam Black Road (SR-1127)	0.54	259	476	585	872
Approximately 0.55 mile upstream of Sam Black Road (SR-1127)	0.20	128	228	276	401
Irish Buffalo Creek					
Approximately 2,000 feet downstream of NC Highway 49	45.86	3544	5916	7257	10973
Approximately 0.7 mile downstream of Poplar Tent Road (SR-1394)	40.49	3334	5677	6976	10580
Approximately 0.7 mile downstream of NC Highway 73	31.83	2893	5216	6454	9874

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
Immediately upstream of NC Highway 73	26.41	2654	4804	5947	9182
Immediately upstream of I-85	24.71	2536	4477	5519	8480
Approximately 2,400 feet upstream of Orphanage Road (SR-1778)	22.07	2320	4022	4908	7365
Approximately 0.6 mile downstream of Rogers Lake Road (SR-1625)	21.22	2288	3977	4850	7278
Approximately 900 feet upstream of Rogers Lake Road (SR-1625)	19.02	2368	4208	5140	7649
Approximately 1,800 feet upstream of Rogers Lake Road (SR-1625)	17.38	2099	3531	4240	6076
Approximately 1,800 feet upstream of Rogers Lake Road (SR-1625)	16.88	2048	3416	4088	5822
Approximately 700 feet downstream of Rainbow Drive (SR-1643)	16.21	2095	3565	4286	6118
Approximately 1,100 feet upstream of Rainbow Drive (SR-1643)	14.73	1613	2675	3350	5171
Approximately 1,100 feet upstream of Rainbow Drive (SR-1643)	14.07	1484	2526	3162	4883
Approximately 1,500 feet upstream of Pine Street	13.56	1455	2627	3256	4985
Jones Branch					
Just upstream of Zion Church Road (SR-1152)	1.01	630	1175	1448	2158
Approximately 700 feet upstream of Zion Church Road (SR-1152)	0.80	547	1009	1240	1844
Approximately 1,300 feet downstream of Falcon Drive (SR-1269)	0.53	362	663	810	1204
Just downstream of Falcon Drive (SR-1269)	0.49	358	654	798	1185
Approximately 300 feet upstream of Falcon Drive (SR-1269)	0.39	276	505	617	922
Approximately 1,600 feet upstream of Falcon Drive (SR-1269)	0.22	159	275	333	493
Little Cold Water Creek					
At the confluence with Cold Water Creek	13.71	1802	3509	4416	6931
Approximately 125 feet upstream of Old Airport Road (SR-2635)	11.85	1687	3278	4117	6442
Approximately 0.9 mile upstream of Old Airport Road (SR-2635)	11.57	1716	3363	4223	6627
Approximately 0.5 mile downstream of NC Highway 73	11.29	1722	3383	4241	6656
Approximately 175 feet upstream of NC Highway 73	10.75	1709	3356	4205	6594
Approximately 600 feet upstream of NC Highway 73	9.73	1681	3295	4119	6429
Approximately 0.4 mile downstream of Gold Hill Road (SR-2408)	9.16	1680	3297	4124	6445
Approximately 550 feet upstream of Gold Hill Road (SR-2408)	8.06	1638	3205	4003	6224
Approximately 0.3 mile upstream of Gold Hill Road (SR-2408)	7.36	1639	3186	3979	6173
Approximately 0.8 mile upstream of Gold Hill Road (SR-2408)	6.38	1610	3119	3891	6007
Approximately 0.7 mile downstream of Sapp Road (SR-2402)	3.32	1035	1903	2339	3545
Immediately downstream of Sapp Road (SR-2402)	3.00	1030	1915	2356	3592
Approximately 0.5 mile upstream of Sapp Road (SR-2402)	2.61	1091	1966	2406	3607
Approximately 0.9 mile upstream of Sapp Road (SR-2402)	2.36	1077	1930	2353	3509
Approximately 1.0 mile upstream of Sapp Road (SR-2402)	2.14	1023	1811	2203	3263
Approximately 1.6 miles upstream of Sapp Road (SR-2402)	1.76	921	1586	1916	2767
Approximately 1.8 miles upstream of Sapp Road (SR-2402)	1.42	656	1133	1374	1997
Approximately 2.1 miles upstream of Sapp Road (SR-2402)	0.69	321	565	685	1002
Approximately 2.5 miles upstream of Sapp Road (SR-2402)	0.54	278	491	596	866
Little Meadow Creek					
Approximately 0.6 mile downstream of Reed Mine Road (SR-1100)	5.04	744	1281	1540	2226
Immediately downstream of Reed Mine Road (SR-1100)	4.83	734	1260	1509	2211
Mallard Creek					
Just upstream of Morehead Road (SR-1300)	41.16	8388	14081	17004	23888
Just downstream of the confluence of Mallard Creek Tributary 2	39.06	8706	15236	18192	25650

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	
Just upstream of the confluence of Mallard Creek Tributary 2		38.71	8690	15211	18163	25608
Mallard Creek Tributary 1						
At the confluence with Mallard Creek		0.81	817	1296	1492	2018
Approximately 600 feet upstream of the confluence with Mallard Creek		0.77	809	1275	1464	1986
Approximately 1,800 feet upstream of the confluence with Mallard Creek		0.71	807	1252	1423	1956
Approximately 3,900 feet upstream of the confluence with Mallard Creek		0.60	751	1129	1316	1827
Approximately 3,900 feet upstream of the confluence with Mallard Creek		0.50	646	966	1125	1546
Mallard Creek Tributary 1A						
At the confluence with Mallard Creek Tributary 1		0.39	384	626	739	1028
Approximately 1,500 feet upstream of the confluence with Mallard Creek Tributary 1		0.35	374	601	707	976
Approximately 2,900 feet upstream of the confluence with Mallard Creek Tributary 1		0.26	315	501	586	803
Approximately 3,500 feet upstream of the confluence with Mallard Creek Tributary 1		0.17	237	372	433	590
Approximately 4,300 feet upstream of the confluence with Mallard Creek Tributary 1		0.13	198	305	354	478
Approximately 4,800 feet upstream of the confluence with Mallard Creek Tributary 1		0.03	41	63	73	98
Approximately 1 mile upstream of the confluence with Mallard Creek Tributary 1		0.02	34	51	58	77
Mallard Creek Tributary 1B						
At the confluence with Mallard Creek Tributary 1		0.10	108	184	219	311
Approximately 700 feet upstream of the confluence with Mallard Creek Tributary 1		0.08	92	154	183	258
Mallard Creek Tributary 2						
At the confluence with Mallard Creek		0.35	325	543	648	924
Approximately 1,600 feet upstream of the confluence with Mallard Creek		0.28	305	500	591	826
Just downstream of Hudspeth Road (SR-1302)		0.22	259	418	492	680
Approximately 200 feet upstream of Hudspeth Road (SR-1302)		0.11	157	249	292	400
McAllister Creek						
At the confluence with Adams Creek		2.58	823	1511	1867	2875
Immediately upstream of Mt Olive Road (SR-2416)		1.09	720	1310	1597	2375
Approximately 2,300 feet upstream of Mt Olive Road (SR-2416)		0.33	323	539	638	903
McKee Creek						
Approximately 1.1 miles upstream of the confluence with Reedy Creek		7.99	1244	2271	2765	4199
Approximately 1,700 feet downstream of Peach Orchard Road		7.49	1238	2294	2804	4292
Approximately 1,700 feet downstream of Peach Orchard Road		6.54	1173	2182	2666	4079
Just downstream of Peach Orchard Road		6.42	1174	2195	2688	4127
At the Mecklenburg/Cabarrus County boundary		6.00	1152	2170	2665	4108
Meadow Creek						
Immediately downstream of Reed Mine Road (SR-1100)		8.29	1652	3126	3869	5830
Immediately upstream of Reed Mine Road (SR-1100)		7.76	1522	2807	3506	5516
Approximately 0.65 mile upstream of Reed Mine Road (SR-1100)		4.93	1317	2386	2928	4430
Approximately 0.95 mile upstream of Reed Mine Road (SR-1100)		4.80	1313	2374	2911	4401
Approximately 1.1 miles downstream of NC Highway 200		3.98	1318	2338	2854	4290
Approximately 0.85 mile downstream of NC Highway 200		3.41	1276	2234	2716	4053
Approximately 0.65 mile downstream of NC Highway 200		3.07	1228	2143	2602	3871
Immediately upstream of NC Highway 200		2.73	1207	2093	2543	3790
Approximately 800 feet upstream of NC Highway 200		1.63	790	1372	1668	2448
Approximately 0.8 mile upstream of NC Highway 200		0.91	494	857	1035	1521

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
Muddy Creek					
Approximately 1 mile upstream of the confluence with Rocky River	8.56	1520	2773	3434	5336
Immediately downstream of Hopewell Church Road (SR-1113)	8.06	1500	2740	3393	5276
Immediately downstream of US Highway 601	7.56	1483	2701	3338	5169
Approximately 600 feet upstream of US Highway 601	6.87	1408	2554	3153	4911
At the confluence with Muddy Creek Tributary 1	2.66	617	1147	1423	2184
Immediately upstream of Rail Crossing	2.41	614	1142	1411	2139
Approximately 0.45 mile downstream of Cabarrus Station Road (SR-1121)	1.76	613	1111	1359	2027
Immediately upstream of Cabarrus Station Road (SR-1121)	1.54	596	1075	1313	1950
Immediately upstream of Rail Crossing	1.26	567	1019	1242	1838
Approximately 1,000 feet upstream of Rail Crossing	1.10	505	904	1103	1652
Muddy Creek Tributary 1					
Immediately downstream of the confluence with Muddy Creek	6.21	1309	2348	2887	4542
Approximately 0.55 mile upstream of the confluence with Muddy Creek	3.25	927	1714	2100	3143
Approximately 0.55 mile upstream of the confluence with Muddy Creek	2.35	599	1130	1390	2099
Approximately 900 feet downstream of Bethel School Road (SR-1120)	1.77	401	752	920	1390
Approximately 1,700 feet downstream of NC Highway 24/27	1.51	336	608	746	1153
Immediately upstream of NC Highway 24/27	1.28	320	573	698	1098
Overcash Branch					
At the confluence with Irish Buffalo Creek	0.50	374	665	809	1180
Approximately 1,600 feet upstream of the confluence with Irish Buffalo Creek	0.46	360	635	769	1116
Approximately 700 feet downstream of Madison Avenue	0.37	307	531	639	917
Approximately 200 feet downstream of Madison Avenue	0.22	183	313	375	538
Patterson Branch					
Approximately 2,100 feet upstream of Centergrove Road (SR-2114)	1.78	957	1626	1955	2797
Approximately 3,200 feet upstream of Centergrove Road (SR-2114)	1.59	915	1551	1861	2644
Approximately 400 feet downstream of Steepleton Drive	1.40	880	1472	1755	2468
Approximately 300 feet downstream of Kingston Drive	1.24	827	1372	1631	2278
Approximately 1,200 feet upstream of Kingston Drive	1.18	816	1353	1607	2243
Approximately 1,000 feet upstream of Brantley Road (SR-2000)	1.09	803	1316	1559	2166
Approximately 150 feet upstream of Lane Street (SR-2180)	0.85	707	1143	1344	1846
Approximately 200 feet downstream of Grace Avenue	0.72	655	1045	1227	1682
Approximately 200 feet upstream of Grace Avenue	0.68	649	1037	1219	1675
Reedy Creek					
Approximately 1 mile upstream of the confluence with Rocky River	42.82	3362	6276	7816	11942
Approximately 1.7 miles upstream of the confluence with Rocky River	41.64	3389	6303	7858	11996
Approximately 1.7 miles upstream of the confluence with Rocky River	40.52	3358	6248	7790	11898
Approximately 1 mile downstream of Lower Rocky River Road (SR-1136)	40.07	3495	6392	7997	12152
Approximately 1,000 feet downstream of Lower Rocky River Road (SR-1136)	30.86	2999	5496	6814	10281
Approximately 3,000 feet upstream of the confluence of Caldwell Creek Tributary 2	26.54	2900	5342	6643	10040
Just downstream of Hickory Ridge Road	26.14	2920	5374	6699	10115
Just upstream of the confluence of Mckee Creek	25.64	2927	5386	6731	10156
Approximately 4,500 feet upstream of the confluence of Mckee Creek	16.34	1871	3676	4586	7079
Just downstream of Robinson Church Road	15.90	1865	3667	4579	7071

Table 13 - Summary of Discharges

Flooding Source		Discharges (cfs)				
Location	Drainage Area (square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance	
At the Mecklenburg/Cabarrus County boundary		12.90	1892	3770	4715	7168
Reedy Creek Tributary 1						
Approximately 3,700 feet upstream of the confluence with Reedy Creek		1.83	699	1382	1716	2498
Approximately 3,700 feet upstream of the confluence with Reedy Creek		1.57	600	1205	1502	2211
Just upstream of the confluence of Unnamed Tributary 1 to Reedy Creek Tributary 2		1.27	580	1106	1354	1915
Just upstream of Plaza Rd EXT (SR-2803)/Mecklenburg County boundary		1.21	571	1084	1328	1879
Reedy Creek Tributary 2						
Just upstream of the confluence of Reedy Creek Tributary 2		30.04	3047	5565	6898	10394
At the confluence with Reedy Creek		2.85	1137	2048	2496	3675
Approximately 2,200 feet upstream of the confluence with Reedy Creek		2.43	1061	1894	2299	3360
Approximately 4,600 feet upstream of the confluence with Reedy Creek		1.41	749	1351	1642	2369
Rocky River						
Approximately 0.7 mile upstream of Railroad Crossing		540.26	23190	41656	51136	77369
At the confluence of Little Meadow Creek, approximately 0.35 mile upstream of NC Highway 24/27		527.14	23519	42244	51858	78133
Approximately 1.1 miles downstream of Garmon Mill Road (from effective study)		520.50	20940	31960	37530	52900
At the confluence of Dutch Buffalo Creek, approximately 0.8 mile downstream of Mt. Pleasant Road		502.51	25094	44804	54847	81803
Approximately 1.75 miles upstream of US Highway 601		389.19	21012	36996	45085	66622
At the confluence of Reedy Creek, approximately 0.7 mile upstream of Flowes Store Road		275.65	14514	25189	30638	46350
Immediately downstream of Rocky River Road near the confluence of Back Creek		230.95	11572	19902	24914	39624
At the confluence of Coddle Creek, approximately 0.8 mile upstream of Flowes Store Road		215.27	10770	18899	23962	38264
At the confluence of Mallard Creek, approximately 0.8 mile downstream of Access Road		130.58	9376	15839	19379	28418
At the confluence of Clarke Creek, approximately 0.5 mile upstream of Derita Road		76.44	6539	13139	16424	25430
Approximately 0.55 mile upstream of Shiloh Church Road at the Mecklenburg/Cabarrus County border		39.27	4232	9035	11398	18252
At confluence of West Branch Rocky River		36.88	4232	9035	11398	18252
Approximately 3.4 miles upstream of confluence of West Branch Rocky River (RR4C)		11.01	1335	2866	3723	6188
Rocky River Tributary						
At the confluence with Rocky River		1.98	803	1147	1313	1762
Just downstream of Bruton Smith Boulevard (SR-2894)		1.94	797	1131	1292	1724
Just upstream of Old Holland Road		1.80	789	1099	1256	1681
At the Mecklenburg/Cabarrus County boundary		1.70	777	1125	1288	1690
Rocky River Tributary 15						
At the confluence with Rocky River		1.72	779	1253	1488	2060
Just downstream of Derita Road		1.16	741	1178	1375	1889
Approximately 400 feet upstream of Christenbury Road		0.96	702	1117	1306	1796
Rogers Lake Branch						
At the confluence with Irish Buffalo Creek		1.91	931	1687	2062	3055
Immediately upstream of Oakwood Avenue (SR-1745)		1.81	942	1705	2083	3096
Approximately 1,100 feet upstream of Oakwood Avenue (SR-1745)		1.56	870	1562	1903	2809
Approximately 600 feet upstream of Spruce Street		0.92	541	1011	1242	1852

Table 13 - Summary of Discharges

Flooding Source		Discharges (cfs)			
Location	Drainage Area (square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Approximately 3,200 feet downstream of Wildwood Drive	0.77	501	946	1161	1720
Approximately 1,650 feet downstream of Wildwood Drive	0.57	440	790	958	1388
Immediately downstream of Wildwood Drive	0.49	423	754	911	1316
Immediately upstream of Rogers Lake Road (SR-1625)	0.43	412	728	877	1259
Approximately 400 feet downstream of Walker Street	0.25	272	464	555	788
Immediately upstream of Walker Street	0.18	214	362	433	612
Immediately downstream of Richard Avenue (SR-1745)	0.09	120	203	242	342
Shamrock Branch					
At the confluence with Threemile Branch	0.39	671	1031	1197	1613
Approximately 350 feet downstream of Shamrock Street NE	0.18	373	575	666	895
Approximately 250 feet upstream of Shamrock Street NE	0.09	211	315	363	480
Immediately upstream of the confluence with Shamrock Branch	0.08	161	248	289	391
Approximately 650 feet upstream of the confluence with Shamrock Branch	0.07	148	227	263	353
Shinn Branch					
At the confluence with Dutch Buffalo Creek	0.46	251	460	560	827
Immediately downstream of NC Highway 200	0.33	208	375	454	663
Stricker Branch					
At the confluence with Irish Buffalo Creek	1.66	1073	1727	2042	2835
Approximately 600 feet downstream of McGill Avenue	1.43	1000	1612	1901	2650
Approximately 600 feet downstream of Evans Street	1.20	943	1521	1789	2463
Approximately 1,600 feet upstream of Evans Street	0.73	701	1092	1275	1733
Immediately downstream of US Highway 29	0.59	678	1057	1233	1669
Immediately downstream of Summercreek Lane	0.32	399	627	734	1002
Approximately 1,100 feet upstream of Summercreek Lane	0.27	380	588	685	930
Approximately 1,450 feet upstream of Summercreek Lane	0.22	327	497	577	776
Approximately 2,300 feet upstream of Summercreek Lane	0.19	303	457	529	710
Approximately 575 feet downstream of Walnut Street	0.16	268	399	460	611
Approximately 200 feet downstream of Walnut Street	0.12	225	331	379	498
Approximately 300 feet upstream of Walnut Street	0.09	177	256	291	380
Threemile Branch					
At the confluence with Cold Water Creek	6.73	1594	2603	3098	4394
Immediately downstream of Lawndale Avenue	6.43	1578	2579	3070	4351
Approximately 1,800 feet upstream of Lawndale Avenue	5.95	1577	2594	3087	4362
Immediately downstream of NC Highway 73	5.50	1565	2577	3064	4321
Approximately 1,600 feet upstream of Cabarrus Avenue (SR-1002)	4.58	1464	2395	2840	3994
Approximately 1,800 feet downstream of Brookwood Avenue NE	4.20	1391	2257	2666	3726
Immediately upstream of Brookwood Avenue NE	3.97	1309	2112	2488	3473
Approximately 200 feet upstream of Miramar Street NE	3.51	1112	1796	2127	3103
Immediately downstream of Burrage Road NE	2.92	1091	1731	2062	2996
Immediately upstream of Lake Concord Road NE	2.53	986	1635	1981	2884
Approximately 300 feet downstream of I-85	2.15	872	1521	1846	2681
Immediately upstream of Cloverleaf Plaza	1.94	837	1462	1773	2592
Immediately downstream of US Highway 29	1.77	812	1414	1713	2499
Immediately upstream of Coopers Ridge Drive	1.51	782	1357	1640	2381

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
Immediately downstream of Dakota Street	1.27	729	1253	1509	2178
Approximately 400 feet downstream of Eddleman Road	1.02	620	1036	1239	1767
Approximately 750 feet downstream of Rogers Lake Road	0.77	546	911	1085	1537
Immediately upstream of Rogers Lake Road	0.64	456	742	880	1251
Approximately 400 feet upstream of Rogers Lake Road	0.55	416	669	798	1133
Approximately 200 feet upstream of Cook Street	0.49	384	621	740	1044
Immediately upstream of Plymouth Street	0.38	331	537	637	889
Tributary to Unnamed Tributary 1 to Coddle Creek					
At the confluence with Unnamed Tributary to Coddle Creek	0.95	554	1068	1310	2050
Just upstream of Golf Course Dam	0.88	536	1030	1262	1976
Approximately 1,500 feet upstream of Golf Course Dam	0.44	657	1014	1177	1588
Tributary to Unnamed Tributary Dutch Buffalo Creek					
At the confluence with Unnamed Tributary to Dutch Buffalo Creek (LDS)	1.40	367	1155	1531	2496
Approximately 2,100 feet upstream of Mt. Pleasant Road (SR-1006)	1.34	364	1153	1527	2483
Approximately 1,200 feet upstream of Hahn Boulevard	1.12	330	1044	1370	2182
Approximately 2,500 feet upstream of Hahn Boulevard	0.89	623	1114	1345	1970
Approximately 250 feet downstream of Barnhardt Road (SR-2621)	0.77	620	1086	1305	1878
Tucker Branch					
At the confluence with Anderson Creek	0.74	463	790	953	1362
Approximately 1,550 feet upstream of the confluence with Anderson Creek	0.58	391	660	796	1114
Approximately 0.5 mile upstream of the confluence with Anderson Creek	0.42	294	488	592	863
Approximately 0.65 mile upstream of the confluence with Anderson Creek	0.31	228	397	472	678
Unnamed Stream					
At the confluence with Rocky River	0.31	264	408	478	655
Unnamed Tributary 1 to Coddle Creek					
Just downstream of Concord Parkway	2.34	1070	1977	2405	3527
Approximately 1,280 feet upstream of Concord Parkway	2.22	1076	2006	2439	3578
Approximately 2,950 feet downstream of the confluence of Trib to Unnamed Tributary 1 to Coddle Creek	1.94	1078	2039	2482	3665
Approximately 1,000 feet downstream of the confluence of Trib to Unnamed Tributary 1 to Coddle Creek	1.72	1064	2004	2429	3625
Approximately 2,210 downstream of Weddington Road	0.59	513	814	944	1317
Approximately 870 feet upstream of Weddington Road	0.46	457	734	860	1189
Approximately 330 feet upstream of Weddington Road	0.35	361	579	679	936
Unnamed Tributary 1 to Irish Buffalo Creek					
At the confluence with Irish Buffalo Creek	1.53	755	1240	1498	2246
Approximately 300 feet downstream of Zion Church Road (SR-1155)	1.05	657	1048	1284	1932
Approximately 2,100 feet upstream of Zion Church Road (SR-1155)	0.72	535	917	1118	1636
Immediately upstream of Central Cabarrus Drive SW (SR-1188)	0.52	473	787	937	1322
Immediately upstream of NC Highway 49	0.41	381	630	750	1059
Approximately 100 feet upstream of Treasure Drive SW	0.19	152	258	309	441
Unnamed Tributary 1 to Reedy Creek Tributary 1					
At the confluence with Reedy Creek Tributary 1	0.24	71	146	188	299
Just downstream of Larewood Drive (SR-1200)	0.21	63	139	179	285

Table 13 - Summary of Discharges

Flooding Source		Discharges (cfs)			
Location	Drainage Area (square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
At Cabarrus Woods Dam	0.20	61	136	175	280
Approximately 500 feet upstream of Cabarrus Woods Dam	0.12	107	190	229	337
Just upstream of Whittlington Dr	0.10	87	154	187	271
Just downstream of Branch Street (SR-2326)	0.09	83	147	177	255
Just upstream of Driveway off Midvale Terrace (SR-2340)	0.06	54	96	116	168
Unnamed Tributary 1 to Rocky River					
At the confluence with Rocky River	1.07	486	1003	1243	1861
Approximately 1,500 feet upstream of the confluence with Rocky River	0.98	461	952	1199	1788
Approximately 2,500 feet upstream of the confluence with Rocky River	0.83	372	780	986	1544
Approximately 4,900 feet upstream of the confluence with Rocky River	0.53	208	458	590	952
Approximately 1.1 mile upstream of the confluence with Rocky River	0.47	191	416	532	854
Approximately 1.3 miles upstream of the confluence with Rocky River	0.40	174	373	475	754
Approximately 1.5 miles upstream of the confluence with Rocky River	0.32	148	315	400	629
Unnamed Tributary 2 to Adams Creek					
At the confluence with Adams Creek	1.74	667	1334	1679	2620
Approximately 400 feet downstream of NC Highway 73	1.67	660	1328	1672	2612
Approximately 950 feet downstream of Fisher Road (SR-2423)	1.13	631	1241	1536	2324
At the confluence with Unnamed Tributary 2 to Adams Creek (LDS)	0.55	335	638	785	1179
Immediately upstream of Fisher Road (SR-2423)	0.49	330	612	747	1107
Approximately 300 feet upstream of Barr Link Road (SR-2520)	0.16	146	258	310	448
Unnamed Tributary 2 to Irish Buffalo Creek					
Approximately 950 feet upstream of Eva Drive NW	0.85	588	1081	1320	1945
Approximately 1,550 feet upstream of Eva Drive NW	0.66	507	907	1099	1594
Approximately 600 feet downstream of Poplar Tent Road (SR-1394)	0.59	478	847	1023	1476
Approximately 600 feet downstream of Poplar Tent Road (SR-1394)	0.42	370	630	753	1067
Unnamed Tributary 2 to Rocky River					
At the confluence with Rocky River	1.41	691	1327	1622	2390
Just upstream of Davidson Highway/NC Hwy 73	1.25	663	1306	1582	2332
Approximately 1,600 feet upstream of NC Hwy 73	0.66	311	617	782	1212
Approximately 2,900 feet upstream of NC Hwy 73	0.60	295	592	743	1154
Approximately 4,300 feet upstream of NC Hwy 73	0.26	170	328	404	598
Approximately 5,000 feet upstream of NC Hwy 73	0.23	153	293	361	537
Approximately 1.1 miles upstream of NC Hwy 73	0.18	116	219	270	404
Approximately 1.3 miles upstream of NC Hwy 73	0.15	94	178	219	328
Approximately 1.5 miles upstream of NC Hwy 73	0.11	84	161	198	298
Unnamed Tributary 3 to Rocky River					
Approximately 300 feet upstream of confluence with Rocky River	1.48	379	819	1058	1795
Approximately 3,800 feet upstream of Kingsview Drive	0.54	249	529	669	1047
Just downstream of Sudbury Road	0.14	90	186	234	362
Unnamed Tributary to Adams Creek					
At the confluence with Adams Creek (immediately upstream of NC Highway 49)	0.43	323	583	710	1050
Approximately 1,850 feet upstream of the confluence with Adams Creek	0.30	285	503	603	865
Approximately 3,600 feet upstream of the confluence with Adams Creek	0.23	274	469	558	785
Unnamed Tributary to Dutch Buffalo Creek					

Table 13 - Summary of Discharges

Flooding Source		Discharges (cfs)			
Location	Drainage Area (square miles)	10% Annual Chance	2% Annual Chance	1% Annual Chance	0.2% Annual Chance
Approximately 700 feet downstream of Mt. Pleasant Road (SR-1006)	2.88	990	2399	3092	4827
Immediately downstream of Mt. Pleasant Road (SR-1006)	1.33	689	1240	1516	2249
Approximately 2,700 feet upstream of Bost Cutoff Road Road (SR-2626)	0.74	445	794	962	1393
Approximately 5,000 feet upstream of Bost Cutoff Road Road (SR-2626)	0.41	275	466	556	804
Wolf Meadow Branch					
Approximately 300 feet downstream of Farm Lake Drive	3.34	2009	3365	4057	5888
Just upstream of Farm Lake Drive	2.80	1734	2921	3507	5046
Just upstream of Roberta Road	2.55	1665	2819	3371	4797
Approximately 1,400 feet upstream of Farmwood Boulevard	2.29	1583	2704	3233	4587
Approximately 1,500 feet upstream of Farmwood Boulevard	0.90	498	913	1111	1630
Approximately 900 feet upstream of Old South Court SW	0.80	465	842	1025	1502
Yow Branch					
Approximately 980 feet downstream of Mt. Pleasant Road	1.10	356	726	920	1470
Approximately 1,000 feet upstream of NC Highway 200	0.79	245	527	674	1096
Approximately 0.5 mile upstream of NC Highway 200	0.64	227	483	617	1005
Approximately 0.75 mile upstream of NC Highway 200	0.20	106	208	260	395
Approximately 1.0 mile upstream of NC Highway 200	0.02	13	27	36	59
Approximately 1.25 miles upstream of NC Highway 200	0.01	6	14	18	28

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

Table 15, "Gage Information" is not applicable in Cabarrus County.

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"
Adams Creek	0.048 to 0.059	0.060 to 0.300
Afton Run	0.045 to 0.072	0.050 to 0.200
Anderson Creek	0.020 to 0.070	0.050 to 0.150
Anderson Creek Tributary 1	0.050 to 0.060	0.080 to 0.140
Back Creek	0.045 to 0.066	0.040 to 0.200
Baker Branch	0.025 to 0.070	0.025 to 0.100
Beaver Creek	0.025 to 0.070	0.025 to 0.100
Beaver Creek Tributary	0.025 to 0.070	0.025 to 0.100
Caldwell Creek	0.045 to 0.065	0.050 to 0.200
Caldwell Creek Tributary	0.035 to 0.060	0.050 to 0.150
Chambers Branch	0.020 to 0.070	0.050 to 0.150
Clarke Creek	0.045 to 0.070	0.020 to 0.260
Clarke Creek Tributary	0.038 to 0.060	0.020 to 0.200
Clear Creek	0.042 to 0.065	0.050 to 0.150
Coddle Creek	0.020 to 0.070	0.050 to 0.150
Coddle Creek Tributary 1	0.050	0.070 to 0.150
Coddle Creek Tributary 2	0.045 to 0.550	0.050 to 0.150
Coddle Creek Tributary 3	0.050	0.080 to 0.150
Coddle Creek Tributary 4	0.050 to 0.060	0.050 to 0.140
Cold Water Creek	0.020 to 0.070	0.025 to 0.150
Common Ford Branch	0.020 to 0.070	0.040 to 0.150
Davis Branch	0.020 to 0.070	0.050 to 0.150
Dutch Buffalo Creek	0.035 to 0.052	0.025 to 0.260
Dutch Buffalo Creek Tributary 1	0.045	0.080 to 0.150
Fisher Town Branch	0.020 to 0.070	0.050 to 0.150
Fuda Creek	0.050 to 0.060	0.050 to 0.190
Hamby Branch	0.020 to 0.070	0.050 to 0.150
Hamby Branch Tributary	0.020 to 0.070	0.050 to 0.150
Hillandale Branch	0.050 to 0.060	0.050 to 0.130
Horse Branch	0.020 to 0.070	0.050 to 0.150
Horton Branch	0.020 to 0.070	0.050 to 0.150
Irish Buffalo Creek	0.020 to 0.070	0.025 to 0.150
Irish Buffalo Creek Tributary 1	0.048	0.100 to 0.130
Irish Buffalo Creek Tributary 2	0.048	0.035 to 0.130
Irish Buffalo Creek Tributary 3	0.048 to 0.050	0.090 to 0.150
Jones Branch	0.048 to 0.065	0.050 to 0.140
Lick Branch	0.045	0.040 to 0.120
Little Buffalo Creek	0.048	0.080 to 0.140
Little Cold Water Creek	0.020 to 0.070	0.050 to 0.150
Little Meadow Creek	0.020 to 0.070	0.050 to 0.150
Mallard Creek	0.045 to 0.060	0.020 to 0.200
Mallard Creek Tributary 1	0.050 to 0.065	0.040 to 0.150
Mallard Creek Tributary 1A	0.035 to 0.065	0.050 to 0.150
Mallard Creek Tributary 1B	0.055 to 0.065	0.110 to 0.150
Mallard Creek Tributary 2	0.050 to 0.068	0.050 to 0.150
McAllister Creek	0.050 to 0.065	0.080 to 0.140
McCachern Branch	0.020 to 0.070	0.050 to 0.150
McKee Creek	0.040 to 0.140	0.040 to 0.200
Meadow Creek	0.035 to 0.060	0.050 to 0.140
Mill Creek	0.040 to 0.050	0.080 to 0.150
Miller Branch	0.049 to 0.051	0.060 to 0.410
Morris Branch	0.051	0.060 to 0.090
Muddy Creek	0.020 to 0.070	0.035 to 0.150

Table 16 - Roughness Coefficients

Stream	Channel "n"	Overbank "n"
Muddy Creek Overflow	0.050	0.100
Muddy Creek Tributary 1	0.040 to 0.055	0.050 to 0.140
Overcash Branch	0.020 to 0.070	0.050 to 0.150
Patterson Branch	0.020 to 0.070	0.025 to 0.150
Patterson Branch Tributary	0.050	0.110 to 0.140
Reedy Creek	0.038 to 0.068	0.050 to 0.230
Reedy Creek Tributary 1	0.038 to 0.060	0.080 to 0.200
Reedy Creek Tributary 2	0.045 to 0.050	0.130 to 0.150
Ridenhour Branch	0.035 to 0.050	0.080 to 0.150
Ridenhour Branch Tributary	0.035 to 0.050	0.080 to 0.150
Rocky River	0.020 to 0.070	0.035 to 0.200
Rocky River Tributary	0.055 to 0.060	0.050 to 0.150
Rocky River Tributary 11	0.048	0.080 to 0.130
Rocky River Tributary 14	0.048	0.060 to 0.140
Rocky River Tributary 15	0.050 to 0.060	0.050 to 0.150
Rogers Lake Branch	0.020 to 0.070	0.050 to 0.200
Rose Hill Branch	0.020 to 0.070	0.025 to 0.100
Royal Oaks Branch	0.047 to 0.051	0.060 to 0.130
Shamrock Branch	0.041 to 0.060	0.050 to 0.140
Shinn Branch	0.020 to 0.070	0.050 to 0.150
Stricker Branch	0.045 to 0.055	0.040 to 0.140
Threemile Branch	0.020 to 0.070	0.015 to 0.150
Tributary to Unnamed Tributary 2 to Adams Creek	0.050 to 0.060	0.080 to 0.140
Tributary to Unnamed Tributary Dutch Buffalo Creek	0.035 to 0.055	0.050 to 0.200
Tributary to Rodgers Lake Branch	0.050 to 0.060	0.050 to 0.130
Tucker Branch	0.020 to 0.070	0.050 to 0.150
Unnamed Tributary 1 to Coddle Creek	0.050 to 0.055	0.050 to 0.140
Unnamed Tributary 1 to Coddle Creek Tributary	0.050 to 0.060	0.050 to 0.140
Unnamed Tributary 1 to Irish Buffalo Creek	0.050 to 0.055	0.050 to 0.130
Unnamed Tributary 1 to Reedy Creek Tributary 1	0.050 to 0.068	0.050 to 0.150
Unnamed Tributary 1 to Rocky River	0.050 to 0.065	0.050 to 0.200
Unnamed Tributary 2 to Adams Creek	0.050 to 0.060	0.050 to 0.200
Unnamed Tributary 2 to Irish Buffalo Creek	0.050 to 0.060	0.050 to 0.140
Unnamed Tributary 2 to Reedy Creek Tributary 1	0.060 to 0.068	0.100 to 0.140
Unnamed Tributary 2 to Rocky River	0.050 to 0.060	0.050 to 0.200
Unnamed Tributary 3 to Rocky River	0.050 to 0.060	0.050 to 0.200
Unnamed Tributary to Adams Creek	0.055 to 0.060	0.080 to 0.140
Unnamed Tributary to Dutch Buffalo Creek	0.035 to 0.060	0.035 to 0.130
Unnamed Tributary to Yow Branch	0.050 to 0.060	0.080 to 0.130
Water Creek	0.050	0.090 to 0.150
Wolf Meadow Branch	0.040 to 0.650	0.050 to 0.200
Yow Branch	0.020 to 0.070	0.050 to 0.150

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

streams 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
Coddle Creek Tributary 1				
003	316	958	544.4 ¹	11 / 36
007	745	958	544.4 ¹	12 / 37
011	1,105	958	544.4 ¹	22 / 20
014	1,406	958	544.4 ¹	17 / 14
017	1,720	958	544.4 ¹	25 / 19
019	1,941	958	545.2	20 / 20
021	2,137	958	545.7	11 / 10
023	2,275	958	546.7	39 / 19
027	2,655	881	548.0	18 / 13
030	3,005	881	550.6	19 / 7
033	3,285	881	553.2	24 / 10
036	3,628	881	554.8	22 / 20
Coddle Creek Tributary 2				
024	2,395	1,341	551.7	25 / 35
027	2,690	1,341	552.1	25 / 21
030	2,990	1,341	553.0	12 / 12
033	3,289	1,341	554.2	12 / 12
036	3,595	1,341	555.7	12 / 12
039	3,930	1,341	557.7	12 / 12
042	4,194	1,341	559.2	12 / 12
045	4,493	1,341	560.8	12 / 12
047	4,652	1,341	561.4	12 / 12
049	4,919	1,341	562.8	16 / 16
052	5,242	1,341	570.3	45 / 45
054	5,430	1,341	570.5	74 / 65
055	5,530	1,341	570.6	50 / 95
056	5,581	1,341	570.6	36 / 100
057	5,654	1,341	572.7	35 / 50
057	5,666	1,341	572.8	35 / 50
057	5,674	1,341	572.7	35 / 50
059	5,905	1,341	581.8	34 / 35

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
064	6,398	1,341	581.9	35 / 65
068	6,827	1,251	582.1	30 / 65
072	7,190	1,251	582.1	35 / 65
075	7,502	1,251	584.3	17 / 65
077	7,732	1,251	585.4	17 / 55
081	8,058	1,251	587.4	9 / 11
084	8,423	1,251	591.1	12 / 18
087	8,691	1,025	593.0	9 / 17
089	8,861	1,025	594.9	9 / 24
090	8,987	1,025	596.5	9 / 8
092	9,174	1,025	599.8	9 / 30
093	9,281	1,025	600.1	9 / 30
094	9,407	1,025	601.5	9 / 25
095	9,524	1,025	603.3	9 / 18
098	9,758	1,025	609.3	9 / 15
100	10,034	754	614.0	6 / 15
102	10,192	754	616.6	9 / 20
103	10,348	754	618.0	9 / 20
106	10,592	754	621.3	20 / 15
108	10,759	578	622.6	10 / 13
109	10,895	578	624.7	10 / 15
111	11,086	578	627.8	12 / 14
112	11,208	578	629.8	11 / 16
114	11,373	578	633.1	8 / 16
115	11,518	578	636.9	21 / 11
117	11,712	458	640.6	9 / 12
118	11,829	458	643.1	10 / 12
120	12,020	458	647.3	6 / 10
122	12,195	458	651.2	6 / 5
123	12,295	382	654.1	6 / 7
125	12,491	382	658.3	8 / 12
126	12,601	382	661.8	8 / 7
127	12,744	382	665.7	17 / 9
129	12,931	382	667.8	10 / 15
131	13,079	382	669.8	5 / 5
132	13,243	382	676.7	41 / 9
134	13,409	382	677.5	50 / 20
136	13,559	216	677.5	30 / 7
137	13,694	216	683.1	30 / 7
138	13,766	216	685.0	11 / 10
138	13,805	216	689.4	30 / 9
138	13,816	216	689.4	30 / 11
138	13,824	216	689.4	31 / 11
138	13,840	216	689.4	30 / 9
142	14,180	216	696.2	80 / 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
143	14,283	216	696.2	60 / 15
144	14,436	216	696.2	35 / 15
146	14,610	216	698.4	10 / 10
147	14,684	216	699.5	6 / 6
148	14,766	216	701.4	6 / 6
148	14,815	216	702.5	6 / 6
Coddle Creek Tributary 3				
001	88	870	566.5 ¹	12 / 12
003	251	870	566.5 ¹	12 / 12
005	468	870	566.5 ¹	14 / 14
006	614	870	566.6	30 / 30
007	745	870	566.8	40 / 50
010	980	870	567.1	30 / 25
012	1,166	870	567.3	32 / 16
014	1,445	870	567.7	41 / 27
018	1,796	870	568.5	16 / 13
020	2,032	870	569.6	21 / 16
022	2,163	870	574.1	21 / 21
023	2,281	870	574.2	17 / 16
024	2,371	870	574.3	24 / 25
026	2,625	870	579.2	25 / 23
028	2,828	870	579.2	126 / 36
032	3,205	870	579.3	137 / 33
037	3,678	870	579.6	60 / 16
041	4,114	870	580.4	16 / 16
045	4,471	870	581.9	16 / 16
049	4,865	870	584.8	16 / 16
051	5,059	870	586.4	24 / 10
053	5,290	623	588.6	24 / 16
055	5,454	623	588.8	29 / 16
058	5,800	623	589.6	16 / 16
061	6,106	623	591.0	16 / 16
064	6,439	623	593.5	16 / 16
069	6,889	623	596.7	16 / 27
073	7,255	486	598.2	16 / 15
Coddle Creek Tributary 4				
000	31	897	650.2 ¹	123 / 123
002	200	897	650.6	95 / 95
003	346	897	651.1	63 / 68
006	620	897	652.7	25 / 50
009	909	897	654.5	28 / 40
012	1,226	897	656.1	30 / 75
016	1,638	897	658.0	18 / 73
020	1,998	897	660.2	14 / 32
024	2,433	897	662.3	35 / 18

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
027	2,733	897	664.5	10 / 14
028	2,830	897	666.1	12 / 12
030	2,952	897	669.9	10 / 12
030	3,033	897	672.0	11 / 10
031	3,147	897	674.4	11 / 10
033	3,289	897	678.2	12 / 11
034	3,437	897	681.4	12 / 11
035	3,499	897	683.1	62 / 68
037	3,677	897	683.3	50 / 46
040	3,971	897	683.9	114 / 16
043	4,311	833	685.4	185 / 14
048	4,812	833	689.0	25 / 12
049	4,923	833	691.5	58 / 58
052	5,244	833	691.9	40 / 40
055	5,533	833	692.1	36 / 35
058	5,779	833	692.4	16 / 19
060	6,007	833	694.4	10 / 16
061	6,080	833	698.1	7 / 32
061	6,102	833	698.3	21 / 61
061	6,140	833	698.3	22 / 100
062	6,180	833	698.3	22 / 140
063	6,295	833	705.8	273 / 273
065	6,509	833	705.8	175 / 168
068	6,792	833	705.9	92 / 83
071	7,052	833	705.9	149 / 148
073	7,322	833	705.9	117 / 116
075	7,521	833	705.9	105 / 108
078	7,822	833	706.0	85 / 85
Cold Water Creek				
776	77,617	3,940	650.0	867 / 483
779	77,931	4,015	650.0	325 / 210
785	78,489	4,015	650.0	340 / 447
791	79,099	4,015	650.0	365 / 435
798	79,764	4,015	650.0	320 / 346
799	79,927	4,015	650.2	275 / 414
806	80,575	3,784	650.2	420 / 170
811	81,083	3,784	650.4	200 / 40
815	81,454	3,784	650.8	200 / 40
820	81,970	3,784	651.7	85 / 84
Dutch Buffalo Creek				
427	42,687	10,484	523.8	36 / 394
436	43,602	10,036	524.0	36 / 361
445	44,468	10,036	524.5	37 / 502
454	45,427	9,952	524.7	33 / 656
463	46,289	9,952	524.9	350 / 296

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
471	47,054	9,952	524.8	225 / 113
484	48,402	9,952	525.9	253 / 330
493	49,329	9,952	526.3	39 / 617
503	50,311	9,849	526.5	33 / 321
514	51,372	9,789	527.6	416 / 36
523	52,275	9,789	528.2	506 / 26
534	53,401	9,789	529.0	405 / 316
547	54,689	9,789	530.0	732 / 214
556	55,598	9,789	530.5	441 / 486
567	56,715	7,980	531.7	32 / 447
573	57,252	7,980	532.3	35 / 405
583	58,300	7,980	534.1	35 / 213
589	58,878	7,980	536.0	83 / 83
590	59,033	7,980	538.4	100 / 100
599	59,924	7,980	540.7	38 / 270
606	60,559	7,980	542.3	38 / 169
612	61,246	7,980	544.4	38 / 75
619	61,908	7,980	545.8	38 / 38
622	62,188	7,873	547.1	40 / 40
622	62,224	7,873	547.8	44 / 43
625	62,456	7,873	548.0	42 / 43
630	62,960	7,873	548.2	38 / 36
635	63,538	7,873	551.0	49 / 36
640	64,020	7,873	553.2	30 / 34
644	64,431	7,873	555.4	65 / 40
647	64,738	7,873	556.3	97 / 39
654	65,430	7,873	559.6	175 / 35
661	66,078	7,873	560.5	176 / 32
668	66,769	7,873	564.7	337 / 33
674	67,389	7,514	565.7	353 / 33
679	67,927	7,514	567.3	286 / 29
685	68,469	7,514	569.5	251 / 36
689	68,883	7,514	570.2	93 / 73
693	69,286	7,514	571.8	33 / 63
698	69,847	7,514	575.9	43 / 40
702	70,235	6,691	577.9	57 / 40
703	70,331	6,691	580.2	35 / 53
707	70,667	6,691	582.3	55 / 95
713	71,321	6,691	583.1	43 / 43
716	71,579	6,691	584.6	33 / 33
718	71,789	6,691	585.6	33 / 33
720	71,994	6,691	586.3	51 / 58
721	72,097	6,691	587.6	43 / 87
725	72,453	6,691	589.3	39 / 100
728	72,816	6,691	591.3	90 / 60

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
733	73,298	6,691	593.2	80 / 275
741	74,062	6,691	595.8	145 / 225
744	74,444	6,691	598.2	135 / 65
751	75,132	6,691	601.2	111 / 31
754	75,390	6,691	602.4	28 / 28
756	75,595	5,520	604.1	80 / 29
759	75,938	5,520	606.0	43 / 122
761	76,054	5,520	611.4	43 / 122
765	76,459	5,520	611.9	59 / 107
769	76,881	5,520	611.9	71 / 67
773	77,333	5,520	615.1	26 / 88
777	77,693	5,520	618.1	25 / 107
780	77,986	5,520	620.0	26 / 195
784	78,449	5,520	621.7	119 / 41
789	78,869	5,520	624.6	202 / 25
797	79,673	5,370	627.6	208 / 25
805	80,532	5,370	630.9	154 / 25
812	81,197	5,370	633.7	220 / 41
820	82,047	5,370	637.6	284 / 25
828	82,849	5,370	641.1	25 / 204
840	84,048	5,370	644.5	370 / 25
846	84,635	5,370	645.5	314 / 33
855	85,454	5,370	647.0	273 / 73
862	86,177	5,156	647.9	420 / 24
871	87,094	5,156	649.0	327 / 24
884	88,411	5,156	650.6	365 / 24
898	89,798	5,156	651.9	444 / 24
906	90,619	5,156	652.8	421 / 24
912	91,213	5,156	653.6	404 / 78
919	91,898	4,945	654.6	230 / 363
933	93,298	4,945	655.8	365 / 23
943	94,254	4,945	657.1	98 / 100
944	94,380	4,945	659.0	120 / 120
957	95,657	4,945	660.8	46 / 426
967	96,698	4,945	661.3	68 / 523
973	97,284	4,706	662.0	323 / 250
983	98,264	4,706	662.8	308 / 352
991	99,059	4,706	663.5	366 / 296
997	99,693	4,706	664.0	214 / 170
1007	100,712	4,706	666.5	22 / 260
1015	101,504	4,391	667.8	322 / 198
1025	102,471	4,391	668.3	83 / 810
1035	103,486	4,391	668.6	251 / 410
1042	104,197	4,391	669.3	397 / 41
1043	104,331	4,391	670.3	396 / 42

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
1053	105,287	4,230	671.2	452 / 295
1064	106,377	4,230	672.3	569 / 126
1072	107,220	4,034	673.3	407 / 118
1082	108,239	3,263	674.7	128 / 142
1088	108,818	3,263	676.0	14 / 345
1096	109,638	3,263	677.5	212 / 193
1105	110,456	3,263	678.8	266 / 19
1112	111,191	3,106	680.5	277 / 25
1118	111,812	3,106	680.9	50 / 158
1119	111,904	3,106	682.3	50 / 158
1125	112,512	3,106	683.3	170 / 200
1130	112,973	3,400	684.0	200 / 110
Dutch Buffalo Creek Tributary 1				
008	820	1,827	674.1 ¹	186 / 22
012	1,200	1,827	674.5	193 / 22
015	1,509	1,827	675.2	189 / 21
018	1,765	1,827	676.0	170 / 19
021	2,116	1,827	677.2	242 / 21
024	2,349	1,827	677.6	172 / 19
026	2,571	1,827	678.2	73 / 30
026	2,649	1,827	679.0	73 / 30
029	2,920	1,827	679.7	134 / 16
031	3,095	1,827	680.0	117 / 16
036	3,562	1,827	681.6	129 / 16
039	3,892	1,747	682.9	120 / 41
042	4,242	1,747	683.8	16 / 210
045	4,539	1,747	684.2	16 / 238
048	4,844	1,747	684.4	36 / 105
050	5,049	1,747	685.4	172 / 11
053	5,278	1,747	686.1	179 / 16
055	5,489	1,747	686.5	205 / 16
056	5,641	1,747	686.7	188 / 16
058	5,842	1,747	687.0	188 / 16
061	6,133	1,747	687.6	121 / 36
Irish Buffalo Creek Tributary 1				
009	935	1,260	612.2 ¹	11 / 18
012	1,177	1,011	613.2	35 / 15
013	1,307	1,011	618.4	35 / 15
015	1,500	1,011	618.5	87 / 7
020	2,019	1,011	618.8	102 / 8
025	2,500	1,011	619.6	10 / 60
030	2,971	1,011	622.0	27 / 17
031	3,111	1,011	625.4	27 / 17
035	3,500	1,011	626.9	52 / 9
038	3,838	833	629.8	14 / 107

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
040	4,014	833	633.7	14 / 107
042	4,187	833	633.7	73 / 51
043	4,259	833	633.8	72 / 52
044	4,404	833	633.8	53 / 64
046	4,589	833	637.1	53 / 64
048	4,847	833	637.2	39 / 18
049	4,908	833	637.5	39 / 18
049	4,938	833	637.5	29 / 15
050	5,005	833	638.2	29 / 15
054	5,406	833	638.9	51 / 7
Irish Buffalo Creek Tributary 2				
010	1,000	1,291	624.8 ²	155 / 7
015	1,500	1,291	625.8 ¹	71 / 72
019	1,874	1,291	627.6	129 / 7
020	2,000	1,291	628.3	130 / 7
024	2,404	1,291	631.4	12 / 117
025	2,500	1,291	632.0	73 / 88
030	2,951	1,291	633.7	45 / 48
031	3,139	1,291	638.5	42 / 45
035	3,500	1,207	638.6	43 / 99
040	4,000	1,207	639.2	22 / 115
045	4,500	1,119	641.3	117 / 7
050	5,000	1,119	644.6	39 / 53
Irish Buffalo Creek Tributary 3				
005	462	1,005	670.0 ²	135 / 7
011	1,069	1,005	674.8	54 / 20
013	1,262	1,005	676.9	27 / 33
016	1,607	1,005	678.6	7 / 10
017	1,711	1,005	681.7	20 / 15
020	2,049	1,005	684.2	60 / 10
022	2,244	1,005	684.7	15 / 24
024	2,385	1,005	685.8	42 / 12
027	2,673	937	687.3	22 / 20
029	2,914	937	690.7	17 / 42
031	3,067	937	692.5	25 / 25
035	3,452	937	693.4	18 / 18
035	3,533	937	695.3	13 / 14
037	3,728	937	699.2	35 / 7
040	3,996	937	703.8	45 / 15
Lick Branch				
007	694	949	666.5 ¹	7 / 71
011	1,050	949	668.7	7 / 88
012	1,213	949	669.9	27 / 32
014	1,400	949	671.6	7 / 111
018	1,750	949	671.8	7 / 136
019	1,903	949	672.0	7 / 94

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
021	2,100	949	672.6	7 / 71
022	2,246	949	673.4	7 / 79
023	2,336	949	674.0	7 / 72
024	2,412	949	674.5	7 / 74
025	2,512	949	676.2	10 / 43
027	2,728	949	677.6	72 / 63
029	2,871	949	677.9	72 / 89
032	3,150	949	678.7	51 / 89
035	3,500	949	679.9	36 / 63
039	3,850	949	681.2	75 / 78
040	4,045	949	682.0	64 / 84
041	4,126	949	682.2	74 / 64
042	4,229	949	683.4	13 / 85
043	4,307	949	685.0	13 / 85
046	4,550	949	685.4	71 / 102
049	4,900	748	686.1	30 / 82
053	5,250	748	686.9	89 / 8
055	5,451	748	687.2	54 / 7
056	5,600	748	688.2	21 / 43
060	5,967	748	690.7	42 / 7
063	6,300	748	692.3	8 / 69
064	6,445	748	692.6	11 / 32
065	6,507	748	692.8	14 / 16
067	6,650	748	694.0	16 / 7
070	7,017	748	696.0	22 / 7
074	7,350	748	698.5	13 / 18
077	7,700	624	700.9	53 / 7
081	8,050	624	701.8	46 / 7
084	8,400	624	704.6	96 / 7
088	8,750	624	706.7	55 / 7
089	8,922	624	707.9	31 / 7
091	9,100	624	709.4	41 / 7
095	9,450	624	711.1	56 / 7
098	9,800	624	712.6	79 / 7
100	10,001	624	713.7	38 / 7
101	10,129	624	715.1	34 / 7
103	10,310	547	717.2	22 / 49
105	10,500	547	718.2	7 / 41
109	10,850	547	720.5	7 / 66
111	11,056	547	721.2	8 / 33
112	11,200	547	723.5	17 / 12
113	11,308	547	724.3	36 / 13
116	11,550	547	725.7	56 / 8
118	11,804	547	727.5	27 / 14
120	11,999	547	728.6	7 / 104

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
123	12,250	547	729.7	7 / 115
123	12,341	547	730.7	7 / 119
124	12,424	547	732.0	11 / 45
126	12,572	547	736.7	11 / 45
127	12,664	547	736.8	7 / 115
130	12,950	547	737.0	7 / 88
133	13,300	547	738.1	57 / 7
137	13,662	547	740.2	20 / 31
Little Buffalo Creek				
003	304	4,381	530.5 ¹	342 / 49
009	854	4,381	530.6	24 / 253
011	1,145	4,381	531.2	24 / 221
015	1,500	4,381	532.1	24 / 283
018	1,764	4,381	532.7	213 / 198
025	2,481	4,381	533.6	470 / 22
033	3,322	4,351	534.6	72 / 350
036	3,561	4,351	534.8	24 / 381
040	4,000	4,351	535.4	170 / 111
042	4,244	4,351	535.9	230 / 24
050	4,967	4,351	537.2	267 / 24
052	5,195	4,351	537.6	222 / 24
055	5,515	4,351	538.3	296 / 59
060	6,046	4,351	539.4	108 / 255
063	6,287	4,170	539.6	119 / 116
065	6,463	4,170	541.0	91 / 86
065	6,537	4,170	541.0	241 / 48
070	7,000	4,170	541.7	62 / 423
075	7,500	4,170	542.2	24 / 525
079	7,873	4,170	542.6	73 / 291
085	8,471	4,170	543.7	24 / 403
088	8,832	4,170	544.2	24 / 276
091	9,052	4,170	544.6	35 / 251
096	9,578	4,170	545.6	211 / 70
101	10,086	3,703	547.1	22 / 390
105	10,500	3,703	548.0	42 / 205
110	11,000	3,703	549.6	22 / 301
115	11,500	3,543	550.8	31 / 427
120	11,969	3,543	552.3	81 / 148
125	12,500	3,543	554.3	21 / 163
128	12,773	3,543	555.2	21 / 218
129	12,926	3,543	555.5	21 / 181
131	13,063	3,543	555.8	25 / 149
132	13,189	3,543	556.7	25 / 149
134	13,436	3,543	557.3	21 / 232
138	13,800	3,543	557.8	187 / 29

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
140	14,000	3,502	558.1	200 / 21
146	14,559	3,502	559.4	381 / 21
151	15,112	3,502	560.4	84 / 115
155	15,500	3,502	561.5	21 / 246
160	16,000	3,502	563.8	21 / 314
165	16,500	3,502	565.0	21 / 177
167	16,666	3,502	566.2	47 / 130
170	16,960	3,502	567.2	26 / 56
171	17,117	3,502	569.1	28 / 21
172	17,230	3,502	569.6	28 / 23
176	17,642	3,502	572.6	21 / 153
181	18,103	3,502	574.2	21 / 195
184	18,438	3,502	575.3	21 / 191
188	18,848	3,502	576.6	171 / 64
191	19,119	3,219	577.5	240 / 20
197	19,671	3,219	579.6	20 / 146
205	20,538	3,219	583.2	259 / 20
207	20,692	3,219	583.6	202 / 20
212	21,190	3,219	585.2	139 / 20
216	21,639	3,219	587.0	70 / 20
220	22,026	3,219	588.8	20 / 156
226	22,560	3,113	590.1	20 / 131
231	23,059	3,113	591.8	20 / 191
234	23,350	3,113	592.8	315 / 56
Little Meadow Creek				
076	7,647	1,968	502.9	59 / 46
080	7,998	1,968	506.2	40 / 45
084	8,377	1,968	507.6	17 / 137
090	8,954	1,929	509.9	24 / 98
094	9,395	1,795	512.9	30 / 92
098	9,814	1,795	516.0	28 / 49
102	10,209	1,795	519.9	63 / 22
107	10,714	1,795	524.6	73 / 13
110	11,035	1,795	527.6	57 / 25
114	11,352	1,795	530.5	39 / 16
116	11,600	1,795	532.8	26 / 60
120	12,032	1,795	535.2	26 / 42
123	12,299	1,795	536.8	34 / 80
125	12,472	1,795	537.1	99 / 45
127	12,721	1,795	537.6	43 / 51
128	12,773	1,795	537.6	43 / 51
129	12,859	1,795	538.0	131 / 16
130	12,959	1,795	538.4	132 / 51
130	13,025	1,795	538.8	132 / 51
133	13,279	1,795	539.5	101 / 75

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
136	13,551	1,795	540.2	129 / 16
140	13,963	1,795	541.5	118 / 79
145	14,450	1,795	542.4	149 / 16
151	15,078	1,795	543.9	126 / 34
155	15,472	1,795	545.0	100 / 43
159	15,905	1,674	546.2	78 / 132
162	16,183	1,674	546.6	22 / 144
163	16,255	1,674	546.9	22 / 144
166	16,560	1,674	547.6	105 / 71
171	17,083	1,674	549.3	188 / 34
177	17,653	1,674	550.7	192 / 15
182	18,241	1,674	552.2	153 / 53
187	18,669	1,674	553.3	148 / 67
191	19,071	1,674	554.6	92 / 68
195	19,487	1,674	555.8	15 / 202
200	20,000	1,674	557.3	137 / 57
205	20,481	1,674	559.0	21 / 194
210	21,000	1,534	560.5	209 / 38
215	21,521	1,534	561.7	224 / 17
221	22,125	1,534	563.0	118 / 158
226	22,620	1,534	564.3	141 / 160
230	23,000	1,534	565.4	111 / 65
237	23,694	1,379	567.4	39 / 57
239	23,878	1,379	568.9	39 / 57
245	24,539	1,379	571.0	65 / 45
252	25,223	1,379	574.8	137 / 31
257	25,699	1,379	576.5	74 / 76
262	26,226	1,379	578.6	78 / 15
269	26,859	1,379	581.2	161 / 15
273	27,267	1,379	582.6	37 / 159
278	27,822	1,007	584.0	16 / 136
279	27,935	1,007	584.1	16 / 136
284	28,366	1,007	586.4	145 / 14
290	28,959	1,007	588.0	32 / 95
295	29,483	1,007	589.5	59 / 56
300	29,971	939	590.9	100 / 49
305	30,487	939	592.3	90 / 49
310	30,971	939	593.8	123 / 14
315	31,473	939	595.0	21 / 116
317	31,727	939	595.7	104 / 23
322	32,165	939	596.9	44 / 62
322	32,244	939	599.4	44 / 62
326	32,575	939	599.6	20 / 166
330	33,021	939	600.8	39 / 82
335	33,525	939	603.1	14 / 150

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
341	34,065	939	604.7	125 / 14
345	34,450	741	605.7	47 / 25
346	34,572	741	606.7	47 / 25
348	34,835	741	607.2	14 / 101
Meadow Creek				
091	9,066	2,928	512.8	79 / 137
094	9,396	2,911	514.6	69 / 72
098	9,824	2,911	517.0	100 / 50
100	9,988	2,911	517.6	100 / 85
101	10,079	2,911	517.5	70 / 85
102	10,246	2,911	518.9	65 / 80
106	10,641	2,911	521.6	145 / 35
109	10,949	2,911	523.0	95 / 30
113	11,316	2,911	525.0	42 / 148
116	11,645	2,911	526.2	31 / 77
121	12,065	2,911	528.9	65 / 92
124	12,450	2,911	531.0	125 / 30
129	12,948	2,911	532.8	53 / 116
134	13,354	2,911	534.1	63 / 63
138	13,767	2,911	535.9	88 / 37
141	14,104	2,911	537.3	34 / 96
146	14,582	2,911	538.8	67 / 38
150	14,989	2,911	540.6	80 / 91
154	15,355	2,911	541.6	54 / 73
158	15,763	2,911	543.1	49 / 75
161	16,088	2,911	544.4	62 / 33
165	16,502	2,911	546.7	83 / 32
170	17,050	2,911	548.6	65 / 81
174	17,447	2,911	550.2	35 / 60
179	17,936	2,854	552.3	61 / 115
184	18,380	2,854	553.6	52 / 115
188	18,788	2,854	555.0	81 / 55
192	19,178	2,716	557.0	30 / 60
196	19,577	2,716	560.1	101 / 23
199	19,929	2,716	562.3	41 / 63
204	20,371	2,602	565.5	42 / 38
208	20,832	2,602	568.9	66 / 134
214	21,398	2,602	571.9	30 / 63
221	22,097	2,602	576.8	37 / 116
226	22,554	2,602	578.8	66 / 38
230	23,026	2,543	580.9	31 / 52
233	23,279	2,543	582.0	32 / 33
234	23,422	2,543	584.7	32 / 33
237	23,683	2,543	585.2	107 / 33
241	24,141	2,543	586.6	104 / 22

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
246	24,554	2,543	588.4	83 / 32
251	25,060	1,668	591.2	53 / 26
256	25,596	1,668	593.4	73 / 71
260	25,980	1,668	595.2	120 / 40
266	26,604	1,668	598.9	30 / 65
271	27,133	1,668	602.5	33 / 40
275	27,453	1,668	604.2	27 / 32
279	27,900	1,035	606.7	39 / 39
282	28,207	1,035	607.7	30 / 30
285	28,470	1,035	608.9	32 / 33
286	28,604	1,035	612.4	32 / 33
288	28,835	1,035	612.6	27 / 49
293	29,258	1,035	613.6	22 / 20
Mill Creek				
037	3,707	2,607	650.2 ¹	413 / 405
046	4,594	2,607	650.2 ¹	327 / 451
053	5,275	2,607	650.2 ¹	280 / 318
058	5,831	2,607	650.2 ¹	199 / 378
063	6,308	2,607	650.2 ¹	110 / 330
072	7,172	2,496	650.2 ¹	65 / 260
080	8,005	2,496	650.4	375 / 55
088	8,756	2,496	651.9	335 / 50
094	9,390	2,496	655.8	55 / 145
097	9,707	2,496	658.1	88 / 45
106	10,586	2,496	660.9	60 / 142
112	11,223	2,496	662.4	130 / 45
116	11,645	2,496	663.7	15 / 100
119	11,871	2,496	664.6	35 / 39
122	12,197	2,496	666.5	45 / 55
124	12,383	2,264	666.8	33 / 48
125	12,531	2,264	668.2	33 / 48
127	12,654	2,264	668.5	30 / 120
130	13,035	2,264	668.8	40 / 220
137	13,672	2,264	669.6	190 / 30
144	14,397	2,264	672.5	215 / 15
153	15,259	2,264	675.6	230 / 15
157	15,673	2,161	676.9	192 / 25
160	16,007	2,161	677.6	45 / 40
161	16,125	2,161	679.3	45 / 40
164	16,375	2,161	680.2	190 / 75
168	16,762	2,161	680.8	115 / 60
175	17,524	2,161	685.6	75 / 90
181	18,103	2,161	687.2	50 / 40
190	18,993	1,798	692.2	36 / 67
197	19,651	1,798	693.8	80 / 75

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
202	20,151	1,798	694.9	67 / 70
212	21,179	1,798	697.4	75 / 94
218	21,754	1,798	699.5	45 / 90
226	22,628	1,798	703.4	130 / 45
233	23,301	1,688	705.4	110 / 50
236	23,555	1,688	705.7	50 / 40
236	23,640	1,688	708.6	50 / 40
238	23,840	1,688	708.7	50 / 110
244	24,355	1,688	709.6	65 / 90
252	25,154	1,688	713.6	20 / 70
255	25,546	1,688	715.4	60 / 35
Miller Branch				
001	74	1,009	656.2 ²	49 / 14
002	178	1,009	656.2 ¹	16 / 18
002	236	1,009	656.2 ¹	23 / 22
007	659	1,009	656.2	9 / 18
008	848	1,009	660.9	17 / 34
010	1,010	1,009	662.9	49 / 46
015	1,513	728	664.4	59 / 65
018	1,752	728	665.0	51 / 12
022	2,204	728	669.1	48 / 12
025	2,500	728	671.2	55 / 14
029	2,857	728	673.3	26 / 12
033	3,271	728	677.5	13 / 47
039	3,915	728	683.8	27 / 24
043	4,331	728	687.3	12 / 44
048	4,796	728	690.5	13 / 14
053	5,284	728	695.0	17 / 18
054	5,352	728	695.7	16 / 16
057	5,678	728	699.7	12 / 13
062	6,194	626	706.9	30 / 16
064	6,438	626	708.6	24 / 7
067	6,727	626	710.2	11 / 11
068	6,791	626	713.0	16 / 16
072	7,184	623	715.6	2 / 39
076	7,615	623	720.5	16 / 10
080	8,044	623	723.7	16 / 19
086	8,572	623	728.5	8 / 20
089	8,863	623	731.8	10 / 8
091	9,116	623	735.9	6 / 9
094	9,423	623	742.5	7 / 29
098	9,771	416	746.0	12 / 12
101	10,093	416	748.3	10 / 10
105	10,494	416	751.3	11 / 28
110	10,975	410	755.3	13 / 7

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
113	11,332	410	761.6	9 / 11
118	11,762	410	767.0	14 / 9
Muddy Creek				
145	14,474	982	495.6 ¹	23 / 15
146	14,552	982	495.6 ¹	14 / 14
149	14,886	982	496.7	11 / 11
154	15,364	982	498.1	165 / 9
157	15,747	1,423	498.3	177 / 13
162	16,218	1,423	498.8	122 / 94
165	16,513	1,423	499.1	84 / 15
169	16,902	1,423	500.1	54 / 55
173	17,304	1,423	501.6	65 / 15
176	17,626	1,423	503.1	104 / 14
180	18,012	1,423	504.7	92 / 40
183	18,305	1,423	505.8	14 / 83
188	18,757	1,423	507.6	14 / 80
191	19,132	1,411	509.6	23 / 37
194	19,404	1,411	511.0	25 / 25
196	19,553	1,411	525.8	24 / 26
197	19,702	1,411	525.9	234 / 98
202	20,200	1,411	525.9	134 / 329
209	20,944	1,411	525.9	404 / 71
216	21,625	1,411	525.9	303 / 87
222	22,182	1,411	525.9	360 / 90
226	22,648	1,411	525.9	207 / 185
230	23,017	1,411	526.0	65 / 120
236	23,634	1,411	526.9	27 / 55
240	23,963	1,411	528.8	14 / 30
243	24,264	1,411	531.9	13 / 43
247	24,704	1,411	534.5	67 / 12
251	25,051	1,411	535.9	119 / 13
256	25,580	1,411	537.6	92 / 25
260	26,009	1,411	539.3	20 / 25
264	26,419	1,411	542.1	28 / 15
269	26,863	1,359	544.4	11 / 77
273	27,326	1,359	547.1	54 / 13
277	27,707	1,359	548.9	27 / 23
281	28,144	1,359	552.6	20 / 20
287	28,656	1,313	557.1	38 / 34
289	28,883	1,313	558.2	25 / 25
290	28,974	1,313	559.4	25 / 25
291	29,107	1,313	559.9	42 / 20
296	29,591	1,313	563.1	47 / 21
300	30,042	1,313	567.5	42 / 23
304	30,397	1,313	571.0	52 / 14

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
307	30,678	1,242	572.7	40 / 40
309	30,928	1,242	574.5	25 / 25
311	31,065	1,242	580.5	39 / 34
311	31,145	1,242	580.6	98 / 102
314	31,396	1,242	580.7	63 / 47
316	31,647	1,242	580.8	33 / 27
320	32,017	1,103	582.8	25 / 15
Muddy Creek Overflow				
000	45	440	490.0 ¹	18 / 14
001	79	440	490.0 ¹	3 / 21
008	752	440	495.4	36 / 67
009	942	440	495.4	64 / 46
012	1,172	440	495.4	64 / 46
013	1,343	440	495.4	58 / 52
015	1,547	440	495.5	78 / 32
018	1,779	440	495.5	82 / 28
Park Creek				
006	624	2,156	651.8 ¹	180 / 179
010	1,041	2,156	651.8 ¹	129 / 127
015	1,542	2,156	651.8 ¹	136 / 132
020	2,021	2,156	651.8 ¹	83 / 84
024	2,381	2,156	653.4	120 / 31
028	2,773	2,156	656.6	87 / 108
030	3,017	2,156	657.7	85 / 106
034	3,371	2,156	658.5	84 / 118
036	3,629	2,156	659.0	99 / 74
041	4,129	2,048	660.6	83 / 36
045	4,548	2,048	662.2	65 / 70
047	4,719	2,048	662.6	54 / 20
049	4,888	2,048	665.5	46 / 20
051	5,074	2,048	666.2	147 / 11
056	5,629	2,048	666.6	124 / 39
062	6,238	2,048	667.5	78 / 12
066	6,629	2,048	669.1	129 / 65
071	7,121	1,920	669.8	18 / 101
074	7,441	1,920	671.2	18 / 14
078	7,829	1,920	673.5	61 / 15
082	8,227	1,920	675.2	39 / 75
086	8,629	1,920	676.1	23 / 110
088	8,819	1,920	676.4	11 / 65
092	9,191	1,920	678.4	109 / 12
Patterson Branch Tributary				
001	51	278	702.2 ¹	9 / 8
001	116	278	705.5	10 / 9
002	184	278	707.7	8 / 8
002	240	278	709.6	10 / 10

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
003	288	278	710.2	15 / 15
004	376	278	711.3	12 / 20
004	443	278	712.2	11 / 11
006	550	278	719.2	14 / 14
006	615	278	719.3	26 / 18
008	773	278	719.4	11 / 18
010	974	278	722.2	12 / 12
011	1,143	278	724.8	14 / 10
013	1,311	278	728.5	11 / 11
014	1,414	278	731.0	7 / 6
015	1,500	278	733.0	12 / 12
016	1,590	278	734.2	12 / 12
017	1,678	278	735.4	12 / 12
018	1,755	278	736.1	12 / 12
018	1,846	278	737.9	14 / 24
019	1,932	278	739.3	20 / 20
020	1,996	278	740.9	12 / 12
020	2,035	278	743.3	12 / 12
021	2,095	278	744.8	12 / 12
022	2,195	278	746.1	12 / 18
023	2,290	278	747.0	12 / 12
Reedy Creek Tributary 2				
001	125	2,496	552.8 ¹	54 / 231
004	421	2,496	552.8 ¹	126 / 206
007	738	2,496	552.8 ¹	235 / 100
010	1,033	2,496	552.8 ¹	280 / 130
015	1,523	2,496	552.8 ¹	213 / 21
022	2,178	2,299	553.2	150 / 45
025	2,518	2,299	554.6	162 / 48
029	2,867	2,299	556.3	146 / 43
032	3,234	2,299	557.6	250 / 35
036	3,638	2,299	558.8	180 / 40
040	3,978	2,299	560.6	224 / 46
043	4,314	2,299	562.2	130 / 85
046	4,624	2,299	564.6	40 / 81
050	5,043	1,642	566.4	113 / 61
Ridenhour Branch				
001	132	1,031	555.5 ¹	50 / 30
002	175	1,031	555.5 ¹	30 / 30
003	268	1,031	555.5 ¹	35 / 40
005	501	1,031	555.5 ¹	60 / 55
008	771	1,031	555.5 ¹	23 / 60
010	959	1,031	555.6	18 / 40
012	1,153	1,031	556.8	60 / 9
014	1,390	1,031	558.2	100 / 8

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
017	1,696	1,031	559.8	25 / 30
018	1,764	1,031	560.3	32 / 32
018	1,798	1,031	561.4	35 / 32
018	1,827	1,031	561.4	45 / 10
019	1,857	1,031	561.6	45 / 20
019	1,902	1,031	561.8	45 / 20
020	1,950	1,031	561.9	40 / 10
021	2,140	1,031	563.1	20 / 30
022	2,245	1,031	563.6	40 / 25
023	2,326	900	564.6	40 / 25
025	2,489	900	565.1	35 / 28
028	2,786	900	566.7	25 / 18
030	3,031	900	568.7	40 / 20
031	3,122	900	569.8	10 / 50
032	3,181	900	570.3	20 / 60
032	3,240	900	570.9	15 / 70
033	3,303	900	571.6	10 / 60
035	3,486	900	598.9	135 / 292
037	3,679	900	598.9	165 / 260
040	4,010	900	598.9	231 / 200
046	4,560	900	598.9	143 / 144
051	5,141	362	598.9	160 / 110
053	5,275	362	598.9	104 / 96
055	5,507	362	598.9	75 / 30
056	5,593	362	599.1	22 / 24
058	5,785	362	600.6	20 / 35
060	5,961	362	601.5	12 / 50
063	6,290	362	603.7	10 / 15
064	6,393	362	606.0	16 / 16
065	6,503	362	607.7	10 / 15
067	6,689	362	611.0	10 / 10
069	6,879	362	613.0	15 / 6
071	7,129	280	615.6	15 / 7
072	7,213	280	616.3	7 / 7
074	7,414	280	620.4	8 / 7
076	7,625	280	622.8	7 / 7
078	7,753	280	624.7	18 / 7
080	7,983	280	627.8	10 / 4
Ridenhour Branch Tributary				
007	696	692	598.4 ¹	15 / 70
008	839	692	599.6	30 / 50
009	946	692	610.0	40 / 70
010	1,019	692	610.0	106 / 105
012	1,158	692	610.0	90 / 180
013	1,283	692	615.5	138 / 230

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
014	1,443	692	615.5	159 / 158
021	2,114	692	615.5	70 / 30
026	2,569	692	615.6	30 / 60
029	2,895	579	615.6	70 / 25
032	3,198	579	615.7	50 / 20
035	3,514	579	616.7	40 / 6
037	3,704	579	618.0	50 / 25
040	3,953	413	619.6	120 / 7
041	4,087	413	620.8	160 / 2
042	4,166	413	624.1	142 / 5
043	4,254	413	634.3	350 / 6
044	4,405	413	634.3	310 / 7
047	4,744	316	634.3	185 / 7
051	5,052	316	634.3	180 / 10
053	5,284	316	634.3	40 / 70
056	5,552	316	635.4	10 / 39
058	5,834	316	639.0	14 / 33
061	6,051	316	640.8	35 / 7
062	6,228	316	642.7	29 / 7
063	6,325	316	643.8	26 / 7
065	6,508	316	645.6	23 / 7
067	6,662	316	647.2	20 / 8
068	6,841	316	649.6	15 / 7
069	6,932	316	652.4	12 / 9
070	7,012	316	655.7	20 / 11
071	7,087	316	670.8	115 / 135
072	7,209	316	670.8	116 / 109
075	7,477	316	670.8	44 / 36
Rocky River				
2124	212,349	38,680	468.9	153 / 387
Rocky River Tributary 11				
003	250	-8,888	514.6 ³	12 / 7
005	460	-8,888	514.6 ³	15 / 11
007	745	621	514.6 ¹	14 / 34
010	952	621	514.6 ¹	44 / 7
011	1,148	621	514.6 ¹	41 / 10
015	1,500	621	514.6 ¹	22 / 14
018	1,750	544	514.6 ¹	11 / 7
020	2,000	544	514.6 ¹	15 / 23
023	2,250	544	514.6 ¹	18 / 28
024	2,372	544	516.0	15 / 39
025	2,467	544	519.0	15 / 32
027	2,743	544	524.0	11 / 13
028	2,779	544	526.1	13 / 16
030	2,995	544	527.0	7 / 37

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
032	3,149	544	528.6	24 / 16
033	3,250	544	529.7	16 / 23
035	3,508	544	533.1	25 / 7
037	3,704	544	537.4	24 / 12
038	3,768	544	538.5	17 / 13
040	4,009	544	541.8	7 / 8
042	4,211	544	546.3	7 / 7
044	4,436	544	548.7	10 / 18
045	4,502	544	551.6	16 / 16
048	4,757	544	554.5	7 / 38
Rocky River Tributary 14				
002	156	-8,888	561.6 ⁴	13 / 13
004	420	-8,888	561.6 ⁴	13 / 13
006	639	-8,888	561.6 ⁴	12 / 12
009	943	-8,888	561.6 ⁴	11 / 22
011	1,074	755	561.6 ¹	20 / 22
012	1,201	755	561.6 ¹	22 / 30
014	1,382	755	561.6 ¹	11 / 25
016	1,621	755	564.0	18 / 42
020	2,011	755	568.8	31 / 17
024	2,369	755	571.3	11 / 16
027	2,683	755	574.0	15 / 11
Rocky River Tributary 15				
003	307	1,488	603.0 ¹	500 / 200
010	994	1,488	603.0 ¹	50 / 250
016	1,576	1,488	603.0 ¹	80 / 80
019	1,935	1,488	603.0 ¹	70 / 75
021	2,131	1,488	603.0 ¹	34 / 34
023	2,299	1,488	603.0 ¹	34 / 34
026	2,604	1,488	603.0 ¹	90 / 90
030	2,998	1,375	603.0 ¹	85 / 40
033	3,314	1,375	603.0 ¹	30 / 30
035	3,489	1,375	605.8	65 / 65
036	3,554	1,375	606.0	120 / 90
036	3,608	1,375	606.0	97 / 82
037	3,666	1,375	606.0	81 / 72
038	3,802	1,375	606.3	56 / 44
041	4,071	1,375	607.1	60 / 40
044	4,424	1,375	608.2	80 / 90
049	4,853	1,375	609.8	20 / 165
053	5,295	1,375	611.3	25 / 165
056	5,557	1,375	612.1	15 / 72
057	5,687	1,375	615.9	48 / 47
060	5,962	1,375	616.1	35 / 40
064	6,409	1,375	618.9	16 / 18

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
066	6,600	1,375	620.8	16 / 14
068	6,817	1,375	622.4	26 / 14
070	7,000	1,375	623.5	47 / 13
072	7,217	1,375	625.5	27 / 18
074	7,397	1,375	627.8	15 / 11
075	7,538	1,375	629.3	12 / 28
078	7,816	1,306	632.1	17 / 16
081	8,067	1,306	634.1	16 / 15
083	8,263	1,306	639.2	25 / 20
084	8,400	1,306	639.3	21 / 44
085	8,544	1,306	639.5	20 / 17
Royal Oaks Branch				
007	716	1,291	586.0 ⁵	12 / 13
011	1,102	1,291	586.0 ¹	11 / 11
016	1,606	1,291	586.2	15 / 16
017	1,699	1,291	586.5	15 / 15
018	1,785	1,291	591.8	15 / 15
020	1,997	1,291	592.0	26 / 21
021	2,059	1,291	592.0	20 / 18
021	2,090	1,291	592.9	22 / 22
023	2,263	1,291	593.0	11 / 20
025	2,500	1,291	593.9	31 / 17
030	3,000	1,205	595.6	29 / 29
034	3,438	1,205	596.9	12 / 13
038	3,809	1,205	600.3	10 / 32
041	4,097	1,187	602.7	19 / 19
042	4,217	1,187	609.2	19 / 19
046	4,584	1,187	609.4	53 / 53
050	4,980	1,187	609.7	9 / 48
054	5,372	1,187	611.7	11 / 44
056	5,596	1,187	613.2	14 / 14
058	5,760	1,187	619.2	14 / 14
062	6,247	1,045	619.6	18 / 13
066	6,597	1,045	620.6	8 / 9
068	6,827	1,045	626.0	12 / 12
072	7,243	1,045	634.3	12 / 12
077	7,702	1,045	634.6	47 / 20
081	8,112	890	637.2	45 / 24
084	8,377	890	642.2	51 / 28
086	8,622	890	645.1	17 / 41
091	9,057	890	648.2	15 / 11
094	9,373	890	652.6	21 / 11
097	9,711	833	654.6	20 / 9
098	9,849	833	659.2	17 / 17
104	10,425	833	660.1	12 / 25

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
Stricker Branch				
094	9,392	1,233	637.5	136 / 49
094	9,440	734	637.6	109 / 81
095	9,471	734	637.7	352 / 81
096	9,587	734	637.7	150 / 60
097	9,741	734	637.8	96 / 149
100	9,960	734	637.7	21 / 43
101	10,142	734	638.0	15 / 42
104	10,443	734	638.8	15 / 13
107	10,746	685	640.2	10 / 12
109	10,949	685	642.4	16 / 20
111	11,074	577	644.2	8 / 6
112	11,207	577	647.0	10 / 12
113	11,339	577	648.5	10 / 12
115	11,526	577	651.2	10 / 22
117	11,685	577	652.3	8 / 14
119	11,875	529	654.1	8 / 14
120	11,997	529	655.5	8 / 12
121	12,130	529	656.2	8 / 8
122	12,239	460	657.5	8 / 8
124	12,381	460	658.4	8 / 8
125	12,467	460	659.3	8 / 8
125	12,538	460	660.3	10 / 10
126	12,641	379	661.2	9 / 8
127	12,696	379	662.0	8 / 6
127	12,722	379	664.1	13 / 12
128	12,788	379	668.5	17 / 17
129	12,865	379	668.6	17 / 11
131	13,072	379	668.9	9 / 9
132	13,236	291	670.2	7 / 9
Tributary to Unnamed Tributary 2 to Adams Creek				
001	120	-8,888	613.8 ⁶	18 / 16
002	226	-8,888	614.5 ⁶	16 / 16
003	349	785	615.4 ¹	11 / 16
004	434	785	616.2	16 / 16
005	532	785	617.2	20 / 35
007	713	785	619.1	30 / 30
Tributary to Unnamed Tributary Dutch Buffalo Creek				
001	145	1,531	524.2 ¹	123 / 13
003	257	1,531	524.2 ¹	93 / 12
003	346	1,531	524.2 ¹	65 / 13
005	507	1,531	525.2	70 / 16
007	656	1,527	526.8	80 / 13
008	775	1,527	527.6	72 / 13
010	971	1,527	529.8	59 / 20
012	1,214	1,527	532.2	15 / 192

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
013	1,283	1,527	534.0	15 / 192
013	1,313	1,527	534.3	25 / 40
015	1,493	1,527	536.5	32 / 18
017	1,693	1,527	538.2	37 / 13
019	1,911	1,527	540.8	13 / 20
021	2,052	1,527	542.6	20 / 20
022	2,198	1,527	544.1	13 / 13
024	2,395	1,527	547.4	17 / 15
025	2,529	1,527	548.7	13 / 13
026	2,630	1,527	550.4	13 / 13
027	2,718	1,527	552.2	13 / 13
028	2,825	1,527	553.8	13 / 13
029	2,909	1,527	555.6	22 / 23
030	3,020	1,527	557.7	34 / 25
031	3,090	1,527	560.1	37 / 11
032	3,178	1,527	564.5	55 / 13
033	3,287	1,527	569.1	32 / 13
034	3,384	1,527	571.0	25 / 15
034	3,446	1,370	571.4	15 / 15
035	3,524	1,370	578.3	14 / 13
036	3,569	1,370	583.8	39 / 26
036	3,593	1,370	586.8	503 / 27
036	3,639	1,370	587.3	530 / 22
041	4,135	1,370	587.4	144 / 145
047	4,749	1,370	587.4	66 / 67
053	5,270	1,345	589.0	20 / 50
055	5,500	1,345	591.2	55 / 22
058	5,771	1,345	592.7	30 / 20
060	6,016	1,345	594.2	25 / 25
063	6,329	1,305	596.2	28 / 20
065	6,464	1,305	597.1	35 / 28
065	6,510	1,305	600.4	32 / 41
066	6,558	1,305	600.4	45 / 35
066	6,623	1,305	600.5	40 / 32
067	6,682	1,305	600.5	40 / 40
067	6,733	1,305	604.5	41 / 49
070	7,004	1,305	604.7	60 / 28
072	7,177	1,305	604.8	30 / 30
074	7,387	1,305	606.1	16 / 15
Unnamed Stream				
001	81	748	658.9 ⁷	19 / 19
002	179	748	658.9 ⁷	14 / 68
002	238	748	658.9 ⁷	14 / 69
004	382	748	658.9 ¹	17 / 19
007	697	686	660.4	19 / 19

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
009	946	686	661.9	8 / 7
010	1,036	686	663.9	21 / 21
011	1,149	686	665.7	19 / 41
015	1,521	686	670.7	20 / 47
020	1,953	686	673.6	19 / 14
023	2,280	419	676.9	17 / 17
025	2,509	419	680.2	8 / 13
028	2,800	419	682.4	16 / 12
030	3,050	419	684.2	14 / 10
032	3,228	419	690.8	15 / 19
033	3,309	419	695.7	20 / 20
034	3,450	419	695.8	30 / 20
036	3,650	419	695.8	10 / 9
039	3,930	419	698.2	6 / 6
042	4,245	419	702.6	12 / 14
045	4,539	150	707.6	8 / 7
047	4,717	150	713.4	7 / 12
048	4,845	150	717.1	11 / 15
050	4,973	150	719.2	14 / 14
052	5,237	150	726.0	11 / 8
056	5,559	150	742.4	11 / 19
Unnamed Tributary 1 to Reedy Creek Tributary 1				
000	42	188	612.9 ¹	10 / 13
001	105	188	613.8	10 / 16
002	218	188	622.0	5 / 5
003	320	188	626.3	9 / 9
005	501	188	626.5	15 / 35
008	763	188	627.7	15 / 15
010	1,022	179	630.8	14 / 14
012	1,205	179	633.1	8 / 8
013	1,312	179	638.8	11 / 11
014	1,409	179	638.8	55 / 35
014	1,450	175	638.9	55 / 35
015	1,503	175	639.4	8 / 10
016	1,582	175	646.5	92 / 94
018	1,787	229	646.5	130 / 131
019	1,949	229	646.5	132 / 133
021	2,070	229	646.5	50 / 100
022	2,154	229	646.5	40 / 40
023	2,298	187	646.6	45 / 25
025	2,465	187	649.9	40 / 8
026	2,554	187	657.2	10 / 11
026	2,613	187	657.2	15 / 14
027	2,709	187	657.3	18 / 22
028	2,797	177	657.6	7 / 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
028	2,848	177	659.4	8 / 6
029	2,941	177	669.7	10 / 10
030	3,050	177	669.7	12 / 12
031	3,145	177	669.8	15 / 15
033	3,256	177	671.4	9 / 7
034	3,350	177	674.2	6 / 6
034	3,395	177	676.7	15 / 10
035	3,466	177	676.8	10 / 10
Unnamed Tributary 1 to Rocky River				
002	200	-8,888	634.1 ⁴	12 / 12
005	490	1,243	634.1 ¹	12 / 10
008	788	1,243	634.1 ¹	12 / 12
011	1,108	1,243	634.1	12 / 12
014	1,400	1,243	636.3	12 / 12
016	1,573	1,243	637.4	12 / 12
018	1,759	1,199	639.0	12 / 15
019	1,905	1,199	639.7	12 / 12
022	2,217	1,199	641.5	12 / 12
025	2,535	1,199	643.6	12 / 10
028	2,806	986	645.7	12 / 12
032	3,171	986	647.0	10 / 10
035	3,534	986	649.3	10 / 12
039	3,865	986	651.8	12 / 12
042	4,225	986	654.7	12 / 9
046	4,615	590	657.8	12 / 12
048	4,802	590	658.5	14 / 15
049	4,924	590	663.7	16 / 15
052	5,150	590	663.9	13 / 13
054	5,422	590	664.3	13 / 11
057	5,662	590	666.4	11 / 11
059	5,872	532	668.7	10 / 12
062	6,217	532	672.8	11 / 12
065	6,512	532	676.7	8 / 9
068	6,803	475	680.6	11 / 11
070	6,966	475	682.0	11 / 11
073	7,334	475	686.0	9 / 9
079	7,869	475	690.7	6 / 6
080	7,968	400	692.1	8 / 7
081	8,071	400	694.3	8 / 9
081	8,136	400	695.2	6 / 6
082	8,197	400	697.2	5 / 5
083	8,253	400	698.6	5 / 5
083	8,309	400	700.2	6 / 6
084	8,358	400	700.5	6 / 6
085	8,485	400	702.2	7 / 7

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
086	8,575	400	703.4	9 / 8
087	8,663	400	704.2	10 / 10
087	8,730	400	704.8	22 / 8
088	8,801	400	705.9	5 / 5
089	8,922	400	708.8	8 / 7
090	8,985	400	709.4	10 / 10
090	9,043	400	710.1	11 / 11
Unnamed Tributary 2 to Adams Creek				
002	212	1,679	580.8 ¹	14 / 14
004	400	1,679	580.8 ¹	11 / 14
005	505	1,679	580.8 ¹	10 / 14
008	771	1,679	580.8 ¹	20 / 40
010	1,048	1,672	583.4	11 / 9
013	1,324	1,672	586.2	33 / 14
014	1,448	1,672	587.0	19 / 18
016	1,563	1,672	589.3	24 / 24
016	1,628	1,672	589.3	18 / 32
017	1,693	1,672	589.4	18 / 30
018	1,777	1,672	589.5	14 / 14
020	1,974	1,672	592.7	27 / 12
021	2,107	1,672	592.8	9 / 13
023	2,289	1,672	593.9	14 / 13
024	2,414	1,672	594.8	14 / 14
025	2,545	1,672	596.7	25 / 30
030	2,952	1,672	600.6	31 / 38
030	2,990	1,672	600.6	33 / 57
030	3,010	1,672	600.5	16 / 16
031	3,095	1,672	602.7	26 / 23
033	3,315	1,672	603.1	38 / 70
038	3,759	1,672	603.2	100 / 24
041	4,063	1,672	603.4	71 / 37
046	4,557	1,672	605.5	55 / 17
051	5,057	1,672	609.0	64 / 31
056	5,558	1,672	611.9	72 / 21
060	6,004	1,536	615.4	113 / 67
065	6,548	747	618.2	10 / 21
067	6,697	747	620.4	15 / 9
068	6,790	747	627.3	37 / 43
069	6,909	747	627.4	49 / 31
072	7,217	747	627.3	18 / 14
075	7,540	747	630.2	17 / 19
080	7,997	747	634.6	12 / 17
083	8,296	747	638.1	12 / 14
087	8,677	747	644.5	14 / 12
088	8,751	747	646.1	50 / 25

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
090	8,984	747	647.0	30 / 22
096	9,582	310	654.2	20 / 15
Unnamed Tributary 2 to Reedy Creek Tributary 1				
001	123	-8,888	610.3 ⁸	11 / 11
003	289	467	610.3 ¹	11 / 12
005	485	467	610.5	9 / 13
007	691	467	613.6	17 / 12
009	904	467	615.4	20 / 30
011	1,090	440	617.0	33 / 17
013	1,301	440	619.9	33 / 32
015	1,505	440	622.9	23 / 37
016	1,623	406	625.4	20 / 30
018	1,785	406	635.8	8 / 6
020	1,958	406	643.4	9 / 5
021	2,100	406	646.5	11 / 10
022	2,238	406	648.0	9 / 8
024	2,428	258	650.8	9 / 7
027	2,674	258	654.4	23 / 46
029	2,929	258	657.7	13 / 12
031	3,122	258	659.7	14 / 16
033	3,326	202	664.3	11 / 11
035	3,545	202	668.1	15 / 15
037	3,740	122	672.9	10 / 26
040	3,968	122	678.8	20 / 35
042	4,200	122	683.4	12 / 12
044	4,394	122	688.7	8 / 6
Unnamed Tributary 2 to Rocky River				
007	678	1,582	626.4 ¹	30 / 30
012	1,177	1,582	626.4 ¹	45 / 45
016	1,553	1,582	627.9	17 / 94
020	2,039	1,582	630.7	23 / 137
021	2,143	1,582	639.0	32 / 140
025	2,474	1,582	639.0	59 / 131
030	2,969	1,226	639.1	75 / 55
036	3,605	1,226	639.4	18 / 17
042	4,209	782	640.3	10 / 10
045	4,499	782	641.4	15 / 10
047	4,719	782	645.5	16 / 11
049	4,903	782	651.2	13 / 13
052	5,160	782	654.2	30 / 30
054	5,384	743	655.8	25 / 25
057	5,656	743	658.0	25 / 25
061	6,051	743	661.0	25 / 25
064	6,422	743	664.1	11 / 11
067	6,700	692	666.6	11 / 14

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
070	6,993	692	668.5	11 / 19
074	7,373	361	672.0	11 / 10
076	7,612	361	673.9	7 / 7
079	7,851	361	676.7	7 / 7
082	8,151	361	680.0	7 / 7
084	8,433	270	682.9	10 / 10
085	8,527	270	683.6	11 / 11
087	8,652	270	684.9	12 / 4
087	8,693	270	692.9	25 / 6
089	8,870	270	692.9	20 / 10
090	8,950	270	693.0	15 / 9
091	9,119	270	693.5	9 / 9
092	9,205	219	694.6	9 / 9
094	9,404	219	696.9	9 / 6
097	9,697	219	702.1	9 / 6
101	10,068	219	707.3	7 / 7
Unnamed Tributary 3 to Rocky River				
003	301	1,140	644.3 ¹	21 / 20
006	648	1,140	644.3 ¹	13 / 13
010	1,047	1,140	644.3 ¹	13 / 13
014	1,409	1,140	644.3 ¹	13 / 13
017	1,693	1,140	645.2	13 / 13
018	1,793	1,140	646.7	24 / 23
021	2,058	1,140	647.3	13 / 19
024	2,391	1,140	648.1	13 / 13
027	2,653	1,140	649.2	13 / 13
029	2,919	1,140	650.4	13 / 13
032	3,220	1,140	651.7	13 / 13
036	3,601	1,140	654.0	13 / 13
039	3,879	862	656.3	13 / 13
042	4,195	862	658.6	13 / 12
045	4,484	862	661.8	14 / 16
045	4,546	862	665.7	30 / 30
049	4,890	862	667.2	13 / 13
052	5,215	821	668.4	13 / 13
056	5,589	821	670.4	11 / 8
058	5,772	821	672.2	11 / 11
059	5,908	821	673.4	10 / 12
060	6,037	821	674.4	10 / 8
062	6,180	821	675.8	12 / 12
063	6,294	821	683.1	14 / 14
064	6,372	821	689.1	18 / 11
065	6,468	821	693.6	12 / 35
065	6,527	821	695.3	14 / 35
066	6,596	821	697.0	12 / 15

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
067	6,687	821	699.6	24 / 12
068	6,790	821	701.4	15 / 24
072	7,247	726	704.1	12 / 12
077	7,651	726	706.9	12 / 12
080	8,004	726	709.2	12 / 12
083	8,321	726	711.8	16 / 11
086	8,648	669	713.6	9 / 9
090	9,020	513	716.7	12 / 8
093	9,321	513	718.9	9 / 9
097	9,722	513	723.3	12 / 7
101	10,065	513	727.2	6 / 6
103	10,301	346	730.2	9 / 9
105	10,549	346	731.4	5 / 5
107	10,659	346	733.0	7 / 8
107	10,748	346	734.0	7 / 9
108	10,772	346	736.1	10 / 8
108	10,799	346	742.9	11 / 9
109	10,856	346	745.9	9 / 12
109	10,907	234	747.8	14 / 14
109	10,940	234	748.3	13 / 17
111	11,065	234	756.4	30 / 30
113	11,305	234	756.4	17 / 11
115	11,467	234	756.6	9 / 9
117	11,739	234	762.6	13 / 7
120	11,989	234	770.5	7 / 7
121	12,099	234	773.7	7 / 5
Unnamed Tributary to Adams Creek				
007	742	710	600.6 ¹	30 / 42
011	1,091	710	602.2 ¹	20 / 14
014	1,426	710	605.0	15 / 35
017	1,734	710	607.1	19 / 13
019	1,900	603	608.6	14 / 10
020	2,034	603	609.7	20 / 10
023	2,306	603	611.9	10 / 10
026	2,569	603	614.6	10 / 10
028	2,849	603	617.3	10 / 10
031	3,062	603	619.4	10 / 10
033	3,299	603	622.1	30 / 20
035	3,512	603	624.2	40 / 30
037	3,687	558	625.9	52 / 23
038	3,843	558	627.5	40 / 25
040	4,007	558	630.6	15 / 25
042	4,234	558	633.9	20 / 26
044	4,418	558	636.5	17 / 38
048	4,788	558	642.0	20 / 22

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
Unnamed Tributary to Dutch Buffalo Creek				
015	1,478	3,092	509.7 ¹	134 / 107
019	1,922	3,092	509.7 ¹	80 / 105
025	2,466	3,092	509.7 ¹	75 / 150
030	3,022	3,092	509.7 ¹	172 / 71
034	3,438	3,092	510.5 ¹	33 / 183
041	4,113	3,092	512.2 ¹	333 / 23
044	4,374	3,092	512.5 ¹	241 / 21
047	4,653	3,092	513.6 ¹	213 / 20
052	5,186	3,092	515.9	137 / 16
057	5,733	3,092	518.7	133 / 55
062	6,195	3,092	521.3	36 / 95
067	6,685	3,092	524.9	45 / 85
070	7,047	3,092	527.9	83 / 77
071	7,123	3,092	530.8	80 / 80
075	7,457	3,092	532.2	63 / 33
078	7,761	3,092	534.9	80 / 75
081	8,079	3,092	536.5	63 / 47
082	8,156	3,092	537.7	70 / 50
083	8,287	3,092	538.8	98 / 37
086	8,585	3,092	540.5	122 / 16
087	8,675	3,092	540.9	89 / 25
089	8,919	3,092	543.4	71 / 29
090	9,032	1,516	545.2	52 / 56
092	9,199	1,516	545.6	55 / 55
096	9,587	1,516	549.3	23 / 22
097	9,713	1,516	563.9	23 / 22
100	9,962	1,516	563.9	57 / 113
103	10,319	1,516	564.0	138 / 32
105	10,536	1,516	564.0	118 / 18
110	10,954	1,516	567.8	12 / 28
111	11,122	1,516	570.4	15 / 12
113	11,298	1,516	573.2	12 / 17
114	11,428	1,516	575.7	23 / 34
117	11,691	1,516	578.6	63 / 19
120	11,977	1,516	582.4	71 / 58
124	12,438	962	587.7	87 / 12
127	12,660	962	591.2	17 / 18
128	12,780	962	593.0	14 / 23
130	12,961	962	595.6	20 / 20
132	13,156	962	597.9	20 / 20
135	13,518	962	603.3	15 / 12
137	13,662	962	605.3	12 / 12
138	13,829	962	608.0	24 / 12
140	13,970	962	609.8	17 / 12

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
141	14,115	962	612.0	16 / 12
143	14,324	556	614.4	7 / 12
145	14,459	556	616.2	7 / 7
147	14,718	556	630.6	10 / 10
148	14,816	556	639.5	60 / 64
150	14,996	556	639.6	45 / 45
158	15,791	556	639.8	32 / 31
159	15,936	556	639.9	14 / 13
160	16,015	556	640.4	14 / 13
161	16,074	556	641.5	9 / 9
162	16,181	556	643.2	7 / 7
162	16,217	556	643.9	12 / 12
162	16,249	556	644.6	18 / 12
163	16,286	556	644.8	26 / 13
164	16,358	556	645.5	30 / 13
164	16,416	556	646.8	23 / 17
165	16,510	556	648.6	20 / 20
Unnamed Tributary to Yow Branch				
001	84	348	532.6 ¹	8 / 8
002	236	348	532.6 ¹	10 / 7
005	503	348	535.8	8 / 8
009	853	348	538.5	14 / 16
010	1,032	348	540.2	8 / 7
013	1,288	348	543.7	8 / 6
015	1,520	348	547.2	9 / 7
018	1,757	348	553.0	8 / 6
020	2,015	348	557.8	8 / 6
022	2,239	144	561.3	8 / 6
025	2,461	144	566.0	5 / 4
027	2,734	144	570.4	6 / 5
029	2,925	144	573.0	6 / 5
032	3,192	128	577.9	6 / 5
033	3,345	128	580.3	6 / 5
034	3,440	128	582.4	6 / 5
037	3,656	128	586.1	6 / 5
038	3,783	98	588.4	6 / 5
039	3,901	98	591.0	6 / 6
040	3,973	98	592.7	6 / 4
041	4,116	98	596.4	6 / 5
043	4,267	98	599.6	6 / 5
045	4,452	98	603.2	6 / 4
Water Creek				
002	192	572	586.8 ⁹	11 / 50
004	438	572	586.8 ⁹	67 / 11
007	654	572	586.8 ⁹	47 / 15

Table 17 - Limited Detailed Flood Hazard Data

Cross Section	Stream Station	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)	Non-Encroachment Width (feet) Left/Right from Stream Centerline
008	780	572	590.1	47 / 15
011	1,053	572	590.1	16 / 16
012	1,248	572	591.8	17 / 15
014	1,368	572	592.6	58 / 10
015	1,489	572	595.0	33 / 56
016	1,588	572	595.4	18 / 19
017	1,664	572	595.5	12 / 12
018	1,846	572	597.2	8 / 25
020	2,042	572	599.9	18 / 12
022	2,249	572	603.2	13 / 15
024	2,397	572	603.8	11 / 8
025	2,531	490	605.7	12 / 11
026	2,628	490	607.2	10 / 25
028	2,826	490	610.4	7 / 70
033	3,278	490	613.2	7 / 89
035	3,541	490	616.5	10 / 40
038	3,798	490	619.4	12 / 45
040	3,994	490	620.5	19 / 12
042	4,159	490	623.4	22 / 12
043	4,326	490	624.4	8 / 11
Yow Branch				
034	3,375	674	510.9 ¹	15 / 17
037	3,721	674	510.9 ¹	17 / 23
040	4,026	674	510.9 ¹	10 / 10
043	4,308	674	512.3	20 / 35
047	4,688	674	514.6	29 / 10
048	4,829	617	515.3	13 / 10
049	4,937	617	516.4	32 / 11
050	4,985	617	516.4	32 / 12
051	5,098	617	518.0	9 / 22
053	5,286	617	519.4	9 / 11
056	5,573	617	522.1	9 / 33
058	5,817	617	523.8	18 / 9
061	6,073	617	526.9	9 / 9
064	6,400	260	530.4	11 / 35
067	6,673	260	534.0	9 / 9
071	7,123	260	540.2	10 / 23
075	7,460	260	543.3	7 / 7
078	7,763	36	546.9	9 / 6
081	8,085	36	558.0	3 / 3
083	8,284	36	567.2	18 / 8
084	8,351	36	570.7	9 / 9
084	8,409	36	573.2	8 / 6
085	8,477	36	575.7	3 / 4
085	8,540	18	578.7	7 / 7

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
086	8,605	18	581.9	8 / 4
087	8,673	18	584.9	3 / 3
087	8,732	18	588.8	16 / 7
088	8,802	18	591.2	3 / 3
088	8,848	18	593.0	3 / 3
090	8,990	18	607.0	20 / 8
092	9,153	18	607.2	80 / 79
093	9,296	18	608.2	18 / 16

¹Elevation includes backwater effects

²Flooding Controlled by Irish Buffalo Creek

³Flooding Controlled by Rocky River

⁴Flooding controlled by Rocky River

⁵Flooding Controlled by Cold Water Creek

⁶Flooding controlled by Unnamed Tributary 2 to Adams Creek

⁷Flooding Controlled by Rogers Lake Branch

⁸Flooding controlled by Reedy Creek Tributary 1

⁹Flooding Controlled by Little Cold Water Creek

5.3 Coastal Analyses

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

6.0 Mapping Methods

6.1 Vertical and Horizontal Control

Vertical Datum

All FISs are referenced to a specific vertical datum. The vertical datum provides a starting point against which flood, ground, and structure elevations can be referenced and compared. With the finalization of the North American Vertical Datum of 1988 (NAVD 88), all North Carolina FISs have been prepared using NAVD 88 as the referenced vertical datum.

All flood elevations shown on the FIRM for Cabarrus 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 Cabarrus County is # feet. The locations used to establish the conversion factor were USGS quadrangle corners that fell within the county, as well as those that were within 2.5 miles outside the county. The benchmarks are referenced to NAVD 88. Table 21, “Datum Conversion Locations and Values,” is shown below.

Table 21, “Datum Conversion Locations and Values.”

Table 21 - Datum Conversion Locations and Values

Latitude	Longitude	Conversion from NGVD29 to NAVD88 (feet)
35.50	-80.75	-0.74
35.50	-80.75	-0.74
35.50	-80.63	-0.77
35.50	-80.63	-0.77
35.50	-80.50	-0.80
35.50	-80.50	-0.80
35.50	-80.38	-0.80
35.50	-80.38	-0.80
35.38	-80.62	-0.85
35.38	-80.62	-0.85
35.37	-80.50	-0.84
35.37	-80.50	-0.84
35.25	-80.62	-0.78
35.25	-80.62	-0.78
35.25	-80.50	-0.85
35.25	-80.50	-0.85
Average conversion in Cabarrus County from NGVD 29 to NAVD 88 = -0.80 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 Cabarrus County that are cataloged by the National Geodetic Survey (NGS) and entered into the National Spatial Reference System (NSRS) as First or Second Order Vertical, with a vertical stability classification of A, B, or C, are shown and labeled on the FIRM with their 6-character NSRS Permanent Identifier (PID).

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

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

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

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

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

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

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

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

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

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

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

Horizontal Datum and Control

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

6.2 Base Map

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

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

As part of the North Carolina CTS Initiative, North Carolina digital FIRM panel numbers are consistent with the North Carolina Land

Records Management Program (LRMP).

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

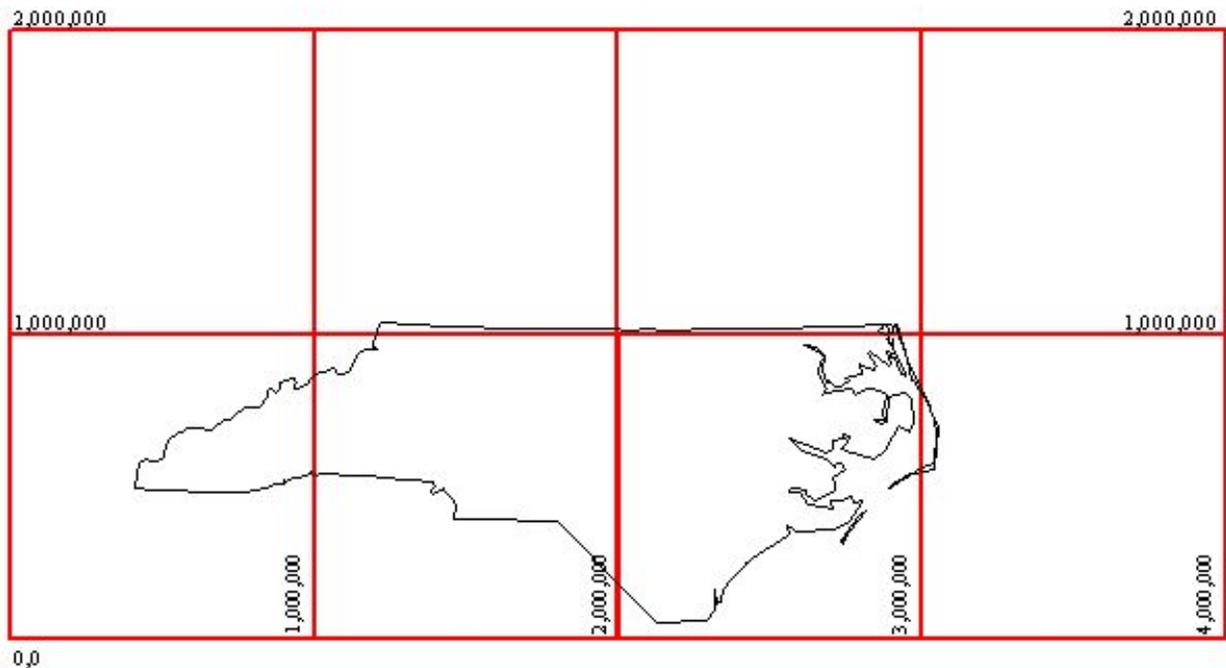


Figure 3 - North Carolina's State Plane Coordinate System

6.3 Floodplain and Floodway Delineation

Floodplain Boundaries

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

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

The 1% annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones VE, AO, AH, A99, AR, A, and AE), and the 0.2% annual chance floodplain boundary corresponds to the boundary of areas of moderate flood

hazards. In cases where the 1% and 0.2% annual chance floodplain boundaries are close together, only the 1% annual chance floodplain boundaries have been shown.

Floodway Delineation

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

Table 22 - Floodway Data

Floodway Source		Floodway			Water Surface Elevation			
Cross Section	Distance (Feet Above Mouth)	Width (Feet)	Section Area (Square Feet)	Mean Velocity (Feet Per Second)	Regulatory	Without Floodway	With Floodway	Increase
Adams Creek								
013	1,319	583	2,749	2.3	517.7 ¹	513.2	514.0	0.8
026	2,594	177	975	6.5	517.7 ¹	515.3	516.3	1.0
039	3,934	74	804	7.9	520.5	520.5	521.5	1.0
063	6,275	220	1,483	4.3	529.4	529.4	529.9	0.5
079	7,936	105	1,002	6.3	534.8	534.8	535.4	0.6
096	9,647	125	981	6.5	541.3	541.3	541.8	0.5
108	10,849	114	1,029	6.1	544.3	544.3	545.1	0.8
119	11,920	118	1,046	6.0	547.8	547.8	548.2	0.4
139	13,857	166	1,078	5.5	558.3	558.3	559.0	0.6
152	15,182	85	752	7.9	570.5	570.5	571.3	0.9
167	16,677	113	1,151	5.2	579.0	579.0	579.9	0.9
178	17,833	180	1,614	3.6	581.4	581.4	582.0	0.6
200	19,977	70	576	6.2	584.8	584.8	585.6	0.8
216	21,645	185	1,107	3.2	591.3	591.3	591.8	0.6
234	23,425	175	943	3.8	594.8	594.8	595.3	0.4
253	25,257	123	1,199	2.9	600.2	600.2	600.6	0.5
260	26,020	190	1,141	3.1	600.7	600.7	601.6	0.8
278	27,784	360	2,690	1.2	606.6	606.6	607.2	0.6
296	29,599	260	1,349	2.3	608.4	608.4	609.4	1.0
313	31,320	400	1,622	1.7	611.4	611.4	612.3	0.9
339	33,938	160	671	4.2	618.7	618.7	619.2	0.4
353	35,327	110	533	4.7	622.6	622.6	623.3	0.7
363	36,332	80	590	3.8	627.6	627.6	628.1	0.5
377	37,654	120	534	4.2	630.8	630.8	631.7	0.9
Afton Run								
005	478	190	779	3.4	601.3 ¹	597.4	598.4	1.0
009	886	219	902	2.9	601.3 ¹	598.7	599.6	0.9
015	1,504	62	321	8.2	601.3 ¹	601.2	601.8	0.6
020	1,964	68	526	5.0	604.3	604.3	604.9	0.6
026	2,569	100	776	3.4	606.9	606.9	607.4	0.5
035	3,469	103	755	3.5	608.4	608.4	609.1	0.6
041	4,069	59	626	3.9	609.7	609.7	610.5	0.8
048	4,799	150	928	2.6	611.4	611.4	612.2	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
053	5,295	70	505	4.8	612.2	612.2	612.8	0.6
061	6,064	182	1,387	1.8	615.9	615.9	616.3	0.4
072	7,157	195	748	2.7	616.9	616.9	617.5	0.6
081	8,125	149	579	3.4	618.9	618.9	619.8	1.0
085	8,529	159	743	2.7	620.9	620.9	621.8	0.9
093	9,332	150	625	3.2	622.6	622.6	623.3	0.8
109	10,896	299	1,255	1.5	627.0	627.0	627.9	0.9
119	11,860	190	1,307	1.2	634.0	634.0	634.2	0.2
129	12,920	200	952	1.7	634.4	634.4	635.1	0.7
145	14,511	146	557	2.8	639.1	639.1	640.1	1.0
153	15,262	250	902	1.5	642.1	642.1	642.6	0.5
160	15,986	280	1,555	0.9	645.9	645.9	646.0	0.1
174	17,395	182	644	1.8	647.0	647.0	647.8	0.9
183	18,308	220	945	1.2	650.8	650.8	651.8	1.0
196	19,627	190	569	2.1	656.8	656.8	657.6	0.8
208	20,802	242	824	1.3	662.5	662.5	663.0	0.5
215	21,535	298	1,191	0.9	666.5	666.5	666.6	0.0
221	22,132	161	452	1.9	668.6	668.6	669.2	0.6
226	22,647	139	416	2.1	670.8	670.8	671.7	1.0
236	23,628	120	280	3.1	675.0	675.0	675.7	0.6
245	24,502	111	182	4.8	680.0	680.0	680.4	0.5
254	25,410	65	164	5.3	685.5	685.5	685.8	0.3
260	26,012	41	186	4.7	690.1	690.1	690.4	0.3
267	26,698	36	158	5.1	694.8	694.8	695.3	0.5
274	27,419	38	134	6.0	699.8	699.8	699.9	0.0
283	28,259	38	140	5.7	705.8	705.8	706.0	0.2
288	28,806	23	112	7.2	710.0	710.0	710.2	0.2
Anderson Creek								
020	1,987	289	2,558	1.9	502.6 ¹	485.5	486.1	0.6
057	5,693	228	1,799	2.7	502.6 ¹	489.5	490.2	0.6
084	8,410	400	3,290	1.5	502.6 ¹	495.7	496.7	1.0
121	12,126	300	1,839	2.6	502.6 ¹	501.7	502.7	0.9
135	13,543	217	1,482	3.3	505.3	505.3	506.2	0.9
151	15,061	405	2,120	2.3	507.7	507.7	508.4	0.7
168	16,793	405	1,794	2.7	510.6	510.6	511.6	1.0
185	18,468	164	986	4.8	516.4	516.4	517.1	0.6
198	19,760	169	991	3.3	518.7	518.7	519.5	0.8
206	20,593	122	693	4.7	520.6	520.6	521.2	0.5
213	21,278	137	825	4.0	524.1	524.1	524.6	0.5
220	22,011	220	1,347	2.4	526.9	526.9	527.6	0.7
232	23,169	244	933	2.2	529.0	529.0	529.7	0.7
244	24,415	148	580	3.6	533.6	533.6	534.2	0.6
251	25,146	66	362	5.8	535.8	535.8	536.6	0.8
260	26,042	80	355	6.0	539.9	539.9	540.5	0.6
266	26,567	60	356	5.9	543.2	543.2	543.9	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
270	27,009	80	431	4.9	544.9	544.9	545.6	0.7
274	27,444	107	452	4.7	546.8	546.8	547.4	0.6
278	27,779	58	315	6.7	547.8	547.8	548.6	0.9
283	28,325	93	465	4.6	550.8	550.8	551.7	0.9
291	29,131	194	716	3.0	555.1	555.1	556.0	0.9
298	29,806	60	336	6.3	558.1	558.1	558.7	0.6
302	30,176	160	822	2.6	560.2	560.2	561.0	0.7
312	31,188	120	544	3.9	562.6	562.6	563.6	1.0
320	31,963	87	421	5.0	565.7	565.7	566.3	0.6
324	32,351	140	1,105	1.9	571.6	571.6	571.9	0.4
327	32,654	258	1,624	1.3	571.7	571.7	572.2	0.5
337	33,666	90	464	4.5	573.6	573.6	574.1	0.4
345	34,498	144	666	1.4	576.7	576.7	577.3	0.6
351	35,084	30	154	5.8	577.9	577.9	578.4	0.4
358	35,841	40	168	5.3	582.9	582.9	583.4	0.5
366	36,574	40	152	5.4	587.2	587.2	587.8	0.6
370	36,997	62	352	2.3	594.1	594.1	595.1	1.0
375	37,549	29	118	4.2	596.0	596.0	596.6	0.6
381	38,063	36	98	5.1	599.8	599.8	600.3	0.5
384	38,389	36	117	3.6	602.8	602.8	603.2	0.5
386	38,607	50	197	2.1	607.0	607.0	607.7	0.8
391	39,126	31	85	5.0	609.8	609.8	610.2	0.4
394	39,403	19	46	7.4	612.6	612.6	612.6	0.0
Anderson Creek Tributary 1								
001	124	35	180	3.5	575.9 ¹	573.6	573.6	0.0
002	188	23	97	6.5	575.9 ¹	573.6	573.6	0.0
004	420	70	376	1.7	577.4	577.4	578.2	0.8
007	674	47	347	1.8	581.4	581.4	582.1	0.6
016	1,574	26	134	4.7	582.8	582.8	583.4	0.5
021	2,105	26	102	6.1	587.4	587.4	587.7	0.3
029	2,934	21	112	5.0	592.3	592.3	592.8	0.5
035	3,456	21	98	5.8	595.4	595.4	595.8	0.4
040	3,979	21	112	4.8	599.8	599.8	600.6	0.8
046	4,614	23	104	5.2	604.7	604.7	605.0	0.4
053	5,298	21	82	6.6	611.3	611.3	611.5	0.2
Back Creek								
009	861	423	2,229	1.9	542.5 ¹	531.2	532.1	0.9
023	2,311	433	2,088	2.0	542.5 ¹	533.0	533.7	0.8
038	3,843	224	1,456	2.9	542.5 ¹	536.0	536.6	0.6
055	5,464	550	2,672	1.6	542.5 ¹	538.4	539.1	0.7
079	7,859	400	1,786	2.3	542.5 ¹	541.0	541.8	0.8
096	9,599	458	1,515	2.8	542.9	542.9	543.7	0.8
106	10,582	250	1,447	2.9	547.0	547.0	547.6	0.6
114	11,399	250	1,532	2.7	549.0	549.0	549.4	0.4
123	12,324	181	1,045	4.0	551.1	551.1	551.3	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
137	13,703	191	1,403	3.0	554.4	554.4	555.2	0.8
145	14,458	380	2,041	2.0	555.8	555.8	556.5	0.7
160	15,960	400	1,993	2.1	558.8	558.8	559.2	0.4
181	18,091	300	1,297	2.5	562.0	562.0	562.6	0.6
189	18,934	190	1,063	3.0	564.4	564.4	565.2	0.8
201	20,053	353	1,743	1.8	566.5	566.5	567.4	0.8
207	20,688	220	1,248	2.6	567.7	567.7	568.5	0.8
218	21,795	388	2,008	1.6	569.6	569.6	570.5	0.9
229	22,900	300	1,416	2.2	571.9	571.9	572.7	0.8
245	24,469	245	1,194	2.7	575.8	575.8	576.5	0.7
255	25,517	323	2,045	1.6	579.2	579.2	579.8	0.5
267	26,726	280	1,575	2.0	580.8	580.8	581.3	0.5
274	27,372	223	1,082	2.9	581.7	581.7	582.4	0.7
281	28,089	350	2,302	1.4	584.3	584.3	585.0	0.7
293	29,265	330	1,733	1.8	585.2	585.2	586.1	0.9
303	30,346	200	915	3.5	587.8	587.8	588.7	0.9
317	31,740	310	1,529	2.1	592.3	592.3	593.1	0.8
327	32,681	235	1,187	2.7	594.6	594.6	595.0	0.5
334	33,431	270	1,443	2.2	597.1	597.1	597.4	0.3
344	34,360	345	1,611	2.0	599.4	599.4	599.6	0.2
350	35,027	290	1,166	2.6	600.9	600.9	601.1	0.2
358	35,806	453	2,606	1.2	606.6	606.6	607.3	0.7
369	36,923	300	1,543	2.0	607.1	607.1	607.7	0.6
373	37,333	315	1,523	2.0	608.0	608.0	608.4	0.4
379	37,895	165	779	3.9	610.2	610.2	610.3	0.1
385	38,528	105	716	5.0	613.6	613.6	613.6	0.1
Baker Branch								
001	105	50	183	9.3	688.8 ¹	682.3	682.3	0.0
003	275	50	229	7.4	688.8 ¹	683.9	683.9	0.0
010	1,000	240	298	5.7	688.8 ¹	687.8	687.8	0.0
021	2,050	60	322	5.3	691.6	691.6	691.7	0.1
032	3,225	80	226	7.3	696.8	696.8	696.8	0.0
034	3,396	80	222	7.4	698.8	698.8	698.8	0.0
046	4,600	265	273	6.0	707.5	707.5	707.5	0.0
048	4,775	265	296	5.5	709.7	709.7	709.8	0.1
062	6,175	100	215	5.6	717.4	717.4	717.4	0.0
Beaver Creek								
009	875	255	512	4.4	653.3 ¹	650.5	650.5	0.0
011	1,093	165	691	3.2	653.3 ¹	653.1	653.4	0.3
036	3,565	360 ²	520	4.0	662.2	662.2	662.2	0.0
Caldwell Creek								
005	473	184	718	3.2	541.7 ¹	538.0	538.8	0.7
013	1,309	93	610	3.8	541.7 ¹	539.6	540.3	0.7
019	1,946	146	679	3.4	543.3	543.3	543.7	0.4
026	2,588	135	584	3.9	545.9	545.9	546.3	0.5

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
035	3,483	225	1,027	2.2	553.1	553.1	553.2	0.0
046	4,648	185	644	3.5	555.7	555.7	556.0	0.4
056	5,625	98	576	4.0	559.7	559.7	560.0	0.3
060	5,996	62	473	4.8	560.7	560.7	561.0	0.3
073	7,333	77	491	4.7	564.2	564.2	564.7	0.4
083	8,290	93	547	4.2	566.9	566.9	567.4	0.5
089	8,872	63	423	5.4	568.3	568.3	568.9	0.6
099	9,917	74	459	5.0	571.0	571.0	571.7	0.7
108	10,823	130	651	3.5	573.4	573.4	574.0	0.6
120	11,996	158	663	3.4	575.8	575.8	576.6	0.7
132	13,241	275	1,160	2.0	579.0	579.0	579.8	0.8
145	14,520	350	1,313	1.7	581.4	581.4	582.0	0.6
161	16,072	105	424	5.3	585.1	585.1	585.5	0.4
171	17,118	176	807	2.8	588.1	588.1	588.8	0.8
179	17,880	250	1,250	1.8	590.4	590.4	591.0	0.5
186	18,601	235	1,016	1.8	591.4	591.4	592.3	0.8
193	19,264	164	864	2.2	593.4	593.4	594.1	0.8
197	19,739	200	837	2.2	594.3	594.3	595.3	1.0
207	20,723	156	764	2.4	596.9	596.9	597.9	1.0
216	21,598	239	1,078	1.7	598.3	598.3	599.1	0.9
224	22,386	181	730	2.6	599.9	599.9	600.5	0.6
236	23,600	196	786	2.5	602.6	602.6	603.4	0.8
244	24,397	290	1,392	1.4	606.0	606.0	606.6	0.6
257	25,652	327	1,278	1.5	608.0	608.0	608.9	0.9
272	27,169	296	833	2.1	611.4	611.4	612.4	1.0
281	28,101	249	857	2.1	614.9	614.9	615.6	0.7
293	29,312	172	413	3.2	617.5	617.5	618.1	0.6
306	30,558	85	227	4.4	621.1	621.1	621.8	0.8
315	31,452	255	618	1.6	625.2	625.2	626.1	0.9
Caldwell Creek Tributary								
005	484	200	921	0.7	592.0	592.0	592.2	0.1
011	1,053	75	240	2.5	592.8	592.8	593.4	0.6
018	1,756	75	216	2.8	596.8	596.8	597.3	0.5
024	2,421	40	96	6.3	607.6	607.6	607.8	0.2
028	2,773	45	136	4.2	612.3	612.3	612.7	0.4
036	3,600	26	77	6.2	618.8	618.8	619.2	0.4
046	4,612	36	86	4.7	630.8	630.8	631.0	0.2
053	5,262	50	107	3.8	636.7	636.7	637.1	0.4
059	5,883	31	86	3.6	643.4	643.4	644.0	0.5
065	6,452	72	147	2.1	651.0	651.0	651.4	0.4
067	6,700	19	47	6.3	653.9	653.9	653.9	0.0
071	7,056	173	1,135	0.3	664.3	664.3	664.3	0.0
074	7,406	50	149	1.8	666.0	666.0	666.2	0.2
077	7,737	50	107	2.5	667.7	667.7	667.9	0.3
082	8,197	13	38	4.0	672.9	672.9	673.2	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
Chambers Branch								
003	343	60	296	7.2	600.4 ¹	596.5	597.0	0.4
009	906	48	300	7.1	602.0	602.0	602.5	0.5
014	1,419	49	319	6.7	608.4	608.4	608.4	0.0
017	1,726	51	254	8.4	611.0	611.0	611.4	0.4
020	2,046	42	260	8.2	615.4	615.4	616.4	1.0
026	2,575	54	531	4.0	624.9	624.9	624.9	0.0
029	2,937	59	273	7.8	626.1	626.1	626.3	0.2
032	3,155	38	258	8.3	629.6	629.6	629.6	0.0
035	3,533	163	402	5.3	632.9	632.9	632.9	0.0
039	3,923	64	329	6.4	635.8	635.8	636.0	0.2
044	4,357	563	9,567	0.2	664.8	664.8	664.8	0.0
052	5,163	848	11,958	0.4	664.8	664.8	664.8	0.0
063	6,323	204	2,469	1.1	665.2	665.2	665.2	0.0
079	7,869	515	1,662	1.6	665.2	665.2	665.2	0.0
098	9,822	185	1,153	2.2	676.1	676.1	677.1	1.0
113	11,252	195	1,072	2.3	680.9	680.9	681.8	1.0
122	12,242	165	643	3.3	684.8	684.8	685.8	1.0
124	12,382	110	885	2.4	689.5	689.5	690.3	0.8
139	13,856	45	217	9.0	694.7	694.7	695.1	0.4
143	14,349	50	365	4.5	698.9	698.9	699.6	0.7
147	14,673	39	291	5.7	704.2	704.2	704.5	0.3
150	15,018	48	339	4.9	706.7	706.7	706.7	0.0
156	15,571	70	456	2.5	711.6	711.6	711.7	0.1
160	15,960	29	173	5.2	711.9	711.9	712.2	0.3
165	16,522	42	180	5.0	716.4	716.4	716.4	0.0
Clarke Creek								
007	745	682	5,768	1.4	606.1 ¹	598.5	599.4	0.9
018	1,827	550	5,869	1.4	606.1 ¹	601.8	602.8	1.0
040	4,027	580	5,242	1.6	606.1 ¹	602.8	603.8	1.0
063	6,269	840	5,912	1.4	606.1 ¹	603.9	604.7	0.8
082	8,218	595	3,878	2.1	606.7	606.7	607.4	0.6
099	9,948	425	2,674	3.0	608.0	608.0	608.7	0.7
108	10,770	725	4,966	1.6	609.9	609.9	610.6	0.6
122	12,188	465	4,066	2.1	613.8	613.8	614.6	0.7
138	13,770	465	4,295	2.0	617.4	617.4	618.2	0.8
147	14,661	290	2,789	3.0	618.4	618.4	619.3	1.0
154	15,405	213	2,156	3.9	620.3	620.3	621.1	0.8
165	16,460	430	4,210	2.0	622.4	622.4	623.3	0.8
172	17,208	356	3,798	2.2	623.1	623.1	623.9	0.8
179	17,918	186	1,958	4.3	623.8	623.8	624.7	0.9
191	19,131	530	6,041	1.4	626.3	626.3	626.9	0.6
Clarke Creek Tributary								
013	1,311	180	836	4.4	606.1 ¹	603.8	604.5	0.6
017	1,651	115	756	4.8	606.7	606.7	607.5	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
024	2,377	80	496	3.6	609.5	609.5	610.1	0.6
031	3,073	38	234	7.6	614.0	614.0	614.2	0.2
039	3,873	140	458	3.9	622.2	622.2	622.2	0.0
042	4,153	60	248	7.2	624.7	624.7	624.8	0.1
Clear Creek								
174	17,398	621	2,139	1.9	486.3	486.3	487.1	0.8
183	18,304	179	754	5.4	487.6	487.6	488.2	0.5
190	18,981	240	994	4.1	489.7	489.7	490.3	0.6
196	19,598	180	1,026	4.0	491.2	491.2	492.0	0.8
203	20,260	250	1,267	3.2	493.1	493.1	494.0	0.9
210	20,985	114	697	5.8	494.8	494.8	495.7	0.9
222	22,241	183	1,237	3.3	498.8	498.8	499.5	0.8
234	23,441	330	2,091	1.9	502.6	502.6	503.2	0.5
251	25,136	216	1,012	3.9	508.7	508.7	509.0	0.3
265	26,505	268	1,137	3.5	512.0	512.0	512.7	0.7
276	27,611	194	829	4.8	515.8	515.8	516.3	0.5
289	28,939	78	584	6.7	521.0	521.0	521.3	0.3
296	29,631	67	527	7.5	523.4	523.4	524.1	0.6
303	30,317	140	589	6.7	526.7	526.7	527.1	0.4
314	31,413	80	624	6.3	531.3	531.3	531.4	0.1
321	32,063	45	286	10.6	532.8	532.8	532.8	0.0
Coddle Creek								
013	1,280	350	2,857	2.5	544.4 ¹	536.5	537.4	0.9
036	3,621	450	3,343	2.2	544.4 ¹	538.3	539.3	1.0
058	5,791	425	3,190	2.2	544.4 ¹	541.2	542.2	1.0
077	7,727	205	1,867	3.8	544.4 ¹	543.1	544.1	1.0
090	9,004	345	2,590	2.8	544.8	544.8	545.7	0.9
106	10,640	209	2,295	3.1	547.6	547.6	548.3	0.6
117	11,668	110	1,496	4.8	549.2	549.2	549.3	0.0
144	14,430	165	1,880	3.8	550.9	550.9	551.6	0.6
156	15,562	130	1,776	4.0	551.8	551.8	552.7	0.9
166	16,605	135	1,784	4.0	552.4	552.4	553.4	1.0
176	17,643	120	1,581	4.6	553.5	553.5	554.5	0.9
185	18,479	140	1,710	4.2	554.6	554.6	555.6	0.9
195	19,494	245	2,281	3.2	555.7	555.7	556.6	0.9
213	21,312	310	2,027	3.6	557.4	557.4	558.4	1.0
232	23,226	260	1,990	3.7	559.0	559.0	560.0	1.0
249	24,898	125	1,525	4.9	562.0	562.0	562.9	0.9
262	26,199	180	2,076	3.6	563.6	563.6	564.4	0.8
272	27,216	140	1,691	4.3	564.5	564.5	565.5	1.0
283	28,288	125	1,618	4.5	566.6	566.6	566.8	0.3
291	29,144	195	2,206	3.3	568.0	568.0	568.6	0.6
308	30,819	280	2,747	2.7	569.1	569.1	570.0	0.9
321	32,102	300	3,064	2.4	570.2	570.2	571.0	0.9
333	33,260	310	3,130	2.3	570.7	570.7	571.6	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
364	36,372	440	3,741	2.0	572.8	572.8	573.7	0.9
372	37,155	430	3,625	2.0	573.2	573.2	574.1	1.0
401	40,068	185	1,766	4.1	576.3	576.3	577.1	0.8
414	41,420	230	2,273	3.2	578.0	578.0	579.0	1.0
439	43,891	320	2,738	2.6	580.4	580.4	581.3	0.9
456	45,557	155	1,765	4.1	583.5	583.5	584.3	0.8
465	46,488	295	2,449	2.9	584.5	584.5	585.3	0.8
477	47,748	420	3,217	2.2	585.4	585.4	586.3	0.9
492	49,219	200	1,806	4.0	587.2	587.2	588.2	0.9
503	50,282	145	1,612	4.5	588.5	588.5	589.4	0.9
515	51,522	210	2,353	3.1	590.3	590.3	591.2	0.9
539	53,942	145	1,660	4.4	592.2	592.2	593.2	1.0
559	55,936	230	2,411	3.0	595.1	595.1	595.5	0.5
569	56,925	410	3,526	2.1	595.6	595.6	596.3	0.7
580	58,022	585	4,562	1.6	595.9	595.9	596.8	0.9
594	59,351	330	2,277	3.2	596.2	596.2	597.2	0.9
606	60,630	215	1,754	4.2	598.8	598.8	599.4	0.6
618	61,805	182	1,949	3.4	601.1	601.1	601.7	0.6
633	63,330	320	2,241	3.0	602.3	602.3	603.0	0.7
647	64,742	190	1,964	3.4	606.2	606.2	606.4	0.2
662	66,158	115	1,306	5.1	607.9	607.9	608.7	0.8
673	67,281	245	2,460	2.7	609.4	609.4	610.4	0.9
681	68,134	230	2,375	2.8	610.2	610.2	611.1	0.9
695	69,508	265	2,633	2.5	611.0	611.0	612.0	1.0
705	70,470	400	3,612	1.9	611.5	611.5	612.4	1.0
719	71,872	345	2,996	2.2	612.3	612.3	613.2	0.9
735	73,475	650	5,264	1.3	613.4	613.4	614.4	0.9
749	74,919	585	3,523	1.9	614.0	614.0	614.9	0.9
762	76,196	250	1,861	3.6	616.1	616.1	617.1	1.0
774	77,410	122	1,542	4.4	618.0	618.0	618.8	0.8
799	79,916	4,457	91,244	0.1	650.2	650.2	650.2	0.0
832	83,242	3,952	70,697	0.1	650.2	650.2	650.2	0.0
859	85,899	1,912	30,644	0.2	650.2	650.2	650.2	0.0
887	88,654	2,112	28,762	0.2	650.2	650.2	650.2	0.0
911	91,120	1,492	17,798	0.4	650.2	650.2	650.2	0.0
932	93,180	1,397	14,382	0.4	650.2	650.2	650.2	0.0
945	94,516	983	5,452	1.0	650.2	650.2	650.2	0.0
958	95,782	318	1,550	3.7	651.6	651.6	651.6	0.0
967	96,749	215	1,158	5.0	652.1	652.1	652.1	0.0
976	97,608	220	1,434	4.0	654.3	654.3	654.6	0.3
984	98,397	311	2,336	2.4	656.4	656.4	657.0	0.6
992	99,228	195	1,537	3.7	657.2	657.2	658.2	1.0
1003	100,261	200	1,725	3.3	659.7	659.7	660.6	0.9
1013	101,270	82	1,004	5.7	661.0	661.0	662.0	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
1021	102,103	103	1,062	5.4	662.7	662.7	663.7	1.0
1030	102,964	193	1,820	3.2	665.1	665.1	666.1	1.0
1040	104,000	300	1,967	2.9	666.3	666.3	667.3	1.0
1052	105,175	140	1,311	4.4	668.5	668.5	669.0	0.5
1063	106,274	215	1,919	3.0	670.3	670.3	671.2	1.0
1072	107,245	365	2,916	2.0	671.3	671.3	672.3	1.0
1081	108,115	300	2,578	2.2	673.6	673.6	674.3	0.6
Coddle Creek Tributary 2								
008	767	52	212	6.2	544.4 ¹	540.0	540.3	0.4
011	1,092	80	505	2.6	545.7	545.7	546.6	0.9
015	1,549	87	393	3.3	546.2	546.2	547.2	1.0
019	1,910	100	341	3.9	547.6	547.6	548.5	0.9
023	2,274	60	393	3.4	551.4	551.4	551.5	0.1
024	2,395	60	355	3.8	551.7	551.7	552.0	0.3
Cold Water Creek								
004	357	1,040	8,151	2.3	527.7 ¹	514.3	515.2	0.8
031	3,080	606	4,640	4.1	527.7 ¹	518.8	519.5	0.8
048	4,836	550	5,018	2.3	527.7 ¹	520.9	521.8	0.9
071	7,089	398	3,282	3.6	527.7 ¹	522.7	523.6	0.9
088	8,768	300	3,041	3.8	527.7 ¹	527.4	528.1	0.7
100	10,039	384	4,003	2.9	529.3 ¹	529.3	530.1	0.8
112	11,172	489	4,646	2.5	531.1 ¹	531.0	532.0	0.9
127	12,671	290	2,768	4.2	532.8	532.8	533.6	0.9
138	13,790	417	4,136	2.8	534.4	534.4	535.3	1.0
160	15,952	406	3,477	3.4	536.0	536.0	536.9	0.9
175	17,470	187	1,882	6.2	539.4	539.4	539.7	0.3
185	18,456	250	2,625	4.4	541.2	541.2	542.1	0.9
193	19,283	225	2,668	4.4	543.6	543.6	544.3	0.7
204	20,402	390	5,074	2.3	546.3	546.3	547.1	0.8
221	22,084	240	3,253	3.5	547.9	547.9	548.8	0.9
230	22,983	430	5,766	2.0	548.8	548.8	549.7	1.0
241	24,093	427	5,404	2.1	549.1	549.1	550.1	0.9
250	25,007	430	5,234	2.2	549.6	549.6	550.5	0.9
257	25,695	300	4,039	2.8	551.3	551.3	551.9	0.6
266	26,567	373	4,659	2.5	551.8	551.8	552.5	0.7
273	27,348	256	3,270	3.5	552.3	552.3	553.1	0.8
279	27,948	350	4,028	2.8	552.9	552.9	553.6	0.8
288	28,798	454	5,193	1.8	553.6	553.6	554.4	0.8
302	30,232	410	4,354	2.1	554.2	554.2	555.0	0.8
310	31,035	299	3,080	3.0	554.8	554.8	555.7	0.8
317	31,694	322	3,643	2.5	556.6	556.6	557.3	0.8
325	32,494	305	3,408	2.7	557.1	557.1	557.9	0.9
331	33,102	233	2,732	3.4	557.5	557.5	558.4	0.8
336	33,649	182	2,146	4.3	558.2	558.2	559.0	0.8
352	35,175	555	5,009	1.8	559.7	559.7	560.5	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
367	36,735	408	4,116	2.0	560.2	560.2	561.2	1.0
378	37,780	460	4,312	1.9	560.9	560.9	561.9	1.0
392	39,207	539	4,933	1.6	562.1	562.1	563.0	0.9
401	40,083	323	2,694	3.0	562.8	562.8	563.7	0.8
411	41,052	577	5,044	1.6	564.0	564.0	564.8	0.9
423	42,276	980	7,770	1.0	564.6	564.6	565.5	0.9
435	43,549	595	6,219	1.3	568.5	568.5	569.0	0.5
444	44,413	774	7,373	1.1	568.6	568.6	569.2	0.7
455	45,482	631	5,151	1.6	568.9	568.9	569.6	0.8
467	46,718	583	4,172	2.0	569.8	569.8	570.6	0.8
483	48,318	520	4,222	2.0	573.4	573.4	573.5	0.1
502	50,201	640	5,003	1.7	574.0	574.0	574.9	0.9
533	53,344	1,050	5,040	1.6	576.3	576.3	577.1	0.8
553	55,322	712	2,706	3.1	579.6	579.6	580.3	0.7
567	56,682	580	3,577	2.4	584.6	584.6	585.3	0.7
581	58,147	390	2,660	3.1	586.8	586.8	587.6	0.9
604	60,443	565	2,609	3.1	589.2	589.2	590.1	0.9
626	62,570	360	1,884	4.3	593.9	593.9	594.6	0.7
643	64,302	200	1,082	7.4	597.5	597.5	598.2	0.7
652	65,203	235	1,545	4.1	601.2	601.2	602.2	1.0
659	65,901	205	1,265	5.0	603.2	603.2	604.1	0.9
671	67,101	90	1,132	5.6	608.7	608.7	609.5	0.8
681	68,135	97	954	6.6	613.7	613.7	614.5	0.8
689	68,935	87	1,071	5.9	617.1	617.1	617.4	0.3
709	70,928	450	9,580	0.6	651.3	651.3	651.3	0.0
729	72,930	764	13,608	0.8	651.5	651.5	651.5	0.0
747	74,749	1,388	18,645	0.6	651.6	651.6	651.5	0.0
768	76,844	311	5,215	2.0	651.9	651.9	651.9	0.0
777	77,672	1,239	13,634	0.8	652.0	652.0	652.0	0.0
Common Ford Branch								
015	1,488	195	531	3.9	574.8 ¹	573.8	574.8	0.9
021	2,059	155	749	2.8	579.3	579.3	580.0	0.7
029	2,926	120	529	4.0	580.7	580.7	581.3	0.6
037	3,729	46	355	5.3	582.8	582.8	583.3	0.5
043	4,300	39	296	6.4	585.0	585.0	585.2	0.2
046	4,571	70	481	3.9	590.7	590.7	590.8	0.0
055	5,500	80	369	4.2	591.8	591.8	592.2	0.4
062	6,187	110	753	2.0	599.3	599.3	599.8	0.5
069	6,936	100	360	4.0	600.5	600.5	601.3	0.8
077	7,678	160	510	2.8	604.0	604.0	604.9	0.9
087	8,661	150	515	2.8	609.0	609.0	609.9	0.9
092	9,153	140	431	2.8	610.6	610.6	611.4	0.9
095	9,501	71	442	2.8	616.0	616.0	616.0	0.0
101	10,139	80	433	2.8	616.5	616.5	616.8	0.3
108	10,789	115	537	2.3	617.8	617.8	618.6	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
116	11,562	160	586	1.7	620.1	620.1	620.9	0.8
119	11,920	100	339	3.0	622.3	622.3	623.0	0.7
125	12,540	65	294	3.4	625.5	625.5	626.2	0.8
132	13,161	60	228	4.0	628.6	628.6	629.3	0.7
137	13,684	95	341	2.7	633.4	633.4	634.3	0.9
139	13,909	45	152	6.0	636.0	636.0	636.2	0.2
143	14,321	50	270	3.4	641.6	641.6	642.3	0.7
147	14,651	60	244	3.7	645.3	645.3	645.8	0.5
151	15,073	34	123	5.6	652.4	652.4	652.7	0.3
155	15,500	30	139	4.9	657.7	657.7	658.1	0.4
159	15,903	40	144	4.0	662.5	662.5	663.1	0.6
165	16,453	35	118	4.9	668.4	668.4	668.9	0.5
168	16,821	20	96	5.5	671.9	671.9	672.2	0.3
171	17,114	29	83	6.4	675.1	675.1	675.2	0.0
174	17,371	39	82	6.5	678.9	678.9	678.9	0.0
177	17,685	42	120	4.4	682.2	682.2	683.1	0.9
Davis Branch								
010	1,006	24	114	7.7	559.9 ¹	552.2	552.2	0.0
016	1,596	53	160	3.6	561.8	561.8	562.5	0.6
021	2,075	35	109	5.3	567.3	567.3	567.5	0.2
025	2,473	38	114	4.6	572.4	572.4	572.5	0.1
028	2,785	57	149	3.5	578.2	578.2	578.6	0.4
031	3,133	50	133	4.0	581.3	581.3	582.2	0.9
035	3,521	37	199	2.2	584.7	584.7	585.3	0.6
039	3,928	45	176	2.5	587.0	587.0	587.6	0.6
Dutch Buffalo Creek								
006	596	1,200	5,922	2.0	509.7 ¹	490.6	491.5	1.0
042	4,241	710	6,806	1.8	509.7 ¹	494.7	495.4	0.7
056	5,556	430	3,940	3.0	509.7 ¹	495.5	496.4	0.8
076	7,555	510	4,977	2.4	509.7 ¹	497.5	498.5	1.0
094	9,439	1,090	10,260	1.2	509.7 ¹	498.4	499.4	1.0
112	11,205	690	5,936	2.0	509.7 ¹	499.1	500.1	1.0
129	12,865	615	6,078	2.0	509.7 ¹	500.7	501.7	1.0
145	14,514	880	6,849	1.8	509.7 ¹	501.9	502.5	0.6
172	17,154	379	3,643	3.3	509.7 ¹	503.8	504.5	0.7
193	19,276	540	6,509	1.9	509.7 ¹	506.8	507.8	1.0
203	20,281	1,030	10,692	1.2	509.7 ¹	507.1	508.1	1.0
227	22,708	1,110	11,022	1.2	509.7 ¹	507.3	508.3	1.0
240	23,956	270	2,741	4.6	509.7 ¹	507.7	508.7	1.0
263	26,326	720	8,851	1.4	512.3 ¹	512.3	513.2	0.9
286	28,574	890	9,644	1.3	512.6 ¹	512.6	513.6	0.9
306	30,581	600	5,667	2.3	513.2	513.2	514.2	1.0
320	31,986	370	4,014	3.3	514.7	514.7	515.6	0.9
338	33,793	480	5,508	2.4	517.2	517.2	518.0	0.9
362	36,181	510	5,625	2.0	518.3	518.3	519.2	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
376	37,557	1,070	11,363	1.0	518.6	518.6	519.6	1.0
392	39,228	800	7,245	1.6	518.9	518.9	519.8	1.0
411	41,069	405	3,466	3.3	519.8	519.8	520.7	0.9
429	42,933	430	4,988	2.3	523.8	523.8	524.1	0.3
Fisher Town Branch								
010	1,032	160	466	3.0	669.0	669.0	669.8	0.8
013	1,345	120	730	1.9	675.5	675.5	676.4	0.9
019	1,935	80	348	4.0	677.6	677.6	678.2	0.7
025	2,457	65	236	5.9	682.1	682.1	682.8	0.7
029	2,946	120	457	3.0	687.3	687.3	687.7	0.4
035	3,462	78	289	4.9	689.5	689.5	690.3	0.8
037	3,723	76	358	3.9	693.7	693.7	694.2	0.5
043	4,328	52	243	5.8	695.6	695.6	696.4	0.8
050	5,027	34	172	7.8	702.8	702.8	703.2	0.4
056	5,629	31	179	6.7	708.6	708.6	708.8	0.2
060	6,041	25	122	9.8	712.3	712.3	712.3	0.0
066	6,584	56	157	7.0	721.2	721.2	721.5	0.3
Fuda Creek								
004	435	250	929	2.7	560.0 ¹	558.8	559.6	0.8
013	1,334	100	438	5.7	561.4	561.4	561.9	0.5
024	2,429	230	857	3.0	566.0	566.0	566.7	0.7
032	3,196	225	1,140	2.2	570.2	570.2	571.0	0.8
043	4,313	95	555	4.6	572.6	572.6	573.5	0.9
054	5,383	125	624	4.1	576.8	576.8	577.7	0.9
059	5,924	115	469	5.1	578.9	578.9	579.6	0.7
068	6,838	93	543	4.4	583.8	583.8	584.6	0.8
079	7,891	80	464	5.2	587.9	587.9	588.8	0.9
085	8,511	112	541	4.4	590.2	590.2	591.0	0.8
098	9,764	95	465	5.2	596.1	596.1	596.8	0.7
111	11,090	130	696	3.4	602.9	602.9	603.6	0.7
120	12,006	197	866	2.8	606.8	606.8	607.6	0.8
127	12,652	82	360	6.7	608.8	608.8	609.7	0.9
135	13,488	145	757	3.2	613.8	613.8	614.6	0.8
142	14,152	120	626	3.8	616.5	616.5	617.4	0.8
147	14,735	95	465	5.2	619.4	619.4	619.7	0.4
153	15,323	87	502	4.8	622.2	622.2	622.9	0.8
157	15,701	72	452	5.3	624.0	624.0	624.7	0.7
161	16,073	101	487	4.0	625.8	625.8	626.3	0.6
172	17,231	100	486	4.0	630.4	630.4	631.1	0.7
181	18,066	130	576	3.4	634.1	634.1	634.7	0.6
187	18,749	100	446	4.3	637.6	637.6	638.2	0.7
193	19,344	95	873	2.2	648.9	648.9	649.8	0.9
200	19,953	83	436	3.7	651.3	651.3	651.9	0.6
205	20,490	225	3,911	0.4	673.2	673.2	674.1	0.9
209	20,936	210	3,582	0.4	673.3	673.3	674.1	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
214	21,407	404	5,638	0.3	673.3	673.3	674.1	0.9
Hamby Branch								
002	207	67	1,049	3.8	517.9 ¹	504.0	504.7	0.7
013	1,339	81	802	5.0	517.9 ¹	507.6	508.5	0.9
020	1,986	69	397	10.2	517.9 ¹	510.7	511.5	0.8
028	2,791	103	583	6.7	519.6	519.6	520.4	0.8
037	3,687	120	660	6.0	524.2	524.2	525.1	0.9
044	4,420	110	579	6.8	527.5	527.5	528.2	0.7
051	5,108	75	315	7.2	531.2	531.2	531.9	0.7
064	6,359	67	281	8.0	541.9	541.9	542.2	0.4
070	7,014	72	310	7.3	547.3	547.3	547.6	0.3
075	7,521	75	301	7.3	551.3	551.3	551.5	0.2
080	8,044	59	311	7.0	555.1	555.1	555.5	0.3
090	9,015	88	445	4.9	559.6	559.6	560.3	0.7
102	10,230	70	383	5.7	565.0	565.0	565.7	0.7
111	11,067	54	372	5.9	569.5	569.5	570.4	0.9
120	12,011	60	355	5.8	574.7	574.7	575.2	0.5
Hamby Branch Tributary								
002	218	65	312	6.0	529.8 ¹	529.5	530.1	0.6
008	848	67	278	6.7	534.6	534.6	534.8	0.2
018	1,848	77	330	5.6	541.6	541.6	542.3	0.7
026	2,645	85	329	5.4	547.8	547.8	548.4	0.7
030	3,022	88	371	4.8	550.7	550.7	551.3	0.6
039	3,943	88	328	5.4	557.0	557.0	557.1	0.1
048	4,797	145	599	3.0	562.2	562.2	562.6	0.4
054	5,370	51	269	6.6	566.1	566.1	566.2	0.1
060	6,036	22	113	5.5	569.7	569.7	570.1	0.4
Hillandale Branch								
003	270	34	108	5.0	597.8 ¹	596.6	596.6	0.0
006	553	30	106	5.1	598.4 ¹	598.4	598.4	0.0
009	890	40	359	1.5	610.5	610.5	610.5	0.0
012	1,188	36	160	3.1	610.6	610.6	610.6	0.0
015	1,514	22	59	8.3	619.9	619.9	620.0	0.0
018	1,827	21	73	6.8	625.6	625.6	625.7	0.0
022	2,179	14	51	7.3	631.2	631.2	631.3	0.2
026	2,598	39	526	0.3	652.6	652.6	652.7	0.1
029	2,862	21	152	1.2	652.6	652.6	652.7	0.1
031	3,109	29	70	2.5	657.4	657.4	657.4	0.0
032	3,244	14	26	2.8	661.5	661.5	661.8	0.3
034	3,381	6	10	7.1	664.9	664.9	664.9	0.0
036	3,581	6	12	6.2	673.1	673.1	673.2	0.1
038	3,798	5	10	7.8	695.7	695.7	695.7	0.0
Horse Branch								
002	179	53	277	7.2	525.2 ¹	501.9	502.4	0.6
009	917	125	826	2.4	525.2 ¹	507.0	507.6	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
019	1,917	83	373	5.3	525.2 ¹	508.9	509.8	0.8
028	2,757	65	345	5.7	525.2 ¹	514.6	515.1	0.5
Horton Branch								
006	589	141	448	3.4	518.3 ¹	517.7	518.2	0.5
009	896	149	439	3.5	519.0	519.0	519.6	0.7
013	1,260	67	390	4.0	523.3	523.3	523.6	0.2
017	1,665	72	298	5.2	525.2	525.2	525.4	0.2
021	2,094	65	342	4.5	528.5	528.5	529.4	0.9
025	2,473	41	233	6.6	530.6	530.6	531.2	0.6
029	2,856	37	246	6.3	533.1	533.1	533.6	0.5
036	3,597	53	264	5.8	538.5	538.5	538.7	0.2
042	4,167	102	442	3.5	544.1	544.1	544.4	0.3
050	5,008	106	276	5.5	547.6	547.6	547.9	0.3
061	6,140	103	412	3.7	554.5	554.5	554.7	0.2
067	6,744	62	306	5.0	558.0	558.0	558.2	0.2
079	7,903	90	315	4.9	563.8	563.8	564.6	0.8
087	8,671	81	241	6.2	568.7	568.7	568.8	0.1
095	9,482	84	327	4.5	573.5	573.5	574.4	0.9
102	10,190	95	450	3.3	578.9	578.9	579.7	0.8
111	11,087	105	444	3.1	583.7	583.7	584.3	0.6
117	11,734	55	251	5.5	588.1	588.1	588.3	0.2
129	12,854	63	247	5.5	594.4	594.4	594.9	0.5
136	13,643	75	263	4.3	600.6	600.6	601.4	0.9
142	14,223	85	309	3.7	605.6	605.6	606.1	0.5
148	14,783	98	282	3.1	609.0	609.0	609.7	0.7
156	15,560	45	202	3.5	616.4	616.4	617.0	0.7
162	16,217	42	204	3.5	620.4	620.4	621.4	1.0
168	16,824	60	208	2.8	626.3	626.3	627.0	0.7
174	17,352	20	52	5.4	630.8	630.8	630.9	0.0
Irish Buffalo Creek								
005	491	475	2,155	3.4	527.7 ¹	515.3	516.2	1.0
033	3,273	245	1,532	4.7	527.7 ¹	524.6	525.6	1.0
043	4,342	223	1,688	4.3	529.0 ¹	529.0	529.5	0.6
054	5,393	275	1,941	3.7	531.5 ¹	531.4	532.4	1.0
073	7,256	197	1,806	4.0	537.3	537.3	538.0	0.7
086	8,563	205	1,645	4.4	540.1	540.1	540.9	0.8
092	9,247	105	1,014	7.2	541.6	541.6	542.6	1.0
106	10,573	157	1,358	5.4	545.9	545.9	546.8	0.9
113	11,269	350	1,901	3.8	547.9	547.9	548.7	0.8
124	12,438	205	1,519	4.8	550.8	550.8	551.7	0.9
134	13,376	225	1,745	4.2	553.0	553.0	554.0	1.0
146	14,644	133	1,231	5.9	556.6	556.6	557.2	0.5
157	15,736	120	1,324	5.5	560.4	560.4	561.0	0.5
166	16,572	180	1,841	3.9	562.0	562.0	562.8	0.7
176	17,550	151	1,520	4.8	563.0	563.0	563.9	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
194	19,428	162	1,474	4.7	565.7	565.7	566.6	0.8
200	20,014	210	2,107	3.3	567.0	567.0	567.9	0.9
206	20,605	210	2,470	2.8	568.8	568.8	569.4	0.6
219	21,949	440	4,050	1.7	569.6	569.6	570.3	0.7
234	23,387	418	3,568	2.0	570.5	570.5	571.2	0.8
256	25,577	258	2,009	3.5	573.7	573.7	573.7	0.0
266	26,565	495	3,333	2.1	574.6	574.6	575.1	0.5
282	28,167	217	1,769	3.9	577.8	577.8	578.0	0.2
292	29,234	355	2,742	2.5	578.9	578.9	579.2	0.2
304	30,412	487	3,539	2.0	581.3	581.3	581.7	0.4
319	31,892	225	1,252	5.6	582.3	582.3	583.2	1.0
328	32,817	125	1,321	5.3	585.2	585.2	585.8	0.7
338	33,762	135	1,419	4.9	586.4	586.4	587.4	0.9
346	34,621	193	1,374	5.1	589.3	589.3	589.8	0.5
353	35,343	101	1,346	5.2	593.0	593.0	593.5	0.5
370	36,995	335	2,842	2.4	594.4	594.4	595.2	0.8
380	37,952	501	4,236	1.6	595.0	595.0	596.0	0.9
391	39,060	242	2,283	3.1	595.6	595.6	596.6	1.0
404	40,381	227	1,469	4.4	597.5	597.5	598.4	0.9
419	41,942	460	3,326	1.9	599.2	599.2	600.0	0.8
427	42,682	341	2,288	2.8	599.8	599.8	600.6	0.9
436	43,648	155	1,348	4.8	602.8	602.8	603.4	0.5
439	43,913	142	1,242	5.2	604.1	604.1	604.4	0.2
447	44,675	210	1,876	3.4	605.2	605.2	605.7	0.6
455	45,500	210	2,077	3.1	606.1	606.1	606.9	0.8
475	47,500	653	4,909	1.3	607.7	607.7	608.5	0.8
493	49,272	470	2,828	2.3	609.0	609.0	609.8	0.8
505	50,463	277	1,705	3.5	611.8	611.8	612.5	0.7
517	51,707	222	1,430	4.2	613.6	613.6	614.6	1.0
525	52,536	572	3,790	1.6	615.2	615.2	616.1	0.8
533	53,332	224	1,142	5.2	616.0	616.0	616.7	0.7
541	54,064	198	1,645	3.6	620.2	620.2	620.8	0.6
556	55,581	433	2,946	2.0	621.7	621.7	622.6	0.9
576	57,636	615	4,315	1.3	626.0	626.0	626.7	0.7
586	58,565	239	1,622	3.4	627.1	627.1	628.0	0.9
600	60,000	295	2,141	2.6	629.6	629.6	630.2	0.6
615	61,500	141	963	5.1	631.9	631.9	632.7	0.8
635	63,452	475	2,826	1.7	634.6	634.6	635.6	1.0
650	64,994	460	2,093	2.3	637.2	637.2	638.1	1.0
668	66,849	359	1,636	3.0	641.5	641.5	642.5	1.0
688	68,768	310	1,277	3.8	646.2	646.2	647.2	1.0
696	69,596	262	1,409	3.4	650.1	650.1	650.6	0.6
707	70,654	265	1,738	3.0	654.8	654.8	655.6	0.8
733	73,262	435	3,004	1.4	658.0	658.0	658.9	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
742	74,205	435	2,173	1.9	658.4	658.4	659.4	1.0
753	75,276	470	2,336	1.8	659.8	659.8	660.8	1.0
768	76,795	400	2,414	1.8	666.3	666.3	666.4	0.1
777	77,675	225	1,075	3.1	666.8	666.8	667.2	0.4
788	78,833	334	1,322	2.5	669.3	669.3	670.0	0.7
795	79,500	354	1,532	2.1	670.3	670.3	671.2	0.9
803	80,294	233	1,118	2.8	672.7	672.7	673.5	0.8
811	81,094	215	798	4.0	674.4	674.4	675.1	0.7
819	81,887	360	1,395	2.3	676.8	676.8	677.6	0.8
826	82,574	299	906	3.6	678.0	678.0	679.0	1.0
Jones Branch								
010	1,026	42	297	4.9	533.6 ¹	515.8	516.3	0.4
020	1,991	46	463	3.1	533.6 ¹	529.5	530.5	1.0
025	2,503	42	239	6.1	533.6 ¹	530.5	531.4	0.8
028	2,850	31	161	7.7	533.6	533.6	534.0	0.4
031	3,119	43	130	9.6	538.6	538.6	538.6	0.0
039	3,949	35	138	5.9	552.9	552.9	553.1	0.2
046	4,560	28	107	7.6	561.7	561.7	561.8	0.1
051	5,090	25	116	6.9	569.0	569.0	569.0	0.0
053	5,313	69	274	2.9	575.6	575.6	575.6	0.0
056	5,631	29	91	6.8	577.0	577.0	577.0	0.0
059	5,890	29	95	6.5	581.3	581.3	581.3	0.0
063	6,301	27	68	4.9	588.2	588.2	588.2	0.0
068	6,806	24	55	6.1	594.6	594.6	594.6	0.0
Little Cold Water Creek								
016	1,570	160	952	4.6	553.9 ¹	550.4	550.7	0.3
027	2,655	156	1,120	3.9	553.9 ¹	553.7	554.5	0.7
033	3,330	265	2,128	1.9	555.6 ¹	555.6	556.6	1.0
042	4,187	230	1,755	2.4	556.3	556.3	557.3	0.9
054	5,443	230	1,434	2.9	557.6	557.6	558.6	1.0
060	5,999	158	994	4.1	558.7	558.7	559.6	0.9
067	6,749	115	848	4.8	560.4	560.4	561.3	0.9
075	7,493	120	798	5.3	561.9	561.9	562.7	0.8
083	8,260	265	1,934	2.2	563.7	563.7	564.7	1.0
090	9,028	177	1,203	3.5	564.9	564.9	565.8	0.9
102	10,220	168	1,145	3.7	567.5	567.5	568.2	0.8
112	11,166	273	1,530	2.8	569.4	569.4	570.1	0.7
120	11,999	220	1,141	3.7	571.1	571.1	571.6	0.5
125	12,507	139	926	4.5	572.9	572.9	573.2	0.3
133	13,329	320	2,458	1.7	574.9	574.9	575.4	0.6
140	13,957	360	2,399	1.7	575.1	575.1	575.7	0.6
148	14,821	260	1,537	2.7	575.6	575.6	576.3	0.7
160	16,029	340	1,866	2.2	578.0	578.0	578.8	0.7
167	16,740	234	1,265	3.3	579.4	579.4	580.2	0.7
177	17,700	314	1,475	2.8	580.6	580.6	581.4	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
186	18,589	366	1,836	2.2	583.4	583.4	583.9	0.5
193	19,337	186	1,306	3.1	586.4	586.4	587.0	0.6
204	20,394	531	2,589	1.5	587.3	587.3	588.0	0.7
220	22,041	276	1,182	3.4	589.8	589.8	590.5	0.6
233	23,326	300	1,496	2.6	593.8	593.8	594.8	1.0
243	24,252	328	1,439	2.7	595.9	595.9	596.7	0.8
249	24,926	387	1,637	2.4	597.5	597.5	598.2	0.7
258	25,787	211	833	2.8	599.6	599.6	600.3	0.7
268	26,824	185	690	3.4	602.2	602.2	602.9	0.6
281	28,146	80	405	5.8	607.5	607.5	607.7	0.2
294	29,382	123	414	5.7	611.7	611.7	612.1	0.3
298	29,800	192	1,081	2.2	615.8	615.8	616.0	0.2
302	30,203	155	668	3.5	616.1	616.1	616.4	0.3
313	31,341	167	601	3.9	618.4	618.4	619.1	0.8
327	32,712	141	492	4.9	623.2	623.2	623.5	0.3
338	33,784	72	402	6.0	627.4	627.4	628.0	0.6
347	34,698	77	491	4.8	632.6	632.6	633.1	0.5
355	35,530	54	277	8.0	635.6	635.6	636.2	0.6
360	36,000	50	345	6.4	638.8	638.8	639.3	0.5
367	36,736	126	674	3.3	644.5	644.5	645.0	0.5
373	37,312	98	670	3.3	646.8	646.8	647.5	0.7
380	37,983	52	287	7.7	648.0	648.0	648.4	0.5
384	38,427	60	302	6.4	650.9	650.9	651.6	0.7
389	38,864	57	320	6.0	655.9	655.9	656.5	0.6
395	39,504	48	247	5.6	660.4	660.4	660.6	0.2
400	39,995	40	181	7.6	664.0	664.0	664.2	0.2
405	40,546	47	146	4.7	667.5	667.5	667.6	0.1
410	41,015	26	129	5.3	672.6	672.6	672.6	0.1
415	41,493	41	157	4.4	678.9	678.9	679.8	0.8
420	41,995	29	98	7.0	685.7	685.7	685.7	0.0
424	42,372	39	125	5.5	689.6	689.6	689.7	0.1
428	42,772	41	121	4.9	695.7	695.7	695.8	0.2
433	43,271	18	75	8.0	700.7	700.7	700.8	0.1
439	43,877	38	85	7.0	707.2	707.2	707.4	0.2
Little Meadow Creek								
012	1,184	48	410	3.8	500.6 ¹	478.6	479.0	0.4
027	2,712	74	382	4.0	500.6 ¹	481.0	481.7	0.6
038	3,767	71	405	3.8	500.6 ¹	483.9	484.8	0.9
048	4,796	65	257	6.0	500.6 ¹	488.1	488.6	0.5
058	5,791	85	437	3.5	500.6 ¹	495.0	495.9	0.8
065	6,479	133	592	2.6	500.6 ¹	498.4	498.9	0.4
070	7,019	115	644	2.3	502.2	502.2	502.9	0.8
075	7,494	105	435	3.5	502.9	502.9	503.7	0.8
Mallard Creek								
008	788	210	3,274	5.2	568.2 ¹	567.3	567.7	0.4

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
022	2,160	260	4,460	3.8	569.5	569.5	570.0	0.5
045	4,458	610	10,272	1.7	571.0	571.0	571.8	0.9
056	5,587	445	7,020	2.6	571.6	571.6	572.5	1.0
067	6,671	890	13,699	1.3	572.4	572.4	573.3	1.0
089	8,908	530	6,955	2.6	573.4	573.4	574.3	0.9
112	11,207	385	4,605	4.0	575.3	575.3	576.0	0.8
122	12,192	218	3,054	6.0	577.5	577.5	578.0	0.5
Mallard Creek Tributary 1								
007	653	146	832	1.8	572.9 ¹	567.5	568.0	0.5
010	1,019	56	327	4.5	572.9 ¹	568.3	568.8	0.5
013	1,326	47	228	6.4	572.9 ¹	569.9	570.5	0.6
016	1,645	50	257	5.5	572.9 ¹	571.9	572.6	0.7
019	1,899	116	705	2.0	575.8	575.8	576.6	0.8
022	2,158	130	587	2.4	576.2	576.2	577.0	0.9
025	2,481	87	479	3.0	577.2	577.2	577.9	0.8
032	3,159	57	309	4.6	581.5	581.5	581.5	0.0
037	3,680	59	295	4.5	584.9	584.9	585.0	0.0
041	4,111	42	259	4.3	589.7	589.7	589.9	0.2
044	4,419	45	282	4.0	590.8	590.8	591.3	0.5
Mallard Creek Tributary 1A								
006	579	60	154	4.8	572.9 ¹	563.9	564.7	0.8
010	963	45	164	4.5	572.9 ¹	567.9	568.7	0.8
013	1,275	46	161	4.4	572.9 ¹	570.7	571.3	0.5
016	1,592	40	158	4.5	577.2	577.2	577.2	0.0
020	1,988	50	201	3.5	580.4	580.4	580.8	0.4
023	2,329	46	126	5.6	583.4	583.4	583.5	0.2
027	2,663	21	80	8.8	586.0	586.0	586.2	0.2
029	2,853	34	170	3.4	588.8	588.8	588.8	0.0
030	3,013	20	85	6.9	589.9	589.9	590.0	0.2
032	3,197	17	65	9.0	592.2	592.2	592.2	0.0
035	3,537	18	68	6.4	598.6	598.6	598.6	0.0
038	3,830	50	217	2.0	605.1	605.1	605.2	0.1
041	4,131	39	83	5.2	606.5	606.5	606.6	0.1
044	4,364	24	65	5.4	610.1	610.1	610.2	0.0
046	4,594	15	53	1.4	615.8	615.8	615.8	0.0
048	4,843	226	3,044	0.0	642.2	642.2	642.2	0.0
051	5,062	179	2,227	0.0	642.2	642.2	642.2	0.0
053	5,284	62	435	0.1	642.2	642.2	642.2	0.0
Mallard Creek Tributary 1B								
000	30	19	51	4.3	586.5 ¹	583.9	584.0	0.1
002	168	10	26	8.3	586.5 ¹	586.4	586.4	0.0
004	391	8	25	8.8	592.0	592.0	592.0	0.0
007	721	12	58	3.8	600.1	600.1	600.2	0.2
010	974	15	44	4.1	604.1	604.1	604.2	0.1
012	1,183	12	39	4.7	608.5	608.5	608.6	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
014	1,414	6	19	9.6	613.6	613.6	613.6	0.0
017	1,665	8	21	8.7	621.0	621.0	621.1	0.1
Mallard Creek Tributary 2								
010	1,043	105	168	3.9	574.2 ¹	567.9	568.4	0.5
015	1,461	28	118	5.5	574.2 ¹	573.8	574.3	0.5
017	1,731	37	115	5.1	579.0	579.0	579.2	0.2
021	2,110	28	110	5.4	583.7	583.7	583.7	0.0
024	2,399	25	99	6.0	588.7	588.7	588.7	0.0
026	2,618	18	66	7.4	591.5	591.5	591.5	0.0
028	2,841	44	193	2.6	600.8	600.8	600.8	0.0
031	3,066	38	135	2.2	607.6	607.6	608.0	0.4
032	3,216	17	38	7.7	610.7	610.7	610.7	0.0
033	3,324	21	44	6.6	618.9	618.9	618.9	0.0
035	3,469	20	59	5.0	622.3	622.3	623.0	0.6
036	3,564	22	73	4.0	624.3	624.3	624.5	0.2
038	3,763	14	39	7.5	626.7	626.7	626.8	0.1
039	3,866	14	49	5.9	629.7	629.7	629.7	0.1
040	3,958	9	36	8.1	631.4	631.4	631.7	0.3
041	4,107	15	56	5.2	634.1	634.1	634.2	0.1
McAllister Creek								
006	605	31	224	8.3	582.3 ¹	577.9	578.0	0.1
019	1,936	50	324	5.8	590.4	590.4	590.4	0.0
033	3,293	115	447	4.2	600.2	600.2	600.7	0.6
049	4,880	56	485	3.8	612.3	612.3	612.8	0.5
071	7,081	95	447	4.2	619.0	619.0	619.5	0.5
092	9,152	60	329	4.9	627.1	627.1	627.8	0.6
116	11,567	116	710	2.2	642.0	642.0	642.0	0.0
129	12,853	115	532	3.0	645.6	645.6	646.1	0.5
140	14,047	93	356	3.1	652.3	652.3	653.0	0.6
161	16,069	45	157	4.1	675.0	675.0	675.8	0.8
McKee Creek								
006	643	200	1,396	2.0	569.3 ¹	567.5	568.3	0.8
016	1,621	180	1,141	2.4	569.3 ¹	568.5	569.2	0.8
025	2,481	210	1,118	2.5	569.4	569.4	570.3	0.9
032	3,224	325	1,476	1.9	570.4	570.4	571.4	0.9
044	4,434	140	802	3.4	573.7	573.7	574.6	0.8
055	5,529	96	634	4.4	575.8	575.8	576.6	0.9
064	6,389	115	780	3.6	577.7	577.7	578.5	0.8
071	7,124	170	1,196	2.3	579.7	579.7	580.4	0.7
082	8,236	173	1,079	2.6	581.1	581.1	581.7	0.7
090	9,047	276	1,707	1.6	582.4	582.4	583.1	0.8
095	9,507	185	1,125	2.5	583.2	583.2	583.9	0.7
103	10,346	85	655	4.1	584.5	584.5	585.2	0.7
108	10,819	190	1,089	2.4	585.6	585.6	586.3	0.7
117	11,708	190	1,084	2.5	589.5	589.5	589.7	0.2

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
124	12,365	63	480	5.6	591.7	591.7	592.2	0.6
131	13,121	179	870	3.1	595.5	595.5	596.4	0.9
136	13,611	65	397	6.8	596.5	596.5	597.4	0.9
144	14,415	300	1,528	1.8	599.5	599.5	600.1	0.6
154	15,398	88	443	6.1	600.7	600.7	601.2	0.5
158	15,836	113	625	4.3	602.1	602.1	602.8	0.6
Meadow Creek								
018	1,834	295	2,014	1.9	500.2 ¹	481.4	482.2	0.8
025	2,479	153	1,183	3.3	500.2 ¹	482.3	483.0	0.7
037	3,668	90	773	5.0	500.2 ¹	485.5	486.1	0.6
043	4,296	194	1,562	2.5	500.2 ¹	490.8	491.0	0.3
051	5,062	137	865	4.0	500.2 ¹	491.9	492.6	0.7
056	5,610	120	677	5.2	500.2 ¹	494.4	495.0	0.6
061	6,100	67	524	6.7	500.2 ¹	498.0	498.4	0.4
071	7,145	89	687	5.1	503.7	503.7	504.4	0.7
083	8,260	180	884	3.3	507.9	507.9	508.7	0.8
091	9,066	216	1,030	2.8	512.8	512.8	513.6	0.8
Morris Branch								
003	307	21	64	4.2	565.8 ¹	551.4	552.4	1.0
005	546	13	53	5.0	565.8 ¹	554.2	555.0	0.8
007	717	13	35	7.7	565.8 ¹	558.3	558.4	0.2
010	1,003	13	27	6.5	571.7	571.7	571.8	0.1
013	1,346	15	31	5.6	580.4	580.4	580.6	0.1
018	1,752	18	30	5.9	585.6	585.6	585.6	0.0
021	2,091	11	23	3.6	592.4	592.4	592.8	0.4
026	2,557	10	19	4.3	598.2	598.2	598.6	0.4
028	2,821	11	17	4.8	601.5	601.5	601.8	0.2
Muddy Creek								
004	435	82	999	3.5	478.1 ¹	466.8	467.6	0.7
016	1,601	147	1,654	2.1	478.1 ¹	467.8	468.6	0.8
025	2,515	104	1,201	2.9	478.1 ¹	468.2	468.9	0.8
040	3,961	209	2,024	1.7	478.1 ¹	469.5	470.3	0.8
051	5,100	212	1,380	2.5	478.1 ¹	470.7	471.5	0.8
060	6,035	140	846	4.1	478.1 ¹	472.3	473.1	0.8
069	6,902	155	1,074	3.2	478.1 ¹	475.0	475.7	0.8
076	7,589	166	1,212	2.8	478.1 ¹	476.8	477.4	0.6
080	8,031	170	1,453	2.3	479.6	479.6	479.6	0.0
089	8,851	179	1,266	2.7	480.3	480.3	480.5	0.2
097	9,672	150	981	3.5	481.0	481.0	481.4	0.4
106	10,606	80	599	5.6	483.1	483.1	483.7	0.6
109	10,851	68	663	5.0	486.0	486.0	486.4	0.4
113	11,316	205	1,918	1.7	488.2	488.2	488.6	0.4
122	12,211	235	1,757	1.8	489.9	489.9	490.3	0.4
124	12,362	215	1,009	3.1	490.0	490.0	490.2	0.2
Muddy Creek Tributary 1								

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
006	567	291	1,881	1.1	495.7	495.7	496.6	0.9
017	1,703	110	662	3.2	497.2	497.2	498.0	0.8
026	2,586	90	487	4.3	500.4	500.4	501.1	0.7
037	3,656	55	275	5.1	505.2	505.2	505.6	0.4
046	4,608	125	324	2.8	508.2	508.2	508.6	0.4
051	5,056	60	320	2.9	512.4	512.4	513.2	0.9
055	5,521	145	702	1.3	513.9	513.9	514.4	0.4
062	6,244	77	293	3.1	515.5	515.5	516.0	0.5
071	7,090	62	209	3.6	518.5	518.5	519.0	0.4
079	7,875	96	285	2.4	522.0	522.0	522.5	0.5
085	8,483	38	123	5.7	523.9	523.9	524.2	0.2
144	14,440	235	1,860	1.6	495.5	495.5	496.3	0.8
Overcash Branch								
003	298	69	223	3.6	657.4 ¹	654.8	655.0	0.2
006	601	33	111	7.3	658.5 ¹	658.5	658.7	0.2
010	990	47	196	4.1	664.4	664.4	665.4	1.0
013	1,285	60	239	3.4	666.8	666.8	667.7	1.0
016	1,561	35	172	4.7	670.0	670.0	670.9	0.9
019	1,934	24	141	5.4	674.1	674.1	675.0	0.9
023	2,314	42	240	3.2	679.8	679.8	680.6	0.8
027	2,719	57	236	3.2	684.3	684.3	685.3	1.0
032	3,158	32	133	4.8	690.0	690.0	690.5	0.4
034	3,406	27	139	2.7	693.9	693.9	694.6	0.7
037	3,703	31	94	4.0	695.1	695.1	695.7	0.6
Patterson Branch								
005	546	352	1,542	1.3	664.8 ¹	651.0	651.0	0.0
018	1,758	184	435	4.5	664.8 ¹	652.8	652.8	0.0
033	3,335	155	414	4.5	664.8 ¹	662.6	662.6	0.0
043	4,316	123	447	4.2	669.8	669.8	670.1	0.3
049	4,938	74	399	4.7	677.1	677.1	677.9	0.8
053	5,286	27	167	10.5	684.2	684.2	684.7	0.5
057	5,696	30	205	7.9	696.0	696.0	696.9	1.0
061	6,119	59	347	4.7	707.7	707.7	707.7	0.0
064	6,397	36	222	7.3	714.1	714.1	714.8	0.7
065	6,540	28	171	9.5	717.4	717.4	717.4	0.0
067	6,681	38	235	6.9	720.0	720.0	721.0	1.0
069	6,936	30	287	5.6	727.3	727.3	728.0	0.7
072	7,241	152	1,353	1.2	729.8	729.8	730.5	0.7
080	7,978	68	340	4.7	729.9	729.9	730.8	0.9
085	8,453	110	555	2.8	732.0	732.0	732.8	0.8
090	8,951	100	603	2.6	736.4	736.4	737.1	0.7
097	9,656	117	626	2.2	738.5	738.5	739.3	0.8
103	10,295	36	238	5.6	744.0	744.0	744.2	0.2
105	10,524	88	313	3.9	744.3	744.3	745.3	1.0
111	11,114	55	260	4.7	747.0	747.0	747.5	0.5

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
Reedy Creek								
040	3,973	501	4,976	1.6	535.4 ¹	525.0	525.7	0.8
057	5,732	683	4,525	1.7	535.4 ¹	525.5	526.5	1.0
087	8,746	457	4,022	2.0	535.4 ¹	528.5	529.2	0.7
107	10,746	236	2,240	3.5	535.4 ¹	530.8	531.4	0.6
126	12,624	230	2,344	3.3	535.4 ¹	533.3	534.2	0.8
136	13,574	159	1,784	4.4	535.4 ¹	534.8	535.7	0.8
165	16,488	149	1,912	4.1	537.6	537.6	538.5	0.9
175	17,520	168	2,043	3.8	538.6	538.6	539.4	0.9
184	18,394	275	3,480	2.3	539.4	539.4	540.3	0.9
200	20,013	490	4,717	1.7	540.0	540.0	540.9	0.9
217	21,690	545	5,162	1.6	541.4	541.4	542.3	1.0
228	22,820	720	5,793	1.4	541.8	541.8	542.7	1.0
242	24,230	305	3,168	2.2	544.4	544.4	545.0	0.7
258	25,828	720	5,912	1.2	544.8	544.8	545.6	0.8
271	27,093	520	3,800	1.8	545.5	545.5	546.3	0.9
291	29,076	423	3,234	2.1	548.5	548.5	549.5	1.0
305	30,490	730	4,576	1.5	550.0	550.0	550.9	0.8
328	32,777	283	2,410	2.8	554.3	554.3	554.9	0.6
337	33,693	500	3,877	1.7	555.6	555.6	556.2	0.7
365	36,481	519	4,033	1.6	559.4	559.4	560.3	0.8
382	38,249	305	2,507	2.6	562.2	562.2	562.5	0.3
401	40,064	390	3,035	2.2	565.8	565.8	566.5	0.6
422	42,197	498	3,402	2.0	567.3	567.3	568.1	0.8
440	43,974	270	1,884	2.5	570.0	570.0	570.8	0.8
449	44,944	225	1,577	2.9	571.8	571.8	572.6	0.8
465	46,467	255	1,769	2.6	574.5	574.5	575.0	0.6
478	47,751	209	1,219	3.8	576.3	576.3	576.9	0.6
490	49,035	245	1,690	2.7	579.7	579.7	580.3	0.6
498	49,783	131	1,081	4.2	581.0	581.0	581.9	0.9
509	50,902	116	1,109	4.1	584.6	584.6	585.0	0.5
517	51,725	200	1,511	3.0	585.7	585.7	586.4	0.7
530	52,953	70	631	7.3	591.0	591.0	591.5	0.5
535	53,481	106	844	5.4	593.6	593.6	594.3	0.6
545	54,499	90	835	5.5	598.0	598.0	598.5	0.5
553	55,281	90	899	5.1	600.8	600.8	601.3	0.5
563	56,284	280	2,183	2.2	603.3	603.3	603.7	0.4
575	57,504	540	3,895	1.2	604.3	604.3	604.7	0.4
588	58,811	385	2,398	2.0	605.2	605.2	605.8	0.6
601	60,063	270	1,724	2.7	607.7	607.7	608.4	0.7
Reedy Creek Tributary 1								
027	2,687	100	346	5.0	604.8	604.8	605.5	0.7
033	3,296	58	335	5.1	608.4	608.4	609.2	0.9
039	3,927	125	561	2.7	611.2	611.2	611.8	0.7
044	4,353	81	354	4.2	612.0	612.0	612.8	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
048	4,835	49	270	5.0	614.3	614.3	614.7	0.4
055	5,474	70	257	5.2	618.3	618.3	618.6	0.3
058	5,777	270	1,663	0.8	624.2	624.2	624.2	0.0
Rocky River								
2124	212,349	540	10,604	3.6	468.9	468.9	469.7	0.8
2133	213,290	521	7,713	5.0	469.5	469.5	470.3	0.8
2144	214,424	468	6,991	5.5	470.4	470.4	471.2	0.8
2158	215,753	390	7,422	5.2	471.9	471.9	472.8	0.9
2177	217,673	325	6,594	5.9	474.1	474.1	475.0	0.9
2191	219,127	395	8,147	4.8	475.4	475.4	476.3	0.9
2208	220,790	567	9,526	4.1	476.6	476.6	477.5	0.9
2216	221,606	341	7,348	5.3	476.9	476.9	477.9	0.9
2236	223,581	301	6,718	5.6	478.2	478.2	479.1	0.9
2247	224,652	342	7,251	5.2	479.0	479.0	480.0	0.9
2260	225,954	451	8,662	4.3	479.9	479.9	480.8	0.9
2273	227,295	632	12,367	3.0	480.9	480.9	481.9	1.0
2283	228,328	278	6,235	6.0	481.0	481.0	482.0	0.9
2294	229,360	340	7,545	6.8	482.7	482.7	483.2	0.5
2310	230,959	400	8,478	6.0	484.7	484.7	485.6	1.0
2325	232,454	400	9,605	5.3	487.6	487.6	488.1	0.5
2349	234,859	390	9,845	5.2	489.8	489.8	490.6	0.8
2368	236,824	420	11,003	4.7	491.6	491.6	492.5	0.9
2382	238,212	465	11,651	4.4	492.8	492.8	493.7	0.8
2396	239,647	485	12,236	4.2	494.0	494.0	494.8	0.8
2411	241,060	385	9,818	5.3	494.8	494.8	495.6	0.8
2429	242,895	530	13,034	4.0	496.2	496.2	497.1	0.9
2442	244,234	470	11,406	4.6	496.8	496.8	497.6	0.8
2456	245,587	410	10,677	4.9	497.7	497.7	498.5	0.8
2471	247,148	550	13,566	3.8	499.7	499.7	500.5	0.8
2496	249,578	670	16,200	3.4	500.8	500.8	501.6	0.8
2512	251,176	720	17,904	3.1	501.6	501.6	502.4	0.7
2532	253,181	885	21,593	2.5	502.5	502.5	503.4	0.8
2564	256,429	1,220	27,986	2.0	503.4	503.4	504.3	0.9
2613	261,270	1,540	32,603	1.7	504.2	504.2	505.1	0.8
2649	264,918	1,065	19,708	2.8	505.5	505.5	506.4	0.8
2686	268,641	985	20,329	2.7	506.7	506.7	507.6	0.9
2729	272,919	790	16,703	3.3	509.5	509.5	510.3	0.9
2760	276,047	745	14,312	3.2	510.6	510.6	511.5	0.9
2778	277,814	455	10,159	4.4	512.3	512.3	512.6	0.2
2799	279,887	465	10,715	4.2	513.5	513.5	514.0	0.4
2812	281,213	515	11,226	4.0	514.8	514.8	515.2	0.4
2831	283,074	460	10,588	4.3	515.8	515.8	516.2	0.5
2847	284,697	525	10,983	4.1	516.8	516.8	517.4	0.5
2858	285,832	450	10,149	4.4	517.6	517.6	518.3	0.7
2869	286,858	375	8,716	5.2	518.6	518.6	519.3	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
2879	287,860	365	8,544	5.3	519.5	519.5	520.2	0.8
2895	289,510	480	10,669	4.2	521.0	521.0	521.6	0.7
2906	290,638	315	7,845	5.8	521.6	521.6	522.2	0.6
2920	292,049	360	9,245	4.9	524.0	524.0	524.7	0.7
2960	296,042	535	12,562	3.6	525.8	525.8	526.7	0.8
2984	298,433	930	21,789	2.1	527.4	527.4	528.2	0.8
3020	301,971	490	9,958	3.1	527.7	527.7	528.6	0.9
3044	304,405	430	9,657	3.2	529.0	529.0	529.8	0.9
3068	306,838	315	7,049	4.4	530.0	530.0	530.8	0.9
3084	308,380	400	9,904	3.1	531.0	531.0	531.9	0.9
3102	310,186	500	10,612	2.9	531.7	531.7	532.6	0.9
3129	312,870	485	10,228	3.0	532.7	532.7	533.7	1.0
3149	314,855	435	8,989	3.4	533.9	533.9	534.9	1.0
3170	316,998	420	8,423	3.6	535.0	535.0	535.9	0.9
3194	319,432	509	10,173	2.4	536.2	536.2	537.1	1.0
3214	321,411	360	7,364	3.4	536.8	536.8	537.8	1.0
3233	323,296	310	6,338	3.9	537.6	537.6	538.6	1.0
3249	324,871	370	7,471	3.3	538.5	538.5	539.5	1.0
3268	326,821	345	7,068	3.5	539.5	539.5	540.5	1.0
3283	328,316	235	5,938	4.2	540.2	540.2	541.2	1.0
3303	330,259	685	9,770	2.6	541.3	541.3	542.2	1.0
3330	332,987	390	6,415	3.7	543.0	543.0	543.9	0.9
3342	334,192	435	8,025	3.0	544.0	544.0	544.9	0.9
3362	336,223	290	5,032	3.8	544.9	544.9	545.8	0.9
3384	338,440	570	8,851	2.2	546.2	546.2	547.1	0.9
3427	342,679	905	12,622	1.5	547.1	547.1	548.0	0.9
3453	345,326	312	3,900	5.0	547.7	547.7	548.6	0.9
3465	346,467	350	4,717	4.1	549.2	549.2	550.1	0.9
3473	347,323	270	3,987	4.9	551.9	551.9	552.0	0.1
3484	348,353	320	4,950	3.9	553.4	553.4	553.7	0.4
3506	350,579	168	3,326	5.8	555.7	555.7	556.3	0.6
3521	352,110	345	5,585	3.5	558.4	558.4	558.8	0.4
3549	354,865	530	6,852	2.8	559.8	559.8	560.5	0.8
3575	357,546	365	4,549	4.3	560.4	560.4	561.4	1.0
3600	360,019	335	5,338	3.6	563.0	563.0	563.9	0.9
3644	364,380	325	5,124	3.8	566.7	566.7	567.6	0.9
3657	365,664	400	6,299	3.1	567.6	567.6	568.6	1.0
3679	367,887	250	4,380	3.8	569.7	569.7	570.6	0.9
3709	370,898	390	7,096	2.3	571.8	571.8	572.7	1.0
3737	373,700	515	9,385	1.8	572.6	572.6	573.6	1.0
3761	376,117	270	4,587	3.6	573.0	573.0	574.0	0.9
3780	377,961	202	3,436	4.8	574.3	574.3	575.2	0.9
3793	379,255	421	6,795	2.4	575.8	575.8	576.7	0.9
3807	380,659	230	3,812	4.3	576.4	576.4	577.3	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
3818	381,804	310	5,083	3.2	578.2	578.2	578.8	0.7
3847	384,671	400	6,215	2.6	579.9	579.9	580.8	1.0
3865	386,464	232	4,095	4.0	581.0	581.0	581.7	0.7
3874	387,356	210	3,806	4.3	582.7	582.7	582.8	0.1
3900	389,952	339	6,032	2.7	584.0	584.0	584.7	0.7
3919	391,930	425	7,238	2.3	585.1	585.1	585.9	0.8
3949	394,942	290	4,834	3.4	587.0	587.0	587.8	0.8
3971	397,055	390	6,755	2.4	588.4	588.4	589.3	0.9
3992	399,244	725	12,161	1.4	589.5	589.5	590.4	0.9
4016	401,609	1,405	19,924	0.8	590.0	590.0	590.9	0.9
4038	403,756	885	9,916	1.7	590.4	590.4	591.4	0.9
4060	406,020	840	8,318	2.0	591.5	591.5	592.5	1.0
4083	408,283	210	2,843	5.8	594.2	594.2	595.2	1.0
4096	409,646	365	5,591	2.9	599.2	599.2	600.1	0.9
4113	411,330	660	10,656	1.5	602.5	602.5	603.3	0.9
4137	413,698	844	13,229	1.2	603.2	603.2	604.2	1.0
4156	415,554	658	9,449	1.7	603.8	603.8	604.7	0.9
4167	416,720	560	6,393	2.6	604.7	604.7	605.7	1.0
4185	418,461	625	9,104	1.8	605.8	605.8	606.7	1.0
4212	421,222	345	3,868	3.0	606.9	606.9	607.8	0.8
4229	422,871	310	3,211	3.6	609.2	609.2	609.8	0.6
4249	424,892	590	6,101	1.9	611.7	611.7	612.5	0.8
4273	427,336	424	4,519	2.5	613.6	613.6	614.4	0.9
4288	428,781	335	4,068	2.8	615.5	615.5	616.4	0.9
4300	429,982	885	10,337	1.1	616.3	616.3	617.2	0.9
4327	432,682	1,050	10,466	1.1	617.5	617.5	618.2	0.8
4353	435,336	580	4,767	2.4	619.4	619.4	620.4	0.9
4370	437,038	1,190	16,348	0.7	624.9	624.9	625.3	0.4
4399	439,854	1,310	12,029	1.0	625.4	625.4	625.8	0.5
4426	442,619	900	5,762	2.0	626.8	626.8	627.6	0.8
4448	444,788	850	7,379	1.5	633.6	633.6	634.4	0.8
4474	447,426	593	4,547	2.5	636.9	636.9	637.8	0.9
4489	448,887	240	2,237	5.1	638.6	638.6	639.5	1.0
4496	449,642	245	2,719	4.2	643.1	643.1	643.3	0.2
4510	450,987	640	6,258	1.8	644.3	644.3	644.8	0.5
4522	452,201	455	4,578	2.5	645.4	645.4	645.9	0.5
Rocky River Tributary								
003	327	170	803	1.6	592.8 ¹	587.7	588.6	0.9
020	2,003	35	207	6.2	593.4	593.4	593.4	0.0
025	2,494	56	346	3.6	595.8	595.8	595.8	0.0
037	3,707	61	438	2.9	598.3	598.3	598.3	0.0
042	4,237	115	480	2.6	600.7	600.7	600.8	0.0
047	4,732	145	490	2.6	601.6	601.6	601.8	0.3
Rogers Lake Branch								
004	423	172	668	3.1	630.9 ¹	629.3	629.9	0.5

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
021	2,099	149	721	2.9	636.7	636.7	637.7	1.0
024	2,441	115	803	2.6	640.9	640.9	641.9	1.0
030	3,044	192	965	2.2	641.8	641.8	642.7	0.9
037	3,717	180	660	2.9	643.2	643.2	644.2	1.0
045	4,515	84	416	4.6	647.5	647.5	648.1	0.6
060	5,993	90	731	2.6	658.6	658.6	658.7	0.2
064	6,423	124	743	1.7	658.8	658.8	659.4	0.6
072	7,175	30	181	6.9	660.1	660.1	660.9	0.8
080	7,969	81	403	3.1	668.6	668.6	669.4	0.9
085	8,491	21	108	10.8	670.6	670.6	670.9	0.3
092	9,229	39	243	4.8	677.1	677.1	677.4	0.3
100	9,994	62	165	5.8	686.3	686.3	686.3	0.0
105	10,523	62	332	2.9	692.8	692.8	693.4	0.6
112	11,173	53	217	4.2	701.0	701.0	701.6	0.6
117	11,673	35	175	5.2	704.0	704.0	704.8	0.8
122	12,150	50	463	1.9	715.1	715.1	715.2	0.1
126	12,631	55	247	2.2	715.3	715.3	715.7	0.4
131	13,132	40	121	4.6	720.5	720.5	721.0	0.5
135	13,533	43	80	5.4	724.9	724.9	725.2	0.3
140	14,028	35	131	3.3	733.8	733.8	734.0	0.2
143	14,342	57	177	1.4	734.6	734.6	735.6	1.0
148	14,752	27	56	4.3	741.7	741.7	741.8	0.1
Shamrock Branch								
001	128	25	52	5.5	608.2 ¹	608.0	608.6	0.6
003	310	23	60	4.8	612.0	612.0	612.4	0.3
004	428	38	252	4.7	592.3 ¹	592.3	593.1	0.8
005	497	13	44	6.5	614.6	614.6	614.9	0.4
007	719	47	392	3.0	600.2	600.2	601.2	1.0
007	726	36	46	5.7	622.0	622.0	622.0	0.0
008	820	25	49	5.3	628.4	628.4	628.7	0.2
009	923	21	47	5.6	643.2	643.2	643.5	0.3
010	1,030	102	460	2.6	601.0	601.0	601.9	0.9
015	1,473	37	134	5.0	602.6	602.6	603.4	0.8
017	1,669	24	108	6.2	604.4	604.4	604.7	0.3
020	1,955	53	206	1.8	608.2	608.2	609.2	1.0
020	2,012	35	128	2.8	608.4	608.4	609.3	1.0
021	2,148	30	116	3.1	609.9	609.9	610.7	0.7
Shinn Branch								
2	180	27	131	4.3	509.7 ³	486.0	486.0	0.0
14	1,375	59	75	6.4	509.7 ¹	507.2	507.6	0.4
22	2,170	34	110	5.1	525.2	525.2	526.0	0.8
28	2,831	17	59	9.4	548.2	548.2	548.2	0.0
35	3,510	12	50	9.1	571.3	571.3	571.9	0.6
Stricker Branch								
006	600	105	469	4.4	596.6 ¹	593.0	593.6	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
015	1,499	50	412	5.0	599.6	599.6	600.3	0.6
020	2,020	95	502	4.1	600.9	600.9	601.4	0.6
029	2,934	90	455	4.2	605.9	605.9	606.5	0.6
035	3,460	185	1,755	1.1	613.0	613.0	613.0	0.0
045	4,452	80	622	2.9	613.4	613.4	613.7	0.4
051	5,060	105	957	1.9	617.0	617.0	617.7	0.7
055	5,536	120	977	1.8	617.3	617.3	618.2	0.9
060	6,012	155	970	1.8	617.7	617.7	618.7	1.0
065	6,544	140	551	3.2	618.6	618.6	619.4	0.8
072	7,228	45	234	5.4	621.4	621.4	622.4	1.0
076	7,608	65	227	5.6	623.4	623.4	624.2	0.8
083	8,282	90	341	3.6	629.8	629.8	630.4	0.6
088	8,756	189	1,216	1.0	636.8	636.8	637.6	0.9
091	9,116	156	579	2.1	637.0	637.0	637.8	0.8
094	9,392	185	858	1.4	637.5	637.5	638.1	0.6
Threemile Branch								
	-8,888	*	*	*	741.3	741.3	*	*
009	890	184	632	4.9	560.0 ¹	555.2	555.6	0.4
015	1,525	42	281	11.0	560.0 ¹	556.0	556.3	0.3
022	2,186	87	456	6.8	560.2 ¹	560.2	560.6	0.4
028	2,796	47	419	7.4	563.2	563.2	563.4	0.2
031	3,062	43	390	7.9	563.7	563.7	564.2	0.5
033	3,317	47	554	5.5	565.8	565.8	566.1	0.3
040	3,971	105	675	4.6	566.8	566.8	567.3	0.6
045	4,522	59	475	6.5	568.2	568.2	568.9	0.7
053	5,302	77	732	4.2	570.0	570.0	570.8	0.9
058	5,806	85	561	5.5	570.3	570.3	571.2	1.0
064	6,384	85	624	5.0	571.9	571.9	572.9	1.0
070	6,981	56	573	5.4	573.3	573.3	574.3	1.0
076	7,566	53	538	5.7	575.1	575.1	575.8	0.8
078	7,820	61	555	5.5	576.2	576.2	577.0	0.7
081	8,138	45	441	7.0	577.8	577.8	578.0	0.2
086	8,612	96	784	3.9	578.8	578.8	579.4	0.6
092	9,206	90	530	5.8	579.2	579.2	579.6	0.4
096	9,555	56	478	6.4	580.4	580.4	581.2	0.8
100	9,987	70	561	5.5	581.9	581.9	582.6	0.7
105	10,500	45	376	8.2	583.3	583.3	583.7	0.4
109	10,870	48	470	6.5	584.6	584.6	585.5	0.9
113	11,294	83	663	4.6	589.0	589.0	589.0	0.0
121	12,053	275	1,106	2.8	591.1	591.1	591.1	0.0
132	13,171	130	765	3.7	592.8	592.8	593.2	0.4
138	13,818	85	518	5.5	593.7	593.7	594.3	0.6
146	14,601	82	564	5.0	596.3	596.3	597.3	1.0
155	15,488	100	798	3.3	598.9	598.9	599.9	1.0
161	16,084	100	605	4.4	600.8	600.8	601.5	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
165	16,530	75	491	5.1	602.8	602.8	603.6	0.9
168	16,839	162	1,670	1.5	613.4	613.4	613.4	0.0
176	17,576	180	1,574	1.6	613.6	613.6	613.6	0.0
183	18,342	171	1,437	1.5	613.9	613.9	614.9	1.0
193	19,310	138	919	2.3	614.8	614.8	615.7	0.9
204	20,425	91	403	5.3	617.9	617.9	618.7	0.8
212	21,231	54	388	5.5	619.9	619.9	620.8	0.9
219	21,921	47	309	6.9	622.6	622.6	623.4	0.8
221	22,080	43	325	6.3	624.0	624.0	624.4	0.4
224	22,385	89	556	3.7	627.3	627.3	627.3	0.0
226	22,635	49	302	6.8	627.7	627.7	627.9	0.3
230	22,968	36	179	11.6	630.8	630.8	630.8	0.0
232	23,202	66	311	6.6	634.6	634.6	634.6	0.0
239	23,904	42	354	5.8	638.4	638.4	638.4	0.0
243	24,278	39	261	7.9	639.7	639.7	639.7	0.0
247	24,686	42	302	6.6	641.9	641.9	642.0	0.1
252	25,161	43	374	5.3	645.0	645.0	645.4	0.4
255	25,546	39	442	4.5	649.8	649.8	650.7	0.9
258	25,842	39	416	4.8	650.4	650.4	651.2	0.8
262	26,158	38	378	5.2	651.1	651.1	651.8	0.7
267	26,695	140	1,050	1.9	654.5	654.5	655.3	0.8
275	27,451	100	689	2.7	655.2	655.2	656.2	1.0
280	28,046	33	427	4.3	659.8	659.8	660.8	0.9
284	28,386	40	749	2.5	669.2	669.2	669.7	0.4
286	28,606	45	805	2.3	669.3	669.3	669.8	0.5
291	29,051	43	670	2.6	669.4	669.4	669.9	0.6
296	29,611	57	527	3.4	670.4	670.4	671.3	0.9
304	30,434	41	415	4.1	670.8	670.8	671.7	1.0
310	30,980	70	565	3.0	673.4	673.4	674.1	0.7
312	31,225	75	747	2.3	675.4	675.4	675.9	0.6
320	32,044	140	880	2.0	675.9	675.9	676.8	0.9
325	32,462	115	562	3.0	676.9	676.9	677.9	0.9
328	32,763	100	503	3.4	679.8	679.8	680.7	0.9
332	33,161	115	639	2.7	682.8	682.8	683.6	0.8
335	33,486	110	612	2.8	684.1	684.1	685.0	0.9
341	34,071	105	875	1.9	690.3	690.3	690.8	0.5
348	34,773	33	201	8.2	690.7	690.7	691.7	1.0
354	35,381	36	201	8.2	695.8	695.8	696.0	0.1
357	35,739	53	269	5.6	698.4	698.4	699.3	0.9
362	36,249	58	238	6.3	702.0	702.0	702.3	0.3
368	36,760	82	335	4.5	705.2	705.2	706.0	0.8
371	37,122	95	416	3.6	707.5	707.5	708.4	0.9
378	37,775	80	376	3.3	710.6	710.6	711.4	0.8
384	38,392	150	814	1.5	716.2	716.2	717.1	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
388	38,767	57	294	4.2	717.3	717.3	718.1	0.8
393	39,272	63	276	4.5	719.4	719.4	720.3	0.9
399	39,859	50	205	5.3	721.8	721.8	722.6	0.8
402	40,214	29	171	5.2	725.8	725.8	726.1	0.4
404	40,373	50	220	4.0	726.5	726.5	727.1	0.6
406	40,632	50	375	2.4	731.9	731.9	732.5	0.7
412	41,160	38	218	3.7	732.4	732.4	733.4	1.0
414	41,442	36	287	2.8	739.2	739.2	739.8	0.7
417	41,744	53	304	2.4	739.3	739.3	740.1	0.8
421	42,099	34	160	4.6	739.7	739.7	740.6	0.9
425	42,548	40	178	4.2	742.4	742.4	743.2	0.8
427	42,742	47	169	3.8	744.1	744.1	744.2	0.1
430	42,969	36	248	2.6	749.6	749.6	749.9	0.3
432	43,166	29	198	3.2	749.8	749.8	750.1	0.2
Tucker Branch								
019	1,911	77	241	3.3	502.6 ¹	488.3	488.8	0.5
035	3,503	51	123	3.8	502.6 ¹	500.1	500.7	0.7
Unnamed Stream								
001	108	130	376	3.5	605.5 ¹	604.5	604.9	0.4
003	297	90	320	4.1	605.5 ¹	605.2	606.1	0.9
004	434	101	468	1.0	559.7 ⁴	545.8	546.7	1.0
008	752	68	290	4.5	608.7	608.7	608.8	0.2
009	921	65	155	3.1	559.7 ⁴	546.2	547.0	0.8
012	1,228	844	7,904	0.2	623.8	623.8	623.9	0.1
025	2,510	127	305	3.9	623.8	623.8	623.8	0.0
Unnamed Tributary 1 to Coddle Creek								
009	918	156	1,060	2.3	579.1 ¹	574.8	575.6	0.8
020	1,952	204	914	2.6	579.1 ¹	576.4	577.2	0.9
029	2,939	271	2,078	1.2	587.2	587.2	587.3	0.1
037	3,738	212	1,653	1.5	587.5	587.5	587.6	0.1
044	4,404	190	1,126	2.1	587.8	587.8	588.2	0.3
049	4,915	140	817	3.0	588.7	588.7	589.0	0.4
058	5,838	132	730	3.4	591.5	591.5	592.1	0.6
069	6,943	170	788	3.2	596.2	596.2	596.9	0.8
080	7,994	100	533	4.6	602.4	602.4	602.7	0.4
085	8,464	116	535	4.5	604.1	604.1	604.8	0.7
092	9,150	65	157	6.0	607.7	607.7	608.0	0.3
102	10,216	31	125	7.6	619.3	619.3	619.7	0.4
107	10,697	55	224	3.8	628.8	628.8	628.9	0.0
112	11,215	53	132	6.5	634.6	634.6	634.6	0.0
119	11,918	68	125	5.4	642.2	642.2	642.7	0.5
125	12,486	70	242	2.8	651.4	651.4	652.3	0.9
Unnamed Tributary 1 to Irish Buffalo Creek								
002	250	41	249	6.0	564.6 ¹	557.8	557.9	0.1
011	1,061	31	196	7.6	564.6 ¹	561.5	561.8	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
018	1,758	48	248	6.0	565.3 ¹	565.3	565.8	0.5
022	2,250	43	255	5.9	567.5	567.5	567.9	0.4
031	3,062	100	338	4.4	570.8	570.8	571.3	0.5
038	3,840	23	146	10.3	574.3	574.3	575.1	0.8
045	4,493	60	299	4.3	578.6	578.6	579.5	0.8
055	5,496	130	456	2.8	584.4	584.4	585.3	0.9
067	6,684	49	277	4.6	591.8	591.8	592.5	0.7
079	7,939	55	255	4.4	602.1	602.1	603.0	0.8
088	8,762	30	139	8.0	609.0	609.0	609.0	0.0
093	9,261	55	383	2.4	616.0	616.0	616.6	0.5
097	9,712	31	159	4.7	616.5	616.5	617.2	0.8
102	10,167	79	916	0.8	631.7	631.7	631.7	0.0
109	10,943	30	204	3.7	631.8	631.8	632.3	0.5
115	11,500	50	210	1.5	636.9	636.9	637.5	0.6
119	11,863	55	125	2.5	639.3	639.3	639.9	0.6
122	12,184	18	67	4.6	643.7	643.7	644.0	0.3
Unnamed Tributary 2 to Irish Buffalo Creek								
008	752	78	401	3.5	605.0 ¹	604.5	605.4	0.8
012	1,231	80	372	3.8	606.2 ¹	606.2	607.0	0.7
018	1,777	47	216	6.1	609.8	609.8	610.5	0.8
023	2,259	40	214	6.2	614.1	614.1	614.8	0.7
028	2,842	34	183	6.0	629.5	629.5	629.6	0.0
031	3,071	28	129	8.5	631.6	631.6	631.6	0.0
035	3,524	75	304	3.4	639.7	639.7	640.0	0.3
039	3,870	65	348	2.9	640.3	640.3	640.8	0.6
043	4,315	55	257	2.9	649.4	649.4	650.1	0.7
047	4,654	90	971	0.8	663.1	663.1	664.1	1.0
051	5,149	60	422	1.8	663.2	663.2	664.2	0.9
056	5,628	35	137	5.5	666.4	666.4	666.7	0.3
Wolf Meadow Branch								
006	628	250	1,247	3.2	564.1 ¹	558.9	559.4	0.5
016	1,611	225	1,264	3.2	564.1 ¹	562.1	562.8	0.7
028	2,783	190	1,155	3.5	565.6	565.6	566.5	0.9
039	3,883	250	2,719	1.5	577.2	577.2	577.2	0.0
048	4,821	145	1,336	2.6	577.5	577.5	577.8	0.3
055	5,487	145	895	3.9	578.2	578.2	578.9	0.7
064	6,384	200	1,407	2.4	584.9	584.9	585.4	0.5
072	7,164	155	1,016	3.2	586.0	586.0	586.5	0.5
083	8,279	180	1,667	1.9	593.8	593.8	594.6	0.8
086	8,631	180	1,388	2.3	594.1	594.1	594.9	0.8
092	9,221	101	444	2.5	594.5	594.5	595.3	0.8
096	9,645	93	294	3.8	597.9	597.9	598.2	0.3
103	10,262	60	181	5.6	604.8	604.8	605.6	0.8
110	10,958	71	317	3.2	612.9	612.9	613.7	0.8
114	11,358	77	238	4.3	616.6	616.6	616.6	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
115	11,514	80	183	5.6	618.3	618.3	618.6	0.3
Yow Branch								
014	1,443	50	274	2.5	510.9 ¹	490.9	491.7	0.8
027	2,677	85	475	1.4	510.9 ¹	500.8	501.2	0.4
034	3,375	32	109	6.2	510.9 ¹	502.9	503.4	0.5

¹Elevation includes backwater effects

²Value is inaccurate, as the floodway has been adjusted in this area to match topographic-based floodplain redelineation

³Flooding Controlled by Dutch Buffalo Creek

⁴Flooding Controlled by Rocky River

* Values not computed for this station

6.4 Coastal Flood Hazard Mapping

This section is not applicable to this FIS project.

7.0 Revising the FIS

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

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

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

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

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

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

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

7.2 Letters of Map Revision

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

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

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

7.3 Physical Map Revisions

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

7.4 Contracted Restudies

The NFIP provides for a periodic review and restudy of flood hazards in a given community. FEMA accomplishes this through a national mapping needs assessment process that assigns priorities and allocates funds to sponsor or subsidize new flood hazard analyses used to update FIS Reports. For map maintenance restudies within the state of North Carolina, scoping will be performed by county approximately 2.5-3.5 years after the previous effective date. Scoping will focus on streams with restudy needs within those previously effective counties rather than on full countywide restudies. A restudy refers specifically to updating or reevaluating engineering analyses that were performed for a flood mapping project that directly impact BFEs and/or flood hazard boundary extents

or analysis of previously unstudied flood prone areas. Restudy project evaluation triggers and prioritization values are an essential component of the map maintenance program. For more information regarding NCFMP-contracted restudies, please contact the NCFMP at 919-715-5711 or at www.ncfloodmaps.com. For more information regarding FEMA-contracted restudies, please contact the FEMA Map Information eXchange (FMIX) toll-free information line at 1-877-FEMA MAP(1-877-336-2627) or the FEMA Regional Office at the address listed on the Notice to Flood Insurance Study Users page at the front of this report.

7.5 Map Revision History

The current FIRM is a subset of the Statewide FIRM, showing flood hazard information for the entire geographic area of Cabarrus 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 11/5/2008 North Carolina Statewide FIRM, which includes Cabarrus County, are presented in Table 24, "Map Revision History."

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

Table 24 - Map Revision History

Community	Initial Identification Date	Initial FIRM Effective Date	FIS Revision Date
CABARRUS COUNTY	12/27/1974	5/5/1981	02/19/2014
CITY OF CHARLOTTE	6/28/1974	8/15/1978	02/19/2014
CITY OF CONCORD	12/21/1973	3/4/1980	02/19/2014
CITY OF KANNAPOLIS	12/27/1974	5/5/1981	02/19/2014
CITY OF LOCUST	9/21/2000	9/21/2000	09/03/2008
TOWN OF FAIRVIEW	12/20/1974	7/18/1983	02/19/2014
TOWN OF HARRISBURG	11/2/1994	11/2/1994	02/19/2014
TOWN OF MIDLAND	12/27/1974	5/5/1981	02/19/2014
TOWN OF MOUNT PLEASANT	11/2/1994	11/2/1994	02/19/2014
TOWN OF STANFIELD	9/21/2000	9/21/2000	09/03/2008

8.0 Study Contracting and Community Coordination

8.1 Authority and Acknowledgments

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

This FIS revises and updates the previous countywide FIS for the geographic area of Cabarrus 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
CABARRUS COUNTY	11/5/2008	NCFMP	NCFMP	206-000-23	10/4/2013
CABARRUS COUNTY	11/5/2008	NCFMP	NCFMP	286-0000-23	3/21/2016
CITY OF CHARLOTTE	11/5/2008	NCFMP	NCFMP	206-000-23	10/4/2013
CITY OF CHARLOTTE	11/5/2008	NCFMP	NCFMP	286-0000-23	3/21/2016
CITY OF CONCORD	11/5/2008	NCFMP	NCFMP	206-000-23	10/4/2013
CITY OF CONCORD	11/5/2008	NCFMP	NCFMP	286-0000-23	3/21/2016
CITY OF KANNAPOLIS	11/5/2008	NCFMP	NCFMP	206-000-23	10/4/2013
CITY OF KANNAPOLIS	11/5/2008	NCFMP	NCFMP	286-0000-23	3/21/2016
CITY OF LOCUST	11/5/2008	NCFMP	NCFMP	206-000-23	10/4/2013
CITY OF LOCUST	11/5/2008	NCFMP	NCFMP	286-0000-23	3/21/2016
TOWN OF FAIRVIEW	11/5/2008	NCFMP	NCFMP	206-000-23	10/4/2013

Table 25 — Authority and Acknowledgments

Community	FIS Dated	Study Contracted By	Data Source	Contract or IAA Number	Work Completed In
TOWN OF FAIRVIEW	11/5/2008	NCFMP	NCFMP	286-0000-23	3/21/2016
TOWN OF HARRISBURG	11/5/2008	NCFMP	NCFMP	206-000-23	10/4/2013
TOWN OF HARRISBURG	11/5/2008	NCFMP	NCFMP	286-0000-23	3/21/2016
TOWN OF MIDLAND	11/5/2008	NCFMP	NCFMP	206-000-23	10/4/2013
TOWN OF MIDLAND	11/5/2008	NCFMP	NCFMP	286-0000-23	3/21/2016
TOWN OF MOUNT PLEASANT	11/5/2008	NCFMP	NCFMP	206-000-23	10/4/2013
TOWN OF MOUNT PLEASANT	11/5/2008	NCFMP	NCFMP	286-0000-23	3/21/2016
TOWN OF STANFIELD	11/5/2008	NCFMP	NCFMP	206-000-23	10/4/2013
TOWN OF STANFIELD	11/5/2008	NCFMP	NCFMP	286-0000-23	3/21/2016

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 Cabarrus County were produced by NCFMP under contract with the State of North Carolina and issued on effective 8/30/2016. For this revision, the hydrologic and hydraulic analyses and the FIRM panels were produced by NCFMP, under contract with the State of North Carolina.

8.2 Consultation Coordination Officer's Meetings/Scoping Meetings

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

The dates of the initial and final CCO meetings held for Cabarrus County and Incorporated Areas were compiled from the previous countywide FIS Report and are shown in Table 26, “Consultation Coordination Officer’s Meetings

Table 26 — Consultation Coordination Officer’s Meetings

Community	For FIS Dated	Initial CCO Date	Attended By	Final CCO Date	Attended By
CABARRUS COUNTY	8/3/1989	6/1/1977	Representatives of Cabarrus County, FEMA, State, Study Contractor	8/8/8888	Representatives of Cabarrus County, FEMA, State, Study Contractor
CABARRUS COUNTY	11/2/1994	6/28/1989	Representatives of Cabarrus County, FEMA, State, Study Contractor	9/6/1984	Representatives of Tetra Tech, FEMA, and Washington County
CABARRUS COUNTY	11/2/1994	6/28/1989	Representatives of Cabarrus County, FEMA, State, Study Contractor	6/2/1993	Representatives of Cabarrus County, FEMA, State, Study Contractor
CITY OF CHARLOTTE	8/15/1978	11/20/1974	Representatives from the City of Charlotte, Mecklenburg County, USGS, and FIA	11/8/1976	Representatives from the City of Charlotte, Mecklenburg County, USGS, and FIA
CITY OF CHARLOTTE	1/6/1994	9/4/1991	Representatives from the City of Charlotte, Mecklenburg County, USGS, and FIA	8/8/8888	NP
CITY OF CONCORD	7/31/1989	6/1/1977	Representatives of Cabarrus County, FEMA, State, Study Contractor	8/8/8888	Representatives of Cabarrus County, FEMA, State, Study Contractor
CITY OF CONCORD ETJ	7/31/1989	6/1/1977	Representatives of Cabarrus County, FEMA, State, Study Contractor	8/8/8888	Representatives of Cabarrus County, FEMA, State, Study Contractor

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 Cabarrus County are shown in Table 28, "Scoping Meetings." Meetings held for the map maintenance revision are also included below for Cabarrus County.

Table 28 — Scoping Meetings

Community	Riverbasin	Initial Scoping Date	Attended By	Final Scoping Date	Attended By
CABARRUS COUNTY	FRENCH BROAD	9/19/2005	Representatives of local communities, Henderson County Dewberry, NCFMP, and NCDEM	1/25/2006	Representatives of local communities, Henderson County Dewberry, NCFMP, and NCDEM
CABARRUS COUNTY	YADKIN	1/7/2004	Representatives of local communities, Dewberry, NCFMP, and Cabarrus County	1/17/2006	Representatives of local communities, City of Concord, Kannapolis, Dewberry, NCFMP, and County
CITY OF CONCORD	YADKIN	1/7/2004	NP	1/17/2006	Representatives of local communities, City of Concord, Kannapolis, Dewberry, NCFMP, and County
CITY OF CONCORD ETJ	YADKIN	1/7/2004	NP	1/17/2006	Representatives of local communities, City of Concord, Kannapolis, Dewberry, NCFMP, and County
CITY OF KANNAPOLIS	YADKIN	1/7/2004	NP	1/17/2006	NP
CITY OF LOCUST	YADKIN	1/6/2004	Representatives of the City of Locust, NCFMP, NFIP, and Dewberry	8/8/8888	NP
TOWN OF STANFIELD	YADKIN	1/6/2004	Representatives of the Town of Stanfield, NCFMP, NFIP, and Dewberry	8/8/8888	NP

Table 30, "Preliminary and Public Participation Meetings" is not applicable in Cabarrus County.

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

Table 27 — Map Repositories

Community	Address	City	State	Zip Code
City of Kannapolis	Kannapolis City Hall, 246 Oak Avenue	Kannapolis	NC	28081
City of Concord	City of Concord GIS Division, 66 Union Street South	Concord	NC	28025
Cabarrus County	Cabarrus County Planning Services, 65 Church Street Southeast	Concord	NC	28025
City of Charlotte	Mecklenburg County Stormwater Services, 700 North Tryon Street	Charlotte	NC	28202
Town of Mount Pleasant	Mount Pleasant Town Hall, 8590 Park Drive	Mount Pleasant	NC	28124
Town of Midland	Midland Town Hall, 4293B Highway 24-27 East	Midland	NC	28107
Town of Harrisburg	Harrisburg Town Hall, 4100 Main Street, Suite 101	Harrisburg	NC	28075
Town of Fairview	Fairview Town Hall, 7514 Concord Highway	Monroe	NC	28110
City of Locust	Locust City Hall, 211 Town Centre	Locust	NC	28097
Town of Stanfield	Stanfield Town Hall, 203 West Stanly Street	Stanfield	NC	28163

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 Cabarrus County.

10.0 Appendix

10.1 Bibliography

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