FLOOD INSURANCE STUDY

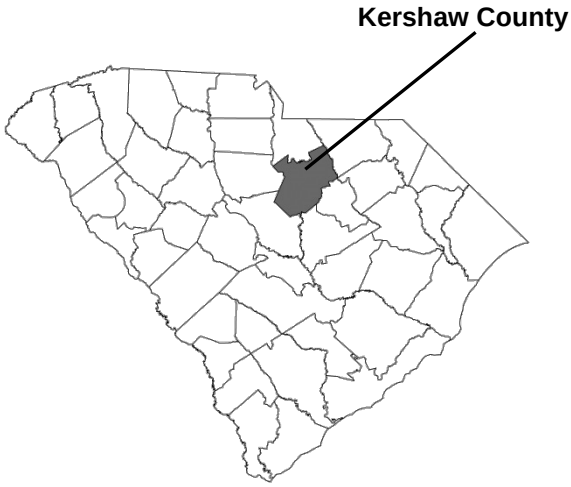
VOLUME 1 OF 2

KERSHAW COUNTY, SOUTH CAROLINA

AND INCORPORATED AREAS

Community Name	Community Number
BETHUNE, TOWN OF	450116
CAMDEN, CITY OF	450117
ELGIN, TOWN OF*	450118
KERSHAW COUNTY (UNINCORPORATED AREAS)	450115

* No Special Flood Hazard Areas Identified



REVISED:

REVISED PRELIMINARY
JULY 15, 2016

Federal Emergency Management Agency

FLOOD INSURANCE STUDY NUMBER
45055CV001B

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.

Part or all of this FIS may be revised and republished at any time. In addition, part of this FIS may be revised by the Letter of Map Revision process, which does not involve republication or redistribution of the FIS. It is, therefore, the responsibility of the user to consult with community officials and to check the community repository to obtain the most current FIS components. A listing of the Community Map Repositories can be found on the Index Map.

Initial Countywide FIS Effective Date: December 6, 2000

Revised Countywide FIS Effective Date: December 19, 2006 – to update corporate limits, to update map format, and to add roads and road names

Second Revised Countywide FIS Effective Date: [TBD] – to add and change Base Flood Elevations and Special Flood Hazard Areas; to change zone designations; to update corporate limits and roads and road names; and to reflect updated topographic information

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FLOOD INSURANCE STUDY
KERSHAW COUNTY, SOUTH CAROLINA AND INCORPORATED AREAS

1.0 INTRODUCTION

1.1 Purpose of Study

This Flood Insurance Study (FIS) revises and updates information on the existence and severity of flood hazards in the geographic area of Kershaw County, South Carolina including: the City of Camden, the Towns of Bethune and Elgin, and the unincorporated areas of Kershaw County (hereinafter referred to collectively as Kershaw County).

This FIS aids in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Protection Act of 1973. This FIS has developed flood risk data for various areas of the county that will be used to establish actuarial flood insurance rates. This information will also be used by Kershaw County to update existing floodplain regulations as part of the Regular Phase of the National Flood Insurance Program (NFIP), and by local and regional planners to further promote sound land use and floodplain development. Minimum floodplain management requirements for participation in the NFIP are set forth in the Code of Federal Regulations at 44 CFR, 60.3.

Please note that the Town of Elgin does not have any mapped Special Flood Hazard Areas (SFHAs). This does not preclude future determinations of the SFHAs that might be necessitated by changed conditions affecting the community (ie. Annexation of new lands) or the availability of new scientific or technical data about flood hazards.

In some States or communities, floodplain management criteria or regulations may exist that are more restrictive or comprehensive than the minimum Federal requirements. In such cases, the more restrictive criteria take precedence and the State (or other jurisdictional agency) will be able to explain them.

1.2 Authority and Acknowledgements

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

The December 6, 2000, FIS was prepared to include unincorporated areas and incorporated communities within Kershaw County in a countywide FIS. Information on the authority and acknowledgments for each jurisdiction included in this countywide FIS, as compiled from their previously printed FIS reports, is shown below.

Camden, City of: the hydrologic and hydraulic analyses for the May 2, 1983, FIS report and November 2, 1983, Flood Insurance Rate Map (FIRM) (hereinafter referred to as the 1983 FIS) were prepared by the U.S. Army Corps of Engineers (USACE), Charleston District, for the Federal Emergency Management Agency (FEMA) under Interagency Agreement (IAA)- H-9-79, Project Order No. 29. Field surveys and mapping for this FIS were performed by Landmark Engineering Company, Inc. (mapping and control), and Moorman and Little Inc., Engineers and Surveyors (cross section surveys), under supervision of the USACE. Additional hydrographic surveys of the Wateree River were performed by the USACE. That work was completed in September 1981.

Kershaw County (Unincorporated Areas): the hydrologic and hydraulic analyses for the May 2, 1983, FIS report and November 2, 1983, FIRM (hereinafter referred to as the 1983 FIS) were prepared by the USACE, Charleston District, for FEMA under Interagency Agreement (IAA)-H-9-79, Project Order No. 29. Field surveys and mapping for this FIS were performed by Landmark Engineering Company, Inc. (mapping and control), and Moorman and Little Inc., Engineers and Surveyors (cross-section surveys), under supervision of the USACE. Hydrographic surveys on Wateree River and Wateree Lake were performed by the USACE. That work was completed in December 1981

The authority and acknowledgments for the Town of Bethune are not listed because no FIS report was ever published for this community.

For the December 6, 2000, countywide FIS, the ground surveys and updated hydrologic and hydraulic analyses were prepared for FEMA by Hayes, Seay, Mattern and Mattern, Inc., under Contract EMW- 96-CO-OO 18. This work was completed in July 1997. Kershaw County provided detailed planimetric features. NOVA Digital Systems, Inc., provided support for the vertical control and cross-section surveys under subcontract to Hayes, Seay, Mattern & Mattern, Inc.

For the December 6, 2000, countywide FIS, digital base mapping files were provided by Kershaw County. These files were compiled at a scale of 1:24,000 from U.S. Geological Survey (USGS) 7.5-Minute Series Topographic Maps.

Additional information was derived from USGS 1:24,000 scale Digital Line Graphs. Additional information was added in and around the floodplains from previously compiled FISs within Kershaw County.

For the December 19, 2006, countywide FIS revision, digital base mapping files were updated and provided by Kershaw County. Additionally, the floodway data tables and flood profiles were converted from the National Geodetic Vertical Datum of 1929 (NGVD29) to North American Vertical Datum of 1988 (NAVD88). This work was performed by Watershed Concepts (the Study Contractor) for the State of South Carolina (Cooperating Technical Partner), under the South Carolina Flood Map Modernization Initiative Project No. P24–085–MJ. This study was completed in December 2005.

For the [TBD], countywide FIS, the hydrologic and hydraulic analyses were prepared by AECOM for the State of South Carolina, Department of Natural Resources (SCDNR) under Mapping Activity Statement FY10.17. This work is a part of the larger Wateree Watershed study and is based on the Discovery Report for Wateree Watershed dated December 20, 2012 (FEMA, 2012). However, it should be noted some of the existing Zone A areas were updated and the reach lengths noted in the Discovery Report may have changed to take into account backwater conditions and streamline refinement. In Kershaw County, detailed hydrologic and hydraulic analyses were performed for approximately 9.4 miles along portions of Buck Creek, Haig Creek, Kelly Creek and Spears Creek. For portions of Bear Creek, Bolton Branch, Bridge Creek, Camp Creek, Flat Branch, Haig Creek, Horsepen Creek, Little Pine Tree Creek, Sanders Creek, and Sawneys Creek approximately 25 miles of limited detailed analyses were performed. The extents of these analyses can be found in Table 3, "[TBD], Study Scope," in Section 2.1, "Study Scope," of this FIS Report. Previously studied streams within the Wateree Watershed were redelineated using more up-to-date topographic information. This work was completed in March 2015.

Additionally, for the [TBD], countywide FIS, revised hydrologic and hydraulic analyses, and revised floodplain mapping for an approximately 21.5 mile stretch of the Catawba-Wateree river system extending from the Lake Wateree Dam in Kershaw County upstream to Rocky Creek Lake Dam near the Fairfield/Chester county boundaries were included. This work was completed in support of Letter of Map Revision (LOMR), case number 15-04-5896P, February 1, 2016.

Base map information shown on the [TBD], FIRMs was provided in digital format by Kershaw County, South Carolina.

The coordinate system used for the production of this FIRM is South Carolina State Plane (FIPSZONE 3900), North American Datum of 1983 (NAD 83). Corner coordinates shown on the FIRM are in latitude and longitude referenced to the South Carolina State Plane (FIPSZONE 3900) projection, NAD 83. Differences in the datum and spheroid used in the production of FIRMs for

adjacent counties may result in slight positional differences in map features at the county boundaries. These differences do not affect the accuracy of information shown on the FIRM.

1.3 Coordination

An initial Consultation Officer's (CCO) meeting is typically held with representatives of FEMA, the community, and the study contractor to explain the nature and purpose of a FIS, and to identify the streams to be studied by detailed methods. A final CCO meeting is then held with the same representatives to review the results of the study.

For the 1983 FIS for the City of Camden, an initial CCO meeting was held in November 1978, and a final CCO meeting was held on November 30, 1982. Both of these meetings were attended by representatives of the USACE, the City of Camden, and FEMA.

For the 1983 FIS for the unincorporated areas of Kershaw County, an initial CCO meeting was held in November 1978, and a final CCO meeting was held on November 30, 1982. Both of these meetings were attended by representatives of the USACE, Kershaw County, and FEMA.

For the December 6, 2000, countywide FIS, an initial CCO meeting was held on February 20, 1997. This meeting was attended by representatives of Kershaw County, Town of Bethune, City of Camden, and Hayes, Seay, Mattern and Mattern, Inc. A final CCO meeting was held on June 29, 1999, with representatives of FEMA, the State of South Carolina, Kershaw County, City of Camden, and the study contractor to review the results of the study.

Numerous other contacts for coordination and data acquisition were made with appropriate agencies and groups throughout the course of the study, including the following: South Carolina Department of Transportation, USGS, FEMA, and Dewberry & Davis LLC.

For the December 19, 2006, countywide FIS revision, there was no CCO meeting information presented (FEMA, 2006).

For the [TBD], countywide FIS, an initial Discovery meeting for the Wateree Watershed study was held on April 5, 2011, and attended by representatives from Kershaw, Lancaster, Lee, and Sumter Counties; the Cities of Camden, Kershaw and Sumter; as well as representatives from FEMA, SCDNR, USGS, Kershaw Conservation District and the study contractors. A Discovery Report, Wateree Watershed, 03050104, dated December 20, 2012, describes and summarizes the Discovery tasks that were conducted for the Wateree Watershed and forms the basis for this countywide FIS revision.

The results of the [TBD], countywide FIS were reviewed at the final CCO meeting, referred to as the Preliminary DFIRM Community Coordination (PDCC) meeting, held on [TBD], wherein the results of this FIS were reviewed and accepted. Those who attended this meeting included [attendee list to be inserted after preliminary stage of study]. All comments and issues raised at that meeting have been addressed.

2.0 AREA STUDIED

2.1 Scope of Study

This FIS covers the geographic area of Kershaw County, South Carolina and includes part of the Wateree Watershed, Hydrologic Unit Code 03050104.

The Wateree Watershed is located in central-northern South Carolina and covers portions of Fairfield, Lancaster, Lee, Kershaw, Richland and Sumter Counties. The southern section of the watershed is approximately 80 miles away from the Atlantic Ocean and the north portion is approximately 90 miles southeast of the Blue Ridge Mountains in North Carolina. The ground elevation ranges between 650 feet and 150 feet within the watershed (FEMA, 2012).

The Wateree River, the main stem of the Wateree Watershed, is a continuation of the Catawba River. The headwaters originate in the Blue Ridge Mountains in North Carolina. The name changes from Catawba to Wateree at Lake Wateree, which is formed by the hydroloelectric dam located in Kershaw County. The Wateree River generally flows southward joining the Congaree River to form the Santee River located about 35 miles southeast of the City of Columbia. The watershed drains 1,256 square miles with a total of 482.3 stream miles within the watershed. The Wateree Watershed covers the western portion of the Kershaw County, including the City of Camden and Town of Elgin. The Wateree Watershed encompasses approximately 514 sq.mi. (approximately 40.9 percent) of Kershaw County (FEMA, 2012).

All or portions of the flooding sources listed in Table 1, "Flooding Sources Studied by Detailed Methods," were studied by detailed methods. Limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 2).

Table 1 – Flooding Sources Studied by Detailed Methods

Big Pine Tree Creek	Little Pine Tree Creek	Tributary to Haig Creek 1
Bolton Branch	McCaskill Creek	Tributary WR-1
Bucks Creek	Runundер Branch	Tuppler Branch
Camp Creek	Sanders Creek	Twentyfive Mile Creek
Flat Branch	Sandy Branch	Unnamed Tributary to Bolton Branch
Gillies Creek	Sloan Branch	

Table 1 – Flooding Sources Studied by Detailed Methods – continued

Haig Creek	Spears Creek	Unnamed Tributary to Little Pine Tree Creek
Horsepen Creek	Swift Creek	Wateree Lake (Wateree River)
Kelly Creek	Town Creek	Yankee Branch
	Tributary CC1	

In the previously printed FIS for the unincorporated areas of Kershaw County, Twentyfive Mile Creek was formerly named Five and Twenty Creek.

As part of the December 6, 2000, countywide FIS, new or revised analyses were included for the flooding sources listed in Table 2, "December 6, 2000, Scope of Revision."

The new or revised analyses for the streams listed in Table 2 affect the City of Camden and the unincorporated areas of Kershaw County. The December 6, 2000, countywide FIS also incorporated the effects of annexations and deannexations by the Town of Elgin and Kershaw County.

Table 2 – December 6, 2000, Scope of Revision

Stream	Limits of Revised or New Detailed Study
Bolton Branch	From the confluence with Wateree River to approximately 300 feet upstream of Wylie Street
Flat Branch	From the confluence with Twentyfive Mile Creek to approximately 230 feet upstream of Wildwood Lane
Gillies Creek	From the confluence with Gillies Ditch to approximately 4,400 feet upstream of Gillies Creek Road
Haig Creek	From the confluence with Spears Creek to approximately 860 feet upstream of Fort Jackson Road
Horsepen Creek	From the confluence with Twentyfive Mile Creek to approximately 300 feet upstream of U.S. Route 1
McCaskill Creek	From U.S. Route 601 to the upstream county boundary
Rununder Branch	For its entire length within Kershaw County
Sandy Branch	For its entire length within Kershaw County
Sloan Branch	From the confluence with Spears Creek to approximately 400 feet upstream of Tower Road
Spears Creek	From U.S. Route 601 to approximately 1.3 miles upstream of Fort Jackson Road

Table 2 – December 6, 2000, Scope of Revision – continued

Stream	Limits of Revised or New Detailed Study
Tributary to Haig Creek 1	From the confluence with Haig Creek to approximately 1.6 miles upstream of Interstate 20
Tuppler Branch	From the confluence with Sandy Branch to approximately 100 feet upstream of Sessions Road
Twentyfive Mile Creek	For its entire length within Kershaw County
Unnamed Tributary to Bolton Branch	From the confluence with Bolton Branch to Cambell Street
Yankee Branch	From the confluence with Twentyfive Mile Creek to approximately 3,600 feet upstream of Chestnut Road

As part of the [TBD], countywide FIS, new detailed and limited detailed analyses were included for the flooding sources shown in Table 3, "[TBD], Scope of Revision."

Table 3 – [TBD], Scope of Revision

Stream	Limits of Study
	New Detailed Study
Buck Creek	From the confluence with Wateree River to approximately 1000 feet upstream of Baldwin Avenue
Haig Creek	From the confluence of Tributary to Haig Creek 1 to approximately 500 feet upstream of Haigs Creek Drive North
Kelly Creek	From the confluence with Spears Creek to approximately 0.73 mile upstream of Highway Church Road
Spears Creek	From just downstream of Interstate 20 to approximately 0.26 mile upstream of County Line Trail
Wateree Lake (Wateree River)	From Lake Wateree Dam to the Kershaw/Lancaster county boundary
	Limited Detailed Study
Bear Creek	From the confluence with Twentyfive Mile Creek to approximately 2.3 miles upstream of Sessions Road
Bolton Branch	From approximately 110 feet downstream of Laurens Street to approximately 0.15 mile upstream of Gordon Street

Table 3 – [TBD], Scope of Revision – continued

Stream	Limits of Study
	Limited Detailed Study – continued
Bridge Creek	From the confluence with Sandy Branch to approximately 0.17 mile upstream of Cherokee Boulevard
Camp Creek	From approximately 80 feet upstream of Carter Street to approximately 0.35 mile upstream of Carter Street
Flat Branch	From the confluence with Twentyfive Mile Creek to approximately 0.46 mile upstream of Tookie Doo Lane
Haig Creek	From approximately 350 feet upstream of Haigs Creek Drive North to approximately 0.28 mile upstream of Corner Stone Lane
Horsepen Creek	From approximately 315 feet downstream of Elgin Estates Drive to approximately 460 feet upstream of Watts Hill Road
Little Pine Tree Creek	From the confluence of Unnamed Tributary to Little Pine Tree Creek to approximately 1.44 miles upstream of the confluence of Unnamed Tributary to Little Pine Tree Creek
Sanders Creek	From approximately 1.8 miles downstream of Sanders Creek Road to approximately 0.35 mile upstream of Tidwell Town Road
Sawneys Creek	From the confluence with Wateree River to approximately 1.44 miles upstream of Wateree Dam Road

Limits of detailed study are indicated on the Flood Profiles (Exhibit 1) and on the FIRM (Exhibit 2). 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.

All or portions of numerous flooding sources in the county were studied by approximate methods. Approximate analyses were used to study those areas having a low development potential or minimal flood hazards. The scope and methods of study were proposed to, and agreed upon by, FEMA and Kershaw County.

2.2 Community Description

Kershaw County, with a total land area of 781 square miles, lies in north-central South Carolina. It is bordered on the north by Lancaster County; on the west by Fairfield County; on the west and south by Richland County; on the south by Sumter County; and on the east by Lee and Chesterfield Counties. According to

U.S. Census Bureau figures, Kershaw County had a population of approximately 61,697 in 2010 (U.S. Census Bureau, 2010[a]). The City of Camden is the largest city in Kershaw County with a population of approximately 6,838 in 2010 (U.S. Census Bureau, 2010[b]). The economy of the area is based primarily on the textile industry and agriculture.

The Wateree River, one of the state's principal rivers, flows southeasterly across Kershaw County from the northwest corner to the southern boundary. Wateree Dam, located on Wateree River about seven miles northwest of the City of Camden, forms Wateree Lake. This lake extends from the dam to the northwest county line, a distance of about fourteen miles. From its origin in the Blue Ridge Mountains of North Carolina to its junction with Congaree River about forty miles south of the City of Camden, the river travels a total distance of about 295 miles. The river is known as the Catawba River for a distance of about 220 miles from its headwaters to the mouth of Big Wateree Creek, about twenty miles northwest of Camden. Downstream of Big Wateree Creek the name of the river changes to the Wateree River. The river system, often referred to as Catawba-Wateree, drains an area of 5,580 square miles.

Approximately 75 percent of the land in Kershaw County is rural farmland, timberland, and swampland, while the remaining 25 percent is urbanized. The primary urban center is the City of Camden, the county seat of Kershaw County. Other urban areas include the Towns of Bethune and Elgin and the communities of Boykin, Mount Pisgah, Westville, and Lugoff. Most of these urbanized areas have experienced growth since the December 6, 2000, countywide FIS, and continued growth is expected. Although not considered an urban area, Wateree Lake also attracts urban development in the form of weekend cabins, mobile homes, and other recreational facilities. Existing floodplain development in the unincorporated areas of the county can be found along the Wateree Lake shore and along several smaller streams near the City of Camden. Development along the streams around the City of Camden generally consists of single family residences with a few commercial establishments and manufacturing facilities.

Soils in Kershaw County are generally well drained to moderately well drained in upland areas and poorly drained in low areas and depressions. In the creek bottoms, soils generally consist of alluvial sands and silts blanketed with finer (clay) soils with local deposits of sands and gravels.

The climate of north central South Carolina is temperate. Average monthly temperatures range from 84 degrees Fahrenheit (°F) in the summer to 30°F in the winter. Average annual precipitation for the region is 46.4 inches. The precipitation is fairly evenly distributed throughout the year, but approximately forty percent of the annual rainfall can be expected to occur from June through October.

2.3 Principal Flood Problems

October 6, 2015, Major Disaster Declaration (FEMA-4241-DR) for the State of South, including Kershaw County, after an unprecedented rain event set rainfall records across the state and flooded entire towns. For some locations, the rainfall was historic and qualified as a 1,000-year rain event, resulting in deadly and disastrous flooding with damages that could top $1 billion (Beam and Kinnard, 2015). Rainfall was severe enough to close a 75-mile stretch of Interstate 95 between Interstates 20 and 26. Flooding from this event was pervasive throughout Kershaw County, creating accessibility problems for first responders to many areas in the county. Additionally, Cook Pond Dam failed as a result of this historic flooding (South Carolina Department of Health and Environmental Control, 2015).

A review of the South Carolina Hazard Mitigation Plan (HMP) summarizes the notable flood events that took place across the state which included flash flooding due to summer storms, as well as flood events due to heavy rains. The HMP notes that from 2009 to 2011 there were two flood events affecting Kershaw County, with resulting property damages of $22,870, no additional details were available (The State of South Carolina, 2013). The Santee-Lynches HMP notes five flood occurrences from 2010 to April 2014 (Santee-Lynches Regional Council of Governments, 2015). The flood event of May 14, 2013, caused Lake Wateree to rise 2 feet above full pool causing flooding of land, docks, and houses along the shoreline.

A review of active USGS gage 02148000, Water River near Camden, South Carolina shows four events above the 27 foot flood stage as noted in the following tabulation.

Date	Gage Height (feet)	Stream-flow (cfs)
07/13/2013	27.79	45,700[1]
02/07/2010	29.34	42,700[1]
03/03/2007	28.07	33,100[1]
09/11/2004	29.67[1]	39,500[1]

[1] Discharge affected by Regulation or Diversion

Flood data for Wateree River at Camden has been collected and published by the USGS and the National Weather Service. According to the 1980 USGS publication, Water Resources Data for South Carolina, maximum discharge for the period 1904-1910, 1929-1978 was 366,000 cubic feet per second (cfs) on 26 August 26, 1908 (USGS, 1980). The publication lists the July 1916 flood (400,000 cfs) as the largest known event recorded at the time. Since both of these events occurred before any of the Duke Power Company dams were constructed, the discharges cannot be directly related to frequency of occurrence under present conditions. However, the frequency analyses based on actual and fabricated records covering the period 1892 to 1978 show the approximate recurrence

intervals for the 1908 and 1916 events to be 0.67-percent and 0.5-percent chance, respectively. If these events occurred under existing conditions, the discharges at Camden would probably be slightly lower because of flood storage in upstream reservoirs.

Lake stage records furnished by Duke Power Company show lake elevations reaching 233 and 234 feet (NAVD88) in 1928 and 1929, respectively (Duke Power Company, Unknown). Since 1930, the records indicate no lake elevations over 231 feet (NAVD88); however, from 1930 to 1978, lake elevations exceeded 229 feet (NAVD88) at least 14 times.

Flood problems in Kershaw County include occasional damage to structures located along the shore of Wateree Lake. Lakeshore development consists mostly of weekend cabins and mobile homes with a few permanent homes and commercial structures. Damages at lake elevations below 229 feet (NAVD88) are mostly limited to boat docks and storage structures. The majority of the living units are located between 229 feet (NAVD88) and 239 feet (NAVD88). The 1-percent annual chance flood elevation for Wateree Lake varies from 238 feet (NAVD88) at the dam to 241 feet (NAVD88) at the upstream study limits. At the time of the December 6, 2000, countywide FIS, there are approximately 1,130 structures within the 1-percent annual chance floodplain of Wateree Lake; about 210 of these are in Kershaw County.

Other potential flood damage areas in the county are along low-lying areas of Big Pine Tree Creek and Twentyfive Mile Creek, which are affected by backwater from Wateree River. Structures in these areas consist of single-family residences and a mill on Big Pine Tree Creek. Damageable structures along the other streams in the county consist of a few residences and small retail establishments.

2.4 Flood Protection Measures

At the time of the December 6, 2000, countywide FIS, there were no planned or completed projects specifically designed to reduce flooding on the Wateree River. However, there are ten Duke Power Company hydropower dams in the Catawba-Wateree basin. These dams are operated for hydropower generation and are subject to regulations prescribed by the Federal Energy Regulatory Commission. During periods of flooding, hydropower dams are generally operated in a manner designed to spill as little water as possible without endangering the structure or making releases which exceed maximum inflow into the reservoir. If lake levels happen to be low at the time a flood occurs, some of the floodwater may be stored, resulting in reduced flooding downstream. Incidental flood control benefits are more likely to occur during the spring and winter when reservoirs are normally drawn down anticipating heavy rainfall. If a major flood occurred during the summer or early fall when water levels were at or above normal pool elevations, very little attenuation would occur.

There are several other dams located along the detailed study reaches included in this FIS. None of these structures are operated for flood control, with most being used for recreational purposes or small hydropower operations. Any flood attenuation caused by these dams would be incidental and relatively insignificant.

There are presently no other planned or completed flood control projects that affect the streams covered in this report. The unicorporated areas and all incorporated areas, including the Town of Elgin, has adopted a floodplain ordinance.

3.0 ENGINEERING METHODS

For the flooding sources studied by detailed methods 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 is expected to be equaled or exceeded once on the average during any 10-, 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-, 50-, 100-, and 500-year floods, have a 10-, 2- 1-, and 0.2-percent 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 1-percent-annual-chance flood in any 50-year period is approximately 40 percent (4 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.

3.1 Hydrologic Analyses

Hydrologic analyses were carried out to establish the peak discharge-frequency relationships for each flooding source studied in detail affecting Kershaw County.

Each community with SFHAs within Kershaw County, with the exception of the Town of Bethune, has a previously printed FIS report. The hydrologic analyses described in those reports have been compiled and are summarized below.

Precountywide Analyses

Developed by the USACE, Hydrologic Engineering Center (HEC), a HEC-1 Rainfall-Runoff Model developed by the USACE for the Santee River Basin studies during 1975 was used to route floods of various frequencies through the Catawba-Wateree system of reservoirs and to determine discharge-frequency relationships for the study area (USACE, 1978 and Unknown). The frequency curve developed using the HEC-1 computer model plotted between the upper and

lower curves obtained by log-Pearson analyses as described above compare favorably with historic flood events. The discharges obtained using the HEC-1 model were adopted for use in the precountywide FIS.

Discharge-frequency relationships for Big Pine Tree Creek and Little Pine Tree Creek were determined by developing a HEC-1 Rainfall Runoff Model for the Big Pine Tree basin and verifying the results by conducting separate regional frequency analyses for both streams (USACE, 1978). The rainfall runoff model was used to route floods through Hermitage Lake on Big Pine Tree Creek and to determine the effect of lake storage on floods of various frequencies.

Hydrologic analyses for Swift Creek, Town Creek, Twentyfive Mile Creek, Tributary WR-1, and Sanders Creek were conducted using the Charleston District Regional Frequency Study and the USGS Regional Frequency Method (USACE, unpublished; USGS, 1975). Results using the two methods agree reasonably well and the results obtained using the Charleston District Regional Frequency Study were adopted for use in the precountywide FIS.

Hydrologic analyses for Camp Creek, Tributary CC1, and Bolton Branch were conducted using both the Tracor Method and the Putnam Method (Tracor Science and Systems, 1973; Putnam, 1972). The results of the Putnam analyses, which allows for consideration of urban factors, were used for these partially urban streams.

December 6, 2000, Countywide Analyses

The hydrologic methodology used for the December 6, 2000, countywide FIS was the USACE HEC-1 Flood Hydrograph Package (USACE, 1970). The Soil Conservation Service (SCS) dimensionless unit hydrograph was used as the method to calculate the hydrograph for each subbasin. The normal depth channel routing was used for the routing methodology. The raw data for drainage areas, curve numbers, lag and routing times were obtained from USGS Quadrangle maps (USGS, various dates). The hypothetical storm information was obtained from Technical Paper No. 40 (US Department of Commerce, 1963).

[TBD], Countywide Analyses

The [TBD], countywide FIS, is the first-time a watershed wide hydrologic analyses were conducted for the Wateree Watershed and there are no existing hydrologic analyses available. However, for counties within this Watershed Study, covered by the current scope, countywide and precountywide hydrologic analyses exist and have been include in the previous subsections.

For the [TBD], countywide FIS, hydrologic analysis was performed in support of LOMR, 15-04-5896P, February 1, 2016 (ESP Associates, P.A., 2015). The hydrologic model is based on gage analysis using USGS stream gage Catawba

River at Rock Hill (02146000) developed as part of a 2014 study of the Catawba River in North Carolina. The peak flows at USGS stream gage 02146000 were transposed downstream using the transposition formation provided in the 2014 Catawba River Study (State of North Carolina, 2014). The hydrologic discharges used were based on regional regression equations.

Discharges for the 10-, 2-, 1-, and 0.2-percent annual chance recurrence intervals for all streams studied by detailed and limited detailed methods were determined using USGS regression analyses. The calculations used the most recent edition of equations for both rural (USGS, 2009) and urban (USGS, 2004) streams.

The rural regression equations used in this study are presented as follows.

Magnitude and Frequency of Rural Floods in the Southeastern United States, 2006: Volume 3, South Carolina

$$Q_{50\%} = 10^{[0.0220(PCT_1)+0.0204(PCT_2)+0.0141(PCT_3)+0.0178(PCT_4)+0.0196(PCT_5)]} DA^{[0.649+0.00130(PCT_2)+0.00109(PCT_3)]} \quad (7)$$

$$Q_{20\%} = 10^{[0.0247(PCT_1)+0.0232(PCT_2)+0.0165(PCT_3)+0.0209(PCT_4)+0.0230(PCT_5)]} DA^{[0.627+0.00122(PCT_2)+0.00117(PCT_3)]} \quad (8)$$

$$Q_{10\%} = 10^{[0.0260(PCT_1)+0.0246(PCT_2)+0.0177(PCT_3)+0.0224(PCT_4)+0.0247(PCT_5)]} DA^{[0.617+0.00119(PCT_2)+0.00123(PCT_3)]} \quad (9)$$

$$Q_{4\%} = 10^{[0.0273(PCT_1)+0.0260(PCT_2)+0.0189(PCT_3)+0.0239(PCT_4)+0.0265(PCT_5)]} DA^{[0.606+0.00118(PCT_2)+0.00130(PCT_3)]} \quad (10)$$

$$Q_{2\%} = 10^{[0.0282(PCT_1)+0.0268(PCT_2)+0.0196(PCT_3)+0.0249(PCT_4)+0.0276(PCT_5)]} DA^{[0.600+0.00118(PCT_2)+0.00135(PCT_3)]} \quad (11)$$

$$Q_{1\%} = 10^{[0.0289(PCT_1)+0.0276(PCT_2)+0.0202(PCT_3)+0.0258(PCT_4)+0.0286(PCT_5)]} DA^{[0.594+0.00119(PCT_2)+0.00139(PCT_3)]} \quad (12)$$

$$Q_{0.5\%} = 10^{[0.0295(PCT_1)+0.0282(PCT_2)+0.0208(PCT_3)+0.0265(PCT_4)+0.0295(PCT_5)]} DA^{[0.589+0.00120(PCT_2)+0.00144(PCT_3)]} \quad (13)$$

$$Q_{0.2\%} = 10^{[0.0303(PCT_1)+0.0290(PCT_2)+0.0214(PCT_3)+0.0274(PCT_4)+0.0306(PCT_5)]} DA^{[0.583+0.00121(PCT_2)+0.00149(PCT_3)]} \quad (14)$$

Where:

$Q_{50\%}$, $Q_{20\%}$, . . .,$Q_{0.2\%}$ are the flows for floods with percent chance of exceedance of 50 percent, 20 percent, . . . , and 0.2 percent, in cubic feet per second;

PCT1, PCT2, PCT3, PCT4, and PCT5 are the basin percentages in hydrologic regions 1(Piedmont), 2(Blue Ridge), 3(Sand hills), 4(Coastal), and 5(Undefined) in percent; and DA is the drainage area, in square miles.

South Carolina's urban regression equations were used for basins that had more than 10 percent impervious area. These alternative USGS urban regression equations are valid for basins with a main channel length from 0.51 mile to 11.2 miles and impervious area from 10 to 40 percent. The equations used are shown below.

Urban flood recurrence interval (years)	Alternative urban regional regression equation
2	$41.6L^{1.47}\ 10^{0.0213IA}$
5	$58.8L^{1.50}\ 10^{0.0198IA}$
10	$69.9L^{1.51}\ 10^{0.0192IA}$
25	$82.3L^{1.53}\ 10^{0.0187IA}$
50	$90.3L^{1.55}\ 10^{0.0185IA}$
100	$97.2L^{1.56}\ 10^{0.0185IA}$
200	$103L^{1.58}\ 10^{0.0185IA}$
500	$111L^{1.60}\ 10^{0.0187IA}$

Where:

L = main channel length (miles) and IA = impervious area (percent)

The dependent variables for the regression equations were determined with GIS tools. Drainage areas were delineated for all study streams. GIS based Percent Imperviousness Layer (Source –National Land Cover Data [NLCD]) was then used to identify streams in urban watersheds. Some basins had sufficient urbanization (more than 10 percent impervious area) to justify the use of South Carolina's urban regression equations. In these urbanized basins, the main channel length was determined from the topographic data. Discharges from the urbanized basins were also compared to the rural regression discharges from the same basins.

In Kershaw County Bolton Branch, Bridge Creek, Buck Creek, Horsepen Creek, Rice Creek and Spears Creek were identified as urban basins in this study. In some instances, the urban flows are lower than the rural estimations flows and for the conservative approach, higher flows were used.

Though several gages are available in Wateree Watershed, very limited numbers of gages are available for study streams and they are not applicable because all of them are regulated or with minimum numbers of data and not suitable for Bulletin 17B analysis (Water Resources Council, 1982).

A summary of the drainage area-peak discharge relationships for the streams studied by detailed methods is shown in Table 3, "Summary of Discharges."

Table 3 – Summary of Discharges

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) Percent Annual Chance 10-percent	2-percent	1-percent	0.2-percent
BIG PINE TREE CREEK					
At confluence with Wateree River	65.9	4,230	9,940	13,310	27,670
Upstream of confluence of Little Pine Tree Creek	51.5	4,420	9,720	12,650	26,010
BOLTON BRANCH					
At confluence with Wateree River	3.0	1,450	2,180	2,520	3,550
Approximately 200 feet upstream of Old Chestnut Ferry Road	0.9	470	720	840	1,200
BUCK CREEK					
Approximately 0.3 mile upstream of Highway 20	4.07	930	1,239	1,351	1,636
Just downstream of Lachicotte Road	2.67	930	1,239	1,351	1,636
Approximately 0.5 mile upstream of Lachicotte Road	1.89	811	1,067	1,161	1,398
Approximately 0.6 mile downstream of US Route 1	1.05	526	685	744	886
Approximately 0.1 mile downstream of US Route 1	0.75	436	559	606	716
CAMP CREEK					
At Five Branch Road	1.1	800	1,300	1,600	2,250
FLAT BRANCH					
At confluence with Twentyfive Mile Creek	3.0	740	1,350	1,660	2,670
Approximately 6,500 feet upstream of confluence with Twentyfive Mile Creek	1.8	400	800	1,020	1,770
Approximately 2,500 feet downstream of Old Columbia Highway	0.8	260	510	640	1,090
Just downstream of Old Columbia Highway	0.1	50	90	110	170

Table 3 – Summary of Discharges – continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) Percent Annual Chance 10-percent	2-percent	1-percent	0.2-percent
GILLIES CREEK					
At confluence with Gillies Ditch	8.9	1,280	2,220	2,730	4,420
Approximately 600 feet upstream of U.S. Route 601	6.1	1,140	2,020	2,500	4,100
Approximately 6,800 feet upstream of U.S. Route 601	4.3	1,060	1,850	2,280	3,680
Approximately 10,600 feet upstream of U.S. Route 601	1.5	580	990	1,200	1,870
Approximately 16,000 feet upstream of U.S. Route 601	0.6	330	530	640	960
HAIG CREEK					
At confluence with Spears Creek	7.0	1,330	1,990	2,430	3,850
Just upstream of Unnamed Tributary to Haig Creek	2.0	540	1,010	1,250	2,030
Approximately 0.1 miles upstream of Route 12	1.74	467	883	1,093	1,793
Just upstream of Interstate 20	1.34	359	690	855	1,427
Just upstream of Haigs Creek North Road	0.99	262	516	638	1,088
Approximately 0.4 miles downstream of Corner Stone Lane	0.56	146	299	371	658
HORSEPEN CREEK					
At confluence with Twentyfive Mile Creek	5.6	970	1,760	2,180	3,560
Approximately 1,500 feet upstream of State Route 349	3.7	630	1,130	1,390	2,250
Approximately 200 feet downstream of State Route 700	2.3	400	740	920	1,530
Approximately 200 feet downstream of U.S. Route 1	0.7	170	370	480	880
KELLY CREEK					
At confluence with Spears Creek	6.52	236	362	414	544
Approximately 0.6 mile downstream of Highway Church Road	2.96	132	203	323	306
Just downstream of Highway Church Road	2.64	121	186	213	281

Table 3 – Summary of Discharges – continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) Percent Annual Chance 10-percent	2-percent	1-percent	0.2-percent
KELLY CREEK (continued)					
Approximately 0.5 mile upstream of Highway Church Road	1.08	62	96	111	146
Approximately 0.4 mile downstream of Blaney Road	1.02	60	93	106	140
LITTLE PINE TREE CREEK					
At confluence with Big Pine Creek	11.2	1,570	2,670	3,410	6,930
McCASKILL CREEK					
At confluence with Spears Creek	8.6	1,570	2,480	2,960	4,480
Approximately 3,000 feet upstream of State Route 47	4.6	1,110	1,770	2,120	3,240
Just upstream of confluence of Runundер Branch	2.0	1,000	1,590	1,880	2,780
Approximately 500 feet downstream of Kershaw/Richland County Boundary	0.7	440	680	800	1,160
RUNUNDER BRANCH					
At confluence with McCaskill Creek	1.0	450	760	920	1,430
Approximately 500 feet downstream of Kershaw/Richland County Boundary	0.3	100	190	230	380
SANDERS CREEK					
At confluence with Wateree River	41.5	4,480	7,790	9,570	14,760
SANDY BRANCH					
At confluence with Twentyfive Mile Creek	13.5	2,470	4,060	4,890	7,520
Just upstream of confluence of Tuppler Branch	10.5	2,090	3,240	3,880	5,870
Approximately 2,500 feet downstream of State Route 120	8.8	1,720	2,840	3,430	5,280
At Kershaw/Richland County Boundary	4.1	780	1,280	1,530	2,350

Table 3 – Summary of Discharges – continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) Percent Annual Chance 10-percent	2-percent	1-percent	0.2-percent
SLOAN BRANCH					
At confluence with Spears Creek	2.1	690	1,130	1,370	2,110
Approximately 500 feet downstream of State Route 906	1.2	460	830	1,010	1,630
SPEARS CREEK					
Approximately 8,000 feet downstream of U.S. Route 601	45.5	3,630	6,070	7,390	11,670
Approximately 2,000 feet downstream of U.S. Route 601	35.4	3,350	5,480	3,360	10,320
Approximately 200 feet downstream of State Route 47	34.6	3,390	5,530	6,710	10,490
Just upstream of confluence of Haig Creek	26.4	2,970	4,690	5,600	8,480
Just upstream of confluence of Sloan Branch	22.9	2,920	4,670	5,600	8,570
Approximately 3,000 feet upstream of State Route 12	15.3	1,930	3,120	3,740	5,680
Approximately 1,000 feet upstream of Interstate 20	12.2	1,830	2,960	3,570	5,510
Approximately 1,200 feet upstream of Kershaw/Richland County Boundary	6.6	1,140	1,760	2,080	3,100
Just downstream of pond 5,500 feet upstream of County Boundary	6.1	1,180	1,800	2,100	3,020
Just downstream of pond 14,500 feet upstream of County Boundary	3.7	740	1,350	1,680	2,770
SWIFT CREEK					
At U.S. Route 521	38.4	4,380	7,610	9,350	14,430
TOWN CREEK					
At U.S. Route 521	9.1	1,750	3,030	3,720	5,250
TRIBUTARY CC1					
At U.S. Route 521	0.4	550	890	1,090	1,500

Table 3 – Summary of Discharges – continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) Percent Annual Chance 10-percent	2-percent	1-percent	0.2-percent
TRIBUTARY TO HAIG CREEK 1					
At confluence with Haig Creek	3.4	780	1,260	1,540	2,430
Approximately 6,800 feet upstream of confluence with Haig Creek	1.2	290	520	640	1,040
Approximately 100 feet downstream of pond	0.3	110	210	260	420
TRIBUTARY WR-1					
At confluence with Wateree River	6.0	1,270	2,200	2,700	4,360
TUPPLER BRANCH					
At confluence with Sandy Branch	2.6	920	1,410	1,660	2,410
Approximately 3,000 feet upstream of State Route 396	1.4	590	1,030	1,250	1,980
Approximately 200 feet downstream of State Route 101	0.5	170	320	400	670
TWENTYFIVE MILE CREEK					
At confluence with Wateree River	125.4	7,960	14,400	17,800	29,200
Approximately 200 feet downstream of State Route 36	114.4	8,010	14,300	17,600	28,500
Approximately 1,000 feet downstream of State Route 34	100.8	7,890	14,000	17,200	27,900
Just upstream of confluence of Horsepen Creek	85.1	7,670	13,600	16,700	26,700
Just upstream of confluence of Yankee Branch	79.5	7,700	13,700	16,600	26,200
Approximately 1,300 feet upstream of State Route 101	56.9	6,940	11,900	14,400	24,200
Just upstream of confluence of Sandy Branch	41.0	6,180	9,990	12,000	18,500
Approximately 2,000 feet upstream of State Route 53	26.6	4,940	8,130	9,800	15,200
Approximately 700 feet downstream of State Route 54	19.3	4,800	7,550	8,950	13,300
Approximately 4,000 feet upstream of State Route 60	8.7	3,100	4,690	5,530	8,100
Approximately 5,000 feet downstream of Fairfield/Richland County Boundary	3.6	1,930	2990	3,520	5,150

Table 3 – Summary of Discharges – continued

FLOODING SOURCE AND LOCATION	DRAINAGE AREA (sq. miles)	PEAK DISCHARGES (cfs) Percent Annual Chance 10-percent	2-percent	1-percent	0.2-percent
UNNAMED TRIBUTARY TO BOLTON BRANCH					
At confluence with Bolton Branch	0.7	440	630	720	990
WATEREE LAKE (WATEREE RIVER)					
Below Lake Wateree Dam	4,760	89,400	178,500	224,500	421,300
At Lake Wateree Dam	4,750	68,200	111,800	134,600	199,200
YANKEE BRANCH					
At confluence with Twentyfive Mile Creek	1.3	310	660	770	1,330
Approximately 5,500 feet upstream of confluence with Twentyfive Mile Creek	0.7	180	330	410	710
Approximately 8,000 feet upstream of confluence with Twentyfive Mile Creek	0.2	80	160	190	320

*Data Not Available

3.2 Hydraulic Analyses

Analyses of the hydraulic characteristics of flooding from the source studied were carried out to provide estimates of the elevations of 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 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 this FIS in conjunction with the data shown on the FIRM.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1). For stream segments for which a floodway was computed (Section 4.2), selected cross-section locations are also shown on the FIRM (Exhibit 2).

Flood profiles were drawn showing computed water-surface elevations for floods of the selected recurrence intervals.

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

Precountywide Analyses

Each community with SFHAs within Kershaw County, with the exception of the Town of Bethune, has a previously printed FIS report. The hydraulic analyses described in those reports have been compiled and are summarized below.

Cross-section data and structural information for the streams studied by detailed methods were obtained by field surveys and photogrammetric methods. All bridges, dams, and culverts were field checked to obtain elevation data and structural geometry. Channel roughness factors (Manning's "n" Values) used in the hydraulic computations were chosen by engineering judgment and based on field observations of the streams and floodplain areas. Roughness values ranged from 0.03 to 0.09 for the main channels of streams and 0.04 to 0.12 for the overbank areas. The acceptability of all assumed hydraulic factors, cross sections, and hydraulic structure data was checked by computations that duplicated historic flood water data.

Water-surface elevations of floods of the selected recurrence intervals were computed through use of the USACE, HEC-2 step-backwater hydraulic model (USACE, 1973). Starting water-surface elevations for Little Pine Tree Creek were taken from the Big Pine Tree Creek profiles. All other starting water-surface elevations were calculated using the slope-area method, except for the starting water-surface elevations for Swift Creek, which were taken from a portion of Wateree River outside the corporate limits of the unincorporated areas of Kershaw County. This area was not studied in detail but the elevations were obtained by using the slope-area method and are shown in Table 4, "Summary of Stillwater Elevations."

Table 4 – Summary of Stillwater Elevations

FLOODING SOURCE AND LOCATION	ELEVATION (feet NAVD88)			
	10-percent annual chance	2-percent annual chance	1-percent annual chance	0.2-percent annual chance
WATEREE RIVER				
At confluence of Swift Creek	131.6	136.7	138.7	145.6

December 6, 2000, Countywide Analyses

Cross-section geometry was obtained from field surveys. All bridges, dams, and culverts were field surveyed to obtain elevation data and structural geometry. The channel sections were located at close intervals upstream and downstream of structures. The overbank cross section data for the backwater analyses were obtained from four-feet contour interval orthophotographic maps of the streams, compiled in 1997 (NOVA Digital Systems, Inc., 1997).

Along certain portions of Big Pine Tree Creek, Little Pine Tree Creek, Sanders Creek, Swift Creek, Town Creek, and Wateree River, a profile base line is shown on the maps to represent channel distances as indicated on the flood profiles and floodway data tables.

Water-surface elevations of floods of the selected recurrence intervals were computed through use of the USACE HEC-RAS step-backwater computer program (USACE, 1997). These computer models were calibrated using historic high water data collected during field investigations.

Starting water-surface elevations for the newly studied and re-studied streams were obtained by using the slope area option of the HEC-RAS step-backwater computer program or by matching the elevations of contiguous FISs (USACE, 1997).

[TBD], Countywide Analyses

For the [TBD], countywide FIS, for the Wateree River, ll model cross section geometry was updated based on Light Detection and Ranging (LiDAR) derived digital elevation models. Channel geometry was verified and/or adjusted by blending information from the effective hydraulic models, LiDAR, and aerial imagery. The spillway information was updated based on Duke Energy documents, LiDAR, and aerial imagery, but is similar to what is the previous model. Flow from the power turbines was accounted for using a gate rating curve in the in-line weir using data provided by Duke Energy, Federal Energy Regulatory Commission documents, and stakeholders knowledge on lake operations.

Water-surface elevations were computed using the USACE HEC, Riverine Analysis System (HEC-RAS) software, version 4.1. Ground elevation information used in the model was based on LiDAR base data supplemented with information from the effective FISs for channel/lake invert elevations. Information related to hydraulic parameters and coefficients (ie. hydraulic roughness, weir coefficients, etc.) was based on aerial base data, information from the effective FISs, and information from Duke Energy documents (ESP Associates, P.A., 2015).

Hydraulics for the [TBD], countywide FIS were prepared at the Watershed level, as a part of the larger Wateree Watershed study. For Buck Creek, the new detailed portion of Haig Creek, Kelly Creek and the new detailed portion of Spears Creek, the hydraulic models were developed using HEC-RAS 4.1 for the 10, 2, 1, and 0.2 -percent annual chance storm events. A floodway profile is developed with the 1-percent annual chance discharges. The frequency storm discharges for the studied streams within Wateree watershed were determined using Regional Regression equations and also from effective studies. The hydraulic analyses will be used to establish flood elevations and regulatory floodways for the subject flooding sources.

Starting conditions for the hydraulic models were set to normal depth using starting slopes calculated from stream invert elevation based on the LIDAR data or, where applicable; derived from the water surface elevations of existing effective flood elevations.

For the streams studied by limited detail methods for [TBD], countywide FIS, the models for limited detail studies were developed using HEC-RAS 4.1 for the 1-percent annual chance storm events. The frequency storm discharges for the studied streams within Wateree watershed were determined using Regional Regression equations and also from effective studies.

Starting conditions for the hydraulic models were set to normal depth using starting slopes calculated from stream invert elevation based on the LIDAR data or, where applicable; derived from the water surface elevations of existing effective flood elevations. Manning's n-values were assigned based on field survey data and also examining recent aerial photography. The values ranged from 0.038 to 0.052 for channels and from 0.06 to 0.14 for overbank areas.

Roughness factors (Manning's "n" Values) used in the hydraulic computations for the December 6, 2000, and [TBD], countywide FIS, detailed study streams were based on field observations and also examining recent imagery. The channel and overbank "n" values for the streams studied by detailed methods are shown in Table 5, "Manning's "n" Values." For streams studied by approximate methods the Manning's "n" Values ranged from 0.038 to 0.052 for channels and from 0.06 to 0.140 for overbank areas.

Table 5 – Manning's "n" Values

Stream	Channel "n"	Overbank "n"
Big Pine Tree Creek	0.030-0.090	0.040-0.120
Bolton Branch	0.047-0.048	0.120-0.200
Buck Creek	0.034-0.052	0.040-0.140
Camp Creek	0.030-0.090	0.040-0.120
Flat Branch	0.048	0.140-0.200

Table 5 – Manning's "n" Values – continued

Stream	Channel "n"	Overbank "n"
Gillies Creek	0.046-0.047	0.110-0.200
Haig Creek	0.047	0.140-0.200
Haig Creek (Upstream of Confluence with Tributary to Haig Creek 1)	0.034-0.052	0.040-0.140
Horsepen Creek	0.048-0.050	0.130-0.200
Kelly Creek	0.034-0.052	0.040-0.140
Little Pine Tree Creek	0.030-0.090	0.040-0.120
McCaskill Creek	0.046-0.048	0.140-0.200
Runundер Branch	0.048	0.140-0.200
Sanders Creek	0.030-0.090	0.040-0.120
Sandy Branch	0.047	0.110-0.200
Sloan Branch	0.048	0.140-0.200
Spears Creek	0.047	0.130-0.200
Spears Creek (Upstream of Interstate 20)	0.034-0.052	0.040-0.140
Swift Creek	0.030-0.090	0.040-0.120
Town Creek	0.030-0.090	0.040-0.120
Tributary CC 1	0.030-0.090	0.040-0.120
Tributary to Haig Creek 1	0.047-0.048	0.130-0.200
Tributary WR-1	0.030-0.09	0.040-0.120
Tuppler Branch	0.049	0.140-0.200
Twentyfive Mile Creek	0.046-0.049	0.110-0.200
Unnamed Tributary to Bolton Branch	0.047-0.049	0.110-0.200
Wateree Lake (Wateree River)	0.030-0.090	0.040-0.120
Yankee Branch	0.048	0.140-0.200

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

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)

In addition to NSRS bench marks, the FIRM may also show vertical control monuments established by a local jurisdiction; these monuments will be shown on the FIRM with the appropriate designations. Local monuments will only be placed on the FIRM if the community has requested that they be included, and if the monuments meet the aforementioned NSRS inclusion criteria.

To obtain current elevation, description, and/or location information for bench marks shown on the FIRM for this jurisdiction, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their Web site at www.ngs.noaa.gov.

It is important to note that temporary vertical monuments 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, they may be found in the Technical Support Data Notebook associated with this FIS and FIRM. Interested individuals may contact FEMA to access this data.

3.3 Vertical Datum

All FIS reports and FIRMs 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. Until recently, the standard vertical datum used for newly created or revised FIS reports and FIRMs was the NGVD29. With the completion of the NAVD88 many FIS reports and FIRMs are now prepared using NAVD88 as the referenced vertical datum.

Flood elevations shown in this FIS report and on the FIRM are referenced to NAVD88. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum.

It is important to note that adjacent counties may be referenced to NGVD 29. This may result in differences in BFEs across county lines. The BFEs shown on the FIRM represent whole-foot rounded values. For example, a BFE of 102.4 will appear as 102 on the FIRM and 102.6 will appear as 103. Therefore, users that wish to convert the elevations in this FIS to NGVD29 should apply the stated conversion factor to elevations shown on the Flood Profiles and supporting data tables in the FIS report, which are shown at a minimum to the nearest 0.1 foot.

For supplementary information regarding conversion between the NGVD29 and NAVD88, visit the National Geodetic Survey website at www.ngs.noaa.gov, or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS 12
National Geodetic Survey
SSMC-3 #9202
1315 East-West Highway
Silver Spring, Maryland 20910
(301) 713-3242

Temporary vertical monuments 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, they may be found in the Technical Support Data Notebook associated with the FIS report and FIRM for this community. Interested individuals may contact FEMA to access these data.

To obtain current elevation, description, and/or location information for benchmarks shown on this map, please contact the Information Services Branch of the NGS at (301) 713-3242, or visit their website at www.ngs.noaa.gov.

4.0 FLOODPLAIN MANAGEMENT APPLICATIONS

The NFIP encourages State and local governments to adopt sound floodplain management programs. To assist in this endeavor, each FIS report provides 1-percent-annual-chance floodplain data, which may include a combination of the following: 10-, 2-, 1-, and 0.2-percent annual chance flood elevations; delineations of the 1- and 0.2-percent annual chance floodplains; and a 1-percent annual chance floodway. This information is presented on the FIRM and in many components of the FIS report, including Flood Profiles, Floodway Data Tables, and Summary of Stillwater Elevations Table. Users should reference the data presented in the FIS report as well as additional information that may be available at the local community map repository before making flood elevation and/or floodplain boundary determinations.

4.1 Floodplain Boundaries

To provide a national standard without regional discrimination, the 1-percent annual chance flood has been adopted by FEMA as the base flood for floodplain management purposes. The 0.2-percent annual chance flood is employed to indicate additional areas of flood risk in the community. For each stream studied by detailed methods, the 1- and 0.2-percent annual chance floodplain boundaries have been delineated using the flood elevations determined at each cross section.

For the [TBD], countywide FIS, LiDAR was provided by SCDNR and was used to develop the 10-foot Digital Elevation Model (DEM) for the hydraulic analysis

and floodplain mapping for the study streams. The 10-foot DEMs were mosaicked for the entire Wateree Watershed and were resampled to a 30-foot cell size to obtain manageable DEM size for processing with ESRI's ArcHydro software. For Kershaw County, the LiDAR was collected for SCDNR by Sanborn Mapping Company, Inc. in February and March 2010 (SCDNR, 2013). The data is available from SCDNR LiDAR Data Products website at:

http://www.dnr.sc.gov/GIS/lidar.html

In the 1983 FISs for the City of Camden and the unincorporated areas of Kershaw County, the floodplain boundaries were interpolated between cross sections, using topographic maps at a scale of 1"=500', with a contour interval of two feet (Landmark Engineering Company, 1980).

For the December 6, 2000, countywide FIS, the boundaries were interpolated between cross sections using topographic maps at scales of 1"=500' and 1"=1,000' with a contour interval of four feet obtained from orthophotographic maps (NOVA Digital Systems, Inc., 1997).

For the streams studied by approximate methods, the 1- percent annual chance floodplain boundaries were transferred from the previously published FISs for the City of Camden and unincorporated areas of Kershaw County (FEMA, 1983[a], 1983[b]).

The 1- and 0.2-percent annual chance floodplain boundaries are shown on the FIRM (Exhibit 2). On this map, the 1- percent annual chance floodplain boundary corresponds to the boundary of the areas of special flood hazards (Zones A and AE), and the 0.2-percent-annual-chance floodplain boundary corresponds to the boundary of areas of moderate flood hazards. I n cases where the 1- and 0.2-percent annual chance floodplain boundaries are close together, only the 1- percent annual chance floodplain boundary has been shown. Small areas within the floodplain boundaries may lie above the flood elevations but cannot be shown due to limitations of the map scale and/or lack of detailed topographic data.

For the streams studied by approximate methods, only the 1- percent annual chance floodplain boundary is shown on the FIRM (Exhibit 2).

4.2 Floodways

Encroachment on floodplains, such as 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, a floodway is used as a tool to assist local communities in this aspect of floodplain management. Under this concept, the area of the 1-percent annual chance 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 base flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1 foot, provided that hazardous velocities are not produced. The floodways in this study are presented to local agencies as minimum standards that can be adopted directly or that can be used as a basis for additional floodway studies.

The floodways presented in this FIS were computed 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 these computations are tabulated for selected cross sections in Table 6, "Floodway Data." The computed floodways are shown on the FIRM (Exhibit 2). In cases where the floodway and 1- percent annual chance floodplain boundaries are either close together or collinear, only the floodway boundary has been shown.

Encroachment into areas subject to inundation by floodwaters having hazardous velocities aggravates the risk of flood damage, and heightens potential flood hazards by further increasing velocities. A listing of stream velocities at selected cross sections is provided in Table 6. In order to reduce the risk of property damage in areas where stream velocity is high, the county may wish to restrict development in areas outside the floodway.

Near the mouths of streams studied in detail, floodway computations are made without regard to flood elevations on the receiving water body. Therefore, "Without Floodway" elevations presented in Table 6 for certain downstream cross sections of Big Pine Tree Creek, Bolton Branch, Camp Creek, Haig Creek, Horsepen Creek, Little Pine Tree Creek, Sanders Creek, Swift Creek, Tributary WR-1 , Tuppler Branch, Twentyfive Mile Creek, and Yankee Branch are lower than the regulatory flood elevations in that area, which must take into account the 1- percent annual chance flooding due to backwater from other sources.

The area between the floodway and 1- percent annual chance floodplain boundaries is termed the floodway fringe. The floodway fringe encompasses the portion of the floodplain that could be completely obstructed without increasing the water-surface elevation of the 1- percent annual chance flood more than 1 foot at any point. Typical relationships between the floodway and the floodway fringe and their significance to floodplain development are shown in Figure 1, "Floodway Schematic."

No floodways have been computed for streams studied by limited detail methods. Information pertaining to the flood discharges and 1-percent-annual-chance water-surface elevations for selected cross sections along streams studied by limited detail methods are shown on Table 7, "Limited Detailed Base Flood Elevation Data."

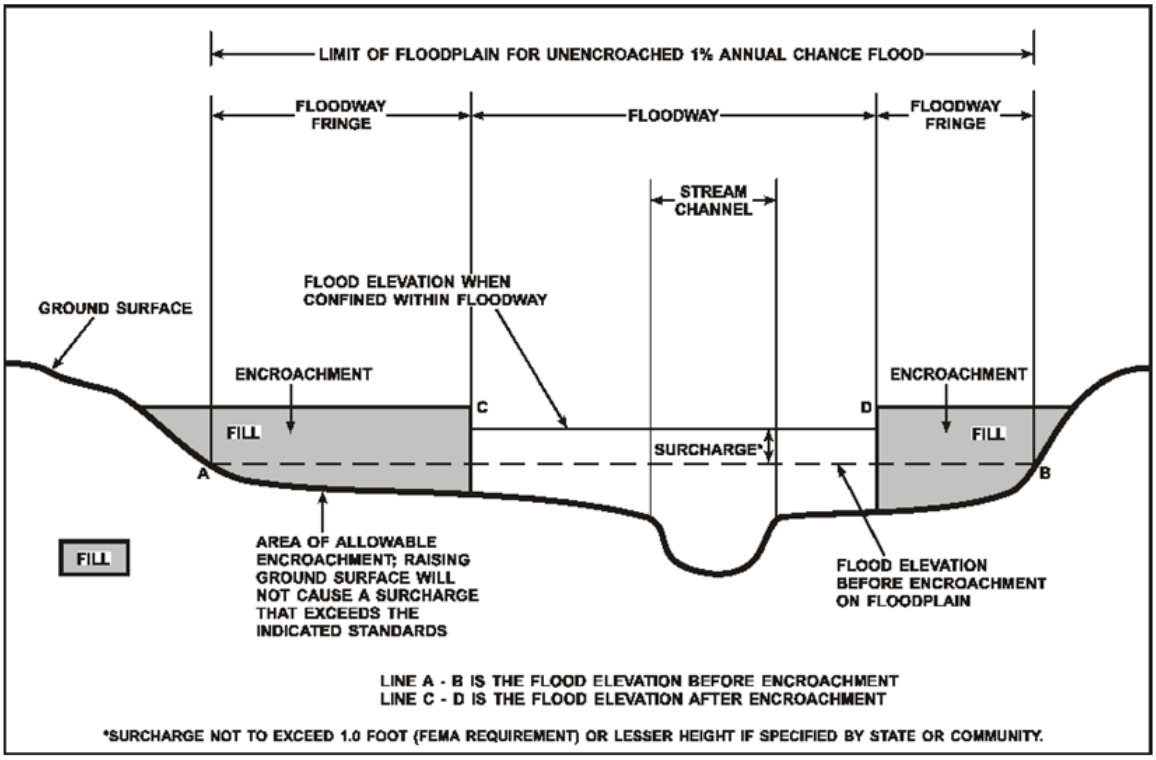

Figure 1 – Floodway Schematic

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Big Pine Tree Creek								
A	9,500	2,020	6,340	2.1	150.4	136.9[2]	137.3	0.4
B	9,750	2,040	11,660	1.1	150.4	141.9[2]	141.9	0.0
C	11,840	1,770	14,910	0.9	150.6	142.3[2]	142.5	0.2
D	17,085	1,810	20,080	0.7	150.6	146.7[2]	147.3	0.6
E	19,925	1,760	14,790	0.9	150.6	147.0[2]	147.7	0.7
F	23,700	1,400	9,750	1.3	150.6	147.8[2]	148.6	0.8
G	25,530	1,065	7,060	1.6	153.5	153.5	154.3	0.8
H	35,000	530	3,580	3.1	164.6	164.6	165.5	0.9
I	38,320	710	6,950	1.6	169.0	169.0	170.0	1.0
J	39,830	1,020	10,500	1.0	171.1	171.1	172.1	1.0
K	41,980	1,090	9,990	1.1	171.7	171.7	172.7	1.0
L	45,100	740	6,130	1.8	173.4	173.4	174.4	1.0
M	47,850	1,170	8,110	1.3	175.8	175.8	176.8	1.0

[1]Feet above confluence with Wateree River

[2]Elevations without considering backwater effects from Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

BIG PINE TREE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Bolton Branch								
A	1,868	205	800	3.2	151.6	144.3[2]	144.5	0.2
B	2,299	180	966	2.6	151.6	145.7[2]	146.0	0.3
C	2,857	176	869	2.9	151.6	147.1[2]	147.4	0.3
D	3,381	130	775	3.3	151.6	148.4[2]	148.9	0.5
E	3,946	140	841	3.0	151.6	149.9[2]	150.4	0.5
F	4,213	148	571	4.4	151.6	150.7[2]	151.1	0.4
G	5,008	171	748	1.1	158.9	158.9	159.9	1.0
H	6,127	112	367	2.3	165.3	165.3	166.0	0.7
I	6,939	140	475	1.8	169.0	169.0	170.0	1.0
J	7,264	90	310	2.7	172.0	172.0	172.8	0.8

[1]Feet above confluence with Wateree River

[2]Elevations without considering backwater effects from Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

BOLTON BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Buck Creek								
A	765	472	911	1.5	149.1	144.3[2]	144.3	0.0
B	1,162	406	909	1.5	149.1	144.6[2]	144.6	0.0
C	1,407	341	898	1.5	149.1	144.7[2]	144.7	0.0
D	1,806	451	5,209	0.3	155.7	155.7	155.7	0.0
E	2,270	287	3,011	1.2	155.7	155.7	155.7	0.0
F	2,676	226	1,709	1.2	155.7	155.7	155.7	0.0
G	2,981	270	1,736	1.7	155.8	155.8	155.7	0.0
H	3,718	282	1,141	2.2	155.9	155.9	156.0	0.1
I	3,842	378	4,372	0.3	163.8	163.8	163.8	0.0
J	4,318	417	3,863	0.4	163.8	163.8	163.8	0.0
K	4,762	372	3,046	0.5	163.8	163.8	163.8	0.0
L	4,872	297	2,207	1.1	164.0	164.0	164.6	0.6
M	5,406	275	1,232	3.6	164.1	164.1	164.7	0.6
N	5,838	327	1,147	4.0	164.6	164.6	165.2	0.5
O	6,347	287	801	5.6	165.8	165.8	166.3	0.4
P	6,708	259	828	5.2	167.1	167.1	167.5	0.4
Q	7,121	263	734	6.1	168.5	168.5	169.0	0.5
R	7,616	84	194	11.2	172.1	172.1	172.2	0.0
S	8,234	227	1,097	4.0	175.2	175.2	175.4	0.2
T	8,540	138	380	8.6	175.3	175.3	175.6	0.4
U	8,625	146	853	4.2	178.5	178.5	179.3	0.8
V	9,160	225	1,211	3.4	179.0	179.0	179.8	0.8
W	9,614	217	790	5.4	179.7	179.7	180.4	0.7
X	10,092	236	658	6.7	181.6	181.6	182.1	0.5
Y	10,762	222	621	7.2	185.1	185.1	185.6	0.5

[1]Feet above Interstate Highway 20

[2]Elevations without considering backwater effects from Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

BUCK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Buck Creek - continued								
Z	11,384	136	382	8.0	188.7	188.7	189.2	0.5
AA	11,795	216	428	8.2	191.4	191.4	191.8	0.4
AB	12,312	184	418	8.7	195.2	195.2	195.6	0.4
AC	12,748	245	426	9.5	200.0	200.0	200.5	0.5
AD	13,101	235	619	6.2	209.0	209.0	209.1	0.2
AE	13,257	468	2,612	1.7	217.1	217.1	218.1	0.9
AF	13,510	286	1,923	1.4	217.1	217.1	218.1	0.9
AG	13,947	221	1,035	2.5	217.2	217.2	218.1	0.9
AH	14,504	108	168	8.8	219.3	219.3	219.4	0.0
AI	14,998	106	349	5.0	222.8	222.8	223.1	0.3
AJ	15,457	101	178	9.0	226.1	226.1	226.3	0.2
AK	15,985	67	174	6.4	230.5	230.5	230.9	0.4
AL	16,294	44	95	7.8	232.8	232.8	232.8	0.0
AM	16,532	126	778	1.9	238.6	238.6	239.0	0.5
AN	17,150	110	438	3.6	238.7	238.7	239.2	0.5
AO	17,730	51	114	9.8	240.0	240.0	240.3	0.3
AP	18,201	53	181	6.5	244.5	244.5	245.1	0.6
AQ	18,523	49	103	9.2	246.9	246.9	246.9	0.1
AR	18,850	109	290	5.1	249.6	249.6	249.6	0.0
AS	19,072	98	189	6.8	250.5	250.5	250.5	0.0
AT	19,210	74	203	6.4	252.1	252.1	252.3	0.2
AU	19,452	63	109	9.1	254.7	254.7	254.7	0.0
AV	19,898	36	110	6.9	258.8	258.8	259.3	0.5
AW	20,234	31	111	6.5	261.2	261.2	261.5	0.3

[1]Feet above Interstate Highway 20

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

BUCK CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Camp Creek								
A	5,500	230	1,080	2.1	155.7	150.4[2]	151.4	1.0
B	6,000	190	750	3.1	155.7	151.5[2]	152.5	1.0
C	6,575	560	4,350	0.5	160.2	160.2	161.0	0.8
D	9,330	220	925	2.1	171.0	171.0	171.0	0.0
E	9,800	420	1,170	1.7	171.6	171.6	172.1	0.5
F	12,070	320	540	3.0	182.0	182.0	182.7	0.7
G	12,275	430	2,580	0.6	188.2	188.2	189.2	1.0
H	13,770	230	300	5.3	193.6	193.6	194.2	0.6
I	14,600	170	615	2.6	202.4	202.4	203.2	0.8
J	15,520	170	510	3.1	211.4	211.4	212	0.6

[1]Feet above confluence with Wateree River

[2]Elevations without considering backwater effects from Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

CAMP CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Flat Branch								
A	2,047	80	296	5.6	182.3	182.3	182.5	0.2
B	2,548	78	507	3.3	187.0	187.0	187.4	0.4
C	3,071	30	181	9.2	188.8	188.8	189.8	1.0
D	3,286	38	234	7.1	191.4	191.4	192.2	0.8
E	3,695	23	152	11.0	195.3	195.3	196.3	1.0
F	4,922	132	1,339	1.2	219.5	219.5	219.5	0.0
G	5,499	165	772	2.2	219.5	219.5	219.5	0.0
H	6,126	61	306	5.4	221.2	221.2	221.4	0.2
I	6,735	174	780	2.1	224.1	224.1	225.1	1.0
J	7,229	53	231	7.2	229.0	229.0	230.0	1.0
K	7,933	82	336	3.0	239.7	239.7	240.7	1.0
L	8,521	42	218	4.7	243.6	243.6	244.3	0.7
M	9,073	130	502	2.0	246.7	246.7	247.7	1.0
N	9,686	71	283	3.6	250.4	250.4	250.6	0.2
O	10,286	101	380	2.7	254.0	254.0	255.0	1.0
P	11,014	52	213	3.0	259.5	259.5	260.1	0.6
Q	11,696	141	573	1.1	261.6	261.6	262.6	1.0
R	11,993	65	219	0.5	262.0	262.0	263.0	1.0

[1]Feet above confluence with Twentyfive Mile Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

FLAT BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Gillies Creek								
A	1,035	244	1,249	2.2	149.4	149.4	150.4	1.0
B	1,742	380	1,769	1.5	151.2	151.2	152.2	1.0
C	3,252	275	2,597	1.1	160.9	160.9	161.8	0.9
D	3,624	290	2,546	1.1	161.0	161.0	161.9	0.9
E	4,133	575	4,626	0.6	161.2	161.2	162.1	0.9
F	5,010	375	2,634	1.0	161.4	161.4	162.3	0.9
G	5,550	250	1,152	2.4	161.6	161.6	162.5	0.9
H	6,076	178	661	4.1	162.8	162.8	163.3	0.5
I	8,034	300	1,723	1.5	169.9	169.9	170.9	1.0
J	8,740	160	882	2.8	171.8	171.8	172.5	0.7
K	9,307	200	1,484	1.7	173.4	173.4	174.4	1.0
L	9,863	300	1,022	2.5	175.1	175.1	176.0	0.9
M	10,372	330	1,568	1.6	177.6	177.6	178.4	0.8
N	10,713	275	1,353	1.9	178.4	178.4	179.4	1.0
O	11,704	255	1,386	1.8	181.3	181.3	182.3	1.0
P	12,118	360	2,016	1.2	182.1	182.1	183.1	1.0
Q	12,627	340	1,998	1.3	182.7	182.7	183.7	1.0
R	13,159	350	2,135	1.2	183.3	183.3	184.3	1.0
S	13,629	185	1,072	2.1	184.2	184.2	185.0	0.8
T	14,216	301	1,613	1.4	185.5	185.5	186.4	0.9
U	14,845	168	735	3.1	187.2	187.2	188.2	1.0
V	15,371	178	1,120	2.0	190.3	190.3	191.1	0.8

[1]Feet above confluence with Gillies Ditch

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

GILLIES CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Gillies Creek - continued								
W	15,799	320	1,225	1.9	191.5	191.5	192.4	0.9
X	16,049	111	731	3.1	192.8	192.8	193.5	0.7
Y	17,427	120	582	2.1	197.1	197.1	197.7	0.6
Z	17,931	70	225	5.3	199.1	199.1	199.4	0.3
AA	18,334	70	166	7.2	201.7	201.7	201.7	0.0
AB	19,204	407	4,299	0.3	220.8	220.8	220.8	0.0
AC	19,683	447	4,510	0.3	220.8	220.8	220.8	0.0
AD	20,429	210	1,820	0.7	220.8	220.8	220.8	0.0
AE	21,003	125	524	2.3	220.8	220.8	220.8	0.0
AF	21,747	37	256	4.7	221.6	221.6	221.7	0.1
AG	22,489	37	254	4.7	222.9	222.9	223.4	0.5
AH	23,122	33	113	5.7	224.7	224.7	225.2	0.5

[1]Feet above confluence with Gillies Ditch

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

GILLIES CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Haig Creek								
A	1,649	80	516	4.7	154.3	150.5[2]	151.3	0.8
B	2,215	175	1,253	1.9	154.3	152.4[2]	153.4	1.0
C	2,763	60	275	8.8	154.3	153.4[2]	153.7	0.3
D	3,045	138	615	4.0	157.7	157.7	158.6	0.9
E	4,121	160	1,113	2.2	163.5	163.5	164.0	0.5
F	4,658	160	1,078	2.3	164.3	164.3	165.1	0.8
G	5,165	395	2,548	1.0	164.8	164.8	165.8	1.0
H	5,579	370	2,265	1.1	165.1	165.1	166.1	1.0
I	6,242	220	1,297	2.0	165.8	165.8	166.7	0.9
J	6,767	250	1,420	1.8	166.9	166.9	167.8	0.9
K	7,283	240	1,416	1.8	168.0	168.0	168.9	0.9
L	7,765	240	1,369	1.9	168.9	168.9	169.9	1.0
M	8,585	245	1,253	2.1	171.1	171.1	171.9	0.8
N	9,845	395	3,433	0.8	177.1	177.1	177.5	0.4
O	10,671	501	2,841	1.2	177.1	177.1	177.5	0.4
P	11,171	150	490	6	177.1	177.1	177.6	0.5
Q	11,518	185	591	5.2	178.8	178.8	179.8	1.0
R	11,989	200	682	4.2	181.0	181.0	181.9	0.9
S	12,556	131	423	7.9	184.5	184.5	185.0	0.5
T	13,118	100	264	6.5	188.1	188.1	188.6	0.6
U	13,274	100	808	1.9	197.5	197.5	197.5	0.0

[1]Feet above confluence with Spears Creek

[2]Elevations without considering backwater effects from Spears Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

HAIG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Haig Creek - continued								
V	13,471	100	888	1.9	198.2	198.2	198.2	0.0
W	13,817	240	2,336	1.0	198.8	198.8	198.8	0.0
X	14,195	260	1,850	1.5	198.8	198.8	198.8	0.0
Y	14,479	166	675	4.0	198.8	198.8	198.8	0.1
Z	14,750	50	157	12.2	200.3	200.3	200.4	0.1
AA	15,061	165	660	3.6	202.3	202.3	203.3	1.0
AB	15,511	93	280	7.8	203.9	203.9	204.8	0.9
AC	15,859	96	318	7.5	206.9	206.9	207.8	0.9
AD	16,114	308	661	5.2	208.6	208.6	209.3	0.7
AE	16,215	324	2,051	1.6	214.5	214.5	214.5	0.0
AF	16,329	235	1,519	1.9	214.5	214.5	214.6	0.0

[1]Feet above confluence with Spears Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

HAIG CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Horsepen Creek								
A	769	190	885	2.5	187.6	182.2[2]	183.2	1.0
B	1,264	54	365	6.0	187.6	184.7[2]	185.4	0.7
C	1,798	60	271	8.0	192.0	192.0	192.0	0.0
D	2,275	145	867	2.5	195.8	195.8	196.8	1.0
E	2,850	60	455	4.8	197.6	197.6	198.2	0.6
F	3,963	200	2,442	0.9	219.3	219.3	219.3	0.0
G	4,628	130	1,317	1.7	219.4	219.4	219.4	0.0
H	5,245	115	965	2.3	219.8	219.8	219.9	0.1
I	5,966	105	475	4.6	220.3	220.3	221.2	0.9
J	6,485	40	289	7.6	225.0	225.0	225.2	0.2
K	6,632	55	321	6.8	225.8	225.8	226.7	0.9
L	6,829	105	653	3.3	228.4	228.4	228.9	0.5
M	7,489	100	858	2.5	238.3	238.3	238.7	0.4
N	7,827	50	463	3.0	238.5	238.5	239.0	0.5
O	8,494	33	308	4.5	238.8	238.8	239.7	0.9
P	9,357	135	866	1.6	239.7	239.7	240.7	1.0
Q	9,852	110	689	2.0	240.2	240.2	241.1	0.9
R	10,241	110	560	2.5	240.6	240.6	241.5	0.9
S	10,698	177	558	2.5	241.9	241.9	242.9	1.0
T	11,007	112	301	4.6	244.3	244.3	245.0	0.7
U	11,611	127	529	2.6	248.1	248.1	249.1	1.0

[1]Feet above confluence with Twentyfive Mile Creek

[2]Elevations without considering backwater effects from Twentyfive Mile Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

HORSEPEN CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Horsepen Creek - continued								
V	12,096	90	444	3.1	249.6	249.6	250.6	1.0
W	12,816	90	496	1.9	251.3	251.3	252.1	0.8
X	13,143	181	482	1.9	251.6	251.6	252.6	1.0
Y	14,066	33	155	5.9	257.6	257.6	258.3	0.7
Z	14,534	210	662	1.4	259.2	259.2	260.2	1.0
AA	14,971	60	228	4.0	260.7	260.7	261.2	0.5
AB	15,305	250	777	1.2	261.3	261.3	262.1	0.8
AC	15,981	44	160	5.7	262.7	262.7	263.1	0.4
AD	17,000	335	1,083	0.9	269.7	269.7	270.7	1.0
AE	17,433	202	688	1.3	270.2	270.2	271.0	0.8
AF	18,169	90	494	1.0	277.2	277.2	278.2	1.0
AG	18,657	140	502	0.8	277.4	277.4	278.4	1.0
AH	19,085	35	183	2.6	277.6	277.6	278.5	0.9
AI	19,526	57	140	3.4	278.5	278.5	279.5	1.0
AJ	20,290	40	170	2.8	291.4	291.4	291.5	0.1

[1]Feet above confluence with Twentyfive Mile Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

HORSEPEN CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Kelly Creek								
A	1,071	45	120	3.8	177.3	177.3	177.3	0.0
B	1,534	38	135	4.8	182.1	182.1	182.4	0.3
C	1,849	60	193	3.8	183.0	183.0	183.4	0.4
D	1,934	60	232	3.4	183.5	183.5	183.7	0.2
E	2,278	98	283	3.6	183.9	183.9	184.6	0.7
F	2,584	125	388	2.7	184.4	184.4	185.2	0.8
G	3,065	179	501	2.5	184.8	184.8	185.7	0.9
H	3,653	86	185	5.2	185.6	185.6	186.5	0.9
I	4,078	95	263	3.9	187.5	187.5	188.0	0.5
J	4,846	81	221	4.4	189.1	189.1	190.0	0.9
K	5,520	174	351	4.0	191.3	191.3	192.1	0.8
L	6,046	177	280	4.6	193.3	193.3	194.0	0.7
M	6,597	91	187	3.1	195.2	195.2	196.1	0.9
N	7,117	72	119	5.0	197.0	197.0	197.8	0.8
O	7,859	50	92	4.3	201.1	201.1	201.4	0.3
P	8,389	50	91	4.8	203.6	203.6	204.0	0.4
Q	8,935	50	108	4.0	205.9	205.9	206.6	0.7
R	9,402	50	80	4.5	208.2	208.2	208.5	0.3
S	9,534	100	419	1.2	211.7	211.7	211.7	0.0
T	9,858	90	396	1.2	211.8	211.8	211.8	0.0
U	10,379	125	402	1.4	211.8	211.8	211.9	0.1

[1]Feet above confluence with Spears Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

KELLY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Kelly Creek - continued								
V	10,973	70	138	3.3	211.8	211.8	212.1	0.3
W	11,298	70	163	2.9	212.5	212.5	212.7	0.2
X	11,848	82	71	7.1	215.0	215.0	215.6	0.6
Y	11,909	147	219	1.3	216.5	216.5	216.7	0.2
Z	12,345	97	83	6.4	217.0	217.0	217.3	0.3
AA	13,002	82	122	1.8	220.2	220.2	220.9	0.7
AB	13,195	64	46	5.6	221.9	221.9	222.6	0.7
AC	13,301	36	61	3.6	223.1	223.1	223.7	0.6

[1]Feet above confluence with Spears Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

KELLY CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Little Pine Tree Creek								
A	2,250	540	1,520	2.1	150.6	142.0[2]	143.0	1.0
B	2,860	500	3,800	0.8	150.6	147.0[2]	148.0	1.0
C	4,260	320	1,650	1.9	150.6	147.8[2]	148.8	1.0
D	4,400	350	1,570	2.0	150.6	150.2[2]	151.1	0.9
E	5,420	150	1,070	2.6	151.9	151.9	152.8	0.9
F	6,910	220	1,410	2.0	154.2	154.2	155.2	1.0
G	7,050	300	2,420	1.1	154.5	154.5	155.4	0.9
H	7,560	250	1,790	1.6	154.5	154.5	155.5	1.0
I	7,730	190	1,290	2.2	154.6	154.6	155.6	1.0
J	12,550	420	2,390	1.3	167.3	167.3	167.8	0.5
K	13,830	180	1,150	2.7	171.6	171.6	172.4	0.8
L	13,970	180	1,450	2.2	173.3	173.3	174.2	0.9
M	16,670	230	1,620	1.9	178.1	178.1	179.0	0.9

[1]Feet above confluence with Big Pine Tree Creek

[2]Elevations without considering backwater effects from Big Pine Tree Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

LITTLE PINE TREE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
McCaskill Creek								
A	2,209	310	2,376	1.3	141.7	141.7	142.4	0.7
B	3,013	315	2,416	1.2	142.2	142.2	143.0	0.8
C	3,674	205	1,554	1.9	143.0	143.0	143.6	0.6
D	4,294	205	1,276	2.3	143.9	143.9	144.8	0.9
E	5,680	600	6,734	0.4	151.7	151.7	152.6	0.9
F	5,962	600	7,283	0.4	151.7	151.7	152.6	0.9
G	6,727	700	9,727	0.3	151.7	151.7	152.7	1.0
H	7,256	700	8,474	0.4	151.7	151.7	152.7	1.0
I	7,872	1,000	6,738	0.3	151.7	151.7	152.7	1.0
J	8,396	600	4,982	0.4	151.7	151.7	152.7	1.0
K	8,892	600	5,172	0.4	151.8	151.8	152.8	1.0
L	10,194	175	805	2.6	156.7	156.7	157.6	0.9
M	10,753	350	1,586	1.3	158.0	158.0	159.0	1.0
N	11,200	190	1,017	2.1	158.9	158.9	159.7	0.8
O	11,741	235	1,344	1.6	159.7	159.7	160.7	1.0
P	12,281	155	1,040	2.0	160.5	160.5	161.5	1.0
Q	13,019	100	611	3.5	162.2	162.2	163.2	1.0
R	14,132	220	994	2.1	169.1	169.1	170.0	0.9
S	14,593	385	1,740	1.2	170.0	170.0	171.0	1.0
T	15,125	230	1,140	1.9	170.9	170.9	171.9	1.0
U	15,888	226	1,011	2.1	173.0	173.0	174.0	1.0
V	16,638	150	796	2.7	175.3	175.3	176.2	0.9
W	17,020	275	1,665	1.3	176.1	176.1	177.1	1.0

[1]Feet above confluence with Spears Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

McCASKILL CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
McCaskill Creek - continued								
X	17,687	250	872	2.4	177.7	177.7	178.3	0.6
Y	18,892	300	1,366	1.6	185.0	185.0	185.9	0.9
Z	19,290	300	1,502	1.4	185.5	185.5	186.5	1.0
AA	19,929	350	1,937	1.0	186.2	186.2	187.1	0.9
AB	20,484	150	892	2.1	186.6	186.6	187.5	0.9
AC	20,991	210	1,189	1.6	187.5	187.5	188.3	0.8
AD	21,688	200	793	2.4	188.5	188.5	189.5	1.0
AE	22,200	98	491	3.8	191.0	191.0	191.5	0.5
AF	22,827	440	1,652	1.1	192.5	192.5	193.5	1.0
AG	23,633	102	483	3.9	195.3	195.3	195.6	0.3
AH	24,126	164	758	2.5	198.3	198.3	199.3	1.0
Al	24,667	100	305	6.2	203.6	203.6	203.8	0.2
AJ	25, 121	140	663	1.2	206.7	206.7	207.7	1.0
AK	25,642	80	145	5.5	210.4	210.4	210.5	0.1
AL	26,314	56	221	3.6	217.3	217.3	218.3	1.0
AM	26,932	38	170	4.7	221.8	221.8	222.7	0.9
AN	27,430	115	381	2.1	225.2	225.2	226.2	1.0

[1]Feet above confluence with Spears Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

McCASKILL CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Runundер Branch								
A	429	41	139	6.6	190.3	190.3	190.3	0.0
B	1,339	110	702	1.3	204.8	204.8	205.4	0.6
C	1,811	110	476	1.9	205.1	205.1	206.1	1.0
D	2,479	130	266	3.5	210.3	210.3	210.3	0.0
E	3,221	90	523	1.8	222.1	222.1	223.1	1.0
F	3,973	20	99	9.3	223.7	223.7	224.7	1.0
G	4,570	40	185	5.0	235.3	235.3	236.3	1.0

[1]Feet above confluence with McCaskill Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

RUNUNDER BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Sanders Creek								
A	4,850	245	2,825	3.4	168.4	163.2[2]	164.2	1.0
B	9,800	295	3,140	3.0	175.0	175.0	175.8	0.8
C	14,150	370	3,160	3.0	186.6	186.6	187.6	1.0
D	17,300	440	3,960	2.4	194.3	194.3	195.3	1.0
E	19,300	410	2,970	3.0	199.3	199.3	200.3	1.0
F	20,070	320	2,780	3.2	204.7	204.7	205.0	0.3
G	22,640	315	2,720	3.3	211.4	211.4	212.3	0.9
H	24,050	560	3,180	2.8	218.0	218	219.0	1.0
I	28, 100	410	5,250	1.7	223.6	223.6	224.6	1.0
J	31,300	250	2,420	2.4	226.5	226.5	227.5	1.0
K	32,900	510	4,225	1.4	228.3	228.3	229.3	1.0
L	33,750	940	6,160	1.0	235.8	235.8	236.6	0.8
M	39,775	660	4,390	1.3	237.7	237.7	238.7	1.0
N	43,800	680	4,605	1.3	241.5	241.5	242.5	1.0

[1]Feet above confluence with Wateree River

[2]Elevations without considering backwater effects from Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

SANDERS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Sandy Branch								
A	1,116	590	3,437	1.4	235.8	235.8	236.8	1.0
B	1,407	550	3,324	1.5	236.1	236.1	237.0	0.9
C	2,116	397	2,603	1.9	236.7	236.7	237.6	0.9
D	2,511	250	1,827	2.7	237.2	237.2	238.0	0.8
E	3,229	325	2,914	1.7	241.7	241.7	242.6	0.9
F	3,637	550	4,741	1.0	241.8	241.8	242.8	1.0
G	4,265	400	2,669	1.5	242.0	242.0	243.0	1.0
H	5,105	357	2,743	1.4	242.8	242.8	243.8	1.0
I	5,624	200	1,746	2.2	243.2	243.2	244.0	0.8
J	6,335	225	1,574	2.5	243.8	243.8	244.8	1.0
K	6,877	125	980	4.0	244.7	244.7	245.5	0.8
L	7,404	140	1,158	3.4	245.8	245.8	246.8	1.0
M	8,965	444	3,104	1.3	249.0	249.0	249.9	0.9
N	9,523	293	2,141	1.8	249.4	249.4	250.3	0.9
O	10,232	172	1,268	3.1	250.2	250.2	251.2	1.0
P	10,870	239	1,931	1.8	251.2	251.2	252.2	1.0
Q	11,780	328	2,370	1.5	252.0	252.0	252.9	0.9
R	12,296	330	2,480	1.4	252.4	252.4	253.3	0.9
S	12,764	365	2,532	1.4	252.6	252.6	253.6	1.0
T	13,131	160	643	5.3	253.0	253.0	253.5	0.5
U	13,550	130	754	4.6	256.0	256.0	256.3	0.3
V	14,238	190	936	2.9	258.3	258.3	259.2	0.9

[1]Feet above confluence with Twentyfive Mile Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

SANDY BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Sloan Branch								
A	560	153	527	2.6	165.4	165.4	166.0	0.6
B	1,590	249	1,120	1.2	173.9	173.9	174.9	1.0
C	1,930	236	895	1.5	174.6	174.6	175.5	0.9
D	2,555	105	426	3.2	177.3	177.3	177.8	0.5
E	3,045	177	863	1.6	179.0	179.0	180.0	1.0
F	3,855	240	755	1.8	181.5	181.5	182.5	1.0
G	4,220	118	444	3.1	183.9	183.9	184.6	0.7
H	4,585	135	604	1.7	185.5	185.5	186.5	1.0

[1]Feet above confluence with Spears Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

SLOAN BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Spears Creek								
A	25,630	450	4,448	1.5	142.0	142.0	142.5	0.5
B	26,260	370	3,706	1.8	142.2	142.2	143.0	0.8
C	26,872	980	8,431	0.8	142.4	142.4	143.4	1.0
D	27,681	1,030	8,375	0.8	142.6	142.6	143.6	1.0
E	28,447	500	4,257	1.6	142.9	142.9	143.9	1.0
F	29, 107	500	2,981	2.2	143.8	143.8	144.7	0.9
G	29,832	670	4,586	1.5	145.2	145.2	146.2	1.0
H	30,351	850	4,810	1.4	145.8	145.8	146.8	1.0
I	30,876	750	4,768	1.4	146.5	146.5	147.4	0.9
J	32,152	754	8,324	0.8	153.1	153.1	153.9	0.8
K	32,786	770	6,377	1.1	153.2	153.2	154.1	0.9
L	33,266	500	5,695	1.2	153.2	153.2	154.2	1.0
M	33,846	480	5,480	1.2	153.3	153.3	154.3	1.0
N	34,637	507	5,443	1.2	153.7	153.7	154.7	1.0
O	35,022	697	7,212	0.8	153.9	153.9	154.9	1.0
P	36,068	426	4,308	1.3	154.2	154.2	155.2	1.0
Q	36,526	853	8,222	0.7	154.4	154.4	155.4	1.0
R	37,435	647	5,170	1.1	154.6	154.6	155.6	1.0
S	37,845	639	4,082	1.4	154.9	154.9	155.9	1.0
T	38,493	400	2,037	2.8	156.0	156.0	157.0	1.0
U	39,058	400	3,062	1.8	158.1	158.1	158.9	0.8
V	39,754	664	4,328	1.3	158.9	158.9	159.7	0.8
W	40,732	504	3,326	1.7	160.0	160.0	160.9	0.9
X	41, 192	716	4,427	1.3	160.6	160.6	161.5	0.9

[1]Feet above county boundary

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

SPEARS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Spears Creek - continued								
Y	41,684	700	4,509	1.3	161.0	161.0	162.0	1.0
Z	42,494	950	5,806	1.0	161.6	161.6	162.6	1.0
AA	43,047	1,050	6,544	0.9	161.9	161.9	162.9	1.0
AB	43,898	900	5,459	1.0	162.4	162.4	163.4	1.0
AC	44,833	600	3,437	1.6	163.4	163.4	164.3	0.9
AD	45,646	500	3,085	1.8	164.6	164.6	165.8	0.9
AE	46,383	700	4,741	1.2	165.8	165.8	166.7	0.9
AF	47,056	950	6,483	0.9	166.2	166.2	167.1	0.9
AG	47,577	700	3,600	1.6	166.4	166.4	167.4	1.0
AH	48,329	300	1,892	3.0	168.2	168.2	168.8	0.6
AI	48,994	400	2,950	1.9	169.7	169.7	170.6	0.9
AJ	49,662	720	4,979	1.1	170.4	170.4	171.4	1.0
AK	50,368	660	3,943	1.0	170.9	170.9	171.8	0.9
AL	51,088	510	1,906	2.0	171.6	171.6	172.6	1.0
AM	51,533	510	2,309	1.6	173.8	173.8	173.9	0.1
AN	52,906	170	1,680	2.3	179.6	179.6	180.2	0.6
AO	53,232	500	5,079	0.7	179.7	179.7	180.6	0.9
AP	53,912	700	6,552	0.5	179.8	179.8	180.7	0.9
AQ	54,628	700	5,909	0.6	179.9	179.9	180.8	0.9
AR	55,224	635	5,803	0.6	180.0	180.0	180.9	0.9
AS	56,018	650	4,771	0.8	180.2	180.2	181.0	0.8
AT	56,636	570	5,190	0.9	180.4	180.4	181.2	0.8
AU	57,525	600	4,063	0.9	180.7	180.7	181.6	0.9
AV	58,448	400	1,299	2.8	181.9	181.9	182.6	0.7
AW	59,029	229	1,326	7.1	186.3	186.3	187.3	1.0

[1]Feet above county boundary

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

SPEARS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Spears Creek - continued								
AX	59,642	194	1,726	3.9	190.1	190.1	191.1	1.0
AY	60,058	580	4,075	3.1	190.5	190.5	191.5	1.0
AZ	60,446	585	4,169	3.1	190.7	190.7	191.6	0.9
BA	61,161	207	1,200	6.4	191.0	191.0	191.8	0.8
BB	61,817	664	3,731	3.5	193.1	193.1	194.1	1.0
BC	62,470	558	2,560	5.6	193.7	193.7	194.5	0.8
BD	62,867	568	2,842	4.3	194.3	194.3	195.0	0.7
BE	63,303	539	2,448	4.7	194.8	194.8	195.4	0.6
BF	64,053	1,093	5,196	2.6	195.5	195.5	196.0	0.5
BG	64,694	1,169	5,276	2.6	195.8	195.8	196.2	0.4
BH	65,194	632	3,228	3.6	196.0	196.0	196.4	0.4
BI	65,747	283	568	10.5	198.9	198.9	199.1	0.2
BJ	70,214	308	567	9.5	203.8	203.8	203.8	0.0
BK	70,524	330	1,248	5.2	205.2	205.2	205.2	0.0
BL	70,734	454\390[2]	4,400	0.6	210.8	210.8	211.1	0.3

[1]Feet above county boundary
[2]Total width\width within county

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

SPEARS CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Swift Creek								
A	31,600	550	5,100	2.0	138.7	132.1[2]	133.1	1.0
B	36,000	890	8,170	1.2	138.7	134.1[2]	135.0	0.9
C	42,500	740	4,790	2.1	138.7	138.3[2]	139.1	0.8
D	47,480	1,355	8,980	1.1	146.8	146.8	146.8	0.0
E	52,070	1,020	5,410	1.8	152.3	152.3	152.5	0.2
F	56,700	1,200	8,450	1.1	157.8	157.8	158.6	0.8
G	61,800	1,520	8,190	1.2	159.6	159.6	160.4	0.8
H	64,640	1,260	8,220	1.2	160.7	160.7	161.6	0.9
I	68,500	1,060	5,470	1.5	167.3	167.3	168.3	1.0
J	73, 100	960	4,730	2.1	171.6	171.6	172.5	0.9
K	77,500	520	3,110	3.2	176.4	176.4	177.3	0.9
L	79,050	1,170	11,850	0.8	183.5	183.5	184.3	0.8
M	80,600	1,250	7,460	1.3	183.8	183.8	184.6	0.8
N	81,900	740	6,220	1.6	185.6	185.6	186.6	1.0
O	84,200	720	6,050	1.7	186.9	186.9	187.9	1.0
P	86,250	550	3,050	3.3	189.7	189.7	190.7	1.0

[1]Feet above mouth

[2]Elevations without considering backwater effects from Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

SWIFT CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Town Creek								
A	16,500[1]	400	3,920	1.1	144.0	144.0	144.0	0.0
B	19,350[1]	400	3,170	1.2	146.2	146.2	147.1	0.9
C	20,850[1]	840	4,350	0.9	146.5	146.5	147.5	1.0
D	24,100[1]	275	1,640	2.0	148.9	148.9	149.8	0.9
E	24,400[1]	440	3,910	0.8	153.2	153.2	154.1	0.9
F	27,600[1]	300	1,620	1.4	155.5	155.5	156.3	0.8
G	29,750[1]	130	780	2.9	157.3	157.3	158.3	1.0
H	32,700[1]	130	650	3.2	167.9	167.9	168.8	0.9
I	34,000[1]	275	1,280	1.6	170.7	170.7	171.5	0.8
J	36,400[1]	230	1,260	1.6	178.6	178.6	179.1	0.5
Tributary CC1								
A	1,000[2]	115	385	2.8	199.1	199.1	200.1	1.0
B	2,085[2]	80	100	6.2	210.8	210.8	211.5	0.7
C	2,325[2]	150	475	1.3	214.7	214.7	215.6	0.9

[1]Feet above confluence with Wateree River
[2]Feet above confluence with Camp Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

TOWN CREEK - TRIBUTARY CC1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Tributary to Haig Creek 1								
A	562	690	4,266	0.4	177.2	177.2	178.2	1.0
B	1,126	100	418	3.7	177.2	177.2	177.8	0.6
C	1,610	75	432	3.6	180.3	180.3	181.1	0.8
D	2,653	250	1,295	1.2	182.8	182.8	183.7	0.9
E	3,007	190	868	1.8	183.4	183.4	184.2	0.8
F	4,418	80	658	2.3	188.5	188.5	189.3	0.8
G	5,036	160	977	1.6	189.3	189.3	190.3	1.0
H	5,467	105	459	3.4	190.3	190.3	190.9	0.6
I	6,039	61	268	5.8	194.9	194.9	194.9	0.0
J	6,649	230	1,178	1.3	197.1	197.1	198.1	1.0
K	7,186	32	180	3.6	197.9	197.9	198.8	0.9
L	7,400	25	147	4.4	198.4	198.4	199.3	0.9
M	7,959	24	88	7.3	201.1	201.1	201.9	0.8
N	8,744	47	225	2.9	205.6	205.6	206.6	1.0
O	9,486	17	82	7.8	208.8	208.8	209.7	0.9
P	10,076	17	97	6.6	213.7	213.7	214.5	0.8
Q	10,578	17	89	7.2	216.5	216.5	217.4	0.9
R	11,072	17	67	9.6	222.5	222.5	222.8	0.3
S	11,903	17	59	4.4	234.9	234.9	235.7	0.8

[1]Feet above confluence with Haig Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

TRIBUTARY TO HAIG CREEK 1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Tributary WR-1								
A	6,520	100	585	4.6	158.2	150.9[2]	151.9	1.0
B	10,430	170	820	3.3	182.0	182.0	183.0	1.0
C	12,000	110	485	4.3	192.6	192.6	193.6	1.0
D	13,450	100	545	3.8	202.8	202.8	203.7	0.9
E	15,700	220	560	3.7	219.0	219.0	219.8	0.8
F	16,050	220	1,380	1.5	223.7	223.7	224.5	0.8
G	17,370	130	355	3.7	225.9	225.9	226.9	1.0

[1]Feet above confluence with Wateree River

[2]Elevations without considering backwater effects from Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

TRIBUTARY WR-1

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Tuppler Branch								
A	1,160	145	535	3.1	242.0	241.6[2]	242.4	0.8
B	2,011	150	520	3.2	250.3	250.3	251.3	1.0
C	2,300	240	824	2.0	252.7	252.7	253.6	0.9
D	2,861	74	449	3.7	256.1	256.1	256.7	0.6
E	3,770	135	696	2.4	258.0	258.0	258.7	0.7
F	4,245	130	856	1.9	259.5	259.5	260.2	0.7
G	4,606	213	927	1.8	260.1	260.1	261.1	1.0
H	5,580	112	746	2.2	263.0	263.0	263.7	0.7
I	6,047	180	989	1.7	263.9	263.9	264.9	1.0
J	6,681	88	416	3.0	266.4	266.4	266.7	0.3
K	7,168	65	349	3.6	269.2	269.2	270.2	1.0
L	7,792	93	504	2.5	273.3	273.3	274.3	1.0
M	8,391	37	173	7.2	278.8	278.8	279.2	0.4
N	8,705	205	1,095	1.1	281.7	281.7	282.7	1.0

[1]Feet above confluence with Sandy Branch

[2]Elevation computed without consideration of backwater effects from Sandy Branch

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

TUPPLER BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Twentyfive Mile Creek								
A	4,190	1,800	19,266	0.9	157.3	148.6[2]	149.6	1.0
B	7,470	1,350	19,179	0.9	157.3	149.4[2]	150.3	0.9
C	7,854	1,175	16,929	1.1	157.3	149.4[2]	150.4	1.0
D	8,618	840	13,290	1.3	157.3	149.5[2]	150.5	1.0
E	8,940	272	4,150	4.3	157.3	149.1[2]	150.1	1.0
F	9,229	160	2,708	6.6	157.3	149.2[2]	150.1	0.9
G	9,646	352	5,029	3.5	157.3	151.0[2]	152.0	1.0
H	10,103	370	5,854	3.0	157.3	151.8[2]	152.8	1.0
I	11,683	410	7,849	2.3	157.3	154.6[2]	155.5	0.9
J	12,513	550	9,414	1.9	157.3	154.9[2]	150.9	1.0
K	13,184	510	9,594	1.9	157.3	155.2[2]	156.2	1.0
L	13,620	385	8,546	2.1	157.3	155.4[2]	156.4	1.0
M	14,404	912	17,095	1.0	157.3	155.7[2]	156.7	1.0
N	15,185	1,125	21,012	0.9	157.3	155.8[2]	156.8	1.0
O	15,837	1,150	22,585	0.8	157.3	155.9[2]	156.9	1.0
P	16,374	950	19,077	0.9	157.3	156.0[2]	157.0	1.0
Q	17,509	900	17,803	1.0	157.3	156.1[2]	157.1	1.0
R	18,734	1,400	21,845	0.8	157.3	156.3[2]	157.3	1.0
S	19,400	1,140	14,629	1.2	157.3	156.4[2]	157.4	1.0
T	20,330	858	10,747	1.7	157.3	156.7[2]	157.6	0.9
U	20,691	833	8,874	2.0	157.3	156.9[2]	157.8	0.9
V	21,570	989	9,178	1.9	157.9	157.9	158.5	0.6
W	22,356	990	11,659	1.5	158.7	158.7	159.2	0.5

[1]Feet above confluence with Wateree River

[2]Elevations without considering backwater effects from Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

TWENTYFIVE MILE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Twentyfive Mile Creek - continued								
X	22,969	970	11,113	1.6	159.1	159.1	159.5	0.4
Y	23,554	990	11,873	1.5	159.5	159.5	159.9	0.4
Z	24,594	1,100	9,354	1.9	160.0	160.0	160.5	0.5
AA	25,546	970	9,892	1.8	160.8	160.8	161.4	0.6
AB	26,107	850	10,498	1.7	161.2	161.2	161.8	0.6
AC	26,621	890	11,316	1.6	161.4	161.4	162.1	0.7
AD	27,250	1,210	14,812	1.2	161.7	161.7	162.4	0.7
AE	27,742	1,040	14,573	1.2	161.9	161.9	162.6	0.7
AF	29,831	570	6,297	2.8	164.7	164.7	165.7	1.0
AG	30,601	605	8,096	2.2	165.8	165.8	166.7	0.9
AH	31, 179	670	8,987	2.0	166.2	166.2	167.2	1.0
AI	31,780	840	10,180	1.7	166.7	166.7	167.6	0.9
AJ	32,400	909	11,768	1.5	167.2	167.2	167.9	0.7
AK	32,821	1,060	11,099	1.6	167.3	167.3	168.1	0.8
AL	33,333	1,182	10,550	1.7	167.6	167.6	168.5	0.9
AM	33,877	1,070	6,997	2.5	167.8	167.8	168.8	1.0
AN	35,138	900	7,420	2.4	170.2	170.2	170.6	0.4
AO	35,936	880	10,212	1.7	171.0	171.0	171.6	0.6
AP	36,494	800	8,926	2.0	171.3	171.3	172.0	0.7
AQ	37,072	990	11,160	1.6	171.7	171.7	172.5	0.8
AR	37,664	960	10,183	1.7	172.1	172.1	172.8	0.7
AS	38,176	917	10,315	1.7	172.4	172.4	173.2	0.8

[1]Feet above confluence with Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

TWENTYFIVE MILE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Twentyfive Mile Creek - continued								
AT	38,808	1,067	11,210	1.6	172.9	172.9	173.6	0.7
AU	39,265	1,066	11,488	1.5	173.2	173.2	173.9	0.7
AV	39,908	1,060	11,575	1.5	173.6	173.6	174.3	0.7
AW	40,607	1,110	12,609	1.4	174.1	174.1	174.7	0.6
AX	41,221	1,240	12,581	1.4	174.4	174.4	175.0	0.6
AY	41,715	1,480	13,082	1.3	174.6	174.6	175.3	0.7
AZ	43,281	1,270	10,926	1.6	175.4	175.4	176.2	0.8
BA	44,709	680	7,185	2.4	182.0	182.0	182.8	0.8
BB	45,241	1,100	12,526	1.4	182.5	182.5	183.4	0.9
BC	45,753	1,195	11,986	1.4	182.7	182.7	183.6	0.9
BD	46,298	1,075	9,667	1.8	183.1	183.1	184.0	0.9
BE	46,634	1,139	11,126	1.6	183.5	183.5	184.3	0.8
BF	47,335	695	6,833	2.5	184.1	184.1	184.8	0.7
BG	47,792	707	7,197	2.4	184.8	184.8	185.5	0.7
BH	48,339	830	9,365	1.9	185.4	185.4	186.2	0.8
BI	48,906	976	10,633	1.6	185.7	185.7	186.6	0.9
BJ	49,374	1,145	11,577	1.5	186.0	186.0	186.9	0.9
BK	49,763	1,309	13,276	1.3	186.2	186.2	187.2	1.0
BL	50,081	1,222	12,442	1.4	186.4	186.4	187.4	1.0
BM	50,706	1,207	13,526	1.3	186.7	186.7	187.7	1.0
BN	51,320	1,757	19,394	0.9	187.0	187.0	187.9	0.9
BO	52,099	1,692	15,608	1.1	187.2	187.2	188.2	1.0

[1]Feet above confluence with Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

TWENTYFIVE MILE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Twentyfive Mile Creek - continued								
BP	52,811	1,442	12,124	1.4	187.7	187.7	188.6	0.9
BQ	53,337	1,380	11,220	1.5	188.3	188.3	189.0	0.7
BR	53,902	1,340	13,498	1.3	188.8	188.8	189.5	0.7
BS	54,341	1,065	10,052	1.7	189.0	189.0	189.7	0.7
BT	54,759	1,079	9,423	1.8	189.5	189.5	190.2	0.7
BU	55,483	1,034	8,615	2.0	190.4	190.4	191.1	0.7
BV	56,006	1,038	8,208	2.0	191.2	191.2	192.0	0.8
BW	56,540	883	7,099	2.4	192.2	192.2	192.9	0.7
BX	56,883	796	6,467	2.6	193.1	193.1	193.6	0.5
BY	57,482	615	7,213	2.3	194.3	194.3	194.9	0.6
BZ	57,901	730	8,448	2.0	194.7	194.7	195.5	0.8
CA	58,405	885	9,972	1.7	195.0	195.0	196.0	1.0
CB	58,974	900	9,895	1.7	195.5	195.5	196.4	0.9
CC	60,217	890	9,500	1.8	198.9	198.9	199.3	0.4
CD	60,575	853	7,981	2.1	199.2	199.2	199.6	0.4
CE	61,248	597	6,254	2.7	200.1	200.1	200.8	0.7
CF	61,939	1,268	13,230	1.3	200.7	200.7	201.6	0.9
CG	62,432	1,266	13,328	1.3	201.0	201.0	201.9	0.9
CH	63, 111	1,330	14,443	1.2	201.3	201.3	202.2	0.9
CI	63,710	977	10,807	1.6	201.6	201.6	202.5	0.9
CJ	64,192	917	10,190	1.6	201.9	201.9	202.8	0.9
CK	64,716	1,035	12,404	1.4	202.3	202.3	203.2	0.9

[1]Feet above confluence with Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

TWENTYFIVE MILE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Twentyfive Mile Creek - continued								
CL	65,434	1,260	11,260	1.5	202.6	202.6	203.6	1.0
CM	66,012	1,520	13,469	1.2	203.1	203.1	204.1	1.0
CN	66,556	1,240	9,965	1.7	203.5	203.5	204.5	1.0
CO	67,057	1,050	9,447	1.8	204.2	204.2	205.0	0.8
CP	67,465	932	9,680	1.7	204.8	204.8	205.5	0.7
CQ	67,920	1,007	11,079	1.5	205.2	205.2	205.9	0.7
CR	68,306	1,019	11,077	1.5	205.4	205.4	206.1	0.7
CS	69,076	817	9,170	1.8	206.1	206.1	206.7	0.6
CT	69,688	790	6,106	2.7	206.8	206.8	207.5	0.7
CU	70,799	743	8,676	1.9	211.6	211.6	212.0	0.4
CV	71,276	573	4,905	3.4	212.0	212.0	212.4	0.4
CW	71,604	370	3,696	4.5	212.9	212.9	213.2	0.3
CX	71,943	351	4,286	3.9	214.3	214.3	214.7	0.4
CY	72,414	890	10,865	1.5	215.0	215.0	215.8	0.8
CZ	73,017	1,355	12,326	1.4	215.3	215.3	216.2	0.9
DA	73,581	1,271	10,175	1.6	215.7	215.7	216.6	0.9
DB	74,205	1,201	10,879	1.5	216.3	216.3	217.3	1.0
DC	74,807	1,133	11,341	1.5	216.8	216.8	217.7	0.9
DD	75,408	1,003	10,385	1.6	217.2	217.2	218.1	0.9
DE	75,835	1,010	10,603	1.6	217.5	217.5	218.4	0.9
DF	77, 113	875	7,652	2.2	220.9	220.9	221.5	0.6
DG	77,782	1,161	10,577	1.4	221.4	221.4	222.4	1.0

[1]Feet above confluence with Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

TWENTYFIVE MILE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Twentyfive Mile Creek - continued								
DH	78,330	1,303	15,626	0.9	221.6	221.6	222.6	1.0
DI	78,784	1,430	14,665	1.0	221.8	221.8	222.7	0.9
DJ	79,403	1,520	9,201	1.6	222.1	222.1	223.0	0.9
DK	79,863	1,600	10,342	1.4	222.7	222.7	223.7	1.0
DL	80,393	1,827	11,195	1.3	223.3	223.3	224.3	1.0
DM	81,264	1,104	7,706	1.9	224.7	224.7	225.5	0.8
DN	81,651	1,128	6,775	2.1	225.5	225.5	226.4	0.9
DO	82, 155	1,096	6,127	2.0	227.1	227.1	227.8	0.7
DP	82,606	1,052	5,874	2.0	228.4	228.4	229.2	0.8
DQ	83, 110	1,115	7,030	1.7	229.5	229.5	230.4	0.9
DR	83,559	1,210	7,506	1.6	230.2	230.2	231.2	1.0
DS	84,178	1,075	6,725	1.8	231.4	231.4	232.4	1.0
DT	85,019	1,300	7,829	1.5	232.9	232.9	233.9	1.0
DU	85,806	1,188	7,496	1.6	234.2	234.2	235.2	1.0
DV	86,550	1,049	7,554	1.6	235.4	235.4	236.4	1.0
DW	87,172	1,044	6,039	2.0	236.5	236.5	237.4	0.9
DX	88,024	1,174	7,390	1.6	238.5	238.5	239.3	0.8
DY	88,520	1,190	6,251	1.9	239.6	239.6	240.4	0.8
DZ	89,099	1,090	6,391	1.9	241.2	241.2	242.1	0.9
EA	89,819	919	7,140	1.7	242.5	242.5	243.5	1.0
EB	90,600	1,064	6,989	1.7	243.9	243.9	244.8	0.9
EC	91, 192	1,007	7,221	1.4	244.8	244.8	245.7	0.9

[1]Feet above confluence with Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

TWENTYFIVE MILE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Twentyfive Mile Creek - continued								
ED	92,031	604	4,742	2.1	245.9	245.9	246.9	1.0
EE	93,309	710	5,057	1.9	249.3	249.3	250.1	0.8
EF	93,966	693	5,588	1.8	250.4	250.4	251.3	0.9
EG	94,496	1,120	8,622	1.1	250.9	250.9	251.9	1.0
EH	95,108	1,510	9,273	1.1	251.4	251.4	252.3	0.9
EI	94,709	1,690	9,755	1.0	251.9	251.9	252.8	0.9
EJ	96,198	1,790	8,832	1.1	252.4	252.4	253.3	0.9
EK	96,616	1,600	7,782	1.3	252.9	252.9	253.7	0.8
EL	97, 157	1,450	5,995	1.6	253.9	253.9	254.7	0.8
EM	98,020	1,150	5,960	1.6	256.3	256.3	256.9	0.6

[1]Feet above confluence with Wateree River

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

TWENTYFIVE MILE CREEK

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Unnamed Tributary to Bolton Branch								
A	887	33	160	4.5	163.4	163.4	164.1	0.7
B	1,398	32	170	4.2	164.7	164.7	165.7	1.0
C	2,144	47	364	2.0	170.1	170.1	171.1	1.0

[1]Feet above confluence with Bolton Branch

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

UNNAMED TRIBUTARY TO BOLTON BRANCH

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Wateree River								
A	295,940	21,340	243,380	0.9	142.0	142.0	143.0	1.0
B	306,280	17,410	218,410	1.0	142.5	142.5	143.5	1.0
C	321,940	21,450[2]	208,610	1.1	143.2	143.2	144.2	1.0
D	338,670	9,110	65,330	3.4	145.2	145.2	146.2	1.0
E	353,400	4,990	66,800	3.4	150.9	150.9	151.8	0.9
F	358,820	1,810	36,000	6.2	153.6	153.6	154.6	1.0
G	363,310	1,960	47,640	4.7	156.8	156.8	157.8	1.0
H	369,200	1,590	34,430	6.5	159.1	159.1	160.1	1.0
I	371,480	2,220	42,310	5.3	160.6	160.6	161.6	1.0
J	373,960	2,690	58,810	3.8	162.3	162.3	163.3	1.0
K	377,100	2,560	51,080	4.4	163.3	163.3	164.3	1.0
L	378,820	2,180	47,490	4.7	164.0	164.0	165.0	1.0
M	383,740	2,130	52,280	4.3	166.2	166.2	167.2	1.0
N	386,630	2,250	55,610	4.0	167.3	167.3	168.2	0.9
O	391,250	1,530	42,950	5.4	168.9	168.9	169.8	0.9
p	394, 870	1,180	34,870	6.4	170.5	170.5	171.5	1.0
Q	397,870	1,940	43,730	5.1	172.3	172.3	173.3	1.0
R	401,080	1,390	39,760	5.6	173.9	173.9	174.9	1.0
S	402,223	1,543	53,018	4.3	174.4	174.4	175.4	1.0
T-AJ*								

[1]Feet above mouth
[2]Combined Wateree River/Town Creek Floodway
*No floodway data computed

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

WATEREE RIVER

FLOODING SOURCE		FLOODWAY			BASE FLOOD WATER SURFACE ELEVATION			
CROSS SECTION	DISTANCE[1]	WIDTH (FEET)	SECTION AREA (SQUARE FEET)	MEAN VELOCITY (FEET PER SECOND)	REGULATORY (FEET NAVD)	WITHOUT FLOODWAY (FEET NAVD)	WITH FLOODWAY (FEET NAVD)	INCREASE (FEET)
Yankee Branch								
A	798	21	117	6.6	202.3	197.6[2]	198.2	0.6
B	1,271	21	88	8.7	202.3	201.9[2]	202.5	0.6
C	1,694	21	99	7.8	208.8	208.8	208.8	0.0
D	2,089	61	103	7.5	219.5	219.5	219.5	0.0
E	2,490	21	107	7.2	225.1	225.1	225.4	0.3
F	2,863	21	83	9.3	229.9	229.9	230.1	0.2
G	3,571	21	87	8.9	243.5	243.5	243.7	0.2
H	3,883	21	81	9.5	249.5	249.5	249.7	0.2
I	4,746	50	208	3.7	264.1	264.1	265.0	0.9
J	5,370	30	178	4.3	266.2	266.2	267.0	0.8
K	5,814	21	90	4.5	267.8	267.8	268.6	0.8
L	6,486	21	52	7.8	273.9	273.9	273.9	0.0
M	6,913	21	83	5.0	278.5	278.5	279.0	0.5
N	7,374	21	74	5.5	281.7	281.7	282.1	0.4
O	8,024	21	58	3.3	286.2	286.2	286.4	0.2

[1]Feet above confluence with Twentyfive Mile Creek

[2]Elevations without considering backwater effects from Twentyfive Mile Creek

TABLE 6

FEDERAL EMERGENCY MANAGEMENT AGENCY
KERSHAW COUNTY, SC
AND INCORPORATED AREAS

FLOODWAY DATA

YANKEE BRANCH

TABLE 7—Limited Detailed Base Flood Elevation Data

Cross Section[1]	Stream Station[2]	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)
BEAR CREEK			
013	1,260	2558	220.90[3]
017	1,671	2558	220.90[3]
018	1,765	2558	220.90[3]
023	2,338	2558	220.90[3]
029	2,853	2558	222.25
034	3,412	2558	223.90
039	3,853	2558	225.11
045	4,472	2558	227.06
050	5,000	2558	228.10
055	5,501	2558	229.20
061	6,054	2558	230.72
066	6,602	2558	233.27
071	7,059	2558	234.70
077	7,710	2417	236.01
081	8,148	2417	236.65
085	8,478	2417	237.87
091	9,066	2417	239.29
097	9,735	2417	241.52
102	10,190	2417	243.63
106	10,563	2417	244.66
110	10,993	2417	246.90
118	11,761	2417	248.38
122	12,202	2417	249.75
130	12,961	2417	252.74
134	13,368	2417	253.62
139	13,931	2417	254.74
BOLTON BRANCH			
000	27	435	174.10
001	65	435	174.15
002	164	435	178.08
003	311	435	178.20
004	353	435	178.24
005	451	435	184.46
008	821	435	184.47
009	924	435	184.47
013	1,348	435	184.46
017	1,658	435	184.58

[1] This table reflects all modeled cross sections. Some cross sections shown in this table may not appear on map.
[2] Feet above mouth.
[3] Elevation includes backwater effects.

TABLE 7—Limited Detailed Base Flood Elevation Data

Cross Section[1]	Stream Station[2]	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)
BRIDGE CREEK			
003	343	674	252.00[3]
007	734	674	252.00[3]
012	1,157	674	252.34
016	1,584	674	253.69
017	1,673	674	257.35
021	2,064	674	257.44
025	2,519	674	257.87
CAMP CREEK			
002	241	451	221.90
004	400	451	221.90
007	688	451	221.90
008	750	451	221.90
011	1,059	451	221.91
014	1,380	451	221.91
018	1,826	451	221.98
020	1,999	451	222.06
FLAT BRANCH			
015	1,450	2032	224.00[3]
015	1,545	2032	224.00[3]
016	1,607	2032	224.00[3]
020	1,993	2032	224.00[3]
020	2,049	2032	224.00[3]
024	2,412	1947	224.00[3]
027	2,717	1947	225.28
034	3,375	1947	227.02
039	3,944	1947	228.56
044	4,401	1947	229.92
048	4,806	1947	231.41
051	5,071	1947	233.07
058	5,847	1947	234.40
061	6,138	1947	235.23
066	6,551	1947	236.72
070	7,002	1947	238.36
077	7,685	1867	240.65
081	8,132	1867	242.13
088	8,792	1867	244.92
095	9,466	1867	247.63
100	9,974	1867	250.07

[1] This table reflects all modeled cross sections. Some cross sections shown in this table may not appear on map.
[2] Feet above mouth.
[3] Elevation includes backwater effects.

TABLE 7—Limited Detailed Base Flood Elevation Data

Cross Section[1]	Stream Station[2]	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)
FLAT BRANCH (continued)			
102	10,232	1867	252.31
103	10,306	1867	252.74
107	10,706	1867	253.39
110	11,018	1867	254.84
116	11,648	1611	257.52
121	12,052	1611	259.31
127	12,682	1611	263.14
HAIG CREEK			
167	16,711	638	214.53
169	16,853	638	216.00
172	17,164	638	219.13
174	17,385	638	219.96
175	17,535	638	223.53
176	17,621	638	231.13
181	18,091	638	231.13
186	18,591	638	231.15
191	19,091	638	231.16
194	19,391	638	231.17
196	19,591	638	231.31
199	19,862	371	234.75
200	20,040	371	236.18
201	20,131	371	250.08
206	20,591	371	250.09
211	21,091	371	250.09
214	21,354	371	250.08
215	21,544	371	250.12
218	21,761	371	251.57
218	21,803	371	255.52
219	21,915	371	255.55
220	22,031	371	257.05
221	22,122	371	273.49
224	22,414	371	273.49
227	22,683	371	274.90
231	23,091	371	279.37
234	23,380	371	287.18
234	23,438	371	293.15
235	23,470	371	293.14
235	23,515	371	293.14

[1] This table reflects all modeled cross sections. Some cross sections shown in this table may not appear on map.
[2] Feet above mouth.
[3] Elevation includes backwater effects.

TABLE 7—Limited Detailed Base Flood Elevation Data

Cross Section[1]	Stream Station[2]	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)
HAIG CREEK (continued)			
235	23,547	371	293.13
HORSEPEN CREEK			
000	14	744	291.40
003	278	744	291.45
004	351	744	291.48
007	657	744	291.67
009	947	368	292.55
013	1,286	368	294.68
013	1,348	368	299.10
016	1,616	368	301.71
018	1,832	368	308.79
020	2,016	368	313.20
022	2,237	368	315.00
025	2,475	368	318.51
025	2,527	368	321.65
028	2,834	368	323.55
031	3,058	368	326.04
034	3,363	368	332.19
036	3,598	368	336.31
039	3,851	368	346.74
039	3,905	368	351.11
043	4,334	368	353.06
LITTLE PINE TREE CREEK			
000	19	322	179.60
006	599	322	179.73
010	1,010	322	179.95
012	1,179	322	180.29
014	1,363	322	181.48
014	1,383	322	181.65
015	1,451	322	182.10
016	1,599	322	183.05
021	2,099	322	184.48
026	2,599	322	185.89
031	3,099	322	187.70
035	3,454	322	189.28
035	3,508	322	190.07
037	3,671	322	190.24
039	3,913	300	191.10

[1] This table reflects all modeled cross sections. Some cross sections shown in this table may not appear on map.
[2] Feet above mouth.
[3] Elevation includes backwater effects.

TABLE 7—Limited Detailed Base Flood Elevation Data

Cross Section[1]	Stream Station[2]	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)
LITTLE PINE TREE CREEK (continued)			
041	4,099	300	191.35
045	4,509	300	192.90
047	4,736	300	193.29
051	5,141	300	194.74
055	5,518	300	195.70
058	5,821	300	196.31
059	5,858	300	198.01
060	6,049	300	198.19
066	6,599	300	199.33
071	7,142	300	202.73
076	7,584	208	205.62
SANDERS CREEK			
000	27	686	241.50
007	704	686	241.54
014	1,372	686	241.65
024	2,374	686	242.01
030	2,958	686	243.38
036	3,569	686	244.38
041	4,058	686	244.87
052	5,205	686	246.32
058	5,846	686	247.92
062	6,226	686	249.00
070	6,952	686	250.03
076	7,597	686	251.21
082	8,168	686	251.76
087	8,722	686	252.34
095	9,460	686	253.55
096	9,567	686	254.14
100	9,970	540	254.56
106	10,553	540	255.11
111	11,131	540	255.63
118	11,841	540	256.33
124	12,432	540	258.16
129	12,898	540	259.02
134	13,408	540	259.66
140	13,958	540	260.46
146	14,603	540	261.59
151	15,118	540	262.58

[1] This table reflects all modeled cross sections. Some cross sections shown in this table may not appear on map.
[2] Feet above mouth.
[3] Elevation includes backwater effects.

TABLE 7—Limited Detailed Base Flood Elevation Data

Cross Section[1]	Stream Station[2]	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)
SANDERS CREEK (continued)			
157	15,667	540	263.61
163	16,261	540	264.59
169	16,899	540	265.42
175	17,514	540	266.17
180	17,975	540	266.87
185	18,469	540	268.32
190	18,953	540	270.17
194	19,354	540	270.98
201	20,067	540	272.37
206	20,604	540	273.82
213	21,315	278	275.72
216	21,614	278	276.56
217	21,716	278	280.25
223	22,299	278	280.31
230	23,049	278	280.65
237	23,731	278	283.02
243	24,330	278	283.81
249	24,889	278	284.47
256	25,593	278	285.54
262	26,200	278	287.18
270	26,959	278	288.66
279	27,941	278	290.91
286	28,645	278	292.75
291	29,111	278	294.13
292	29,187	278	297.06
297	29,660	278	297.19
303	30,331	278	297.43
310	30,991	278	300.87
SAWNEYS CREEK			
009	905	7753	171.40[3]
015	1,500	7753	171.40[3]
020	1,954	7753	171.40[3]
026	2,579	7753	171.40[3]
032	3,153	7753	171.40[3]
039	3,904	7753	171.40[3]
044	4,421	7753	171.40[3]
055	5,478	7753	171.40[3]
060	6,002	7753	171.40[3]

[1] This table reflects all modeled cross sections. Some cross sections shown in this table may not appear on map.
[2] Feet above mouth.
[3] Elevation includes backwater effects.

TABLE 7—Limited Detailed Base Flood Elevation Data

Cross Section[1]	Stream Station[2]	Flood Discharge (cfs)	1% Annual Chance Water-Surface Elevation (feet NAVD 88)
SAWNEYS CREEK (continued)			
064	6,375	7753	171.40[3]
068	6,835	7753	171.70
073	7,280	7753	174.70
082	8,173	7753	176.33
088	8,780	7753	178.07
093	9,336	7753	180.08
099	9,923	7753	181.17
106	10,566	7753	182.64
108	10,753	7753	184.59
111	11,131	7635	184.76
119	11,933	7635	185.43
127	12,663	7635	187.02
132	13,230	7635	188.17
139	13,917	7635	188.86
145	14,516	7635	189.50
151	15,090	7635	191.11
156	15,564	7635	192.37
161	16,054	7635	193.13
164	16,447	7635	194.00
169	16,886	7363	195.04
174	17,408	7363	195.59
179	17,892	7363	196.13
183	18,302	7363	197.69

[1] This table reflects all modeled cross sections. Some cross sections shown in this table may not appear on map.
[2] Feet above mouth.
[3] Elevation includes backwater effects.

5.0 INSURANCE APPLICATIONS

For flood insurance rating purposes, flood insurance zone designations are assigned to a community based on the results of the engineering analyses. The zones are as follows:

Zone A

Zone A is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the FIS by approximate methods. Because detailed hydraulic analyses are not performed for such areas, no Base Flood Elevations (BFEs) or depths are shown within this zone.

Zone AE

Zone AE is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the FIS by detailed methods. In most instances, whole-foot BFEs derived from the detailed hydraulic analyses are shown at selected intervals within this zone.

Zone X

Zone X is the flood insurance rate zone that corresponds to areas outside the 0.2-percent annual chance floodplain, areas within the 0.2-percent annual chance floodplain, and areas of 1-percent annual chance flooding where average depths are less than 1 foot, areas of 1-percent annual chance flooding where the contributing drainage area is less than 1 square mile, and areas protected from the one percent annual chance flood by levees. No BFEs or depths are shown within this zone.

6.0 FLOOD INSURANCE RATE MAP

The FIRM is designed for flood insurance and floodplain management applications.

For flood insurance applications, the map designates flood insurance rate zones as described in Section 5.0, and in the 1- percent annual chance floodplains that were studied by detailed methods, shows selected whole-foot base flood elevations or average depths. Insurance agents use the zones and base flood elevations in conjunction with information on structures and their contents to assign premium rates for flood insurance policies.

For floodplain management applications, the map shows by tints, screens, and symbols, the 1- and 0.2- percent annual chance floodplains. Floodways and the locations of selected cross sections used in the hydraulic analyses and floodway computations are shown where applicable.

The current FIRM presents flooding information for the entire geographic area of Kershaw County. Historical data relating to the precountywide maps prepared for each community are presented in Table 8, "Community Map History."

7.0 OTHER STUDIES

The [TBD], countywide FIS, is a part of the larger Wateree Watershed study covering flooding sources in Fairfield, Kershaw, Lancaster, Richland and Sumter Counties, South Carolina. Additional materials related to the entire Wateree Watershed study may be obtained by accessing the Technical Support Data Notebook.

Information pertaining to revised and unrevised flood hazards for each jurisdiction within Kershaw 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 Kershaw County.

8.0 LOCATION OF DATA

Information concerning the pertinent data used in the preparation of this study can be obtained by contacting the Federal Insurance and Mitigation Division, FEMA Region IV, Koger – Center – Rutgers Building, 3003 Chamblee Tucker Road, Atlanta, Georgia 30341.

COMMUNITY NAME	INITIAL IDENTIFICATION	FLOOD HAZARD BOUNDARY MAP REVISIONS DATE	FIRM EFFECTIVE DATE	FIRM REVISIONS DATE
Bethune, Town of	July 18, 1975	None		
Camden, City of	May 24, 1974	May 14, 1976 June 27, 1980	November 2, 1983	
Elgin, Town of*	January 24, 1975	None		
Kersahw County (Unincorporated Areas)	January 6, 1978	None	November 2, 1983	

*No Special Flood Hazard Areas Identified

TABLE 8

FEDERAL EMERGENCY MANAGEMENT AGENCY

KERSHAW COUNTY, SC AND INCORPORATED AREAS

COMMUNITY MAP HISTORY

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